3.2 - Air Quality

3.2.1 - Introduction

This section describes existing air quality conditions regionally and locally as well as the relevant regulatory framework. This section also evaluates the possible impacts related to air quality that could result from the implementation of the project. The information included in this section is based on project-specific air quality modeling results utilizing California Emissions Estimator Model (CalEEMod) Version 2020.4.0, the American Meteorological Society (AMS)/United States Environmental Protection Agency (EPA) Regulatory Model (AERMOD) air dispersion model (Version 21112). Complete modeling output is provided in Appendix B. The following comments related to Air Quality were received during the Notice of Preparation (NOP) scoping period:

- The Environmental Impact Report (EIR) should carefully assess and mitigate the proposed project's impacts on air quality.
- Because of the proposed project's proximity to residences and schools already disproportionately burdened by multiple sources of air pollution, the EIR should address the potential cumulative health impacts associated with the construction and operation of the proposed project.
- The EIR should specifically quantify and discuss the potential cancer risks from on-site Transport Refrigeration Units.

3.2.2 - Environmental Setting

Regional Geography and Climate

The City of American Canyon is located within the San Francisco Bay Area Air Basin (Air Basin or SFBAAB). The Air Basin is approximately 5,600 square miles in area and consists of nine counties that surround the San Francisco Bay, including all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties; the southwestern portion of Solano County; and the southern portion of Sonoma County. The San Francisco Bay Area (Bay Area) has a Mediterranean climate characterized by mild, dry summers and mild, moderately wet winters, moderate daytime onshore breezes, and moderate humidity.

A semi-permanent, high-pressure area centered over the northeastern Pacific Ocean dominates the summer climate of the West Coast. Because this high-pressure cell is persistent, storms rarely affect the California coast during the summer. Thus, the conditions that persist along the coast of California during summer are a northwest airflow and negligible precipitation. A thermal low-pressure area from the Sonoran-Mojave Desert also causes air to flow onshore over the Bay Area much of the summer.

The steady northwesterly flow around the eastern edge of the Pacific High (a high-pressure cell) exerts stress on the ocean surface along the West Coast. This airflow pattern induces upwelling of cold water from below the surface. Upwelling produces a band of cold water off San Francisco that is approximately 80 miles wide. During July, the surface waters off San Francisco are 3°F (degrees Fahrenheit) cooler than those off Vancouver, British Columbia, more than 900 miles to the north. Air

approaching the California coast, already cool and moisture-laden from its long trajectory over the Pacific Ocean, is further cooled as it flows across this cold bank of water near the coast, thus accentuating the temperature contrast across the coastline. This cooling is often sufficient to produce condensation, creating a high incidence of fog and stratus clouds along the Northern California coast in summer.

In summer, the northwest winds to the west of the Pacific coastline are drawn into the interior through the gap in the western Coast Ranges, known as the Golden Gate,[1] and over the lower portions of the San Francisco Peninsula. Immediately to the south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more nearly from the west as they stream through the Golden Gate. This channeling of the flow through the Golden Gate produces a jet that sweeps eastward but widens downstream, producing southwest winds at Berkeley and northwest winds at San José; a branch also curves eastward through the Carquinez Straits and into the Central Valley. Wind speeds may be locally strong in regions where air is channeled through a narrow opening such as the Golden Gate, the Carquinez Strait, or San Bruno Gap. For example, the average wind speed at San Francisco International Airport from 3:00 a.m. to 4:00 p.m. in July is about 20 miles per hour (mph), compared with only about 8 mph at San José and less than 7 mph at the Farallon Islands.

The sea breeze between the coast and the Central Valley[2] commences near the surface along the coast in late morning or early afternoon; it may first be observed only through the Golden Gate. Later in the day, the layer deepens and intensifies while spreading inland. As the breeze intensifies and deepens, it flows over the lower hills farther south along the peninsula. This process frequently can be observed as a bank of stratus clouds "rolling over" the coastal hills on the west side of the Bay. The depth of the sea breeze depends in large part upon the height and strength of the inversion. The generally low elevation of this stable layer of air prevents marine air from flowing over the coastal hills. It is unusual for the summer sea breeze to flow over terrain exceeding 2,000 feet in elevation.

In winter, the SFBAAB experiences periods of storminess, moderate-to-strong winds, and periods of stagnation with very light winds. Winter stagnation episodes are characterized by outflow from the Central Valley, nighttime drainage flows in coastal valleys, weak onshore flows in the afternoon, and otherwise light and variable winds.

A primary factor in air quality is the mixing depth (the vertical air column available for diluting contaminant sources). Generally, the air temperature decreases with height, creating a gradient from warmer air near the ground to cooler air at elevation caused by the sun converting large amounts of energy to sensible heat at the ground, which warms the air at the surface. The warm air rises in the atmosphere, where it expands and cools. Sometimes, however, the temperature of air increases with height. This condition is known as a temperature inversion because the atmosphere's temperature profile is "inverted" from its usual state. Over the SFBAAB, the frequent occurrence of temperature inversions limits mixing depth and, consequently, limits the availability of air for dilution.

[1] A strait on the West Coast of North America that connects the San Francisco Bay to the Pacific Ocean.

[2] A flat valley that dominates the geographical center of California stretching 450 miles from north-northwest to south-southeast, inland from and parallel to the Pacific Ocean coast. It is bound by the Sierra Nevada to the east and the Coast Range to the west.

Air Pollutant Types, Sources, and Effects

Criteria Air Pollutants

Air pollutants are termed criteria air pollutants if they are regulated by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. Table 3.2-1 provides a summary of the types, sources, and effects of criteria air pollutants.

Table 3.2-1: Description of Criteria Pollutants of National and California Concern

Criteria Pollutant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
Ozone	Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), nitrous oxides (NO_X), and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.	Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and NO_X) are mobile sources (on-road and off-road vehicle exhaust).	Irritate respiratory system; reduce lung function; change breathing pattern; reduce breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; induce some immunological changes; increase mortality risk; damage to vegetation and property.
Particulate matter (PM_{10}) Particulate matter ($PM_{2.5}$)	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} refers to particulate matter that is between 2.5 and 10 microns in diameter, (one micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.	Suspended particulate matter sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; the use of metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal and recycling. Mobile or transportation-related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.	• Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravate existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias. • Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death.
Nitrogen dioxide (NO_2)	During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides—NO_X (NO, NO_2, NO_3, N_2O, N_2O_3, N_2O_4, and N_2O_5).	NO_X is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Nitrogen	Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; risk to public health implied by pulmonary and extra-pulmonary

Criteria Pollutant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
	NO_X is a precursor to ozone, PM_{10}, and $PM_{2.5}$ formation. NO_X can react with compounds to form nitric acid and related small particles and can result in PM-related health effects.	dioxide forms quickly from NO_X emissions. NO_2 concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.	biochemical and cellular changes and pulmonary structural changes; contributions to atmospheric discoloration; increased visits to hospital for respiratory illnesses.
Carbon monoxide (CO)	CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.	CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential woodburning, and natural sources.	Ranges depending on exposure: slight headaches; nausea; aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; decreased exercise tolerance in persons with peripheral vascular disease and lung disease; impairment of central nervous system functions; possible increased risk to fetuses; death.
Sulfur dioxide (SO_2)	Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 parts per million (ppm), the gas has a strong odor similar to rotten eggs. Sulfur oxides (SO_X) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below State and federal standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and PM_{10}.	Human-caused sources include fossil fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethyl sulfide and hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum standards.	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath, and chest tightness during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.
Lead (Pb)	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded State or federal	Lead ore crushing, lead ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment,

Criteria Pollutant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
	standards at any monitoring station since 1982.	from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.	learning deficiencies, and low IQs.

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Toxic Air Contaminants

Concentrations of toxic air contaminants (TACs) are also used as indicators of air quality conditions. TACs are defined as air pollutants that may cause or contribute to an increase in mortality or serious illness or pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at very low concentrations. TACs can cause long-term health effects (such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage) or short-term acute affects (such as eye watering, respiratory irritation, runny nose, throat pain, or headaches). For TACs that may cause

cancer, all concentrations present some risk. In other words, there is no threshold level below which some adverse health impacts are not expected to occur. This contrasts with the criteria pollutants such as nitrogen dioxide and carbon dioxide for which acceptable levels of exposure can be determined. The State and federal governments set ambient air quality standards.

TACs are separated into carcinogens and noncarcinogens based on the physiological effects associated with exposure to a particular TAC. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. Cancer risk is typically expressed as excess cancer cases per million exposed individuals over a lifetime exposure or other prolonged duration. There is generally an assumed safe level of exposure for noncarcinogenic substances below which no negative health impact is believed to occur. These levels may vary depending on the specific pollutant. Acute and chronic exposure to noncarcinogens is expressed as a hazard index (HI), which is the ratio of expected exposure levels to an acceptable reference exposure level (REL).

To date, the California Air Resources Board (ARB) has designated nearly 200 compounds as TACs. The ARB has implemented control measures for several compounds that pose high risks and show potential for effective control. The majority of the estimated health risk from TACs can be attributed to a relatively few compounds, the most important being diesel particulate matter (DPM) from diesel-fueled engines. Common TACs of national and California concern include DPM, reactive organic gases (ROG), benzene, asbestos, hydrogen sulfide, sulfates, visibility-reducing particulates, vinyl chloride, and lead. Table 3.2-2 provides a summary of the types, sources, and effects of TACs.

Table 3.2-2: Description of Toxic Air Contaminants of National and California Concern

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
Diesel particulate matter (DPM)	DPM is a source of $PM_{2.5}$—diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total PM mass, which consists of compounds such as hydrocarbons and their derivatives and polycyclic aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust.	Diesel exhaust is a major source of ambient PM pollution in urban environments. Typically, the main source of DPM is from combustion of diesel fuel in diesel-powered engines. Such engines are in on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various pieces of stationary construction equipment.	Some short-term (acute) effects of DPM exposure include eye, nose, throat, and lung irritation, coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human studies on the carcinogenicity of DPM demonstrate an increased risk of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure.

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
VOCs	ROGs, or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably.	Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.	Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as TACs.
Benzene	Benzene is a VOC. It is a clear or colorless light-yellow, volatile, highly flammable liquid with a gasoline-like odor. The EPA has classified benzene as a "Group A" carcinogen.	Benzene is emitted into the air from fuel evaporation, motor vehicle exhaust, tobacco smoke, and from burning oil and coal. Benzene is used as a solvent for paints, inks, oils, waxes, plastic, and rubber. Benzene occurs naturally in gasoline at one to 2 percent by volume. The primary route of human exposure is through inhalation.	Short-term (acute) exposure of high doses from inhalation of benzene may cause dizziness, drowsiness, headaches, eye irritation, skin irritation, and respiratory tract irritation, and at higher levels, loss of consciousness can occur. Long-term (chronic) occupational exposure of high doses has caused blood disorders, leukemia, and lymphatic cancer.
Asbestos	Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties, such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of	Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained	Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs). Exposure to asbestos can occur

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
	asbestos are chrysotile, amosite, and crocidolite.	in buildings in the United States.	during demolition or remodeling of buildings that were constructed prior to the 1977 ban on asbestos for use in buildings. Exposure to naturally occurring asbestos can occur during soil-disturbing activities in areas with deposits present.
Hydrogen Sulfide	Hydrogen sulfide (H_2S) is a flammable, colorless, poisonous gas that smells like rotten eggs.	Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide. Anthropogenic sources include the combustion of sulfur containing fuels (oil and coal).	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.
Sulfates	Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water.	Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel.	Sulfates can cause a decrease in ventilatory function, aggravation of asthmatic symptoms; and aggravation of cardio-pulmonary disease, as well as vegetation damage, degradation of visibility, property damage.
Visibility-Reducing Particles	Suspended PM is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} refers to particulate matter that is between 2.5 and 10 microns in diameter (1 micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.	Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; the use of metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal; and	• Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravates existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias. • Long-term exposure can result in reduced lung function, chronic bronchitis, changes in lung morphology, and death.

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
		recycling. Mobile or transportation-related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.	
Vinyl Chloride	Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, the California Air Resources Board (ARB) identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.	Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites.	Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.
Lead (Pb)	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded State or federal standards at any monitoring station since 1982.	Lead ore crushing, lead ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQs.

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure

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Air Quality

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features. Atmospheric conditions such as wind speed, wind direction, and air temperature inversions interact with the physical features of the landscape to determine the movement and dispersal of air pollutant emissions and, consequently, their effect on air quality.

Regional Air Quality

The Bay Area Air Quality Management District (BAAQMD) is the regional agency regulating air quality within the nine-county SFBAAB. The SFBAAB includes Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, the western portion of Solano County, and the southern portion of Sonoma County.

Air Pollutant Standards and Attainment Designations

Air pollutant standards have been adopted by the EPA and the ARB for the following six criteria air pollutants that affect ambient air quality: ozone, NO_2, CO, SO_2, lead, and particulate matter (PM), which is subdivided into two classes based on particle size: PM with aerodynamic diameters equal to or less than 10 microns (PM_{10}), and PM with aerodynamic diameters equal to or less than 2.5 microns ($PM_{2.5}$). These air pollutants are called "criteria air pollutants" because they are regulated by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. California has also established standards for TACs such as visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. Table 3.2-3 presents the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) for these aforementioned air pollutants. Note that there are no State or federal ambient air quality standards for ROGs, benzene, or DPM.

Table 3.2-3: Federal and State Air Quality Standards in the SFBAAB

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]
Ozone	1 Hour	0.09 ppm	—
	8 Hour	0.070 ppm	0.070 ppm[f]
Nitrogen dioxide[b] (NO_2)	1 Hour	0.18 ppm	0.100 ppm
	Annual	0.030 ppm	0.053 ppm
Carbon monoxide (CO)	1 Hour	20 ppm	35 ppm
	8 Hour	9.0 ppm	9 ppm
Sulfur dioxide[c] (SO_2)	1 Hour	0.25 ppm	0.075 ppm
	3 Hour	—	0.5 ppm
	24 Hour	0.04 ppm	0.14 (for certain areas)
	Annual	—	0.030 ppm (for certain areas)
Lead[e]	30-day	1.5 µg/m^3	—
	Quarter	—	1.5 µg/m^3
	Rolling 3-month average	—	0.15 µg/m^3
Particulate matter (PM_{10})	24 hour	50 µg/m^3	150 µg/m^3
	Mean	20 µg/m^3	—
Particulate matter ($PM_{2.5}$)	24 Hour	—	35 µg/m^3
	Annual	12 µg/m^3	12.0 µg/m^3
Visibility-reducing particles	8 Hour	See note below[d]	
Sulfates	24 Hour	25 µg/m^3	—
Hydrogen sulfide	1 Hour	0.03 ppm	—
Vinyl chloride[e]	24 Hour	0.01 ppm	—

Notes:
ppm = parts per million (concentration) µg/m^3 = micrograms per cubic meter Annual = Annual Arithmetic Mean
30-day = 30-day average Quarter = Calendar quarter

[a] Federal standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3-Hour SO_2, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[b] To attain the 1-hour nitrogen dioxide national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (0.100 ppm).

[c] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 part per billion (ppb). The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[d] Visibility-reducing particles: In 1989, the ARB converted both the general Statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the Statewide and Lake Tahoe Air Basin standards, respectively.

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]

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

[f] The EPA Administrator approved a revised 8-hour ozone standard of 0.07 ppb on October 1, 2015. The new standard went into effect 60 days after publication the Final Rule in the Federal Register. The Final Rule was published in the Federal Register on October 26, 2015, and became effective on December 28, 2015.

Source: California Air Resources Board (ARB). 2016. Ambient Air Quality Standards. May 4. Website: https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf. Accessed May 18, 2021.

Air quality monitoring stations operated by the ARB and BAAQMD measure ambient air pollutant concentrations in the SFBAAB. In general, the SFBAAB experiences low concentrations of most pollutants compared to federal or State standards.

Both the EPA and ARB use ambient air quality monitoring data to designate areas according to their attainment status for criteria air pollutants. These designations identify the areas with air quality problems and initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. "Attainment" status refers to those regions that are meeting federal and/or State standards for a specified criteria pollutant. "Nonattainment" refers to regions that do not meet federal and/or State standards for a specified criteria pollutant. "Unclassified" refers to regions with insufficient data to determine the region's attainment status for a specified criteria air pollutant. Each standard has a different definition, or "form" of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the 3-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

Table 3.2-4 shows the current attainment designations for the SFBAAB. The SFBAAB is designated as nonattainment for the State ozone, PM_{10}, and $PM_{2.5}$, standards and the national ozone and $PM_{2.5}$ standards.

Table 3.2-4: San Francisco Bay Area Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	N/A
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Nonattainment	Nonattainment
Sulfates	Attainment	N/A
Hydrogen Sulfates	Unclassified	N/A

Pollutant	State Status	National Status
Visibility-reducing Particles	Unclassified	N/A
Lead	N/A	Attainment
Notes: N/A = information not available. Source: Bay Area Air Quality Management District (BAAQMD). 2017. Air Quality Standards and Attainment Status. January 5. Website: http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status. Accessed May 18, 2021.		

Air Quality Index

The health impacts of the various air pollutants of concern can be presented in a number of ways. The clearest comparison is to the State and federal ozone standards. If concentrations are below the standard, it is safe to say that no health impact would occur to anyone. When concentrations exceed the standard, impacts will vary based on the amount by which the standard is exceeded. The EPA developed the Air Quality Index (AQI) as an easy-to-understand measure of health impacts compared with concentrations in the air. Table 3.2-5 provides a general description of the health impacts of ozone at different concentrations.

Table 3.2-5: Air Quality Index and Health Effects from Ozone

Air Quality Index/ 8-hour Ozone Concentration	Health Effects Description
AQI—0–50—Good	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
Concentration 0–54 ppb	**Health Effects Statements**: None.
	Cautionary Statements: None.
AQI—51–100—Moderate	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
Concentration 55–70 ppb	**Health Effects Statements**: Unusually sensitive individuals may experience respiratory symptoms.
	Cautionary Statements: Unusually sensitive people should consider limiting prolonged outdoor exertion.
AQI—101–150—Unhealthy for Sensitive Groups	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
Concentration 71–85 ppb	**Health Effects Statements**: Increasing likelihood of respiratory symptoms and breathing discomfort in active children and adults, and people with respiratory disease, such as asthma.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.

Air Quality Index/ 8-hour Ozone Concentration	Health Effects Description
AQI—151–200—Unhealthy Concentration 86–105 ppb	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Greater likelihood of respiratory symptoms and breathing difficulty in active children and adults and people with respiratory disease, such as asthma; possible respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
AQI—201–300—Very Unhealthy Concentration 106–200 ppb	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasing likelihood of respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.
Source: Air Now. N.d. AQI Calculator: AQI to Concentration Calculator. Website: https://www.airnow.gov/aqi/aqi-calculator. Accessed May 18, 2021.	

Local Air Quality

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features. Atmospheric conditions such as wind speed, wind direction, and air temperature inversions interact with the physical features of the landscape to determine the movement and dispersal of air pollutant emissions and, consequently, their effect on air quality.

The local air quality can be evaluated by reviewing relevant air pollution concentrations near the project area. The air quality monitoring station closest to the project site is the Napa Valley College Air Monitoring Station, located approximately 5.5 miles north of the project site. Table 3.2-6 summarizes the recorded ambient air data at the representative monitoring stations for the years 2017 through 2019, which is the most current data available at the time of this analysis. As the Napa Valley College Air Monitoring Station does not have recorded data for 2017, the next closest monitoring station, Vallejo-304 Tuolumne Street Monitoring Station, approximately 6.5 miles south of the project site, was selected to identify the region's air quality in 2017. As Table 3.2-6 shows, the recorded data show exceedances of the California standards for ozone (1-hour and 8-hour) and PM_{10}, and national standards for 8-hour ozone, $PM_{2.5}$, and $PM_{10,}$ on multiple occasions from 2017 to 2019. No exceedances of either the State or national standards were recorded for CO, NO_2, or SO_2. No recent monitoring data for Napa County or the SFBAAB was available for CO or SO_2. Generally, no monitoring is conducted for pollutants that are no longer likely to exceed ambient air quality standards.

Table 3.2-6: Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Item	2017	2018	2019
Ozone[(1)]	1 Hour	Max 1 Hour (ppm)	**0.105**	0.083	**0.095**
		Days > State Standard (0.09 ppm)	**1**	0	**1**
	8 Hour	Max 8 Hour (ppm)	**0.089**	0.068	**0.076**
		Days > State Standard (0.07 ppm)	**2**	0	**2**
		Days > National Standard (0.070 ppm)[(2)]	**2**	0	**2**
CO	8 Hour	Max 8 Hour (ppm)	ND	ND	ND
		Days > State Standard (9.0 ppm)	ND	ND	ND
		Days > National Standard (9 ppm)	ND	ND	ND
NO_2[(1)]	Annual	Annual Average (ppm)	0.008	ND	0.001
	1 Hour	Max 1 Hour (ppm)	0.049	0.040	0.040
		Days > State Standard (0.18 ppm)	0	0	0
SO_2	Annual	Annual Average (ppm)	ND	ND	ND
	24 Hour	Max 24 Hour (ppm)	ND	ND	ND
		Days > State Standard (0.04 ppm)	ND	ND	ND
Inhalable coarse particles (PM_{10})[(1)]	Annual	Annual Average (µg/m^3)	11.5	12.7	13.5
	24 Hour	Max 24 Hour (µg/m^3)	ND	26.0	39.0
		Days > State Standard (50 µg/m^3)	ND	ND	ND
		Days > National Standard (150 µg/m^3)	ND	ND	0
Fine particulate matter ($PM_{2.5}$)[(1)]	Annual	Annual Average (µg/m^3)	11.7	ND	6
	24 Hour	24 Hour (µg/m^3)	**101.9**	**117.9**	21.5
		Days > National Standard (35 µg/m^3)	**9**	ND	0

Notes:
> = exceed ppm = parts per million µg/m^3 = micrograms per cubic meter
ID = insufficient data ND = no data max = maximum
Bold = exceedance
State Standard = California Ambient Air Quality Standard
National Standard = National Ambient Air Quality Standard
(1) San Pablo-Rumrill Boulevard
(2) On October 1, 2015, the EPA strengthened the NAAQS for ground-level ozone to 70 parts per million through the adoption of a new standard. The Final Rule went into effect on December 28, 2015.
Source: California Air Resources Board (ARB). 2018. iADAM: Top 4 Summary. Website: https://www.arb.ca.gov/adam/select8/sc8start.php. Accessed July 29, 2021.

Sensitive Receptors

Air pollution does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others are. Land uses such as residences, schools, day

care centers, hospitals, nursing and convalescent homes, and parks are considered the most sensitive to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress or, as in the case of residential receptors, their exposure time is greater than that for other land uses. Therefore, these groups are referred to as sensitive receptors. Exposure assessment guidance typically assumes that residences would receive exposure to air pollution 24 hours per day, 350 days per year, for 70 years. BAAQMD defines sensitive receptors as children, adults, and seniors occupying or residing in residential dwellings, schools, day care centers, hospitals, and senior-care facilities.

Project Vicinity

The closest off-site air pollution sensitive receptors near the project site in each direction include the following:

- A single-family residence approximately 200 feet southwest of the project site.
- A single-family residence approximately 3,150 feet west of the project site.
- A residential neighborhood approximately 2,510 feet south of the project site.
- A single-family residence approximately 1,790 feet east of the project site.
- A single-family residence approximately 1,860 feet northeast of the project site.
- Calvary Baptist Christian Academy approximately 4,040 feet south of the project site.

Project Site

The project site is vacant and no sensitive receptors currently exist on the project site.

Existing Emission Sources

Project Vicinity

The primary sources of air pollutants (both criteria air pollutant and TACs) in the project site vicinity include the various other surrounding industrial properties, building-related energy use, and motor-related vehicle trips associated with the local business use, particularly on State Route (SR) 29. The project site is located approximately 660 feet west of SR-29 and approximately 2,430 feet southeast of Napa County Airport. Other activities that result in emissions include space and water heating, landscape maintenance, and any surrounding industrial uses that can store, produce, decommission, or otherwise handle hazardous materials.

Project Site

The project site itself is currently vacant and does not produce any air pollutants.

3.2.3 - Regulatory Framework

Federal

Clean Air Act

Congress established much of the basic structure of the Clean Air Act (CAA) in 1970 and made major revisions in 1977 and 1990. Six common air pollutants (also known as criteria pollutants) are addressed in the CAA. These are PM, ground-level ozone, CO, sulfur oxides, nitrogen oxides, and lead. The EPA calls these pollutants criteria air pollutants because it regulates them by developing

human health-based and/or environmentally based criteria (science-based guidelines) for setting permissible levels. The set of limits based on human health are called primary standards. Another set of limits intended to prevent environmental and property damage are called secondary standards.[3] The federal standards are called NAAQS. The air quality standards provide benchmarks for determining whether air quality is healthy at specific locations and whether development activities will cause or contribute to a violation of the standards. The criteria pollutants are:

- Ozone
- Nitrogen dioxide (NO_2)
- Lead
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Carbon monoxide (CO)
- Sulfur dioxide

The federal standards were set to protect public health, including that of sensitive individuals; thus, the EPA is tasked with updating the standards as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health.

The CAA also requires each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The federal CAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies.

EPA Emission Standards for New Off-Road Equipment

Before 1994, there were no standards to limit the amount of emissions from off-road equipment. In 1994, the EPA established emission standards for hydrocarbons, NO_X, CO, and PM to regulate new pieces of off-road equipment. These emission standards came to be known as Tier 1. Since that time, increasingly more stringent Tier 2, Tier 3, and Tier 4 (interim and final) standards were adopted by the EPA and the ARB. Each adopted emission standard was phased in over time. New engines built in and after 2015 across all horsepower sizes must meet Tier 4 final emission standards. In other words, new manufactured engines cannot exceed the emissions established for Tier 4 final emissions standards.

State

California Air Quality Control Plan (State Implementation Plan)

An SIP is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal air quality standards. The ARB, which has overall responsibility for Statewide air quality maintenance and air pollution prevention, administers the SIP for the State of California. California's SIP incorporates individual federal attainment plans for regional air districts—an air district prepares their federal attainment plan, which is sent to the ARB to be approved and incorporated into the California SIP. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality

[3] United States Environmental Protection Agency (EPA). 2014. Clean Air Act Requirements and History. Website: https://www.epa.gov/clean-air-act-overview/clean-air-act-requirements-and-history. Accessed May 18, 2021.

monitoring), control measures and strategies, and enforcement mechanisms for attaining and maintaining air quality standards.

Areas designated nonattainment must develop air quality plans and regulations to achieve standards by specified dates, depending on the severity of the exceedances. For much of the country, implementation of federal motor vehicle standards and compliance with federal permitting requirements for industrial sources are adequate to attain air quality standards on schedule. For many areas of California, however, additional State and local regulation is required to achieve the standards.

California Clean Air Act

The California Legislature enacted the California Clean Air Act (CCAA) in 1988 to address air quality issues of concern not adequately addressed by the federal CAA at the time. California's air quality problems were and continue to be some of the most severe in the nation and required additional actions beyond the federal mandates. The ARB administers the CAAQS for the 10 air pollutants designated in the CCAA. The 10 State air pollutants are the six federal standards listed above and visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The EPA authorized California to adopt its own more stringent regulations than similar federal regulations implementing the CAA for motor vehicles and other sources. Generally, the planning requirements of the CCAA are more stringent than the federal CAA; therefore, consistency with the CAA will also demonstrate consistency with the CCAA.

Other ARB responsibilities include, but are not limited to, overseeing local air district compliance with California and federal laws; approving local air quality plans; submitting SIPs to the EPA; monitoring air quality; determining and updating area designations and maps; conducting basic research aimed at providing a better understanding between emissions and public well-being, and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

California Health and Safety Code Section 39655 and California Code of Regulations Title 17 Section 93000 (Substances Identified as Toxic Air Contaminants)

The ARB identifies substances as TACs as defined in Health and Safety Code Section 39655 and listed in Title 17, Section 93000 of the California Code of Regulations, "Substances Identified As Toxic Air Contaminants." A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness or pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. In general, for those TACs that may cause cancer, there are thresholds set by regulatory agencies below which adverse health impacts are not expected to occur. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the State and federal governments have set ambient air quality standards. According to the California Almanac of Emissions and Air Quality, the majority of the estimated health risk from TACs for the State of California can be attributed to relatively few compounds, the most important of which is DPM from diesel-fueled engines.

California Low-Emission Vehicle Program

The ARB first adopted Low-Emission Vehicle (LEV) program standards in 1990. These first LEV standards ran from 1994 through 2003. LEV II regulations, running from 2004 through 2010, represent continuing progress in emission reductions. As the State's passenger vehicle fleet continues to grow and more sport utility vehicles and pickup trucks are used as passenger cars rather than work vehicles, more stringent LEV II standards were adopted to provide reductions necessary for California to meet federally mandated clean air goals outlined in the 1994 SIP. In 2012, the ARB adopted the LEV III amendments to California's LEV regulations. These amendments, also known as the Advanced Clean Car Program, include more stringent emission standards for model years 2017 through 2025 for criteria pollutants and greenhouse gas (GHG) emissions for new passenger vehicles.[4]

California On-Road Heavy-Duty Vehicle Program

The ARB has adopted standards for emissions from various types of new on-road heavy-duty vehicles. Section 1956.8, Title 13, California Code of Regulations contains California's emission standards for on-road heavy-duty engines and vehicles, and test procedures. The ARB has also adopted programs to reduce emissions from in-use heavy-duty vehicles including the Heavy-Duty Diesel Vehicle Idling Reduction Program, the Heavy-Duty Diesel In-Use Compliance Program, the Public Bus Fleet Rule and Engine Standards, and the School Bus Program and others.[5]

California In-Use Off-Road Diesel Vehicle Regulation

On July 26, 2007, the ARB adopted a regulation to reduce DPM and NO_X emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than 5 consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. The ARB is enforcing that part of the rule with fines up to $10,000 per day for each vehicle in violation. Performance requirements of the rule are based on a fleet's average NO_X emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirements, making the first compliance deadline January 1, 2014, for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501-5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less).

The latest amendments to the Truck and Bus regulation became effective on December 31, 2014. The amended regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet PM filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses and privately and publicly owned school buses with a gross vehicle weight of greater than 14,000 pounds. The regulation provides various flexibility options tailored to fleets operating low-use

[4] California Air Resources Board (ARB). 2013. Clean Car Standards—Pavley, Assembly Bill 1493. Website: http://www.arb.ca.gov/cc/ccms/ccms.htm. Accessed May 18, 2021.

[5] California Air Resources Board (ARB). 2013. The California Almanac of Air Quality and Emissions—2013 Edition. Website: http://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm. Accessed May 18, 2021.

vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks.[6]

California Airborne Toxic Control Measures for Asbestos

The ARB has adopted Airborne Toxic Control Measures (ATCM) for sources that emit a particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology to minimize emissions.

In July 2001, the ARB approved an ATCM for construction, grading, quarrying and surface mining operations to minimize emissions of naturally occurring asbestos. The regulation requires applying Best Management Practices (BMPs) to control fugitive dust in areas known to have naturally occurring asbestos and requires notification to the local air district before ground-disturbing activities. The measure establishes specific testing, notification, and engineering controls before grading, quarrying, or surface mining in construction zones where naturally occurring asbestos is located on projects of any size. There are additional notification and engineering controls at work sites larger than one acre in size. These projects require the submittal of a "Dust Mitigation Plan" and approval by the air district before the start of a project.

Construction sometimes requires the demolition of existing buildings where construction occurs. Asbestos is also found in a natural state, known as naturally occurring asbestos. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers into the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

The ARB has an ATCM for construction, grading, quarrying, and surface mining operations, requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. The measure applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the Air Pollution Control Officer or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally occurring asbestos on the site. The measure also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity. Review of the Department of Conservation maps indicates that no ultramafic rock has been found near the project site with the areas more likely to contain naturally occurring asbestos are approximately 2 miles southeast of the project site.[7]

[6] California Air Resources Board (ARB). 2015. On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation. Website: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed May 18, 2021.

[7] United States Geological Survey (USGS). 2011. Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California Map.

California Airborne Toxic Control Measures for Transport Refrigerated Units

The ARB also has an ATCM for in-use diesel-fueled Transport Refrigeration Units (TRUs) and generator sets, which establishes performance targets for TRUs. TRUs are trailer-mounted units, powered by small diesel-fueled engines, which provide chilled air to tailers carrying perishable goods (e.g., produce, meats, and prescription drugs). The measure regulates PM emissions rates from TRUs powered by diesel internal combustion engines that range from 9 to 36 horsepower. According to the regulation, facilities with over 20 loading docks must submit a detailed report specifying the types of models and quantities of TRUs that would operate at the facility. The report is filed by the equipment operator and is submitted electronically to the ARB. By July 31, 2009, owners and operators of California-based TRUs were required to submit an application for an ARB identification number as part of the ARB Identification Numbering Requirements. By December 31, 2021, owners and operators of California-based TRUs must submit documentation demonstrating that TRUs with a model year 2013 or newer meet the Ultra Low-Emission TRU in-use standard by the end of the seventh year after the engine model year.

Verified Diesel Emission Control Strategies

The EPA and the ARB tiered off-road emission standards only apply to new engines and off-road equipment can last several years. The ARB has developed Verified Diesel Emission Control Strategies (VDECS), devices, systems, or strategies used to achieve the highest level of pollution control from existing off-road vehicles to help reduce emissions from existing engines. VDECS are designed primarily for the reduction of DPM emissions and have been verified by ARB. There are three levels of VDECS, the most effective of which is the Level 3 VDECS. Tier 4 engines are not required to install VDECS because they already meet the emissions standards for lower-tiered equipment with installed controls.

California Diesel Risk Reduction Plan

The ARB Diesel Risk Reduction Plan has led to the adoption of new State regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce DPM emissions in 2020 by about 90 percent overall from year 2000 levels. The projected emission benefits associated with the full implementation of this plan, including federal measures, are reductions in DPM emissions and associated cancer risks of 75 percent by 2010 and 85 percent by 2020.[8]

Tanner Air Toxics Act and Air Toxics Hot Spots Information and Assessment Act

TACs in California are primarily regulated through the Tanner Air Toxics Act (Assembly Bill 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (Assembly Bill 2588), also known as the Hot Spots Act. To date, the ARB has identified more than 21 TACs, and has adopted the EPA's list of Hazardous Air Pollutants (HAPs) as TACs.

Carl Moyer Memorial Air Quality Standards Attainment Program

The Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program), a partnership between the ARB and local air districts, issues grants to replace or retrofit older engines and equipment with engines and equipment that exceed current regulatory requirements to reduce air

[8] California Air Resources Board (ARB). 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles. Website: http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf. Accessed May 18, 2021.

pollution. Money collected through the Carl Moyer Program complements California's regulatory program by providing incentives to effect early or extra emission reductions, especially from emission sources in environmental justice communities and areas disproportionately affected by air pollution. The program has established guidelines and criteria for the funding of emissions reduction projects. Within the San Francisco Bay Area Air Basin (Air Basin), the BAAQMD administers the Carl Moyer Program. The program has established guidelines and criteria for the funding of emissions reduction projects. Within the Air Basin, the BAAQMD administers the Carl Moyer Program. The program establishes cost-effectiveness criteria for funding emission reductions projects, which under the final 2017 Carl Moyer Program Guidelines are $30,000 per weighted ton of NO_X, ROG, and PM.[9]

California Refrigerant Management Program

California's Refrigerant Management Program (RMP) regulates refrigerants used in larger facilities, primarily industrial and supermarket land uses. Refrigerants regulated under the RMP include any refrigerant that is an ozone depleting substance as defined in Title 40 of the Code of Federal Regulation, Part 82, and any compound with a global warming potential (GWP) value equal to or greater than 150 according to the GWPs specified in the United Nations Intergovernmental Panel on Climate Change's (IPCC) Fourth Assessment Report of 2007. According to the RMP, all supermarket and industrial refrigeration systems with a full recharge capacity of 50 pounds (22.7 kilograms) or greater will be required to limit the refrigerants used to no greater than 150 GWP beginning in 2022. Similarly, according to the RMP, all room air conditioning unit systems with a full recharge capacity of 50 pounds or greater will be required to limit the refrigerants used to no greater than 750 GWP beginning in 2023.[10]

Regional

BAAQMD California Environmental Quality Act Air Quality Guidelines

The BAAQMD is the primary agency responsible for ensuring that air quality standards (NAAQS and CAAQS) are attained and maintained in the SFBAAB through comprehensive planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The BAAQMD prepares plans to attain ambient air quality standards in the SFBAAB and prepares ozone attainment plans for the national ozone standard, clean air plans for the California standard, and PM plans to fulfill federal air quality planning requirements. The BAAQMD also inspects stationary sources of air pollution; responds to citizen complaints; monitors ambient air quality and meteorological conditions; and implements programs and regulations required by the CAA and the CCAA.

The BAAQMD developed quantitative thresholds of significance for its California Environmental Quality Act (CEQA) Guidelines in 2010, which were also included in its updated 2011 Guidelines. The BAAQMD's adoption of the 2010 thresholds of significance was later challenged in court. In an opinion issued on December 17, 2015, related to the BAAQMD CEQA Guidelines, the California Supreme Court held that CEQA does not generally require an analysis of the impacts on project

[9] California Air Resources Board (ARB). 2017. 2017 Carl Moyer Program Guidelines. Website: California Air Resources Board (ARB). 2017. 2017 Carl Moyer Program Guidelines. Accessed May 19, 2021.

[10] California Air Resources Board (ARB). 2020. Proposed Amendments to ARB's HFC Regulation. December 10. Website: https://ww3.arb.ca.gov/board/books/2020/121020/20-13-4pres.pdf. Accessed September 10, 2021.

residents and users of locating development in areas subject to environmental hazards unless the proposed project would exacerbate those existing environmental hazards (*California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, 377-378). The California Supreme Court also found that specific legislation within CEQA requires the analysis of exposing people to environmental hazards in specific circumstances, including the location of development near airports, schools near sources of toxic contamination, and certain exemptions for infill and workforce housing (*Id*. at pp. 391-392). On N remand from the California Supreme Court, the Court of Appeal later held that public agencies remain free to voluntarily conduct this analysis not required by CEQA for their own public projects (*CBIA v. BAAQMD (2016) 2 Cal.App.5th 1067, 1083*).

In view of the California Supreme Court's opinion, the BAAQMD published a new version of its CEQA Guidelines in May 2017. The BAAQMD CEQA Guidelines state that local agencies may rely on thresholds designed to reflect the impact of locating development near areas of toxic air contamination where CEQA requires such an analysis or where the agency has determined that such an analysis would assist in making a decision about the proposed project. However, the thresholds are not mandatory, and agencies should apply them only after determining that they reflect an appropriate measure of a project's impacts. The BAAQMD's guidelines for implementing the thresholds are for informational purposes only, to assist local agencies.

BAAQMD Particulate Matter Plan

To fulfill federal air quality planning requirements, the BAAQMD adopted a $PM_{2.5}$ emissions inventory for the year 2010 at a public hearing on November 7, 2012. The Bay Area Clean Air Plan also included several measures for reducing PM emissions from stationary sources and woodburning. On January 9, 2013, the EPA issued a final rule determining that the Bay Area has attained the 24-hour $PM_{2.5}$ NAAQS, suspending federal SIP planning requirements for the SFBAAB.[11] Despite this EPA action, the SFBAAB will continue to be designated as nonattainment for the national 24-hour $PM_{2.5}$ standard until the BAAQMD submits a redesignation request and a maintenance plan to the EPA and the EPA approves the proposed redesignation.

The Air Basin is designated nonattainment for the State PM_{10} and $PM_{2.5}$ standards, but the Air Basin is currently unclassified for the federal PM_{10} standard and nonattainment for federal $PM_{2.5}$ standards. The EPA lowered the 24-hour $PM_{2.5}$ standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$ in 2006 and designated the Air Basin as nonattainment for the new $PM_{2.5}$ standard effective December 14, 2009.

On December 8, 2011, the ARB submitted a "clean data finding" request to the EPA on behalf of the Bay Area. If the clean data finding request is approved, then EPA guidelines provide that the region can fulfill federal $PM_{2.5}$ SIP requirements by preparing either a redesignation request and a $PM_{2.5}$ maintenance plan, or a "clean data" SIP submittal. Because peak $PM_{2.5}$ levels can vary from year to year based on natural, short-term changes in weather conditions, the BAAQMD believes that it

[11] United States Environmental Protection Agency (EPA). 2013. Determination of Attainment for the San Francisco Bay Area Nonattainment Area for the 2006 Fine Particle Standard; California; Determination Regarding Applicability of Clean Air Act Requirements. January 9. Website: https://www.govinfo.gov/content/pkg/FR-2013-01-09/pdf/2013-00170.pdf. Accessed May 18, 2021.

would be premature to submit a redesignation request and $PM_{2.5}$ maintenance plan at this time. Therefore, the BAAQMD will prepare a "clean data" SIP to address the required elements, including:

- An emission inventory for primary $PM_{2.5}$, as well as precursors to secondary PM formation
- Amendments to the BAAQMD's New Source Review regulation to address $PM_{2.5}$

BAAQMD 2017 Clean Air Plan

In May 2017, the BAAQMD adopted the final Bay Area 2017 Clean Air Plan. The BAAQMD prepared the 2017 Clean Air Plan in cooperation with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG). The goals of the 2017 Clean Air Plan are to reduce regional air pollutants and climate pollutants to improve the health of Bay Area residents for the next decades. The 2017 Clean Air Plan aims to lead the region into a post-carbon economy, continue progress toward attaining all State and federal air quality standards, and eliminate health risk disparities from air pollution exposure in Bay Area communities. The Plan includes 85 distinct control measures to help the region reduce air pollutants and has a long-term strategic vision that forecasts what a clean air Bay Area will look like in the year 2050. The 2017 Clean Air Plan envisions a future whereby the year 2050:

- Buildings will be energy efficient—heated, cooled and powered by renewable energy.
- Transportation will be a combination of electric vehicles, both shared and privately owned, and autonomous public transit fleets, with a large share of trips by bicycling, walking, and transit.
- The Bay Area will be powered by clean, renewable electricity and will be a leading incubator and producer of clean energy technologies leading the world in the carbon-efficiency of our products.
- Bay Area residents will have developed a low-carbon lifestyle by driving electric vehicles, living in zero net energy homes, eating low-carbon foods, and purchasing goods and services with low-carbon content.
- Waste will be greatly reduced, waste products will be re-used or recycled, and all organic waste will be composted and put to productive use.

The focus of control measures includes aggressively targeting the largest source of GHG, ozone pollutants, and PM emissions: transportation. This includes more incentives for electric vehicle infrastructure, off-road electrification projects such as Caltrain and shore power at ports, and reducing emissions from trucks, school buses, marine vessels, locomotives, and off-road equipment. Additionally, the BAAQMD will continue to work with regional and local governments to reduce Vehicle Miles Traveled (VMT) through the further funding of rideshare, bike and shuttle programs.

BAAQMD Regulations

Regulation 2, Rule 1 (Permits–General Requirements)

The BAAQMD regulates new sources of air pollution and the modification and operation of existing sources through the issuances of authorities to construct and permits to operate. Regulation 2, Rule 1 provides an orderly procedure which the project would be required to comply with to receive

authorities to construct or permits to operate from the BAAQMD for new sources of air pollutants, as applicable.

Regulation 2, Rule 5 (New Source Review Permitting)

The BAAQMD regulates backup emergency generators, fire pumps, and other sources of TACs through its New Source Review (Regulation 2, Rule 5) permitting process.[12] Although emergency generators are intended for use only during periods of power outages, monthly testing of each generator is required; however, the BAAQMD limits testing to no more than 50 hours per year. Each emergency generator installed is assumed to meet a minimum of Tier 2 emission standards (before control measures). As part of the permitting process, the BAAQMD limits the excess cancer risk from any facility to no more than 10 per 1-million-population for any permits that are applied for within a 2-year period and would require any source that would result in an excess cancer risk greater than 1 per 1 million to install Best Available Control Technology (BACT) for Toxics.

Regulation 6, Rule 1 (Particulate Matter–General Requirements)

The BAAQMD regulates PM emissions through Regulation 6 by means of establishing limitations on emission rates, emissions concentrations, and emission visibility and opacity. Regulation 6, Rule 1 provides existing standards for PM emissions that could result during project construction or operation that the project would be required to comply with, as applicable, such as the prohibition of emissions from any source for a period or aggregate periods of more than 3 minutes in any hour which are equal to or greater than 20 percent opacity.

Regulation 6, Rule 6, (Particulate Matter–Prohibition of Trackout)

One rule by which the BAAQMD regulates PM includes Regulation 6, Rule 6, which prohibits PM trackout during project construction and operation. Regulation 6, Rule 6 requires the prevention or timely cleanup of trackout of solid materials onto paved public roads outside the boundaries of large bulk material sites, large construction sites, and large disturbed surface sides such as landfills.

Regulation 8, Rule 3 (Architectural Coatings)

This rule governs the manufacture, distribution, and sale of architectural coatings and limits the ROG content in paints and paint solvents. Although this rule does not directly apply to the proposed project, it does dictate the ROG content of paint available for use during the construction.

Regulation 8, Rule 15 (Emulsified and Liquid Asphalts)

Although this rule does not directly apply to the proposed project, it does dictate the reactive organic gases content of asphalt available for use during the construction through regulating the sale and use of asphalt and limits the ROG content in asphalt.

Regulation 9, Rule 8 (Inorganic Gaseous Pollutants–Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines)

Under Regulation 9, Rule 8, the BAAQMD regulates the emissions of nitrogen oxides and carbon monoxide from stationary internal combustion engines with an output rated by the manufacturer at more than 50 brake horsepower. As such, any proposed stationary source equipment (e.g., backup

[12] Bay Area Air Quality Management District (BAAQMD). 2016. NSR [New Source Review] Permitting Guidance. Website: http://www.baaqmd.gov/permits/permitting-manuals/nsr-permitting-guidance. Accessed May 18, 2021.

generators, fire pumps) which would be greater than 50 horsepower would require a BAAQMD permit under Regulation 9, Rule 8 to operate.

Regulation 11, Rule 2 (Hazardous Pollutants–Asbestos Demolition, Renovation, and Manufacturing)

Under Regulation 11, Rule 2, the BAAQMD regulates emissions of asbestos to the atmosphere during demolition, renovation, milling, and manufacturing and establishes appropriate waste disposal procedures. Any of these activities which pose the potential to generate emissions of airborne asbestos are required to comply with the appropriate provisions of this regulation.

Regulation 1, Rule 301 (Odorous Emissions)

The BAAQMD is responsible for investigating and controlling odor complaints in the Bay Area. The agency enforces odor control by helping the public to document a public nuisance. Upon receipt of a complaint, the BAAQMD sends an investigator to interview the complainant and to locate the odor source if possible. The BAAQMD typically brings a public nuisance court action when there are a substantial number of confirmed odor events within a 24-hour period. An odor source with five or more confirmed complaints per year, averaged over 3 years, is considered to have a substantial effect on receptors.

Several BAAQMD regulations and rules apply to odorous emissions. Regulation 1, Rule 301 is the nuisance provision that states that sources cannot emit air contaminants that cause nuisance to several people. Regulation 7 specifies limits for the discharge of odorous substances where the BAAQMD receives complaints from 10 or more complainants within a 90-day period. Among other things, Regulation 7 precludes discharge of an odorous substance that causes the ambient air at or beyond the property line to be odorous after dilution with four parts of odor-free air and specifies maximum limits on the emission of certain odorous compounds.

Lastly, the BAAQMD enforces the Portable Equipment Registration Program (PERP) ATCM on behalf of the ARB. Under the PERP, owners or operators of portable engines and other types of equipment which meet the qualifications of the ATCM can register their equipment to operate throughout California. However, owners and operators of portable engines which meet the qualifications of this ATCM who do not register their equipment under the PERP must obtain individual permits from local air districts. Permits issued under the PERP must be honored by all air districts throughout California.

Plan Bay Area

On July 18, 2013, ABAG and the MTC approved the Plan Bay Area. The Plan Bay Area includes integrated land use and transportation strategies for the region and was developed through OneBayArea, a joint initiative between ABAG, BAAQMD, MTC, and the San Francisco Bay Conservation and Development Commission. The plan's transportation policies focus on maintaining the extensive existing transportation network and utilizing these systems more efficiently to handle density in Bay Area transportation cores.[13] Assumptions for land use development come from local and regional planning documents. Emission forecasts in the Bay Area Clean Air Plan rely on projections of VMT, population, employment, and land use projections made by local jurisdictions

[13] Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC). 2013. Plan Bay Area. Website: https://www.planbayarea.org/previous-plan. Accessed April 1, 2021.

during development of Plan Bay Area. The Plan Bay Area 2040 was adopted July 2017 and updates Plan Bay Area.

Plan Bay Area 2040, published by the MTC and ABAG, is a long-range integrated transportation and land use/housing strategy through 2040 for the Bay Area. Plan Bay Area 2040 functions as the sustainable communities' strategy mandated by Senate Bill (SB) 375. As a regional land use plan, Plan Bay Area 2040 aims to reduce per capita GHG emissions by promoting more compact, mixed use residential and commercial neighborhoods located near transit. Plan Bay Area 2040 is a limited and focused update that builds upon a growth pattern and strategies developed in the original Plan Bay Area (adopted by MTC in 2013) but with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last 4 years.

Local

City of American Canyon General Plan

The City of American Canyon adopted its General Plan in 1994, which contains objectives and policies that help address air quality and reduce the community's vulnerability to air pollution. The following objectives and policies from the City's General Plan are relevant to air quality and apply to the proposed project:

Goal 8F Reduce consumption of nonrenewable energy sources and support the development and utilization of new energy sources.

Objective 8.22 Minimize transportation-related energy consumption.

Policy 8.22.1 Encourage the development of mixed use, pedestrian friendly employment/residential centers that help minimize vehicle trips in American Canyon and contribute to a reduction in energy consumption.

Policy 8.22.3 Require that Development Plans provide for linkages between bicycle and pedestrian circulation systems and transit and employment centers, in accordance with established areawide plans.

Policy 8.22.4 Maintain a system of traffic signals and controls that minimizes waiting time and vehicle speed changes through routes.

Policy 8.22.5 Require that Development Plans provide for High-Occupancy Vehicles (HOV) and public transportation, where feasible, through the provision of appropriate transit areas and park-and-ride locations along public transportation routes.

Objective 8.23 Reduce Energy consumption in buildings.

Policy 8.23.1 Require that developers employ energy-efficient subdivision and site planning methods as well as building design. Measures to be considered include building orientation and shading, landscaping, building reflectance, use of active and passive solar heating and hot water system, etc. In establishing these energy related design

requirements, the City shall balance energy-efficient design with good planning principles.

Objective 1.37 Consider initiatives to reduce direct and indirect greenhouse gas (GHG) emissions from transportation sources, and from new, renovated, and existing development in the City.

Policy 1.37.6 Reduce vehicle engine idling in American Canyon by educating the broader community (i.e., businesses, commuters, residents) on the greenhouse gas impacts caused by engine idling, and implementing feasible commercial vehicle regulations.

3.2.4 - Thresholds of Significance

Appendix G to the CEQA Guidelines is a sample Initial Study Checklist that includes questions for determining whether impacts to air quality are significant. These questions reflect the input of planning and environmental professionals at the Governor's Office of Planning and Research and the California Natural Resources Agency, based on input from stakeholder groups and experts in various other governmental agencies, nonprofits, and leading environmental consulting firms. On the subject of air quality, Appendix G states that, "[w]here available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations." As a result, many lead agencies derive their significance criteria from the questions posed in Appendix G and input from relevant air districts. The City has chosen to do so for this project.

Additional guidance on the significance of air quality impacts is found in CEQA Guidelines Section 15065, subdivision (a)(4), which provides that a lead agency shall find that a project may have a significant effect on the environment if "the environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly." According to the California Supreme Court, this "mandatory finding of significance" applies to potential effects on public health from environmental impacts such as those associated with air pollutant emissions from projects. (*California Business Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, 386-392.)

In light of the foregoing, the proposed project would have a significant effect related to air quality if the project would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard;

c) Expose sensitive receptors to substantial pollutant concentrations (and thereby possibly cause substantial adverse effects on human beings, directly or indirectly); or

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Significance Criteria

The preceding thresholds of significance are stated in general terms. It is therefore desirable to formulate additional, more precise thresholds based on guidance from the BAAQMD, as is encourage in Appendix G to the CEQA Guidelines. As explained earlier, BAAQMD's May 2017 CEQA Air Quality Guidelines were prepared to assist in evaluating air quality impacts of projects and plans proposed within the Bay Area. [14] The guidelines provide recommended procedures for evaluating potential air quality impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and GHGs. The analysis below was prepared using these BAAQMD CEQA Guidelines.

Regional Significance Criteria

Table 3.2-7 shows the BAAQMD's criteria for regional significance for project construction and operations.

Table 3.2-7: BAAQMD Regional (Mass Emissions) Air Pollutant Significance Thresholds

Pollutant	Construction Phase	Operational Phase	
	Average DailyEmissions (pounds/day)	Average DailyEmissions (pounds/day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NO_X	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
PM_{10} and $PM_{2.5}$ Fugitive Dust	Best Management Practices	None	None

Notes:
ROG = reactive organic gas
NO_X = oxides of nitrogen
PM_{10} = particulate matter, including dust, 10 micrometers or less in diameter
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
Source: Bay Area Air Quality Management District (BAAQMD) 2017. May. California Environmental Quality Act Air Quality Guidelines.

In developing the above significance thresholds, the BAAQMD considers the emission levels for which a project's individual emissions would be cumulatively considerable. If a project were to exceed the emission thresholds in Table 3.2-7, that project's emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality

[14] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed March 17, 2021.

conditions.[15] Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with PM include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants. However, for projects that exceed the emissions thresholds shown in Table 3.2-7, it is speculative to determine how exceeding regional thresholds would affect the number of days the region is in nonattainment—as mass emissions are not linearly correlated with concentrations of emissions—or how many additional individuals in the Air Basin would be affected by the health effects cited above.

In *Sierra Club v. County of Fresno (Friant Ranch, LP)* (2018) 6 Cal.5th 502, 510, 517-522, the California Supreme Court held generally that an EIR should "make a reasonable effort to substantively connect a project's air quality impacts to likely health consequences." A possible example of such a connection would be to calculate a project's "impact on the days of nonattainment per year" (*Id*. at pp. 521). But the court recognized that there might be scientific limitations on an agency's ability to make the connection between air pollutant emissions and public health consequences in a credible fashion, given limitations in technical methodologies (*Id*. at pp. 520-521). Thus, the court acknowledged that another option for an agency preparing an EIR might be "to explain why it was not feasible to provide an analysis that connected the air quality effects to human health consequences" (*Id*. at p. 522).

Here, the BAAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of emissions in the Air Basin. At present, the BAAQMD has not provided any methodology to assist local governments in reasonably and accurately assessing the specific connection between mass emissions of ozone precursors (e.g., ROG and NO_X) and other pollutants of concern on a regional basis and any specific effects on public health or regional air quality concentrations that might result from such mass emissions. The City has therefore concluded that it is not feasible to predict how mass emissions of pollutants of regional concern from the proposed project could lead to specific public health consequences, changes in pollutant concentrations, or changes in the number of days for which the SFBAAB will be in nonattainment for regional pollutants.

Ozone concentrations, for instance, depend upon various complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level ozone concentrations related to the NAAQS and CAAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds. To achieve the health-based standards established by the EPA, the air districts prepare air quality management plans that detail regional programs to attain the Ambient Air Quality Standards (AAQS). However, if a project within the BAAQMD exceeds the regional significance thresholds, the proposed project could

[15] Bay Area Air Quality Management District (BAAQMD). 2017. CEQA Air Quality Guidelines. Accessed: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en.

contribute to an increase in health effects in the basin until the attainment standards are met in the Air Basin.

On the other hand, it is technically feasible to predict with reasonable accuracy the potential localized health consequences of localized pollutants such as TACs and $PM_{2.5}$. As discussed below, the consultants who prepared this section prepared a Health Risk Assessment (HRA) that addresses the potential for additional incidences of cancer resulting from both the construction-related emissions and the operational emissions of the proposed project.

Consistency with Air Quality Plan

The applicable air quality plan is BAAQMD's 2017 Bay Area Clean Air Plan, which identifies measures to:

- Reduce emissions and reduce ambient concentrations of air pollutants;
- Safeguard public health by reducing exposure to the air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most heavily affected by air pollution; and
- Reduce GHG emissions to protect the climate.

A project would be determined to conflict with or obstruct implementation of an applicable air quality plan if it would result in substantial new regional emissions not foreseen in the air quality planning process.

Local CO Hotspots

Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots. The significance criteria for CO hotspots are based on the CAAQS for CO, which is 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average). However, with the turnover of older vehicles, the introduction of cleaner fuels, and implementation of control technology, the SFBAAB is in the attainment of the CAAQS and NAAQS, and CO concentrations in the SFBAAB have steadily declined. Because CO concentrations have improved, the BAAQMD does not require a CO hotspot analysis if all the following criteria are met:

- The project is consistent with an applicable congestion management program established by the County Congestion Management Agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans; and
- The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; and
- The project traffic would not increase traffic volumes at affected intersection to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g.,

tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).[16]

Community Risk and Hazards

The BAAQMD's significance thresholds for local community risk and hazard impacts apply to both the siting of a new source and to the siting of a new receptor. Local community risk and hazard impacts are associated with TACs and $PM_{2.5}$ because emissions of these pollutants can have significant health impacts at the local level.

- The proposed project would generate TACs and $PM_{2.5}$ during construction activities that could elevate concentrations of air pollutants at the nearby school and residential sensitive receptors. The thresholds for construction-related local community risk and hazard impacts are the same as for project operations. The BAAQMD has adopted screening tables for air toxics evaluation during construction.[17] Construction-related TAC and $PM_{2.5}$ impacts should be addressed on a case-by-case basis, considering each project's specific construction-related characteristics and proximity to off-site receptors, as applicable.[18]
- The proposed project involves the construction of new industrial warehouse facilities and would be a source of operational TACs and $PM_{2.5}$ from trucking activity. The BAAQMD thresholds related to siting new sources of TACs and $PM_{2.5}$ near existing or planned sensitive receptors are applicable.

Since the City of American Canyon does not have a qualified risk reduction plan, a site-specific analysis of TACs and $PM_{2.5}$ impacts on sensitive receptors was conducted. The thresholds identified below are applied to the proposed project's construction and operational phases.

Community Risk and Hazards: Project

Project-level emissions of TACs or $PM_{2.5}$ from individual sources that exceed any of the thresholds listed below are considered a potentially significant community health risk:

- An excess cancer risk level of more than 10 in one million, or a non-cancer (i.e., chronic or acute) hazard index greater than 1.0 would be a significant cumulatively considerable contribution.
- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$ from a single source would be a significant cumulatively considerable contribution.

[16] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed July 20, 2021.

[17] Bay Area Air Quality Management District (BAAQMD). 2010. Air Toxics NSR Program, Health Risk Screening Analysis Guidelines. Website: https://www.baaqmd.gov/~/media/Files/Engineering/Air%20Toxics%20Programs/hrsa_guidelines.ashx. Accessed July 20, 2021.

[18] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed 18, 2021.

Community Risk and Hazards: Cumulative

Cumulative sources represent the combined total risk values of each of the individual sources within the 1,000-foot evaluation zone. A project would have a cumulatively considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source or location of a receptor, plus the contribution from the proposed project, meets any of these conditions:

- Has excess cancer risk levels of more than 100 in one million or a chronic non-cancer hazard index (from all local sources) greater than 10.0.
- Exceeds 0.8 µg/m^3 annual average $PM_{2.5}$.

In February 2015, the California Office of Environmental Health Hazard Assessment (OEHHA) adopted new HRA guidance that includes several efforts to be more protective of children's health. These updated procedures include age sensitivity factors to account for the higher sensitivity of infants and young children to cancer-causing chemicals, and age-specific breathing rates.[19]

Odors

The BAAQMD thresholds for odors are qualitative based on BAAQMD Regulation 7, Odorous Substances. This rule places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health, or safety of any such persons or the public; or which causes, or has a natural tendency to cause, injury, or damage to business or property. Under BAAQMD Rule 1-301, the BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants. Table 3.2-8 shows the screening distances for various land uses that are considered to have objectionable odors.[20]

Table 3.2-8: BAAQMD Odor Screening-level Distances Thresholds

Land Use/Type of Operation	Project Screening Distance
Wastewater Treatment Plant	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	2 miles
Transfer Station	1 mile

[19] California Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments. February. Website: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf. Accessed May 18, 2021.

[20] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed May 18, 2021.

Land Use/Type of Operation	Project Screening Distance
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile
Painting/Coating Operations	1 mile
Rendering Plant	2 miles
Coffee Roaster	1 mile
Food Processing Facility	1 mile
Confined Animal Facility/Feed Lot/Dairy	1 mile
Green Waste and Recycling Operations	1 mile
Metal Smelting Plants	2 miles
Source: Bay Area Air Quality Management District (BAAQMD) 2017.	

Approach to the Analysis

Emission factors represent the emission rate of a pollutant over a given time or activity; for example, grams of NO_X per VMT or grams of NO_X per horsepower-hour of equipment operation. The ARB has published emission factors for on-road mobile vehicles/trucks in the Emission Factors (EMFAC) mobile source emissions model and emission factors for off-road equipment and vehicles in the OFFROAD emissions model. Activity levels measure how active a piece of equipment is and can be represented as the amount of material processed, elapsed time that a piece of equipment is in operation, horsepower of a piece of equipment used, or VMT per day. An air emissions model (or calculator) combines the emission factors and the various levels of activity and outputs the emissions for the various pieces of equipment.

The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 was developed in collaboration with the South Coast Air Quality Management District and other air districts throughout the State. CalEEMod is designed as a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant emissions associated with construction and operation from various land uses.

The modeling follows BAAQMD guidance where applicable from its CEQA Air Quality Guidelines. The following criteria air pollutants and precursors are assessed in this analysis:

- Reactive organic gases
- Nitrogen oxides (NO_X)
- Carbon monoxide (CO)
- Particulate matter equal to or less than 10 microns in diameter (PM_{10})
- Particulate matter equal to or less than 2.5 microns in diameter ($PM_{2.5}$)

Note that the proposed project would emit ozone precursors ROG and NO_X. However, the proposed project would not directly emit ozone since it is formed in the atmosphere during the photochemical reactions of the ozone precursors.

At the time of this analysis, the construction of Phase 1 of the proposed project was anticipated to begin in early 2022 and be completed 10 months later. Construction of Phase 2 of the proposed project was expected to begin immediately following the completion of Phase 1 construction and be completed 10 months later. If the construction schedule moves to later years, construction emissions would likely decrease because of improvements in technology and more stringent regulatory requirements. In general, this analysis also included estimated project trip generation and trip length provided by W-Trans (Appendix H). As the proposed project is a speculative warehouse development which could accommodate cold storage and accompanying TRUs, this analysis considers two project scenarios: a cold warehouse project scenario and a dry warehouse project scenario. Where appropriate, both project scenarios are presented herein to determine project impacts.

Construction-related Criteria Pollutants

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from both on-site and off-site activities. On-site emissions consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Additionally, paving operations and the application of architectural coatings would release ROG emissions. Off-site emissions result from motor vehicle exhaust from delivery vehicles, worker traffic and road dust (PM_{10} and $PM_{2.5}$).

Equipment Tiers and Emission Factors

Equipment tiers refer to a generation of emission standards established by the EPA and ARB that apply to diesel engines in off-road equipment. The “tier” of an engine depends on the model year and horsepower rating; generally, the newer a piece of equipment is, the greater the tier it is likely to have. Excluding engines greater than 750 horsepower, Tier 1 engines were manufactured generally between 1996 and 2003. Tier 2 engines were manufactured between 2001 and 2007. Tier 3 engines were manufactured between 2006 and 2011. Tier 4 engines are the newest and some incorporate hybrid electric technology; they have been manufactured since 2007.

Construction emissions are generally calculated as the product of an activity factor and an emission factor. The activity factor for construction equipment is a measure of how active a piece of equipment is and can be represented as the amount of material processed, elapsed time that a piece of equipment is in operation, horsepower of a piece of equipment used, or the amount of fuel consumed in a given amount of time. The emission factor relates the process activity to the amount of pollutant emitted. Examples of emission factors include grams of emissions per miles traveled and grams of emissions per horsepower-hour. The operation of a piece of equipment is tempered by its load factor, which is the average power of a given piece of equipment while in operation compared with its maximum rated horsepower. A load factor of 1.0 indicates that a piece of equipment continually operates at its maximum operating capacity. This analysis uses the CalEEMod default load factors for off-road equipment.

Operation-related Criteria Pollutants

The operational-phase emissions are based on the development of the proposed industrial park. The modeling accounts for the average daily vehicle and truck trips and VMT, energy usage, water demand, and wastewater and solid waste generation. For purposes of this analysis, hours of operation for the proposed project are 24 hours per day, 7 days per week.

Transportation

On-road transportation sources are based on passenger vehicle and truck trip generation rates and VMT provided in the Traffic Impact Analysis (TIS) prepared by W-Trans for the proposed project (see Appendix H). According to the VMT information provided therein, the proposed project would result in an average employee daily VMT of 16.24 miles. As this VMT would represent all travel to and from the project site for employees, an average of 8.12 miles per vehicle trip was utilized in this analysis to estimate associated emissions from employee passenger vehicle activity. However, as provided in the TIS, the proposed project would also generate truck traffic for deliveries and shipments. As indicated by the project applicant, the most probable port of origin for freight deliveries and shipments would be the Port of Oakland, approximately 32.8 miles from the project site. Therefore, truck travel distances utilized in this analysis were assumed to be 32.8 miles per trip.

Furthermore, the proposed project would include locomotive operations beginning with operation of Phase 1. The quantity and frequency of rail shipments to the project site are currently unknown; therefore, various assumptions are utilized in this analysis to characterize future operations. For instance, according to the United States Bureau of Transportation Statistics, the average weight of a loaded railcar ranges from 63 to 67 tons;[21] therefore, for the purposes of this analysis, a loaded railcar being shipped to the proposed project is assumed to weigh 65 tons on average. Assuming an average travel distance of 50 miles and an average loaded railcar weight of 65 tons,[22] this would represent nearly two loaded, 20-railcar locomotive deliveries per week. Please refer to the locomotive emissions estimations contained in Appendix B for more details.

CalEEMod, Version 2020.4.0 was used to quantify passenger vehicle and truck emissions using vehicle emission rates based on vehicle emissions data obtained from the ARB EMFAC2017 Version 1.0.2 web database and adjusted based on methodology provided in Appendix B of the CalEEMod User's Guide.[23] The passenger vehicle trips were assumed to be distributed among the light-duty auto (LDA), light-duty truck 1 (LDT1), light-duty truck 2 (LDT2), and medium-duty vehicle (MDV) EMFAC2007 vehicle categories, proportional to that respective vehicle category's share of those four-passenger vehicle categories within the CalEEMod for Napa County.

[21] United States Bureau of Transportation Statistics. 2012. Railcar Weights. Website: https://www.bts.gov/archive/publications/transportation_statistics_annual_report/2003/chapter_02/railcar_weights#:~:text=The%20average%20weight%20of%20a,trends%20among%20selected%20freight%20commodities. Accessed July 29, 2021.

[22] United States Department of Transportation (USDOT), Bureau of Transportation Statistics. 2012. Railcar Weights. Website: https://www.bts.gov/archive/publications/transportation_statistics_annual_report/2003/chapter_02/railcar_weights#:~:text=The%20average%20weight%20of%20a,trends%20among%20selected%20freight%20commodities. Accessed August 2, 2021.

[23] California Air Pollution Control Officers Association (CAPCOA). 2017. California Emissions Estimator Model (CalEEMod). Version 2020.4.0 Prepared by: BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts.

Truck and TRU emissions were calculated utilizing the ARB's EMFAC2017 Version 1.0.3 and OFFROAD web databases, respectively, and adjusted based on methodology provided in Appendix B. Please refer to the fleet mix adjustment calculations contained in Appendix B for more details.

Other Operational Emissions

Solid Waste Disposal. Indirect emissions from waste generation are based on the CalEEMod default solid waste generation rates, which are based on data from the California Department of Resources, Recycling, and Recovery (CalRecycle).

Water/Wastewater. GHG emissions from this sector are associated with the embodied energy used to supply treat and distribute water, and then treat wastewater and fugitive GHG emissions from wastewater treatment. Indoor water consumption is based on CalEEMod default indoor water use rates.

Area Sources. Area and stationary sources are based on the CalEEMod defaults for use of consumer products and cleaning supplies.

Energy. Emissions from this sector are principally from use of natural gas for space and water heating at the proposed buildings.

Stationary Sources. Stationary sources are based on the anticipated stationary source equipment included in the proposed project. Given the type and size of the proposed project, the project applicant anticipates the use of a backup diesel generator and diesel-fueled fire pump for each of the proposed buildings; however, the exact specifications for this equipment is unknown at the time of this analysis. To account for potential operational emissions generated from the non-emergency use of this equipment, the proposed project was assumed to include three backup diesel generators and three diesel-fueled fire pumps, each assumed to be rated at 50 horsepower and operate for a four-hour maintenance period one day per month, totaling an estimated 48 hours of operation per year.

Construction- and Operation-related Toxic Air Contaminants

TACs are air pollutants in minuscule amounts in the air that could increase the chances of experiencing health problems if a person receives exposure to them. Exposures to TAC emissions can have both chronic long-term (over a year or longer) and acute short-term (over a period of hours) health impacts. Construction-period TAC emissions could contribute to increased health risks to nearby residents or sensitive receptors.

This analysis assesses the potential health impacts to surrounding sensitive receptors resulting from TAC emissions during project construction. The TACs of greatest concern are those that cause serious health problems or affect many people. Health problems can include cancer, respiratory irritation, nervous system problems, and birth defects. Some health problems occur soon after a person inhales TACs. These immediate effects may be minor, such as watery eyes; or they may be serious, such as life-threatening lung damage. Other health problems may not appear until many months or years after a person's first exposure to the TAC. Cancer is one example of a delayed health problem.

Fine particle pollution can be emitted directly or formed secondarily in the atmosphere. $PM_{2.5}$ health impacts are important because their size can be deposited deep in the lungs, causing respiratory

effects. For purposes of this analysis, exhaust emissions of DPM are represented as exhaust emissions of $PM_{2.5}$. Studies indicate that DPM poses the greatest health risk among airborne TACs. A 10-year ARB research program demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic long-term health risk. DPM differs from other TACs in that it is not a single substance but a complex mixture of hundreds of substances. Although diesel-fueled internal combustion engines emit DPM, the composition of the emissions varies, depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. The CalEEMod emissions model has been used to estimate DPM emissions during construction and operation of the proposed project.

Odors

The impact analysis qualitatively evaluates the types of land uses proposed to evaluate whether major sources of anticipated odors would be present and, if so, whether those sources would likely generate objectionable odors. According to the BAAQMD's CEQA Air Quality Guidelines, a project that involves the siting of a new odor source would consider the screening-level distances and the complaint history of the odor sources, described below. Projects that would site a new odor source farther than the screening-level distances provided in Table 3.2-8 would not likely result in a significant odor impact.

3.2.5 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the proposed project and provides mitigation measures where appropriate.

Consistency with Air Quality Management Plan

Impact AIR-1:	**The proposed project would conflict with or obstruct implementation of the applicable air quality plan.**

Impact Analysis

The BAAQMD is responsible for reducing emissions from area, stationary, and mobile sources in the SFBAAB to achieve National and California AAQS. The BAAQMD 2017 Clean Air Plan is a regional and multiagency effort to reduce air pollution in the Air Basin. A consistency determination with the Air Quality Management Plan (AQMP) plays an important role in local agency project review by linking local planning and individual projects to the 2017 Clean Air Plan. It fulfills the CEQA goal of informing decision-makers of the proposed project's environmental effects under consideration early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to the clean air goals in the 2017 Clean Air Plan.

The BAAQMD compiles the regional emissions inventory for the SFBAAB. In part, the regional population, housing, and employment projections developed by the ABAG are based on cities' general plan land use designations. These projections form the foundation for the emissions inventory of the 2017 Clean Air Plan. These demographic trends are incorporated into Plan Bay Area, compiled by ABAG and the MTC, to determine priority transportation projects and VMT in the Bay Area. Projects consistent with the local general plan are considered consistent with the regional air

quality plan. Large projects that exceed regional employment, population, and housing planning projections have the potential to be inconsistent with the regional inventory compiled as part of the 2017 Clean Air Plan.

The proposed project would build a 2.4-million-square-foot logistics center on approximately 161 acres of the project site. The remaining approximately 47 acres would be preserved as open space. The 94.7-acre area east of what will be Devlin Road would support two high-cube warehouse buildings totaling 1,069,904 square feet (Phase 1). Phase 2, the 113.1-acre area west of Devlin Road, would develop the remaining 1.3 million square feet of high-cube warehouse. The project site is designated "Industrial" by the City of American Canyon General Plan and zoned "General Industrial." As previously described, demographics trends such as employment and population growth were estimated in ABAG's Plan Bay Area 2040 based on local general plan land use patterns, which the BAAQMD utilized in part to inform the emissions inventory and projections contained in the 2017 Clean Air Plan. As a result, the ABAG regional population, housing, and employment estimates for this project site would be reasonably accounted for because the proposed project is consistent with these General Plan land use designations. Thus, the proposed project would generally be consistent with the underlying general plan land use designation and would not have the potential to substantially affect housing, employment, and population projections in the region that are the basis of the 2017 Clean Air Plan projections.

Table 3.2-9 identifies the control measures in the 2017 Clean Air Plan required by BAAQMD to reduce emissions for a wide range of stationary and mobile sources and the project's consistency analysis with these control measures. As shown in Table 3.2-9, the proposed project would not conflict with the control measures of the 2017 Clean Air Plan.

Table 3.2-9: Consistency With 2017 Clean Air Plan Control Measures

Type	Measure Number/Title	Consistency Analysis
Stationary Source Control Measure	SS 1–Fluid Catalytic Cracking in Refineries SS 2–Equipment Leaks SS 3–Cooling Towers SS 4–Refinery Flares SS 5–Sulfur Recovery Units SS 6–Refinery Fuel Gas SS 7–Sulfuric Acid Plants SS 8–Sulfur Dioxide from Coke Calcining SS 9–Enhanced NSR Enforcement for Changes in Crude Slate SS 10–Petroleum Refining Emissions Tracking SS 11–Petroleum Refining Facility-Wide Emission Limits SS 12–Petroleum Refining Climate Impacts Limit SS 13–Oil and Gas Production, Processing and Storage SS 14–Methane from Capped Wells SS 15–Natural Gas Processing and Distribution	**Consistent**. Stationary sources are regulated directly by the BAAQMD, which routinely adopts/revises rules or regulations to implement the Stationary Source (SS) control measures to reduce stationary source emissions. Therefore, any new stationary sources associated with the proposed project would be required to comply with BAAQMD's regulations. Based on the proposed warehousing use for the project site, it is not anticipated that the proposed project would result in any new major stationary source emissions. Additionally, in the event stationary equipment is installed on-site, it is anticipated that the equipment would be small-quantity emitters and would require review by BAAQMD for

Type	Measure Number/Title	Consistency Analysis
	SS 16–Basin-Wide Methane Strategy SS 17–GHG BACT Threshold SS 18–Basin-Wide Combustion Strategy SS 19–Portland Cement SS 20–Air Toxics Risk Cap and Reduction from Existing Facilities SS 21–New Source Review for Toxics SS 22–Stationary Gas Turbines SS 23–Biogas Flares SS 24–Sulfur Content Limits of Liquid Fuels SS 25–Coatings, Solvents, Lubricants, Sealants and Adhesives SS 26–Surface Prep and Cleaning Solvent SS 27–Digital Printing SS 28–LPG, Propane, Butane SS 29–Asphaltic Concrete SS 30–Residential Fan Type Furnaces SS 31–General Particulate Matter Emission Limitation SS 32–Emergency Backup Generators SS 33–Commercial Cooking Equipment SS 34–Wood Smoke SS 35–PM from Bulk Material Storage, Handling and Transport, Including Coke and Coal SS 36–PM from Trackout SS 37–PM from Asphalt Operations SS 38–Fugitive Dust SS 39–Enhanced Air Quality Monitoring SS 40–Odors	permitted sources of air which would ensure consistency with the 2017 Clean Air Plan.
Transportation Control Measures	TR 1–Clean Air Teleworking Initiative TR 2–Trip Reduction Programs TR 3–Local and Regional Bus Service TR 4–Local and Regional Rail Service TR 5–Transit Efficiency and Use TR 6–Freeway and Arterial Operations TR 7–Safe Routes to Schools and Safe Routes to Transit TR 8–Ridesharing, Last-Mile Connection TR 9–Bicycle and Pedestrian Access and Facilities TR 10–Land Use Strategies TR 11–Value Pricing TR 12–Smart Driving TR 13–Parking Policies TR 14–Cars and Light Trucks TR 15–Public Outreach and Education TR 16–Indirect Source Review TR 17–Planes TR 18–Goods Movement TR 19–Medium and Heavy-Duty Trucks TR 20–Ocean Going Vessels	**Consistent**. Transportation (TR) control measures are strategies to reduce vehicle trips, vehicle use, VMT, vehicle idling, and traffic congestion to reduce motor vehicle emissions. Although most of the TR control measures are implemented at the regional level—that is, by MTC or California Department of Transportation (Caltrans)—the 2017 Clean Air Plan relies on local communities to assist with the implementation of some measures. Electrical conduits would be provided in the parking lot to accommodate future electric vehicle parking spaces. The proposed project would also be subject to the Bay Area's Commuter Benefits Program, which requires all employers in BAAQMD's jurisdiction that have 50 or more full-time

Type	Measure Number/Title	Consistency Analysis
	TR 21–Commercial Harbor Craft TR 22–Construction, Freight and Farming Equipment TR 23–Lawn and Garden Equipment	employees to offer commuter benefits to their employees.
Energy and Climate Control Measures	EN 1–Decarbonize Electricity Production EN 2–Renewable Energy Decrease Electricity Demand	**Consistent**. The Energy and Climate (EN) control measures are intended to reduce energy use as a means of reducing adverse air quality emissions. Additionally, the proposed buildings would comply with 2019 Building Energy Efficiency Standards' solar requirements and would be constructed to support future roof-mounted solar systems. Moreover, compliance with the 2019 Building Energy Efficiency Standards would improve energy efficiency by an overall 30 percent compared to the 2016 Building Energy Efficiency Standards.[24]
Buildings Control Measures	BL 1–Green Buildings BL 2–Decarbonize Buildings BL 3–Market-Based Solutions BL 4–Urban Heat Island Mitigation	**Consistent**. The Buildings (BL) control measures focus on working with local governments to adopt the best GHG emissions control practices and policies. As discussed above for the EN control measures, the proposed buildings would comply with 2019 Building Energy Efficiency Standards—i.e., constructed to support a roof-mounted solar system and achieving greater energy efficiency compared to the 2016 Building Energy Efficiency Standards.
Agriculture ControlMeasures	AG 1–Agricultural Guidance and Leadership AG 2–Dairy Digesters AG 3–Enteric Fermentation AG 4–Livestock Waste	**Not Applicable**. Agricultural (AG) practices in the Bay Area account for a small portion, roughly 1.5 percent, of the Bay Area GHG emissions inventory. The GHGs from agriculture include methane, nitrous oxide, and carbon dioxide. The proposed project would not involve any agricultural activities or operations.
Natural and WorkingLands Control Measures	NW 1–Carbon Sequestration in Rangelands NW 2–Urban Tree Planting NW 3–Carbon Sequestration in Wetlands	**Consistent**. The control measures for the Natural and Working Lands (NW) sector focus on increasing carbon sequestration on rangelands and wetlands. The proposed project would include the planting of various ornamental and shade trees throughout

[24] California Energy Commission (CEC). 2018. 2019 Building Energy Efficiency Standards Frequently Asked Questions. Website: https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf. Accessed July 29, 2021.

Type	Measure Number/Title	Consistency Analysis
		the project site. Additionally, the proposed project would include an approximately 45-acre Wetland Preserve to include existing wetlands as well as established/created wetlands intended to offset wetland impacts of buildout development of the project site. These actions would support the State's working lands and would therefore make the proposed project consistent with this measure.
Waste Management Control Measures	WA 1–Landfills WA 2–Composting and Anaerobic Digesters WA 3–Green Waste Diversion WA 4–Recycling and Waste Reduction	**Consistent**. The Waste Management (WA) control measures include strategies to increase waste diversion rates through efforts to reduce, reuse, and recycle. The proposed project would comply with Assembly Bill (AB) 341, which requires mandatory commercial recycling for businesses that generate four cubic yards or more of commercial solid waste per week. Additionally, the proposed project would be required to reduce construction waste by 75 percent and use 30 percent recycled content during the construction of the proposed facility. Therefore, the proposed project would not conflict with these WA control measures.
Water Control Measures	WR 1–Limit GHGs from publicly owned treatment works (POTWs) WR 2–Support Water Conservation	**Consistent.** The 2017 Clean Air Plan includes measures to reduce water use. The proposed project would include water efficiency measures required under CALGreen. In addition, the proposed project would include water-efficient indoor fixtures consistent with the requirements of CALGreen and water-efficient landscaping outdoors.
Super GHG ControlMeasures	SL 1–Short-Lived Climate Pollutants SL 2–Guidance for Local Planners SL 3–GHG Monitoring and Emissions Measurements Network	**Consistent**. Super-GHGs include methane, black carbon, and fluorinated gases. These compounds are sometimes referred to as short-lived climate pollutants because their lifetime in the atmosphere is generally fairly short. Measures to reduce super-GHGs are addressed on a sector-by-sector basis in the 2017 Clean Air Plan. As discussed under Impact AIR-2, the proposed project would be required to implement Mitigation Measure (MM) AIR-2d, which

Type	Measure Number/Title	Consistency Analysis
		would require the use of a trucking fleet utilizing model year 2010 trucks or newer. This requirement would contribute to reducing black carbon. Furthermore, the proposed project would comply with AB 341, which mandates commercial recycling for businesses that generate four cubic yards or more of commercial solid waste per week, which could contribute to reducing methane by diverting waste from landfills.
Further Study ControlMeasures	FSM SS 1–Internal Combustion Engines FSM SS 2–Boilers, Steam Generator and Process Heaters FSM SS 3–GHG Reductions from Non Cap-and-Trade Sources FSM SS 4–Methane Exemptions from Wastewater Regulation FSM SS 5–Controlling start-up, shutdown, maintenance, and malfunction (SSMM) Emissions FSM SS 6–Carbon Pollution Fee FSM SS 7–Vanishing Oils and Rust Inhibitors FSM SS 8–Dryers, Ovens and Kilns FSM SS 9–Omnibus Rulemaking to Achieve Continuous Improvement FSM BL 1–Space Heating FSM AG 1–Wineries	**Consistent**. The majority of the Further Study Control Measures (FSM) apply to sources regulated directly by the BAAQMD. Because the BAAQMD is the implementing agency, any new sources of stationary and area sources in the project site would be required to comply with these additional study control measures in the 2017 Clean Air Plan.
Notes: AG = Agricultural BL = Buildings EN = Energy and Climate FSM = Further Study Measures NW = Natural and Working Lands SL = Super GHG (Short-Lived) SS = Stationary Sources TR = Transportation WA = Waste Management WR = Water Control Measures Source: Bay Area Air Quality Management District (BAAQMD). 2017, April 19. Final 2017 Clean Air Plan, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en. Accessed July 27, 2021.		

As shown in Table 3.2-9, the proposed project would not conflict with the clean air measures contained in the Clean Air Plan after mitigation. Nonetheless, the BAAQMD's CEQA Air Quality Guidelines further recommend determining a project's consistency with the 2017 Clean Air Plan, in part, by determining a project's consistency with the significance thresholds presented in Table

3.2-7.[25] As discussed under Impact AIR-2, the proposed project would generate emissions which exceed the BAAQMD's significance thresholds after the implementation of applicable and feasible mitigation and would result in a significant and unavoidable impact. Because the proposed project would exceed these thresholds after implementation of feasible mitigation, the proposed project would be considered by the BAAQMD to be a substantial emitter of criteria air pollutants. This impact would be significant and unavoidable.

As discussed under Impact AIR-2, the proposed project would generate criteria pollutant and ozone precursor emissions during construction and operation. The BAAQMD does not have a bright-line emissions threshold for determining potentially significant impacts related to construction fugitive dust. Instead, the BAAQMD determines a project to result in a potentially significant impact if that project were not to implement construction BMPs to minimize the extent of fugitive dust emissions, such as soil erosion, sediment migration, roadway dust re-entrainment, and soil trackout, during project construction. In the absence of specific information related to the proposed project's intended implementation of construction BMPs to minimize fugitive dust emissions, the proposed project is assumed to not include any construction BMPs. Therefore, Mitigation Measure (MM) AIR-2a would be required to ensure implementation of construction BMPs recommended by the BAAQMD irrespective of the emissions reductions achieved by those BMPs.

As discussed under Impact AIR-2, unmitigated project construction ROG emissions would exceed BAAQMD significance thresholds. Specifically, architectural coating activities during project construction would principally contribute to the exceedance. As such, MM AIR-2b would require project construction to utilize low-VOC (i.e., ROG) architectural coating products containing no greater than 50 grams of VOC per liter of product to reduce the generation of ROG emissions during architectural coating activities. Implementation of MM AIR-2b would result in reducing ROG emissions from 68 average pounds per day to 33 average pounds per day, which is below the BAAQMD significance threshold of 54 pounds per day for ROG emissions.

As discussed under Impact AIR-2, unmitigated project operation would result in ROG and NO_X emissions which exceed BAAQMD significance thresholds. ROG emissions generated during project operation would principally be generated by consumer products, which cannot be sufficiently controlled by the proposed project due to the possible use of cleaning products, hairsprays, and other personal care products by employees. As ROG emissions generated under the control of the proposed project during project operation would principally be generated by the periodic reapplication of architectural coatings, MM AIR-2c would be required to ensure the use of low-VOC (i.e., ROG) architectural coating products that contain no more than 50 grams of VOC per liter of product to reduce the generation of ROG emissions during project operation. Additionally, as NO_X emissions generated during project operation would principally be generated by the operation of the trucking fleet, irrespective of whether the fleet would accommodate the use of TRUs, MM AIR-2d would be required to ensure the trucking fleet accessing the project site would be comprised of vehicles no older than model year 2014 to reduce tailpipe NO_X emissions.

[25] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed December 15, 2021.

Under a dry storage scenario, implementation of MM AIR-2c would result in a reduction of ROG emissions during project operation from approximately 13 tons per year and 70 average pounds per day to approximately 12 tons per year and 64 average pounds per day, which exceed the BAAQMD significance thresholds for ROG emissions of 10 tons per year and 54 average pounds per day. Under a cold storage scenario, implementation of MM AIR-2c would result in a reduction of ROG emissions during project operation from approximately 16 tons per year and 90 average pounds per day to approximately 15 tons per year and 85 average pounds per day, which exceed the BAAQMD significance thresholds for ROG emissions of 10 tons per year and 54 average pounds per day.

Under a dry storage scenario, implementation of MM AIR-2d would result in a reduction of NO_X emissions during project operation from approximately 40 tons per year and 217 average pounds per day to approximately 35 tons per year and 192 average pounds per day, which exceed the BAAQMD significance thresholds for NO_X emissions of 10 tons per year and 54 average pounds per day. Under a cold storage scenario, implementation of MM AIR-2d would result in a reduction of NO_X emissions during project operation from approximately 71 tons per year and 388 average pounds per day to approximately 66 tons per year and 362 average pounds per day, which exceed the BAAQMD significance thresholds for NO_X emissions of 10 tons per year and 54 average pounds per day.

Consequently, implementation of MM AIR-2a and MM AIR-2b would sufficiently reduce project construction emissions to less than significant levels; however, implementation of MM AIR-2c and MM AIR-2d would not be sufficient to reduce project operation emissions to less than significant levels. Therefore, the proposed project would generate emissions which exceed the BAAQMD's significance thresholds after the implementation of applicable and feasible mitigation and would result in a significant and unavoidable impact. As previously discussed, the BAAQMD's CEQA Air Quality Guidelines recommend determining a project's consistency with the 2017 Clean Air Plan, in part, by determining a project's consistency with the BAAQMD significance thresholds. Because the proposed project would exceed significance thresholds after mitigation, resulting in a significant and unavoidable impact, the proposed project would be inconsistent with the 2017 Clean Air Plan. Therefore, this impact would be significant unavoidable impact after the incorporation of identified mitigation.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measures MM AIR-2a**,** MM AIR-2b**,** MM AIR-2c**,** MM AIR-2d.

Level of Significance After Mitigation

Significant unavoidable impact.

Cumulative Criteria Pollutant Emissions Impacts

Impact AIR-2: **The proposed project would 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.**

Impact Analysis

This impact is related to the cumulative effect of a project's regional criteria pollutant emissions. By its nature, air pollution is largely a cumulative impact resulting from emissions generated over a large geographic region. The nonattainment status of regional pollutants results from past and present development within the Air Basin, and this regional impact is a cumulative impact. Therefore, new development projects (such as the proposed project) within the Air Basin would contribute to this impact only on a cumulative basis. No single project would be sufficient in size, by itself, to result in nonattainment of regional air quality standards. Instead, a project's emissions may be individually limited, but cumulatively considerable when evaluated in combination with past, present, and future development projects.

Potential localized and regional impacts would result in exceedances of State or federal standards for NO_X, particulate matter (PM_{10} and $PM_{2.5}$), or CO. NO_X emissions are of concern because of potential health impacts from exposure to NO_X emissions during both construction and operation and as a precursor in the formation of airborne ozone. PM_{10} and $PM_{2.5}$ are of concern during construction because of the potential to emit exhaust emissions from the operation of off-road construction equipment and fugitive dust during earth-disturbing activities (construction fugitive dust). CO emissions are of concern during project operation because operational CO hotspots are related to increases in on-road vehicle congestion and potential health effects.

ROG emissions are also important because of their participation in the formation of ground-level ozone. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, elderly, and young children.

The cumulative analysis focuses on whether a specific project would result in cumulatively considerable emissions. According to Section 15064(h)(4) of the CEQA Guidelines, the existence of significant cumulative impacts caused by other projects alone does not constitute substantial evidence that the project's incremental effects would be cumulatively considerable. Rather, the determination of cumulative air quality impacts for construction and operational emissions is based on whether the project would result in regional emissions that exceed the BAAQMD regional thresholds of significance for construction and operations on a project level. The significance thresholds represent the allowable amount of emissions each project can generate without generating a cumulatively considerable contribution to regional air quality impacts. Therefore, a project that would not exceed the BAAQMD thresholds of significance on the project level also would not be considered to result in a cumulatively considerable contribution to these regional air quality impacts. Construction and operational emissions are discussed separately below.

Construction

During construction, fugitive dust would be generated from site grading and other earthmoving activities. The majority of this fugitive dust would remain localized and deposited near the project site; however, fugitive dust's potential impacts exist unless control measures are implemented to reduce this source's emissions. Exhaust emissions would also be generated from the operation of the off-road construction equipment and on-road construction vehicles.

Construction Fugitive Dust

The BAAQMD does not recommend a numerical threshold for fugitive dust PM emissions. Instead, the BAAQMD bases the determination of significance for fugitive dust on a consideration of the control measures to be implemented, referred to as BMPs. If all appropriate emissions control measures are implemented for a project as recommended by the BAAQMD, then fugitive dust emissions during construction are not considered significant. Therefore, the BAAQMD determines a project to result in a potentially significant impact if that project were not to implement construction BMPs to minimize the extent of fugitive dust emissions, such as soil erosion, sediment migration, roadway dust re-entrainment, and soil trackout, during project construction. In the absence of specific information related to the proposed project's intended implementation of construction BMPs to minimize fugitive dust emissions, the proposed project is assumed to not include any construction BMPs. Therefore, MM AIR-2a would be required to ensure implementation of construction BMPs recommended by the BAAQMD irrespective of the emissions reductions achieved by those BMPs. With the incorporation of this mitigation, short-term construction impacts associated with violating an air quality standard or contributing substantially to an existing or projected air quality violation would be less than significant for fugitive dust.

Construction Air Pollutant Emissions: ROG, NO_X, PM_{10}, $PM_{2.5}$

CalEEMod, Version 2020.4.0, was used to estimate the proposed project's construction emissions. CalEEMod provides a consistent platform for estimating construction and operational emissions from various land use projects and is the model recommended by the BAAQMD for estimating project emissions. Estimated construction emissions are compared with the applicable thresholds of significance established by the BAAQMD to assess ROG, NO_X, exhaust PM_{10}, and exhaust $PM_{2.5}$ construction emissions to determine significance for this impact.

At the time of this analysis, the construction of Phase 1 of the proposed project was anticipated to begin in early 2022 and be completed 10 months later. Construction of Phase 2 of the proposed project was expected to begin immediately following the completion of Phase 1 construction and be completed 10 months later. If the construction schedule moves to later years, construction emissions would likely decrease because of improvements in technology and more stringent regulatory requirements.

Construction activities such as grading, excavation, and travel on unpaved surfaces would generate dust and lead to elevated concentrations of PM_{10} and $PM_{2.5}$. According to the project site plans dated November 11, 2020, an estimated 5,400 cubic yards are anticipated to be imported during Phase 1 grading activities, and, according to telephone correspondence with the project applicant, Phase 2 is assumed to balance grading activities on-site. As the BAAQMD dust control measures would be required to ensure fugitive dust impacts are less than significant, the emission estimates shown

below account for the implementation of MM AIR-2a. The operation of construction equipment results in exhaust emissions, which include ROG and NO_X. Table 3.2-10 presents construction-period emissions that would result from the development of the proposed project.

Table 3.2-10: Unmitigated Construction Emissions

Construction Activity	Criteria Pollutant Emissions (Tons)			
	ROG	NO_X	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
Project Phase 1				
Site Preparation (2022)	<0.01	0.02	<0.01	<0.01
Grading (2022)	0.03	0.39	0.01	0.01
Building Construction (2022)	0.54	4.00	0.10	0.09
Paving (2022)	0.05	0.06	<0.01	<0.01
Architectural Coating (2022)	5.90	0.01	<0.01	<0.01
Project Phase 2				
Site Preparation (2022)	<0.01	0.02	<0.01	<0.01
Grading (2022)	0.03	0.33	0.01	0.01
Building Construction (2022)	0.10	0.70	0.02	0.01
Building Construction (2023)	0.47	3.42	0.07	0.06
Paving (2023)	0.06	0.06	<0.01	<0.01
Architectural Coating (2023)	7.32	0.01	<0.01	<0.01
Total Construction Emissions (Tons)	**14.51**	**9.03**	**0.22**	**0.21**
Average Daily Emissions				
Total Construction Emissions (Pounds)	29,029	18,065	437	411
Average Daily Construction Emissions (Pounds/Day)	**68**	**42**	**1**	**1**
BAAQMD Significance Thresholds	54	54	82	54
Significant Impact?	**Yes**	**No**	**No**	**No**

Notes:
This analysis relies on a 427-day construction schedule, consistent with the construction schedule and modeling results contained in Appendix B.
ROG = reactive organic gases NOx = nitrogen oxides
PM_{10} = particulate matter, including dust, 10 micrometers or less in diameter
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
BAAQMD = Bay Area Air Quality Management District
Source: Appendix B.

As shown in Table 3.2-10, ROG emissions generated mainly during architectural coating activities during project construction would exceed BAAQMD significance thresholds, requiring the implementation of MM AIR-2b, which would require the use of low-VOC (i.e., ROG) architectural coating products during project construction. Table 3.2-11 displays emissions generated during

project construction incorporating the implementation of MM AIR-2b. As shown therein, MM AIR-2b would reduce ROG emissions to below the applicable BAAQMD significance thresholds during project construction by implementing the use of architectural coating products that contain no greater than 50 grams of VOC (i.e., ROG) per liter of product. As a result, MM AIR-2b would result in reducing ROG emissions from 68 average pounds per day to 33 average pounds per day, which is below the BAAQMD significance threshold of 54 pounds per day for ROG emissions during project construction. Therefore, project construction emissions would be less than significant with the implementation of MMs AIR-2a and AIR-2b.

Table 3.2-11: Mitigated Construction Emissions

Construction Activity	Criteria Pollutant Emissions (Tons)			
	ROG	NO_X	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
Project Phase 1				
Site Preparation (2022)	<0.01	0.02	<0.01	<0.01
Grading (2022)	0.03	0.39	0.01	0.01
Building Construction (2022)	0.54	4.00	0.10	0.09
Paving (2022)	0.05	0.06	<0.01	<0.01
Architectural Coating (2022)	2.59	0.01	<0.01	<0.01
Project Phase 2				
Site Preparation (2022)	<0.01	0.02	<0.01	<0.01
Grading (2022)	0.03	0.33	0.01	0.01
Building Construction (2022)	0.10	0.70	0.02	0.01
Building Construction (2023)	0.47	3.42	0.07	0.06
Paving (2023)	0.06	0.06	<0.01	<0.01
Architectural Coating (2023)	3.22	0.01	<0.01	<0.01
Total Construction Emissions (Tons)	**7.09**	**9.03**	**0.22**	**0.21**
Average Daily Emissions				
Total Construction Emissions (Pounds)	14,190	18,065	437	411
Average Daily Construction Emissions (Pounds/Day)	**33**	**42**	**1**	**1**
BAAQMD Significance Thresholds	54	54	82	54
Significant Impact?	**No**	**No**	**No**	**No**

Notes:
This analysis relies on a 427-day construction schedule, consistent with the construction schedule and modeling results contained in Appendix B.
ROG = reactive organic gases NO_X = nitrogen oxides
PM_{10} = particulate matter, including dust, 10 micrometers or less in diameter
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
BAAQMD = Bay Area Air Quality Management District
Source: Appendix B.

Operation

Operational Air Pollutant Emissions: ROG, NO_X, PM_{10}, $PM_{2.5}$

Operational emissions would include area, energy, and mobile sources. Area sources would include emissions from architectural coatings, consumer products, and landscape equipment. Energy sources include emissions from the combustion of natural gas for water heaters and other heat sources. Mobile sources include exhaust and road dust emissions from the automobiles that would travel to and from the project site. Mobile sources also include exhaust from trailer-mounted TRUs which would accompany any freight truck carrying refrigerated goods. Stationary sources include emissions from stationary source equipment, such as backup generators, that would require a permit issued by the BAAQMD. Pollutants of concern include ROG, NO_X, PM_{10}, and $PM_{2.5}$.

Project operations were analyzed at full buildout immediately following the completion of construction for Phase 2 in August 2023 as a conservative estimate of operational emissions beginning in the earliest year of full operation. According to the Traffic Impact Study (TIS) prepared for the proposed project,[26] during full operation, the proposed project is expected to generate an estimated 528 daily truck trips and 2,832 daily passenger vehicle trips. According to the site plan set for the proposed project, dated November 11, 2020, Phase 1 of the proposed project would construct a warehouse that will connect to the existing railroad bordering the eastern boundary of the project site. Because of the lack of information regarding the potential future tenants, the proposed warehouse space is analyzed for a cold storage scenario and a dry storage scenario.

The cold storage project scenario would also include the operation of TRUs. In the absence of specific project information, all TRUs analyzed herein utilize weighted averages for emission factors retrieved from the ARB's OFFROAD2017 database for in-state truck TRUs, in-state van TRUs, in-state gen-set TRUs, in-state trailer TRUs, out-of-state gen-set TRUs, out-of-state trailer TRUs, and locomotive TRUs, all utilizing aggregate horsepower bins. These vehicle categories were selected as they encompass all possible TRU emission factors contained in the ARB's OFFROAD2017 database. As each truck is assumed to be accompanied by a TRU under the cold storage scenario and each of the 528 truck trips is one-way, this analysis assumes a truck and TRU population of 266. Each TRU is assumed to spend an average of four hours running on-site for unloading and loading purposes,[27] and an average of two hours off-site traveling to and from the Port of Oakland—the closest major freight origin.

Furthermore, in the absence of more specific information, the locomotive emission estimates contained herein assume a monthly average of 500,000 ton-miles of product and material locomotive deliveries. Assuming an average travel distance of 50 miles and an average loaded railcar weight of 65 tons,[28] this would represent nearly two loaded, 20-railcar locomotive deliveries per week.

[26] W-Trans. 2021. Traffic Impact Study for the Giovannoni Logistics Center. March 11.

[27] California Air Resources Board (ARB). 2021. Appendix I Health Analyses: Transport Refrigeration Units. Website: https://ww3.arb.ca.gov/board/rulemaking/tru2021/appi.pdf. Accessed August 19, 2021.

[28] United States Department of Transportation (USDOT). Bureau of Transportation Statistics. 2012. Railcar Weights. Website: https://www.bts.gov/archive/publications/transportation_statistics_annual_report/2003/chapter_02/railcar_weights#:~:text=The%20average%20weight%20of%20a,trends%20among%20selected%20freight%20commodities. Accessed August 2, 2021.

Operational emission estimates for the proposed project are contained in Table 3.2-12. For detailed assumptions used to estimate emissions, see Appendix B.

Table 3.2-12: Unmitigated Operational Emissions

Emissions Source	ROG	NO_X	PM_{10} Total	$PM_{2.5}$ Total
	Tons per Year			
Dry Storage Project Scenario				
Area	10.93	<0.01	<0.01	<0.01
Energy	0.04	0.40	0.03	0.03
Mobile–Passenger Vehicles	0.83	0.90	3.07	0.83
Mobile–Trucks	0.92	36.51	1.17	0.59
Mobile–Locomotives	ND	1.68	0.04	0.04
Mobile–TRUs	–	–	–	–
Stationary	0.01	0.04	<0.01	<0.01
Total (tons/year)	*12.74*	*39.54*	*4.32*	*1.49*
Significance Threshold (Tons/Year)	**10**	**10**	**15**	**10**
Exceeds Significance Threshold?	**Yes**	**Yes**	**No**	**No**
Total Average (pounds/day)	*70*	*217*	*24*	*8*
Significance Threshold (Tons/Year)	**54**	**54**	**82**	**54**
Exceeds Significance Threshold?	**Yes**	**Yes**	**No**	**No**
Cold Storage Project Scenario				
Area	10.93	<0.01	<0.01	<0.01
Energy	0.05	0.44	0.03	0.03
Mobile–Passenger Vehicles	0.83	0.90	3.07	0.83
Mobile–Trucks	0.92	36.51	1.17	0.59
Mobile–Locomotives	ND	1.68	0.04	0.04
Mobile–TRUs	3.71	31.15	0.43	0.40
Stationary	0.01	0.04	<0.01	<0.01
Total (tons/year)	*16.46*	*70.73*	*4.76*	*1.89*
Significance Threshold (Tons/Year)	**10**	**10**	**15**	**10**

Emissions Source	ROG	NO_X	PM_{10} Total	$PM_{2.5}$ Total
	Tons per Year			
Exceeds Significance Threshold?	**Yes**	**Yes**	**No**	**No**
Total Average (pounds/day)	*90*	*388*	*26*	*10*
Significance Threshold (Tons/Year)	**54**	**54**	**82**	**54**
Exceeds Significance Threshold?	**Yes**	**Yes**	**No**	**No**

Notes:
[1] Totals may not add up due to rounding. Calculations use unrounded results. 365 working days per year is assumed to estimate average daily emission rates.
lb. = pounds ROG = reactive organic gases NO_X = oxides of nitrogen
PM_{10} = particulate matter 10 microns in diameter$PM_{2.5}$ = particulate matter 2.5 microns in diameter
ND = No Data
Source: CalEEMod Output (see Appendix B).

Table 3.2-12 indicates that the proposed project would result in operational-related criteria air pollutants or ozone precursors which would exceed the BAAQMD's thresholds of significance, specifically with respect to ROG and NO_X emissions. As area sources would generate the majority of operational ROG emissions, MM AIR-2c would be required to ensure the use of low-VOC architectural coatings for any reapplication of paints and coatings and the use of electric landscaping equipment, including chainsaws, lawnmowers, and leaf blowers during project operation. In addition, as the trucking fleet would generate the majority of operational NO_X emissions, MM AIR-2d would be required to ensure that a more fuel-efficient, lower-emission trucking fleet—one which demonstrates a model year 2014 or newer for all heavy-duty trucks upon first implementation—is utilized during project operation. Model year 2014 was selected because it is the first homogenous model year for a trucking fleet in Napa County to demonstrate a reduction in NO_X emissions when compared with unmitigated emission estimates. This is considered a feasible trucking mitigation measure as the ARB's Truck and Bus Regulation[29] would otherwise require trucks greater than a 26,000-pound gross vehicle weight rating which operate in California be no older than 2010 model year by the time the proposed project would become operational in 2023. This would allow the proposed project to utilize trucks which are 9 years old and would not constitute an infeasible financial burden.

Table 3.2-13 displays emissions generated by project operation with the implementation of MMs AIR-2c and AIR-2d. As shown therein, under a dry storage scenario, implementation of MM AIR-2c would result in a reduction of ROG emissions during project operation from approximately 13 tons per year and 70 average pounds per day to approximately 12 tons per year and 64 average pounds per day, which exceed the BAAQMD significance thresholds for ROG emissions of 10 tons per year

[29] California Air Resources Board (ARB). 2019. Truck and Bus Regulation Compliance Requirement Overview. June 18. Website: https://www.arb.ca.gov/msprog/onrdiesel/documents/fsregsum.pdf?_ga=2.176823522.653555524.1631722616-611272733.1590599157. Accessed September 16, 2021.

and 54 average pounds per day. Under a cold storage scenario, implementation of MM AIR-2c would result in a reduction of ROG emissions during project operation from approximately 16 tons per year and 90 average pounds per day to approximately 15 tons per year and 85 average pounds per day, which exceed the BAAQMD significance thresholds for ROG emissions of 10 tons per year and 54 average pounds per day.

Under a dry storage scenario, implementation of MM AIR-2d would result in a reduction of NO_X emissions during project operation from approximately 40 tons per year and 217 average pounds per day to approximately 35 tons per year and 192 average pounds per day, which exceed the BAAQMD significance thresholds for NO_X emissions of 10 tons per year and 54 average pounds per day. Under a cold storage scenario, implementation of MM AIR-2d would result in a reduction of NO_X emissions during project operation from approximately 71 tons per year and 388 average pounds per day to approximately 66 tons per year and 362 average pounds per day, which exceed the BAAQMD significance thresholds for NO_X emissions of 10 tons per year and 54 average pounds per day.

Table 3.2-13: Mitigated Operational Emissions

Emissions Source	ROG	NO_X	PM_{10} Total	$PM_{2.5}$ Total
	Tons per Year			
Dry Storage Project Scenario				
Area	10.18	<0.01	<0.01	<0.01
Energy	0.04	0.40	0.03	0.03
Mobile–Passenger Vehicles	0.83	0.90	3.07	0.83
Mobile–Trucks	0.67	31.93	1.13	0.56
Mobile–Locomotives	ND	1.68	0.04	0.04
Mobile–TRUs	–	–	–	–
Stationary	0.01	0.04	<0.01	<0.01
Total (tons/year)	*11.74*	*34.95*	*4.28*	*1.46*
Significance Threshold (Tons/Year)	**10**	**10**	**15**	**10**
Exceeds Significance Threshold?	**Yes**	**Yes**	**No**	**No**
Total Average (pounds/day)	*64*	*192*	*23*	*8*
Significance Threshold (Tons/Year)	**54**	**54**	**82**	**54**
Exceeds Significance Threshold?	**Yes**	**Yes**	**No**	**No**
Cold Storage Project Scenario				

Emissions Source	ROG	NO_X	PM_{10} Total	$PM_{2.5}$ Total
	Tons per Year			
Area	10.18	<0.01	<0.01	<0.01
Energy	0.05	0.44	0.03	0.03
Mobile–Passenger Vehicles	0.83	0.90	3.07	0.83
Mobile–Trucks	0.67	31.93	1.13	0.56
Mobile–Locomotives	ND	1.68	0.04	0.04
Mobile–TRUs	3.71	31.15	0.43	0.40
Stationary	0.01	0.04	<0.01	<0.01
Total (tons/year)	15.46	66.14	4.71	1.86
Significance Threshold (Tons/Year)	**10**	**10**	**15**	**10**
Exceeds Significance Threshold?	**Yes**	**Yes**	**No**	**No**
Total Average (pounds/day)	*85*	*362*	*26*	*10*
Significance Threshold (Tons/Year)	**54**	**54**	**82**	**54**
Exceeds Significance Threshold?	**Yes**	**Yes**	**No**	**No**

Notes:
[1] Totals may not add up due to rounding. Calculations use unrounded results. 365 working days per year is assumed to estimate average daily emission rates.
lb. = pounds ROG = reactive organic gases NO_X = oxides of nitrogen
PM_{10} = particulate matter 10 microns in diameter$PM_{2.5}$ = particulate matter 2.5 microns in diameter
ND = No Data
Source: CalEEMod Output (see Appendix B).

As previously discussed, unmitigated project operation would result in ROG and NO_X emissions which exceed BAAQMD significance thresholds. ROG emissions generated during project operation would principally be generated by consumer products, which cannot be sufficiently controlled by the proposed project due to the possible use of cleaning products, hairsprays, and other personal care products by employees. As ROG emissions generated under the control of the proposed project during project operation would principally be generated by the periodic reapplication of architectural coatings, MM AIR-2c would be required to ensure the use of low-VOC (i.e., ROG) architectural coating products that contain no more than 50 grams of VOC per liter of product to reduce the generation of ROG emissions during project operation. Additionally, as NO_X emissions generated during project operation would principally be generated by the operation of the trucking fleet, irrespective of whether the fleet would accommodate the use of TRUs, MM AIR-2d would be

required to ensure the trucking fleet accessing the project site would be comprised of vehicles no older than model year 2014 to reduce tailpipe NO_X emissions.

It is important to note that the principal source for operational ROG emissions would be the use of consumer products by employees and visitors. Consumer products in this context consist of cleaning solvents and personal care products, such as hairspray. CalEEMod, Version 2020.4.0, utilizes a Statewide average VOC (i.e., ROG) per building square foot metric, irrespective of land use type, derived from the ARB's Statewide 2008 Consumer Product Inventory.[30] Because of this assumption built into the emissions modeling, nonresidential land uses, such as the proposed project, are likely to result in fewer operational ROG emissions generated by the use of consumer products than what is demonstrated in this analysis. Nonetheless, more accurate information is not available for the use of consumer products during project operation, thus this assumption must be relied upon for purposes of this analysis. In addition, because consumer products would be consumed by employees and visitors on-site and the use of those products would not be under the control of the property owner or tenant, consumer products cannot be guaranteed to be regulated through mitigation. As such, mitigation targeting the use of consumer products was omitted from this analysis.

Operational Carbon Monoxide Hotspot

The CO emissions from traffic generated by the proposed project are a concern at the local level. Congested intersections can result in high, localized concentrations of CO.

The BAAQMD recommends a screening analysis to determine whether a project has the potential to contribute to a CO hotspot. The screening criteria identify when site-specific CO dispersion modeling is necessary. The proposed project would result in a less than significant impact to air quality for local CO if all the following screening criteria are met:

1. The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans; and
2. The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; and
3. The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

As indicated in the TIS prepared for the proposed project,[31] no intersections impacted by the proposed project would experience traffic volumes of 44,000 vehicles per hour. According to the TIS, the study intersection which would experience the most traffic volume during the 'Existing Plus Project Traffic Volumes' scenario during AM and PM peak-hours would be the intersection of South

[30] California Air Pollution Control Officers Association (CAPCOA). 2021. CalEEMod Appendix E Technical Source Documentation. Website: http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/appendix-e2020-4-0.pdf?sfvrsn=6. Accessed December 15, 2021.

[31] W-Trans. 2021. Traffic Impact Study for the Giovannoni Logistics Center. March 11.

Kelly Road and CA-29. As discussed therein, that intersection would experience an estimated 3,622 AM peak-hours vehicle trips and 3,338 PM peak-hour vehicle trips with the implementation of the proposed project. Therefore, the proposed project would not result in any nearby intersection having peak-hour traffic volumes exceeding 44,000 vehicles per hour.

Nonetheless, CO hotspots can occur when a transportation facility's design or orientation prevents the adequate dispersion of CO emissions from vehicles, resulting in the accumulation of local CO concentrations. The design or orientation of a transportation facility that may prevent the dispersion of CO emissions include tunnels, parking garages, bridge underpasses, natural or urban canyons, below-grade roadways, or other features where vertical or horizontal atmospheric mixing is substantially limited. Adjacent roadways that would receive new vehicle trips generated by the proposed project do not include roadway segments where vertical or horizontal atmospheric mixing is substantially limited.

Finally, the proposed project would not conflict with a program, plan, ordinance, or policy of the circulation system, including transit, roadway, bicycle, and pedestrian facilities. As discussed in Section 3.12, Transportation, all studied roadway segments and intersections would operate at acceptable levels of service with traffic generated by the proposed project in combination with existing traffic levels. Additionally, as described in Section 3.12, Transportation, because the proposed project would operate at acceptable levels of service consistent with the City of American Canyon standards, then the proposed project would be consistent with an adopted congestion management program. Therefore, based on the above criteria, the proposed project would not exceed the CO screening criteria and would have a less than significant impact related to CO.

The proposed project would generate criteria pollutant and ozone precursor emissions during construction and operation. The BAAQMD does not have a bright-line emissions threshold for determining potentially significant impacts related to construction fugitive dust. Instead, the BAAQMD determines a project to result in a potentially significant impact if that project were not to implement construction BMPs to minimize the extent of fugitive dust emissions, such as soil erosion, sediment migration, roadway dust re-entrainment, and soil trackout, during project construction. In the absence of specific information related to the proposed project's intended implementation of construction BMPs to minimize fugitive dust emissions, the proposed project is assumed to not include any construction BMPs. Therefore, MM AIR-2a would be required to ensure implementation of construction BMPs recommended by the BAAQMD irrespective of the emissions reductions achieved by those BMPs.

Unmitigated project construction ROG emissions would exceed BAAQMD significance thresholds. Specifically, architectural coating activities during project construction would principally contribute to the exceedance. As such, MM AIR-2b would require project construction to utilize low-VOC (i.e., ROG) architectural coating products containing no greater than 50 grams of VOC per liter of product to reduce the generation of ROG emissions during architectural coating activities. Implementation of MM AIR-2b would result in reducing ROG emissions from 68 average pounds per day to 33 average pounds per day, which is below the BAAQMD significance threshold of 54 pounds per day for ROG emissions.

Unmitigated project operation would result in ROG and NO_X emissions which exceed BAAQMD significance thresholds. ROG emissions generated during project operation would principally be generated by consumer products, which cannot be sufficiently controlled by the proposed project due to the possible use of cleaning products, hairsprays, and other personal care products by employees. As ROG emissions generated under the control of the proposed project during project operation would principally be generated by the periodic reapplication of architectural coatings, MM AIR-2c would be required to ensure the use of low-VOC (i.e., ROG) architectural coating products that contain no more than 50 grams of VOC per liter of product to reduce the generation of ROG emissions during project operation. Additionally, as NO_X emissions generated during project operation would principally be generated by the operation of the trucking fleet, irrespective of whether the fleet would accommodate the use of TRUs, MM AIR-2d would be required to ensure the trucking fleet accessing the project site would be comprised of vehicles no older than model year 2014 to reduce tailpipe NO_X emissions.

Under a dry storage scenario, implementation of MM AIR-2c would result in a reduction of ROG emissions during project operation from approximately 13 tons per year and 70 average pounds per day to approximately 12 tons per year and 64 average pounds per day, which exceed the BAAQMD significance thresholds for ROG emissions of 10 tons per year and 54 average pounds per day. Under a cold storage scenario, implementation of MM AIR-2c would result in a reduction of ROG emissions during project operation from approximately 16 tons per year and 90 average pounds per day to approximately 15 tons per year and 85 average pounds per day, which exceed the BAAQMD significance thresholds for ROG emissions of 10 tons per year and 54 average pounds per day.

Under a dry storage scenario, implementation of MM AIR-2d would result in a reduction of NO_X emissions during project operation from approximately 40 tons per year and 217 average pounds per day to approximately 35 tons per year and 192 average pounds per day, which exceed the BAAQMD significance thresholds for NO_X emissions of 10 tons per year and 54 average pounds per day. Under a cold storage scenario, implementation of MM AIR-2d would result in a reduction of NO_X emissions during project operation from approximately 71 tons per year and 388 average pounds per day to approximately 66 tons per year and 362 average pounds per day, which exceed the BAAQMD significance thresholds for NO_X emissions of 10 tons per year and 54 average pounds per day.

Consequently, implementation of MM AIR-2a and MM AIR-2b would sufficiently reduce project construction emissions to less than significant levels; however, implementation of MM AIR-2c and MM AIR-2d would not be sufficient to reduce project operation emissions to less than significant levels. Therefore, the proposed project would generate emissions which exceed the BAAQMD's significance thresholds after the implementation of applicable and feasible mitigation and would result in a significant and unavoidable impact. Therefore, this impact would be significant unavoidable after implementation of identified mitigation.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AIR-2a The following Best Management Practices (BMPs), as recommended by the Bay Area Air Quality Management District (BAAQMD), shall be included in the design of the project and implemented during construction:

- All active construction areas shall be watered at least two times per day.
- All exposed non-paved surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and access roads) shall be watered at least three times per day and/or non-toxic soil stabilizers shall be applied to exposed non-paved surfaces.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered and/or shall maintain at least 2 feet of freeboard.
- All visible mud or dirt tracked out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure (ATCM) Title 13, Section 2485 of California Code of Regulations). Clear signage regarding idling restrictions shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- The prime construction contractor shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The City and the construction contractor shall take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

MM AIR-2b Prior to the issuance of grading or building permits, the project applicant shall provide the City with documentation demonstrating the use of "Low-VOC" architectural coatings during the proposed project's construction. "Low-VOC" architectural coatings used during project construction shall not exceed 50 grams of reactive organic gases (ROG) or volatile organic compounds (VOC) per liter of product.

MM AIR-2c Prior to issuing any certificate of occupancy for the proposed project, the project applicant shall provide the City with documentation demonstrating the use of "Low-VOC" architectural coatings and electric landscaping equipment during the operation of the proposed project. "Low-VOC" architectural coatings used during project construction shall not exceed 50 grams of reactive organic gases (ROG) or

volatile organic compounds (VOC) per liter of product. Landscaping equipment referred to in this requirement shall include lawnmowers, leaf blowers, and chainsaws.

MM AIR-2d Prior to issuing the certificate of occupancy for the proposed project, the project applicant shall provide the City with documentation demonstrating the use of a truck fleet that meets or exceeds model year 2014 for all heavy-duty trucks during operation of the proposed project. If the project applicant does not own the truck fleet that would be used during operation of the proposed project, the project applicant shall provide the City with documentation from the truck fleet owner or operator demonstrating that trucks utilized for operation of the proposed project will meet or exceed model year 2014. If any change occurs where a new truck fleet is utilized during operation of the proposed project, the project applicant shall provide the City with documentation demonstrating that the new truck fleet meets or exceeds this requirement.

To monitor and ensure that trucks that meet a model year of 2014 or newer are used for the proposed project, the fleet operator shall maintain records of all trucks and equipment associated with the proposed project's operation and make these records available to the City upon request. Alternatively, the City may require periodic reporting and provision of written records by operators and conduct regular inspections of the records to the maximum extent feasible and practicable.

Level of Significance After Mitigation

Significant unavoidable impact.

Sensitive Receptors Exposure to Pollutant Concentrations

Impact AIR-3:	**The proposed project would not expose sensitive receptors to substantial pollutant concentrations.**

Impact Analysis

The proposed project could expose sensitive receptors to elevated pollutant concentrations if it causes or contributes significantly to elevated pollutant concentration levels. As described in Section 3.2.2, Environmental Setting, beneath Table 3.2-6, the closest sensitive receptors include a single-family residence located approximately 200 feet south of the project site, as well as Calvary Baptist Christian Academy. Unlike regional emissions, localized emissions are typically evaluated in terms of air concentration rather than mass so they can be more readily correlated to potential health effects. As the proposed project would constitute the development of approximately 2.4 million square feet of industrial warehouse space and the operation of heavy-duty trucking fleets, a construction and operational HRA was prepared for the proposed project and is contained in Appendix B. The results of the HRA are summarized below.

Construction and Operation

Construction and Operational Related Diesel Particulate Matter

Because the proposed project could accommodate the construction and operation of 2.4 million square feet of cold storage space and the subsequent operation of TRUs in addition to truck and passenger vehicle activities, the HRA herein analyzes the cold storage project scenario as a conservative assessment. As shown in Table 3.2-14, health risks resulting from the construction and operation of a cold storage project scenario were found to be less than the BAAQMD's project-level significance thresholds.

Table 3.2-14 presents a summary of the results of the HRA prepared for the proposed project during project construction and operation. As previously discussed, the proposed project would develop Phase 1, which would become operational immediately following the completion of construction activities. As Phase 1 would become operational, Phase 2 of the proposed project would begin construction, resulting in an overlap of construction and operational emissions. As such, the HRA analyzes the proposed project's Phase 1 construction DPM emissions for the first year, Phase 1 operational and Phase 2 construction DPM emissions for the second year, and Phase 1 and 2 operational DPM emissions for the remainder of the 30-year exposure duration, consistent with the BAAQMD's Health Risk Assessment Guidelines.[32] The HRA also analyzes the proposed project's Phase 1 construction DPM emissions for the first year; Phase 1 operational and Phase 2 construction DPM emissions for the second year; Phase 1 and 2 operational DPM emissions of school receptor exposure at the Calvary Baptist Christian Academy; and the proposed project's operational DPM emission concentrations for the remainder of the 13-year exposure duration for a K-12 school, consistent with the BAAQMD's Health Risk Assessment Guidelines.

Because the proposed project could accommodate the construction and operation of 2.4 million square feet of cold storage space and the subsequent operation of TRUs in addition to truck and passenger vehicle activities, the HRA herein analyzes the cold storage project scenario as a conservative assessment. As shown in Table 3.2-14, health risks resulting from the construction and operation of a cold storage project scenario were found to be less than the BAAQMD's project-level significance thresholds.

Table 3.2-14: Summary of Construction Health Risks at the Maximum Impacted Receptor

Impact Scenario	Cancer Risk[1] (risk per million)	Chronic Non-Cancer Hazard Index[2]	TAC Concentration[3] (µg/m³)
Residential MIR Impact (Cold Storage Scenario)			
Scenario 1 (Phase 1 Construction)	0.44	<0.01	<0.01
Scenario 2 (Phase 2 Construction, Phase 1 Operation)	1.44	<0.01	0.01
Scenario 3 (Phase 1, Phase 2 Operation)	0.22	0.01	0.04

[32] Bay Area Air Quality Management District (BAAQMD). 2016. BAAQMD Air Toxics NSR Program Health Risk Assessment Guidelines. December. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/permit-modeling/hra_guidelines_12_7_2016_clean-pdf.pdf?la=en. Accessed September 16, 2021.

Impact Scenario	Cancer Risk[1] (risk per million)	Chronic Non-Cancer Hazard Index[2]	TAC Concentration[3] (µg/m³)
Total (30 Year Duration)	*2.10*	*0.01*	*0.05*
Thresholds of Significance	**10**	**1**	**0.3**
Exceeds Individual Source Threshold?	**No**	**No**	**No**
School MIR Impact (Cold Storage Scenario)			
Scenario 1 (Phase 1 Construction)	0.01	<0.01	<0.01
Scenario 2 (Phase 2 Construction, Phase 1 Operation)	0.03	<0.01	<0.01
Scenario 3 (Phase 1, Phase 2 Operation)	<0.20	<0.01	<0.01
Total (30 Year Duration)	*0.24*	*<0.01*	*<0.01*
Thresholds of Significance	**10**	**1**	**0.3**
Exceeds Individual Source Threshold?	**No**	**No**	**No**

Notes:
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
REL = reference exposure level DPM = diesel particulate matter TAC = toxic air contaminants
MIR = Maximally Impacted Sensitive Receptor µg/m³ = micrograms per cubic meter
[1] Cancer risk is identified by multiplying the risk sum from HARP2 by 1,000,000.
[2] Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as $PM_{2.5}$ exhaust) by the DPM REL of 5 µg/m³.
[3] TAC concentration taken from AERMOD is always at the MIR identified from the project air dispersion models. The residential MIR was located at 38.20613°N -122.25739°E and the school MIR was identified as the Calvary Baptist Christian Academy.
Emissions Source: Appendix B.
Thresholds Source: Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed April 15, 2021.

As shown in Table 3.2-14, the proposed project would not result in significant health impacts to the maximally impacted residential or school receptors under the cold storage scenario. Therefore, the proposed project would have a less than significant health risk impacts.

Community Health Risk Assessment

A community HRA was conducted in accordance with BAAQMD recommendations. The cumulative health risk values were determined by adding the health risk values from refined modeling of the proposed project to the screening-level health risk values from each individual stationary and mobile source within a 1,000-foot radius of the site. The HRA concluded that the main source of a cumulative community health risk within 1,000 of the project site are the existing sources. The analysis results presented in the HRA, contained in Appendix B, are shown in Table 3.2-15. As shown therein, health risks to nearby sensitive receptors would not exceed the BAAQMD community health risk significance thresholds. As the proposed project did not result in an exceedance of project-level BAAQMD significance thresholds, the proposed project would not result in a potentially significant impact and the proposed project's impacts would not be cumulatively considerable. Therefore, this impact would be less than significant.

Table 3.2-15: Summary of Construction Health Risks at the Maximum Impacted Receptor

Source	Source Type	Distance from MIR[1] (feet)	Cancer Risk (per million)	Chronic HI	$PM_{2.5}$ Concentration ($\mu g/m^3$)
Project					
Residential MIR	Diesel Construction Equipment, Trucking Fleets, and Passenger Vehicles	1,860	2.10	0.01	0.05
Existing Stationary Sources (BAAQMD Facility Number)[2]					
California Stonecraft Facility ID 24284	Polyester Resin Operation	1,455	ND	<0.01	ND
William Kreysler and Assoc Inc Facility ID 12852	Polyester Resin Operation, Solvent Cleaning	1,440	ND	<0.01	ND
City of American Canyon/Accounts Payable Facility ID 14432	Generators	450	0.12	0.00	0.00
All Bay Mill and Lumber Co Facility ID 4793	Woodworking	2,085	ND	ND	0.11
Ikea Facility ID 200845	Generators	1,750	61.11	0.02	0.08
Roadways					
Existing Local Roadway Network		–	0.11	ND	<0.01
Rail					
Existing Rail Lines (California Northern Railroad)		140	4.87	ND	0.01
Freeways					
Existing Freeways (Highway 29)		225	5.58	ND	0.10
Cumulative Health Risks					
Cumulative Maximum with Project DPM Emissions			**73.89**	**0.03**	**0.35**
BAAQMD's Cumulative Thresholds of Significance			**100**	**10**	**0.8**
Threshold Exceedance?			**No**	**No**	**No**

Notes:
MIR = Maximally Impacted Sensitive Receptor BAAQMD = Bay Area Air Quality Management District
$\mu g/m^3$ = micrograms per cubic meter HI = health index
DPM = diesel particulate matter $PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
ND = No Data
[1] The residential MIR located at 38.20613°N -122.25739°E was identified as the primary MIR here as it would experience the greatest health impact between residential and school receptors.
[2] Assumes emissions remain constant with time. Values represent the greatest identified among all MIRs presented in this analysis, including the two previously identified residences and the previously identified school.
Source: Appendix B.

Carbon Monoxide Hotspot

As discussed in Impact AIR-2, the proposed project would not generate sufficient vehicle traffic during project operation to substantiate creating a CO hotspot. Therefore, this impact would be less than significant with regard to exposing sensitive receptors to substantial concentrations of CO emissions. As such, the proposed project would result in less than significant impacts related to exposing sensitive receptors to substantial pollutant concentrations.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

None Required.

Level of Significance After Mitigation

Less than significant impact.

Objectionable Odors Exposure

Impact AIR-4:	**The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.**

Impact Analysis

Construction

During construction activities, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment. It is anticipated that by the time such emissions reach any sensitive receptor sites, they would be diluted to well below any air quality or odor concern level. Therefore, construction odor impacts would be less than significant.

Operation

The proposed project would construct and operate a logistics center including at least three warehouse buildings intended for distribution centers. Operation of this type of project would likely not generate objectionable odors that may affect a substantial number of nearby receptors. The types of uses that are considered to have objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. Though the specific uses of the buildings have not been determined, it is not anticipated that a wastewater treatment plant or solid waste transfer station would be accommodated at the project site.

As shown previously in Table 3.2-8, food manufacturing plants and chemical manufacturing have odor screening distances of one mile and two miles, respectively, from the facility to sensitive receptors. Sensitive receptors surrounding the project site within these screening distances are generally to the south and consist of school and residential land uses. Thus, as the future tenants

propose the land use for distribution and/or sortation facilities, implementation of the proposed project would not create or expose a substantial number of people to objectionable odors, a potentially significant impact. As such, this impact would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

None required.

Level of Significance After Mitigation

Less than significant impact.