4.2 AIR QUALITY

4.2.1 ENVIRONMENTAL SETTING

TOPOGRAPHY, METEOROLOGY, AND CLIMATE

Regional

The Project site is in unincorporated Solano County, California, west of the city of Suisun City and south of the city of Fairfield. The Project site is in the San Francisco Bay Area Air Basin (SFBAAB), which consists of 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.

The SFBAAB is characterized by complex terrain consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range is not continuous, with a western coast gap, Golden Gate, and an eastern coast gap, Carquinez Strait, which allow air to flow in and out of the SFBAAB and the Central Valley. The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below to the surface because of the northwesterly flow produces a band of cold water off the California coast. The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold-water band resulting in condensation and the presence of fog and stratus clouds along the northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms.

Local

The Carquinez Strait Region is the only sea-level gap between the Bay and the Central Valley. The region includes the lowlands bordering the strait to the north and south, and includes the area adjoining Suisun Bay and the western part of the Sacramento-San Joaquin Delta as part east as Bethel Island. The region also extends from Rodeo in the southwest and Vallejo in the northwest to Fairfield on the northeast and Brentwood on the southeast.

The prevailing wind direction is from the west across the Carquinez Strait. Strongest winds typically occur in the afternoon with wind speeds upwards of 15 to 20 miles per hour throughout the strait region. Annual average wind speeds are generally between 8 and 10 miles per hour. Under certain atmospheric conditions, winds will shift and flow from the east. East winds usually contain more pollutants than the cleaner marine air from the west. The occasional east winds can cause elevated pollutant levels to move into the strait region, particularly during the summer and fall seasons.

Summer temperatures in the area of the City of Suisun City can reach about 90 degrees Fahrenheit with minimum temperatures in the winter in the high 30s (WWRC 2023). Temperature extremes are especially pronounced in sheltered areas farther from the moderating effects of the strait itself (e.g., Suisun City).

AIR POLLUTANTS OF CONCERN

Criteria Air Pollutants

Individual air pollutants at certain concentrations may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. The United States Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (ARB) have identified six air pollutants that can cause harm to human health and the environment: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter equal to and less than 10 microns in diameter (PM_{10}) and particulate matter equal to and less than 2.5 microns in diameter ($PM_{2.5}$), and lead. Because the ambient air quality standards for these air pollutants are regulated using human health and environmentally based criteria, they are commonly referred to as "criteria air pollutants." Reactive organic gases (ROG) and oxides of nitrogen (NO_X) are criteria pollutant precursors that form ozone through chemical and photochemical reactions in the atmosphere.

Health-based air quality standards have been established for these pollutants by EPA at the national level and by ARB at the state level. These standards are referred to as the national ambient air quality standards (NAAQS) and the California ambient air quality standards (CAAQS), respectively. The NAAQS and CAAQS were established to protect the public with a margin of safety from adverse health impacts caused by exposure to air pollution. Ambient air concentrations are monitored throughout the SFBAAB to designate the Basin's attainment status with respect to the NAAQS and CAAQS for criteria air pollutants. The purpose of these designations is to identify areas with air quality problems and thereby initiate planning efforts for improvement. Both EPA and ARB designate areas of California as "attainment," "nonattainment," "maintenance," or "unclassified" for the various pollutant standards according to the federal Clean Air Act and the California Clean Air Act, respectively. The "unclassified" status is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. Table 4.2-3 in the Regulatory Framework section below lists the CAAQS and NAAQS values for each pollutant. Table 4.2-1 presents the recent attainment designations for the SFBAAB. With respect to the NAAQS, the SFBAAB is designated as a nonattainment area for ozone and $PM_{2.5}$, and as an attainment or unclassified area for all other pollutants. With respect to the CAAQS, the SFBAAB is designated as a nonattainment area for ozone, PM_{10}, and $PM_{2.5}$, and as an attainment area for all other pollutants.

Within the SFBAAB, the Bay Area Air Quality Management District (BAAQMD) is responsible for ensuring that emission standards are not violated. The BAAQMD maintains multiple air quality monitoring stations that continually measure the ambient concentrations of major air pollutants throughout the SFBAAB. Table 4.2-2 summarizes published monitoring data for 2019 through 2021. The nearest monitoring station to the Project Site is the Fairfield monitoring station, approximately 1 mile southwest from the Project site. This station monitors ozone. Data for NO_2 and $PM_{2.5}$ were obtained from the Vallejo monitoring station approximately 14 miles southwest from the Project site. Data for PM_{10} was obtained from the Vacaville Merchant Street monitoring station approximately 8 miles to the north-northeast of the Project site. In general, the ambient air quality measurements from this station are representative of the air quality in the Project vicinity.

Table 4.2-1. San Francisco Bay Area Basin Attainment Status

Pollutant	State Attainment Status	Federal Attainment Status
CO (1 hour and 8 hour)	Attainment	Unclassified/Attainment
Ozone (1 hour)	Nonattainment	--
Ozone (8 hour)	Nonattainment	Nonattainment
NO_2 (1 hour)	Attainment	Attainment/Unclassified
NO_2 (Annual)	Attainment	Unclassified
PM_{10} (24hour)	Nonattainment	Unclassified
PM_{10} (Annual)	Nonattainment	--
$PM_{2.5}$ (24 hour)	--	Nonattainment [1]
$PM_{2.5}$ (Annual)	Nonattainment	Unclassified/Attainment
SO_2 (1 hour and 24 hour)	Attainment	Unclassified/Attainment [2]
Lead (30 Day)	Attainment	--
Lead (Quarter)	--	Unclassified/Attainment
Lead (3month)	--	--
H_2S (1 hour)	Unclassified	--
Vinyl Chloride	No information available	--
Visibility Reducing Particles	Unclassified	--

Source: BAAQMD 2023

Notes:

CO = carbon monoxide, H_2S = hydrogen sulfide; NO_2 = nitrogen dioxide; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ -= particulate matter with aerodynamic diameter less than 2.5 microns; SO_2 = sulfur dioxide.

1 On January 9, 2013, U.S. EPA issued a final rule to determine that the Bay Area attains the 24-hour $PM_{2.5}$ national standard. Despite this action, the Bay Area will continue to be designated as "non-attainment" for the national 24-hour $PM_{2.5}$ standard until such time as the BAAQMD submits a "redesignation request" and a "maintenance plan" to U.S. EPA, and U.S. EPA approves the proposed redesignation.

2 On June 2, 2010, the U.S. EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO_2 NAAQS, however, must continue to be used until 1 year following U.S. EPA initial designations of the new 1-hour SO_2 NAAQS.

Table 4.2-2. Local Air Quality Monitoring Summary

Pollutant and Averaging Period	Item	2019	2020	2021
Ozone 1 Hour[1]	Max 1 Hour (ppm)	0.080	0.098	0.093
Ozone 1 Hour[1]	Days > State Standard (0.09 ppm)	0	1	0
Ozone 8 Hour[1]	Max 8 Hour (ppm)	0.068	0.082	0.079
Ozone 8 Hour[1]	Days > State Standard (0.070 ppm)	0	3	2
Ozone 8 Hour[1]	Days > National Standard (0.070 ppm)	0	3	2
NO_2 Annual[2]	Annual Average (ppm)	0.007	0.007	0.006
NO_2 1 Hour[2]	Max 1 Hour (ppm)	0.05	0.05	0.04
NO_2 1 Hour[2]	Days > State Standard (0.18 ppm)	0	0	0
PM_{10} Annual[3]	Annual Average ($\mu g/m^3$)	11.7	36.7	14.6
PM_{10} 24 hour[3]	Max 24 Hour ($\mu g/m^3$)	72.2	319.2	49.6
PM_{10} 24 hour[3]	Days > State Standard (50 $\mu g/m^3$)	-	-	-
PM_{10} 24 hour[3]	Days > National Standard (150 $\mu g/m^3$)	-	-	0
$PM_{2.5}$ Annual[2]	Annual Average ($\mu g/m^3$)	8.8	12.0	8.7
$PM_{2.5}$ 24 hour[2]	Max 24 Hour ($\mu g/m^3$)	30.5	152.7	32.0
$PM_{2.5}$ 24 hour[2]	Days > National Standard (35 $\mu g/m^3$)	0	12.0	0

Source: ARB 2022

Notes:

- = insufficient data; $\mu g/m^3$ = micrograms per cubic meter; NO_2 = nitrogen dioxide; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ -= particulate matter with aerodynamic diameter less than 2.5 microns; ppm = parts per million.

The anomalous value for maximum PM_{10} 24-concentration in 2020 was likely due to the LNU Lightning Complex wildfire that affected Napa, Solano, Lake, Sonoma, and Yolo counties in August of 2020.

1 Fairfield monitoring site

2 Vallejo monitoring site

3 Vacaville monitoring site

The following provides a brief description of criteria air pollutants and health effects of exposure.

- **Ozone (O^3)** is a colorless gas that is odorless at ambient levels. Ozone is the primary component of urban smog. It is not emitted directly into the air but is formed through a series of reactions involving ROG and NO_X in the presence of sunlight. ROG and NO_X are referred to as "ozone precursors." Because ozone is not directly emitted, air quality regulations focus on reducing the ozone precursors of ROG and NO_X. Meteorology and terrain play a major role in ozone formation. Generally, low wind speeds or stagnant air coupled with warm temperatures and clear skies provide the optimum conditions for formation. As a result, summer is generally the peak ozone season. Because of the reaction time involved, peak ozone concentrations often occur far downwind of the precursor emissions. Therefore, ozone is a regional pollutant that often affects large areas.

  Individuals exercising outdoors, children, and people with lung disease, such as asthma and chronic pulmonary lung disease, are the most susceptible subgroups for ozone effects. Short-term ozone exposure (lasting for a few hours) can result in changes in breathing patterns, reductions in breathing capacity, increased susceptibility to infections, inflammation of lung tissue, and some immunological changes. A correlation has also been reported between elevated ambient ozone levels and increases in daily hospital admission rates and mortality (EPA 2022a). An increased risk of asthma has been found in children who participate in multiple sports and live within communities with high ozone levels.

  Emissions of the ozone precursors ROG and NO_X have decreased in the past several years. According to the most recently published edition of ARB *California Almanac of Emissions and Air Quality*, NO_X, and ROG emissions levels are projected to continue to decrease through 2035, largely because of more stringent motor vehicle standards and cleaner burning fuels, as well as rules for controlling ROG emissions from industrial coating and solvent operations (ARB 2013).

- **Carbon Monoxide (CO)** is a colorless and odorless gas that, in the urban environment, is produced primarily by the incomplete burning of carbon in fuels; primarily, from mobile (transportation) sources. Relatively high concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Vehicular traffic emissions can cause localized CO impacts, and severe vehicle congestion at major signalized intersections can generate elevated CO levels, called "hot spots," which can be hazardous to human receptors adjacent to the intersections. CO enters the bloodstream through the lungs by combining with hemoglobin, which normally supplies oxygen to the cells. However, CO combines with hemoglobin much more readily than oxygen does, drastically reducing the amount of oxygen available to the cells. Adverse health effects from exposure to high CO concentrations, which typically can occur only indoors or within similarly enclosed spaces, include dizziness, headaches, and fatigue. CO exposure is especially harmful to individuals who suffer from cardiovascular and respiratory diseases (U.S. EPA 2022b).

- **Nitrogen Dioxide (NO_2)** is one of a group of highly reactive gases known as oxides of nitrogen, or NO_X. NO_2 is formed when ozone reacts with nitric oxide (i.e., NO) in the atmosphere, and is listed as a criteria pollutant because NO_2 is more toxic than nitric oxide. The major human-made sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Inhalation is the most common route of exposure to NO_2. Breathing air with a high concentration of NO_2 can lead to respiratory illness. Short-term exposure can aggravate respiratory diseases, particularly asthma, resulting in respiratory symptoms (such as coughing, wheezing, or difficulty breathing), hospital admissions, and visits to emergency rooms. Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma, and potentially increase susceptibility to respiratory infections (U.S. EPA 2022c).

- **Sulfur Dioxide (SO_2)** is one component of the larger group of gaseous oxides of sulfur (SO_X). SO_2 is used as the indicator for the larger group of SO_X because it is the component of greatest concern and found in the atmosphere at much higher concentrations than other gaseous SO_X. SO_2 is typically produced by such stationary sources as coal and oil combustion facilities, steel mills, refineries, and pulp and paper mills. The major adverse health effects associated with SO_2 exposure pertain to the upper respiratory tract. On contact with the moist mucous membranes, SO_2 produces sulfurous acid, a direct irritant. Concentration rather than duration of exposure is an important determinant of respiratory effects. Children, the elderly, and those who suffer from asthma are particularly sensitive to effects of SO_2 (U.S. EPA 2022d).

  SO_2 also reacts with water, oxygen, and other chemicals to form sulfuric acids, contributing to the formation of acid rain. SO_2 emissions that lead to high concentrations of SO_2 in the air generally also lead to the formation of other SO_X, which can react with other compounds in the atmosphere to form small particles, contributing to particulate matter pollution, which can have health effects of its own.

- **Particulate Matter (PM_{10} and $PM_{2.5}$)** is a complex mixture of extremely small particles and liquid droplets made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Natural sources of particulates include windblown dust and ocean spray. The major areawide sources of $PM_{2.5}$ and PM_{10} are fugitive dust, especially from roadways, agricultural operations, and construction and demolition. Other sources of PM_{10} include crushing or grinding operations. $PM_{2.5}$ sources also include all types of combustion, including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes. Exhaust emissions from mobile sources contribute only a very small portion of directly emitted $PM_{2.5}$ and PM_{10} emissions; however, they are a major source of ROGs and NO_X, which undergo reactions in the atmosphere to form PM, known as secondary particles. These secondary particles make up the majority of PM pollution. Effects from short- and long-term exposure to elevated concentrations of PM_{10} include respiratory symptoms, aggravation of respiratory and cardiovascular diseases, and cancer (World Health Organization 2021). $PM_{2.5}$ poses an increased health risk because these very small particles can be inhaled deep in the lungs and may contain substances that are particularly harmful to human health.

- **Lead** is a highly toxic metal that may cause a range of human health effects. Lead is found naturally in the environment and is used in manufactured products. Previously, the lead used in gasoline anti-knock additives represented a major source of lead emissions to the atmosphere. Metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Although the ambient lead standards are no longer violated, lead emissions from stationary sources still pose “hot spot” problems in some areas. Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotients. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death (U.S. EPA 2022e).

- **Reactive Organic Gases (ROGs)/Volatile Organic Compounds** are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as O_3. There are no ambient air quality standards (AAQS) established for ROGs. However, because they contribute to the formation of O_3, the BAAQMD has established a significance threshold for this pollutant.

Toxic Air Contaminants

In addition to criteria air pollutants, concentrations of toxic air contaminants are also used as indicators of air quality conditions that can harm human health. Air pollutant human exposure standards are identified for many toxic air contaminants including the following common toxic air contaminants relevant to development projects: particulate matter, fugitive dust, lead, and asbestos. These air pollutants are termed toxic air contaminants because they are air pollutants that may cause or contribute to an increase in mortality or in serious illness or that may pose a hazard to human health. Toxic air contaminants are usually present in minute quantities in the ambient air; however, their high toxicity or health impact may pose a threat to public health even at low concentrations. Toxic air contaminants 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).

Toxic air contaminants are separated into carcinogens and noncarcinogens based on the nature of the physiological effects associated with exposure to a particular toxic air contaminant. 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, typically over a lifetime exposure or other prolonged duration. For noncarcinogenic substances, there is generally assumed to be a safe level of exposure 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 acceptable reference exposure levels.

The majority of the estimated health risks from toxic air contaminants can be attributed to relatively few compounds, the most important being diesel particulate matter (DPM) from diesel-fueled engines. Other toxic air contaminants (TACs) for which data are available that currently pose the greatest ambient risk in California are benzene, formaldehyde, hexavalent chromium, 1,3-butadiene and acetaldehyde.

In 1998, ARB identified diesel particulate matter as a toxic air contaminant based on evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. Almost all diesel exhaust particles are 2.5 microns or less in diameter. Because of their extremely small size, these particles can be inhaled, and eventually trapped in the bronchial and alveolar regions of the lungs. DPM differs from other TACs because it is not a single substance, but a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, type of lubricating oil, and presence or absence of an emission control system. Unlike the other TACs, no ambient monitoring data are available for DPM because no routine measurement method currently exists. However, emissions of DPM are forecasted to decline; it is estimated that emissions of

DPM in 2035 will be less than half those in 2010, further reducing statewide cancer risk and non-cancer health effects (ARB 2013).

Existing Emissions Sources

There are no existing on-site stationary sources on the Project Site. On-road mobile source emissions are associated with vehicles traveling primarily along Pennsylvania Avenue, Cordelia Road, and State Highway 12 (SR 12). There are also mobile source emissions associated with locomotives traveling along the railroad line that is east of the Project Site.

Sensitive Receptors

Air quality does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others. Population subgroups sensitive to the health effects of air pollutants include the elderly and the young, population subgroups with higher rates of respiratory disease such as asthma and chronic obstructive pulmonary disease, and populations with other environmental or occupational health exposures (e.g., indoor air quality) that affect cardiovascular or respiratory diseases such as asthma and chronic obstructive pulmonary disease. The factors responsible for variation in exposure are also often similar to factors associated with greater susceptibility to air quality health effects. As described in the BAAQMD CEQA Air Quality Guidelines, land uses or facilities most likely to support sensitive receptors include schools and schoolyards, parks and playgrounds, daycare centers and preschools, hospices, dormitories, prisons, nursing homes, hospitals, and residential communities (BAAQMD 2023). Such land uses are considered to be sensitive to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress.

Residential areas are considered more sensitive to air quality conditions compared to commercial and industrial areas because people generally spend longer periods of time at their residences, with associated greater exposure to ambient air quality conditions. Off-site workers may not always be considered sensitive receptors because all employers must follow regulations set forth by the Occupational Safety and Health Administration to ensure the health and well-being of their employees. However, for the purposes of this EIR, off-site workers (workers near the Project Site) are conservatively considered sensitive receptors in this analysis.

The city of Fairfield's southern city limit is on the opposite side of SR 12, north of the Project Site. Existing uses in this portion of Fairfield include single-family residences, offices, and light industrial uses. The nearest sensitive uses receptors the north of the Project Site are residences located approximately 500 feet (north of SR 12) from the northern Project boundary. East of the Union Pacific Railroad tracks that are adjacent to the eastern perimeter of the Project Site is Downtown Suisun City and the Suisun City waterfront, which is developed with a variety of commercial, residential, assembly, repair, and retail land uses. The nearest sensitive receptor east of the Project Site are residences located approximately 200 feet east of the eastern Project boundary. West of the Project Site, across Ledgewood Creek, are industrial warehouse and office uses. The nearest sensitive receptor (the industrial warehouse and office buildings) to the west of the Project Site are approximately 300 feet from the western Project boundary. There are also two commercial uses, an auto repair shop and U-Haul rental shop on one parcel and a concrete contractor on another, somewhat central to the Project parcels but not within the Project Site, adjacent to the west side of Pennsylvania Avenue at the intersection of Pennsylvania Avenue and Cordelia Street.

4.2.2 Regulatory Framework

Federal

Clean Air Act

The U.S. EPA's air quality mandates are drawn primarily from the federal Clean Air Act, which was enacted in 1970 and amended in 1977 and 1990 (Clean Air Act Amendments). The Clean Air Act requires the U.S. EPA to establish the NAAQS, as shown in Table 4.2-3 (note that this table also provides the CAAQS, as further described under the State regulatory section below). NAAQS have been established for the six major air pollutants described in the Environmental Setting above: ozone, CO, NO_2, SO_2, lead, PM_{10} and $PM_{2.5}$. The Clean Air

Table 4.2-3. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS[1]	NAAQS[2,3] - Primary	NAAQS[2,3] - Secondary
CO	1 Hour		35 ppm (40 mg/m^3)	NA
CO	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	NA
NO_2	1 hour	0.18 ppm (339 $\mu g/m^3$)	100 ppb (188 $\mu g/m^3$)	NA
NO_2	Annual Arithmetic Mean	0.030 ppm (57 $\mu g/m^3$)	0.053 ppm (100 $\mu g/m^3$)	Same as Primary
Ozone	1 hour	0.09 ppm (180 $\mu g/m^3$)	NA[5]	NA
Ozone	8 hour	0.070 ppm (137 $\mu g/m^3$)[8]	0.070 ppm (137 $\mu g/m^3$)[4]	Same as Primary
PM_{10}	24 hour	50 $\mu g/m^3$	150 $\mu g/m^3$	Same as Primary
PM_{10}	Annual Arithmetic Mean	20 $\mu g/m^3$ [6]	NA	NA
$PM_{2.5}$	24 hour	NA	35 $\mu g/m^3$	Same as Primary
$PM_{2.5}$	Annual Arithmetic Mean	12 $\mu g/m^3$ [6]	12 $\mu g/m^3$ [10]	15.0 $\mu g/m^3$
SO_2	1hour	0.25 ppm (655 $\mu g/m^3$)	0.075 ppm (196 $\mu g/m^3$)	NA
SO_2	24 hour	0.04 ppm (105 $\mu g/m^3$)	0.14 ppm (365 $\mu g/m^3$)	NA
SO_2	Annual Arithmetic Mean	NA	0.030 ppm (80 $\mu g/m^3$)	NA
Sulfates	24 hour	25 $\mu g/m^3$	NA	NA
H_2S	1 hour	0.03 ppm (42 $\mu g/m^3$)	NA	NA
Lead	30-day Average	1.5 $\mu g/m^3$	NA	NA
Lead	Calendar quarter	NA	1.5 $\mu g/m^3$	Same as Primary
Lead	Rolling 3-month Average	NA	0.15 $\mu g/m^3$ [9]	
Vinyl Chloride	24 hour	0.01 ppm (26 $\mu g/m^3$)	NA	NA
Visibility-Reducing Particles	8 hour	See Note 7	NA	NA

Source: ARB 2016

Notes: $\mu g/m^3$ = micrograms per cubic meter; CAAQS = California Ambient Air Quality Standard; CO = carbon monoxide; H_2S = carbon monoxide; mg/m^3 = milligrams per cubic meter; NA = not applicable; NAAQS = national ambient air quality standards; NO_2 = nitrogen dioxide; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; ppb = parts per billion; ppm = parts per million; SO_2 = sulfur dioxide.

1 California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equalled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. In particular, measurements are excluded that ARB determines would occur less than once per year on the average.

2 National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates, and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.070 ppm (70 ppb) or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m3. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 $\mu g/m^3$. Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.

3 National standards are set by the U.S. EPA at levels determined to be protective of public health with an adequate margin of safety.

4 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. U.S. EPA will make recommendations on attainment designations by October 1, 2016, and issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.

5 The national 1-hour ozone standard was revoked by the U.S. EPA on June 15, 2005.

6 In June 2002, ARB established new annual standards for $PM_{2.5}$ and PM_{10}.

7 Statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

8 The 8-hour CA ozone standard was approved by the Air Resources Board on April 28, 2005 and became effective on May 17, 2006.

9 National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.

10 In December 2012, U.S. EPA strengthened the annual $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) from 15.0 to 12.0 micrograms per cubic meter ($\mu g/m^3$). In December 2014, U.S. EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ NAAQS. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

Act identifies two types of NAAQS. Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

The Clean Air Act requires each state with regions that have not attained the NAAQS to prepare a State Implementation Plan, detailing how these standards are to be met in each local area. The State Implementation Plan is a legal agreement between each state and the federal government to commit resources to improving air quality. It serves as the template for conducting regional and project-level air quality analyses. The State Implementation Plan is not a single document, but a compilation of new and previously submitted attainment plans, emissions reduction programs, air district rules, state regulations, and federal controls.

Nonroad Sources and Emission Standards

Before 1994, there were no standards to limit the amount of emissions from off-road equipment. In 1994, the U.S. 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. This rule was issued under the U.S. EPA's authority in Section 213 of the Clean Air Act. Since that time, increasingly more stringent Tier 2, Tier 3, and Tier 4 (interim and final) standards were adopted by the U.S. EPA, as well as by ARB. Tier 1 emission standards became effective in 1996. The more stringent Tier 2 and Tier 3 emission standards became effective between 2001 and 2008, with the effective date dependent on engine horsepower. Tier 4 interim standards became effective between 2008 and 2012, and Tier 4 final standards became effective in 2014 and 2015. 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 (U.S. EPA 2021e).

Regulations for On-road Vehicles and Engines

The U.S. EPA also has certain regulations for on-road vehicles and engines, including passenger vehicles, commercial trucks and buses, and motorcycles (U.S. EPA 2020). In 2001, the U.S. EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources. This rule was issued under the U.S. EPA's authority in Section 202 of the Clean Air Act. Passenger cars and trucks are regulated by the U.S. EPA under "light-duty" vehicle programs. The U.S. EPA regulates passenger vehicles to reduce the amount of harmful emissions. There are regulations for multiple aspects of passenger vehicles, including: standards for exhaust and evaporative emissions; control of hazardous air pollutants and air toxics; National Low Emission Vehicle Program; Compliance Assurance Program 2000; onboard refueling vapor recovery; and inspection and maintenance.

On March 31, 2022, the National Highway Traffic Safety Agency (NHTSA) finalized Corporate Average Fuel Economy Standards for model years 2024 through 2026. The final rule established standards that would require an industry-wide fleet average of approximately 49 miles per gallon for passenger cars and light trucks in model year 2026, by increasing fuel efficiency by 8 percent annually for model years 2024 and 2025, and 10 percent annually for model year 2026 (NHTSA 2022).

Safer Affordable Fuel-Efficient Vehicle Rule

In September 2019, the NHTSA and the U.S. EPA published the Safer Affordable Fuel Efficient (SAFE) Vehicle Rule Part One: One National Program. The SAFE Part One Rule revoked California's authority and vehicle waiver to set its own emissions standards and set zero emission vehicle mandates in California for passenger cars and light duty trucks and establish new standards, covering model years 2021 through 2026. In April 2020, the U.S. EPA and NHTSA issued the second part of the proposed SAFE Vehicles Rule, which addressed the stringency of federal vehicle emission standards and fuel economy regulations for passenger cars and light duty trucks by requiring a 1.5 percent increase in fuel economy each year from model years 2021 to 2026. This final rule was made effective on June 29, 2020. However, on December 21, 2021, the NHTSA finalized the Corporate Average Fuel Economy Preemption rulemaking to withdraw its portions of the SAFE Part One Rule (NHTSA 2021) and with this action, California's authority under the Clean Air Act to implement its own emission standards and zero emission vehicle sales mandate is restored. On March 31, 2022, the NHTSA finalized the Corporate Average Fuel Economy Standards for model years 2024 through 2026 which included higher stringency than the SAFE Vehicles Rule, Part Two.

STATE

ARB is the lead agency responsible for developing the State Implementation Plan in California. Local air districts and other agencies prepare air quality attainment plans or air quality management plans, and submit them to ARB for review, approval, and incorporation into the applicable State Implementation Plan.

California Clean Air Act

ARB is also responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act. The California Clean Air Act was adopted in 1988 and requires ARB to establish CAAQS, the current of which are shown in Table 4.2-3.

Other ARB responsibilities include, but are not limited to, overseeing local air district compliance with state and federal laws; approving local air quality plans; submitting State Implementation Plans to the U.S. EPA; monitoring air quality; determining and updating area designations and maps; and setting emission standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels. ARB maintains air quality monitoring stations throughout the state in conjunction with local air districts. Data collected at these stations are used by ARB to classify air basins as being in attainment or nonattainment with respect to each pollutant and to monitor progress in attaining air quality standards.

California Health and Safety Code Section 40914

The California Clean Air Act requires that each area exceeding the CAAQS for ozone, CO, SO_2, and NO_2 develop a plan aimed at achieving those standards. California Health and Safety Code Section 40914 requires air districts to design a plan that achieves an annual reduction in district-wide emissions of 5 percent or more, averaged every consecutive 3-year period. To satisfy this requirement, the local air districts have to develop and implement air pollution reduction measures, which are described in their air quality attainment plans, and outline strategies for achieving the CAAQS for any criteria pollutants for which the region is classified as nonattainment.

In-Use Off-Road Diesel Vehicle Regulation, On-Road Light-Duty Certification, and California Reformulated Gasoline Program

ARB has established emission standards for vehicles sold in California and for various types of equipment. California gasoline specifications are governed by both state and federal agencies. During the past decade, federal and state agencies have imposed numerous requirements on the production and sale of gasoline in California. ARB has also adopted control measures for diesel PM and more stringent emissions standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators).

Idling of Commercial Heavy-Duty Trucks

This Airborne Toxic Control Measure (ATCM) was adopted to control emissions from idling trucks. It prohibits idling for more than 5 minutes for all commercial trucks with a gross vehicle weight rating over 10,000 pounds. The ATCM contains an exception that allows trucks to idle while queuing or involved in operational activities.

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

In addition to criteria pollutants, both federal and state air quality regulations also focus on toxic air contaminants. Toxic air contaminants in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act (Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for ARB to designate substances as toxic air contaminants. Research, public participation, and scientific peer review must occur before ARB can designate a substance as a toxic air contaminant. The Air Toxics Hot Spots Information and Assessment Act requires that toxic air contaminant emissions from stationary sources be quantified and compiled into an inventory according to criteria and guidelines developed by ARB, and if directed to do so by the local air district, a health risk assessment must be prepared to determine the potential health impacts of such emissions.

ARB has adopted a Diesel Risk Reduction Plan, which recommends control measures to achieve a diesel PM reduction of 85 percent by 2020 from year 2000 levels. Recent regulations and programs include the low-sulfur diesel fuel requirement and more stringent emission standards for heavy-duty diesel trucks and off-road in-use diesel equipment. As emissions are reduced, it is expected that the risks associated with exposure to the emissions will also be reduced.

Transportation Refrigeration Unit Airborne Toxic Control Measure

ARB adopted the transportation refrigeration unit (TRU) airborne toxic control measure in 2004 and amended it in 2010, 2011, and 2022 to reduce DPM emissions and associated health risk from diesel-powered TRUs. The

2022 amendments include a lower PM emissions standard of no greater than 0.02 gram per brake horsepower-hour, which aligns with the U.S. EPA standard for Tier 4 final off-road PM emissions for 25 to 50 hp engines. This standard applies to all model year 2023 and newer trailer TRUs, domestic shipping container TRUs, railcar TRUs, and TRU generator set engines. Beginning in 2023, the 2022 airborne toxic control measure requires TRU owners to turn over at least 15 percent of their truck TRU fleet operating in California to zero-emission technology each year for seven years, along with several additional reporting requirements to demonstrate compliance. The 2022 airborne toxic control measure anticipates all truck TRUs operating in California to be zero-emission by the end of the year 2029.

Airborne Toxic Control Measures for Emergency Generators

ARB's Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines regulates the use of stationary emergency standby engines to provide electrical power during a power loss. ARB's ATCM for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower or Greater regulates the use of emergency backup generators, subject to the terms and conditions of the applicable air district permit.

Air Quality and Land Use Guidance

ARB developed the Air Quality and Land Use Handbook: A Community Health Perspective to provide guidance on land use compatibility with sources of toxic air contaminants (ARB 2005). These sources include freeways and high-traffic roads, commercial distribution centers, rail yards, refineries, dry cleaners, gasoline stations, and industrial facilities. The handbook is not a law or adopted policy, but offers advisory recommendations for the siting of sensitive receptors near uses associated with toxic air contaminants. The handbook acknowledges that land use agencies must balance health risks with other considerations, including housing and transportation needs, economic development priorities, and quality of life issues. The recommendations include avoidance of siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day.

In response to new research demonstrating benefits of compact, infill development along transportation corridors, ARB released a technical supplement, Technical Advisory: Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways (Technical Advisory; ARB 2017), to the 2005 Air Quality and Land Use Handbook. This Technical Advisory was developed to identify strategies that can be implemented to reduce exposure at specific developments or as recommendations for policy and planning documents. It is important to note that the Technical Advisory is not intended as guidance for a specific project and does not discuss the feasibility of mitigation measures for the purposes of compliance with the CEQA. Some of the strategies identified in the Technical Advisory include implementation of speed reduction mechanisms, including roundabouts, traffic signal management, and speed limit reductions; design that promotes air flow and pollutant dispersion along street corridors, such as solid barriers and vegetation for pollutant dispersion; and indoor high efficiency filtration (ARB 2017).

LOCAL

BAAQMD is the agency responsible for protecting public health and welfare in the San Francisco Bay Area Air Basin through the administration of federal and state air quality laws and policies. Included in BAAQMD's tasks are monitoring of air pollution, preparation of air quality plans, and promulgation of rules and regulations.

BAAQMD 2017 Bay Area Clean Air Plan

BAAQMD adopted the Bay Area Clean Air Plan: Spare the Air, Cool the Climate (Bay Area Clean Air Plan) on April 19, 2017, to provide a regional strategy to improve Bay Area air quality and meet public health goals (BAAQMD 2017b). The control strategy described in the Bay Area Clean Air Plan includes a wide range of control measures designed to reduce emissions and decrease ambient concentrations of harmful pollutants in the region, safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, and reduce greenhouse gas (GHG) emissions to protect the climate. To protect public health, the Bay Area Clean Air Plan describes how BAAQMD will continue progress toward attaining all state and federal air quality standards in the region and eliminating health risk disparities from exposure to air pollution among Bay Area communities.

The Bay Area Clean Air Plan addresses four categories of pollutants: (1) ground-level ozone and its key precursors, ROGs and NO_X; (2) PM, primarily $PM_{2.5}$, and precursors to secondary $PM_{2.5}$; (3) air toxics; and (4) GHGs. The control measures are categorized based upon the economic sector framework including stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, and water measures (BAAQMD 2017b).

BAAQMD Particulate Matter Plan

To fulfill federal air quality planning requirements, BAAQMD adopted a $PM_{2.5}$ emissions inventory for year 2010 at a public hearing on November 7, 2012. The Bay Area 2017 Clean Air Plan also included several measures for reducing PM emissions from stationary sources and wood burning. On January 9, 2013, the U.S. EPA issued a final rule determining that the San Francisco Bay Area has attained the 24-hour $PM_{2.5}$ NAAQS, suspending federal State Implementation Plan planning requirements for the SFBAAB. Despite this U.S. EPA action, the SFBAAB will continue to be designated as nonattainment for the national 24-hour $PM_{2.5}$ standard until such time as BAAQMD submits a redesignation request and a maintenance plan to the U.S. EPA, and the U.S. EPA approves the proposed redesignation.

BAAQMD Regulation 6, Rule 6

BAAQMD Regulation 6, Rule 6 (adopted August 1, 2018) limits the quantity of particulate matter in the atmosphere through control of trackout of solid materials onto paved public roads outside the boundaries of sites, including but not limited to large construction sites and landfills.

BAAQMD Regulation 8, Rule 3

BAAQMD Regulation 8, Rule 3 (adopted March 1, 1978 and amended 2009) limits the quantity of volatile organic compounds in architectural coatings supplied, sold, offered for sale, applied, or manufactured for use within the BAAQMD.

BAAQMD Regulation 11, Rule 2

BAAQMD Regulation 11, Rule 2 (adopted December 15, 1976 and amended 1998) regulates hazardous pollutants from asbestos demolition, renovation, and manufacturing activities. The purpose of the rule is to control emissions of asbestos to the atmosphere during demolition, renovation, milling and manufacturing and establish appropriate waste disposal procedures.

SOLANO COUNTY GENERAL PLAN

The Solano County General Plan (Solano County 2008) included the following goals, policies, and implementation programs related to air quality.

- **Goal HS.G-2:** Improve air quality in Solano County, and by doing so, contribute to improved air quality in the region.

- **Goal HS.G-4:** Protect important agricultural, commercial, and industrial uses in Solano County from encroachment by land uses sensitive to noise and air quality impacts.

  - **Policy HS.P-43**: Support land use, transportation management, infrastructure and environmental planning programs that reduce vehicle emissions and improve air quality.

  - **Policy HS.P-44:** Minimize health impacts from sources of toxic air contaminants, both stationary (e.g., refineries, manufacturing plants) as well as mobile sources (e.g., freeways, rail yards, commercial trucking operations).

  - **Policy HS.P-45:** Promote consistency and cooperation in air quality planning efforts.

    - **Implementation Program HS.I-54:** Require that when development proposals introduce new significant sources of toxic air pollutants, they prepare a health risk assessment as required under the Air Toxics "Hot Spots" Act (AB 2588, 1987) and, based on the results of the assessment, establish appropriate land use buffer zones around those areas posing substantial health risks.

  - **Policy HS.P-38:** Integrate public health concerns into land use planning and decision making.

    - **Implementation Program HS.I-42:** Promote the use of health building materials such as low toxicity paint and nontoxic carpeting.

- **Goal TC.G-3:** Encourage land use patterns that maximize access and mobility options for commuting and other types of trips, and minimize traffic congestion, vehicle miles traveled (VMT), and greenhouse gas emissions.

  - **Policy TC.P-3:** Establish land use patterns that facilitate shorter travel distances and non-auto modes of travel, and limit the extent of additional transportation improvements and maintenance that may be needed with a more dispersed land use pattern.

  - **Policy TC.P-6:** Participate in transportation programs that promote technical solutions resulting in more efficient use of energy, reduced greenhouse gas emissions and noise levels, and improved air quality.

CITY OF SUISUN CITY GENERAL PLAN

Suisun City adopted the 2035 General Plan in 2015 (City of Suisun City 2015), which includes the following goal and policies related to air quality contained in Volume 1 (Policy Document).

- **Goal T-3:** Manage travel demand in order to reduce up-front and ongoing cost of transportation infrastructure, enhance local mobility, improve air quality, and improve the local quality of life.

  - **Policy T-3.1:** The City will collaborate with other local, regional, and state agencies, as well as employers to encourage carpooling, carpool parking, flexible work schedules, ridesharing, and other strategies to reduce commute period travel demand.

  - **Policy T-3.6:** New developments that would accommodate 100 full- or part-time employees or more are required to incorporate feasible travel demand management strategies, such as contributions to transit/bike/pedestrian improvements; flextime and telecommuting; a carpool program; parking management, cash out, and pricing; or other measures, as appropriate, to reduce travel demand.

- **Goal PHS-3:** Minimize Exposure to Air Pollutants

  - **Policy PHS-3.1:** The City will ensure that new industrial, manufacturing, and processing facilities that may produce toxic or hazardous air pollutants are located at an adequate distance from residential areas and other sensitive receptors, considering weather patterns, the quantity and toxicity of pollutants emitted, and other relevant parameters.

  - **Policy PHS-3.2:** The City will communicate with the Bay Area Air Quality Management District to identify sources of toxic air contaminants and determine the need for health risk assessments prior to approval of new developments.

  - **Policy PHS-3.3:** The City will require projects that could result in significant air pollutant emissions impacts to reduce operational emissions from vehicles, heating and cooling, lighting, equipment use, and other proposed new sources.

  - **Policy PHS-3.4:** The City will require implementation of applicable emission control measures recommended by the Bay Area Air Quality Management District for construction, grading, excavation, and demolition.

    – **Program PHS-3.1: Health Risk Analyses.** When development involving sensitive receptors, such as residential development, is proposed in areas within 134 feet of SR 12 or when uses are proposed that may produce hazardous air contaminants, the City will require screening level analysis, and if necessary, more detailed health risk analysis to analyze and mitigate potential impacts. For projects proposing sensitive uses within 134 feet of SR 12, the City will require either ventilation that demonstrates the ability to remove more than 80% of ambient $PM_{2.5}$ prepared by a licensed design professional or site-specific analysis to determine whether health risks would exceed the applicable BAAQMD-recommended threshold and alternative mitigation demonstrated to achieve the BAAQMD threshold. Site-specific analysis may include dispersion modeling, a health risk assessment, or screening analysis. For proposed sources of toxic air contaminants, the City will consult with the BAAQMD on analytical methods, mitigation strategies, and significance criteria to use within the context of California Environmental Quality Act documents, with the objective of avoiding or mitigating significant impacts.

- **Program PHS-3.2: Construction Mitigation.** The City will require new developments to incorporate applicable construction mitigation measures maintained by the BAAQMD to reduce potentially significant impacts. Basic Control Measures are designed to minimize fugitive PM dust and exhaust emissions from construction activities. Additional Control Measures may be required when impacts would be significant after application of Basic Control Measures.

- **Program PHS-3.3: Construction Mitigation for Health Risk.** Construction equipment over 50 brake horsepower (bhp) used in locations within 300 feet of an existing sensitive receptor shall meet Tier 4 engine emission standards. Alternatively, a project applicant may prepare a site-specific estimate of diesel PM emissions associated with total construction activities and evaluate for health risk impact on existing sensitive receptors in order to demonstrate that applicable BAAQMD-recommended thresholds for toxic air contaminants would not be exceeded or that applicable thresholds would not be exceeded with the application of alternative mitigation techniques approved by BAAQMD.

4.2.3 Environmental Impacts and Mitigation Measures

Methodology

Potential air quality impacts associated with short-term construction and long-term operations were evaluated in accordance with BAAQMD-recommended and ARB-approved methodologies and data sources. Construction and operational emissions of criteria air pollutants were compared with the applicable thresholds of significance (described below) to determine potential impacts. Please see Appendix B of the EIR for model details, assumptions, inputs, and outputs.

Construction-related emissions associated with both on-site and off-site construction were modeled using the California Emissions Estimator Model (CalEEMod) based on Project-specific inputs.[1] Project construction is assumed to occur over approximately 2.5 years, with 3 phases, starting no sooner than 2024; actual buildout is subject to market conditions. The construction of wetlands within the Managed Space Area and off-site improvements were modeled to be constructed in their entirety in the initial year of construction. The duration of each construction phase was scaled proportionally from the CalEEMod defaults to align with the total anticipated construction duration based on similar projects. Import of fill material was included based upon project-specific grading study; there is no anticipated material export, as material would be used onsite. Modeled construction-related emissions are compared to the applicable thresholds (described below) to determine significance.

Operations would result in increased vehicle travel, including use of TRUs on trucks visiting the site, once the buildings are occupied; energy use in the form of electricity and natural gas; new area sources of emissions (i.e., landscape maintenance equipment, periodic architectural coating, and consumer products); and stationary sources in the form of backup diesel generators that would provide emergency power and emergency fire pumps. To provide a conservative estimate of building operational requirements and TRU use, the emissions modeling assumed a 100 percent cold storage scenario (i.e., refrigerated warehouse land use in CalEEMod), which, due to

[1] Because CalEEMod emissions outputs were did not accurately account for exhaust emissions from construction worker trips (such emissions were zero in the CalEEMod output files), these emissions were calculated separately using the number of construction worker trips per day and distance per trip provided in the CalEEMod output file for each subphase of construction, multiplied by the weighted average PM10 and PM2.5 exhaust emissions factors, respectively, from ARB's EMFAC 2021 emissions inventory for LDA, LDT1, and LDT2 vehicle categories for the earliest possible year of construction (2024).

Suisun City's location is very unlikely. As a result of this assumption, the EIR may be overestimating actual operational emissions, both onsite and related to in-transit TRU use for the transport of goods.

Operational area- and energy-source air pollutant emissions were modeled in CalEEMod based on the Project-specific acreages and building square footage. Onsite material handling equipment may also be required for some or all of the buildings. Based on industry standards, yard trucks used internal to the buildings would be all electric. However, outside forklifts may also be required and three diesel-powered forklifts per building, with the exception of Building B/C, which would have 12 forklifts due to the larger building size. These forklift emissions were modeled in CalEEMod using CalEEMod defaults. Diesel-powered backup generators and fire water pumps for each building (a total of 6 each) were modeled in CalEEMod, assuming up to 4 hours per day and 100 hours per year of use per unit.

Operational mobile source emissions were calculated using emissions factors from ARB's EMFAC 2021 for travel to and from the site be onsite workers and visiting trucks, onsite travel from the Project Site driveway entrance locations to the respective building parking and truck bays, and on-site idling of visiting trucks. Onsite worker trip rate was based upon the fiscal impact analysis and related worker estimate for the proposed Project, while onsite worker travel distance was based upon the traffic analysis conducted for the proposed Project. The visiting truck trip rate was based on the ITE trip rate of 1.181 trips per day applied to the traffic study for the proposed Project, and 32.5 percent of such trips being visiting trucks, consistent with the traffic analysis for the proposed Project. Visiting truck travel distance was based on the average travel distance between the Project site and surrounding major ports, which came to approximately 52 miles one-way. This is considered a conservative estimate, a large portion of the truck trips would be moving goods from the Project Site to surrounding consumer locations, and not likely travelling as far as those trucks bring goods to the Project Site. Resuspended roadway dust and tire and brake wear from on-road vehicle travel were also estimated using methodology consistent with U.S. EPA AP-42 methodology. Every visiting truck was assumed to require a TRU, in alignment with up to 100 percent of the land use serving cold storage use. Emissions associated with TRU use for trucks were estimated using emissions factors from OFFROAD 2021 for travel to and from the Project Site and up to 4 hours of on-site idling for operations.

A health risk assessment (HRA) was conducted to provide quantitative estimates of $PM_{2.5}$ concentration exposure and health risks from exposures to TACs. Impacts were evaluated for receptors within 1,000 feet of the Project Site. The HRA was conducted consistent with BAAQMD (BAAQMD 2023) and OEHHA (OEHHA 2015) guidance. Consistent with BAAQMD recommendations for HRAs, the U.S. EPA's regulatory dispersion model AERMOD was used to estimate pollutant concentrations at receptors. For cancer and non-cancer chronic and acute risks, pollutant concentrations files from AERMOD were supplied as inputs to ARB's Hot Spots Analysis and Reporting Program (HARP2), along with corresponding Project-related TAC emissions (emissions estimating methodology summarized above), to estimate the health risk impacts associated with the construction and operation phases of the proposed Project.

For construction, the HRA modeling assumed a 2.6-year construction duration.[2] Construction activity was modeled to occur five days per week for 10 hours per day (7 a.m. to 5 p.m.).

2 Modeled duration for health risk is slightly longer than then the actual 29-month schedule. This is due to the available exposure durations a user can select in HARP. Therefore, for Phase 1, a modeled duration of 0.8-year (compared 0.75-year actual), for Phases 2 and 3 a modeled duration of 0.9-year (compared to 0.83-year actual).

Both off-road and on-road sources of TACs associated with the proposed Project's construction and operation phases were included in the HRA. For construction, off-road sources of emissions were modeled as adjacent volume and area (fugitive dust) sources spanning the footprint of the proposed Project Site. On-road emissions were modeled as adjacent volume sources along construction vehicle routes. The HRA considered two operational phases of the proposed Project. The first operational phase ("interim operations") includes the occupancy and operation of buildings A and B/C. The second operations phase ("full buildout operations") occurs after all construction is completed with occupancy in all 6 buildings (A through G). The HRA included emissions from emergency generators (one for each building for a total of six for the full buildout operations), fire water pumps (one for each building for a total of six for the full buildout operations), on site forklifts (a total of 27 for the full buildout operations), idling of TRUs, and on-road vehicles, both traveling to and from the site and operating on site. For the purposes of the HRA, the portion of total on-road vehicle (worker and visiting truck) and TRU emissions that would occur within 1,000 feet of the proposed Project Site and proposed traffic routes were estimated based on the longest trip distance within 1,000 feet of the Project Site for the respective vehicle categories. Emergency generators, fire water pumps, and idling TRUs were modeled as point sources, and on-road vehicles were represented by adjacent volume sources along traffic routes and onsite ramps. Forklifts operating onsite were modeled as volume sources located at the bay doors for each of the proposed project buildings. Model input parameters are consistent with recently released BAAQMD CEQA guidance (BAAQMD 2023). Additional details on the model input parameters, source locations, and receptors are provided in Appendix B of this EIR.

After conducting dispersion modeling, annual averaged concentrations of $PM_{2.5}$ are presented where the proposed Project would have the greatest impact on receptors. Annual averaged $PM_{2.5}$ concentrations impacts were assessed for each phase of construction (3 phases), interim and full buildout operations. In addition, TAC concentrations were evaluated to determine the potential cancer risk from the proposed Project. Three exposure scenarios were evaluated to assess long-term cancer risk for residential, worker, student, and childcare exposures. These included:

- Residential Exposure Scenario 1: This scenario evaluates the cancer risk that construction activities and full buildout operations would pose to residential receptors over a 30.6-year period. This scenario includes an initial 1.7-year period of construction activities followed by a 0.9-year period of Phase 3 construction and interim operation activity. The remaining 28 years include emissions from full buildout operation activity.

- Residential Exposure Scenario 2: This scenario evaluates the cancer risk that the full buildout operational-only TAC emissions of the proposed project would pose to residential receptors over a 30-year period.

- Worker Exposure Scenario 1: This scenario evaluates the cancer risk that construction activities and full buildout operations would pose to residential receptors over a 25.6-year period. This scenario includes an initial 1.7-year period of construction activities followed by a 0.9-year period of Phase 3 construction and interim operation activity. The remaining 23 years include emissions from full buildout operation activity.

- Worker Exposure Scenario 2: This scenario evaluates the cancer risk that the full buildout operational-only TAC emissions of the proposed project would pose to residential receptors over a 25-year period.

- Student Exposure Scenario 1: This scenario evaluates the cancer risk that construction activities and full buildout operations would pose to residential receptors over a 13.6-year period. This scenario includes an initial 1.7-year period of construction activities followed by a 0.9-year period of Phase 3 construction and interim operation activity. The remaining 12 years include emissions from full buildout operation activity.

- Student Exposure Scenario 2: This scenario evaluates the cancer risk that the full buildout operational-only TAC emissions of the proposed project would pose to residential receptors over a 13-year period.
- Child Exposure Scenario 1: This scenario evaluates the cancer risk that construction activities and full buildout operations would pose to residential receptors over a 5.6-year period. This scenario includes an initial 1.7-year period of construction activities followed by a 0.9-year period of Phase 3 construction and interim operation activity. The remaining 3 years include emissions from full buildout operation activity.
- Child Exposure Scenario 2: This scenario evaluates the cancer risk that the full buildout operational-only TAC emissions of the proposed project or expanded streetscape variant would pose to residential receptors over a 5-year period.

The purpose of analyzing multiple health risk exposure scenarios is to ensure analysis and disclosure of the most impactful scenario. The approximately 30-year residential exposure, 25-year off-site worker exposure scenarios, 13-year student, and 5-year childcare are consistent with BAAQMD 2022 CEQA Air Quality Guidelines (2023). Detailed methodology pertaining to the HRA and dispersion modeling is provided in Appendix B.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, the proposed Project would have a significant impact related to air quality resources if it would:

- conflict with or obstruct implementation of the applicable air quality plan;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard;
- expose sensitive receptors to substantial pollutant concentrations; or
- result in other emissions (such as those leading to odors) adversely affecting a substantial number or people.

Where available, the significance thresholds established by the applicable air quality management or air pollution control district may be relied upon to make the significance determinations. While the final determination of whether or not a project is significant is within the purview of the lead agency pursuant to CEQA Guidelines Section 15064(b), BAAQMD recommends that its quantitative and qualitative air pollution thresholds be used to determine the significance of project-related emissions (BAAQMD 2023). The City, in its discretion and based on scientific evidence supporting the use thereof, has determined it is appropriate to use BAAQMD's recommended thresholds for purposes of identifying the Project's potential air quality impacts.

Consistency with the Applicable Air Quality Plan

The applicable air quality plan is BAAQMD's 2017 Bay Area Clean Air Plan (BAAQMD 2017b). The Project would be consistent with the Bay Area Clean Air Plan if it would support the plan's goals, include applicable control measures from the Bay Area Clean Air Plan, and would not disrupt or hinder implementation of any control measures from the plan. Consistency with this plan is the basis for determining whether the proposed Project would conflict with or obstruct implementation of an applicable air quality plan.

Criteria Air Pollutants

BAAQMD has developed recommended thresholds of significance, as presented in the BAAQMD CEQA Air Quality Guidelines, and supported by Appendix D of the BAAQMD CEQA Air Quality Guidelines, "Threshold of Significance Justification," by which a lead agency may evaluate the potential air quality impacts of a project. The BAAQMD's project-level thresholds are summarized in Table 4.2-4. According to BAAQMD, projects with emissions less than the thresholds presented would be expected to have a less-than-significant impact on air quality of the SFBAAB because exceedance of these thresholds may otherwise contribute to exceedances of CAAQS and NAAQS.

Table 4.2-4. BAAQMD Regional (Mass Emissions) Criteria Air Pollutant Significance Thresholds

Pollutant	Construction Phase Average Daily Emissions (pounds per day)	Operational Average Daily Emissions (pounds per day)	Operational Maximum Annual Emissions (tons per 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	BMPs	Included with Above PM Thresholds	Included with Above PM Thresholds

Note:

BMPs = Best Management Practices; NO_X = nitrogen oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ROG = reactive organic gases.

Source: BAAQMD 2023, Table 3-3.

Regional Health Risks Associated with Criteria Air Pollutant and Precursor Emissions

The California Supreme Court provided guidance on analysis of air quality impacts on human health in *Sierra Club v. County of Fresno* (2108) 6 Cal. 5th 502. The case reviewed the long-term, regional air quality analysis contained in the EIR for the proposed Friant Ranch development. The Friant Ranch project is a 942-acre master-plan development in unincorporated Fresno County within the San Joaquin Valley Air Basin, an air basin currently in nonattainment for the ozone and $PM_{2.5}$ NAAQS and CAAQS. The Court found that the air quality analysis was inadequate because it failed to provide enough detail "for the public to translate the bare [criteria pollutant emissions] numbers provided into adverse health impacts or to understand why such a translation is not possible at this time." The Court's decision clarifies that the agencies authoring environmental documents must make reasonable efforts to connect a project's air quality impacts to specific health effects or explain why it is not technically feasible to perform such an analysis.

All criteria pollutants are associated with some form of health risk. Criteria pollutants can be classified as either regional or localized pollutants. Regional pollutants can be transported over long distances and affect ambient air quality far from the emissions source. Localized pollutants affect ambient air quality near the emissions source. Ozone is considered a regional criteria pollutant, whereas CO, NO_2, SO_2, and lead (Pb) are localized pollutants. PM can be both a local and a regional pollutant, depending on its composition. The primary criteria pollutants of concern generated by the proposed Project are ozone precursors (ROG and NOX) and PM (including Diesel PM).

If a project were to exceed the emissions in Table 4.2-4, emissions could cumulatively contribute to the nonattainment status of the region for ozone and PM and contribute increased health effects associated with these air quality conditions.

The BAAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of emissions in the SFBAAB, and at present, does not have a methodology that would correlate the expected air quality emissions of a project to the likely specific health consequences of such emissions. Moreover, there are also no tools currently available to correlate the expected air quality emissions of projects to the likely specific health consequences of the increased emissions. Reducing emissions would contribute to reducing possible health effects related to criteria air pollutants. However, for projects that exceed the emissions thresholds shown in Table 4.2-4, 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 region would be affected by the health effects cited above.

The analysis of health impacts due to individual projects resulting from emissions of criteria air pollutants has long been focused on a regional or air basin-wide level, typically evaluated through regional air quality planning efforts, such as under Air Quality Attainment Plans and the SIP. This is because the complex reactions and conditions that lead to the formation of ozone and PM in the atmosphere can result in the transport of pollutants over wide aeras and result in health impacts from criteria air pollutants being experienced on a regional scale such as the SFBAAB. The potential for criteria air pollutant emissions to be transported over wide areas means that the emissions of ozone precursor pollutants, such as ROG and NO_X, from a project site such as that of the proposed Project does not necessarily translate directly into a specific concentration of ozone or a specific health risk in that same area. To achieve the health-based standards established by ARB and the EPA, the air districts prepare air quality management plans that detail regional programs to attain the CAAQS and NAAQS. In addition, air quality attainment plans take into account anticipated growth and ongoing development within the region, and the thresholds of significance established by BAAQMD account for such growth while serving to identify projects that would generate a level of emissions that could contribute to exceedances of CAAQS and NAAQS. If a project within the BAAQMD exceeds the regional significance thresholds, the proposed project could contribute to an increase in health effects in the basin until the attainment standards are met in the SFBAAB.

TAC Health Risks

The thresholds of significance used to evaluate health risks from new sources of TACs associated with construction and operation of the proposed Project are based on the potential for the proposed Project to substantially affect the geography or severity of the air pollutant exposure zone at sensitive receptor and off-site worker locations. If a sensitive receptor or worker location meets the air pollutant exposure zone criteria with the proposed Project but would not meet the air pollutant exposure zone criteria without it, a substantial health risk contribution threshold is defined as an annual average $PM_{2.5}$ concentration at or above 0.3 µg/m3 or an excess cancer risk at or greater than 10.0 per 1 million. The 0.3 $\mu g/m^3$ annual average $PM_{2.5}$ concentration and the excess cancer risk of 10.0 per 1 million persons exposed are the Project-level health risk levels identified by BAAQMD; they are the levels below which the BAAQMD considers new sources not to make a considerable contribution to cumulative health risks. Projects that result in a cancer risk or annual average $PM_{2.5}$ concentration below these levels at sensitive or worker receptors would not expose sensitive or worker receptors to substantial pollutant concentrations. The chronic hazard index (HI) resulting from the proposed Project is also disclosed and compared with the BAAQMD's chronic HI threshold of 1.0.

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 cumulative 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 project, exceeds the following (BAAQMD 2023, Appendix B):

- Non-compliance with a qualified Community Risk Reduction Plan; or
- An 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; or
- 0.8 $\mu g/m^3$ annual average $PM_{2.5}$.

Carbon Monoxide

CO is a colorless and odorless gas that, in the urban environment, is primarily produced by the incomplete burning of carbon in fuels, primarily from mobile (transportation) sources. Relatively high concentrations may be found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Vehicle congestion, particularly at major signalized intersections, can generate elevated CO levels, called "hot spots," which can be hazardous to human receptors proximate to the area of congestion.

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, introduction of cleaner fuels, and implementation of control technology, the SFBAAB is in attainment of the CAAQS and NAAQS for CO, and CO concentrations in the SFBAAB have steadily declined over time. Because CO concentrations have improved, BAAQMD does not require a CO hotspot analysis and the proposed project would be considered to result in a less-than-significant impact related to local CO concentrations if the following criteria are met (BAAQMD 2023, Chapter 4):

- 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.
- The Project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The Project 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).

Odors

BAAQMD does not have recommended thresholds related to odors associated with construction-related emissions. To address long-term operational emissions leading to odors, BAAQMD recommends a qualitative approach, noting that a project that would result in the siting of a new odor source should consider the BAAQMD CEQA Air Quality Guidelines' odor screening distances also provided in Table 4.2-5 for reference, and the complaint history of the odor source(s). The land uses for which BAAQMD has developed odor screening distances are those that typically 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. Odors are also regulated under BAAQMD's Regulation 7, Odorous Substances, and Regulation 1, Rule 1-301, Public Nuisance. Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Regulation 1, Rule 1-301 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's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance.

Based on the BAAQMD-recommended thresholds, projects that would site a new odor source farther than the applicable screening distance shown in Table 4.2-5 from an existing receptor, would not likely result in a significant odor impact. Alternatively, a type of odor source with five (5) or more confirmed complaints in the new source are per year, averaged over three years, is considered to have a significant impact on receptors within the screening distance shown in Table 4.2-5.

Table 4.2-5. BAAQMD Odor Screening Distances

Land Use / Type of Operation	Project Screening Distance (miles)
Wastewater Treatment Plant	2
Wastewater Pumping Facilities	1
Sanitary Landfill	2
Transfer Station	1
Composting Facility	1
Petroleum Refinery	2
Asphalt Batch Plant	2
Chemical Manufacturing	2
Fiberglass Manufacturing	1
Painting/Coating Operations	1
Rendering Plant	2
Coffee Roaster	1
Food Processing Facility	1
Confined Animal Facility/Feed Lot/Dairy	1
Green Waste and Recycling Operations	1
Metal Smelting Plants	2

Source: BAAQMD 2023.

Note: BAAQMD = Bay Area Air Quality Management District

In summary, pursuant to the BAAQMD recommended thresholds for evaluating project-related air quality impacts, implementation of the proposed Project would be considered significant if it would (BAAQMD 2023b):

- conflict with the BAAQMD's 2017 Clean Air Plan;
- exceed the BAAQMD screening level criteria or generate construction-related criteria air pollutant or precursor emissions that exceed the BAAQMD-recommended thresholds of average daily emissions of 54 pounds per day of ROG, 54 pounds per day of NO_X, 82 pounds per day of exhaust PM_{10}, 54 pounds per day of exhaust $PM_{2.5}$, or result in a violation of the CO CAAQS;
- exceed the BAAQMD screening level criteria or generate long-term regional criteria air pollutant or precursor emissions that exceed the BAAQMD-recommended thresholds of average daily emissions of 54 pounds per day of ROG, 54 pounds per day of NO_X, 82 pounds per day of exhaust PM_{10}, 54 pounds per day of exhaust $PM_{2.5}$; maximum annual emissions of 10 tons per year of ROG, 10 tons per year of NO_X, 15 tons per year of PM_{10}, or 10 tons per year of $PM_{2.5}$; or result in a violation of the CO CAAQS;
- expose the maximally exposed individual to TAC emissions that result in an incremental increase in cancer risk of more than 10 in one million, a Hazard Index equal to or greater than 1.0, and/or a concentration of $PM_{2.5}$ emissions greater than or equal to 0.3 micrograms per meter cubed; or
- include an odor source with five or more confirmed complaints per year overaged over three years.

In developing thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

IMPACT ANALYSIS

Impact 4.2-1. Conflict with or Obstruct Implementation of the Applicable Air Quality Plan. *This impact would be potentially significant.*

A project that would conflict with or obstruct the goals would be considered inconsistent with the 2017 Bay Area Clean Air 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 BAAQMD 2017 Bay Area Clean Air Plan. On an individual project basis, consistency with BAAQMD quantitative thresholds is interpreted as demonstrating support for the 2017 Clean Air Plan goals. This impact would be **significant**.

The BAAQMD 2017 Bay Area Clean Air Plan is the applicable air quality plan that comprehensively addresses control strategies for the reduction of ozone (through the reduction of ozone precursors), $PM_{2.5}$, TACs, and GHG emissions. The two primary goals of the 2017 Bay Area Clean Air Plan are to protect public health and protect the climate. Any project that would conflict with or obstruct these goals would be considered inconsistent with the 2017 Bay Area Clean Air 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 BAAQMD 2017 Bay Area Clean Air Plan. On an individual project basis, consistency with BAAQMD quantitative thresholds is interpreted as demonstrating support for the 2017 Clean Air Plan goals.

The 2017 Clean Air Plan control strategy encompasses 85 individual control measures that describe specific actions to reduce emissions under the following sectors: stationary (industrial) sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-GHG pollutants. Many of these measures are industry-specific and would not be applicable to the proposed land uses or target larger-scale planning efforts such as transit funding and utility energy programs, and would not directly apply to the proposed Project. The control measures identified in the 2017 Bay Area Clean Air Plan that are most applicable to the proposed Project are associated with transportation sector, building sector, energy sector, natural and working lands sector, waste sector, and water sector control measures.

Project construction activities would involve the temporary use of off-road equipment, haul trucks, and worker commute trips. Consistent with Stationary Source Control Measures SS36 (PM from Trackout) and SS38 (Fugitive Dust) of the 2017 Clean Air Plan, the Project would implement BAAQMD's Basic Construction Mitigation Measures, which would reduce fugitive dust emissions during construction. Project construction activities would also be consistent with 2017 Clean Air Plan Measure WA4, Recycling and Waste Reduction, which calls for the recycling of construction materials. A minimum of 75 percent of the solid waste generated would be diverted from landfill disposal as required by the California Green Building Standards Code.

Projects that are consistent with the assumptions used in development of the air quality plan and relevant emissions reduction measures are considered to not conflict with or obstruct the attainment of the air quality plan. Assumptions for emission estimates are based on population, employment, and land use projections taken from local and regional planning documents. As the proposed Project involves development of warehousing and logistics uses, it would not result in the increase of population or housing that was not foreseen in City or regional planning efforts. Although the proposed Project would require a General Plan amendment to adjust on-site General Plan land use designations, the area has been designated for non-residential development in the current and previous Suisun City General Plans. The Project Site is in a Priority Production Area, which identify clusters of industrial business and are prioritized for economic development investments and protection from competing land uses; these areas are already well-served by the region's goods movement network. Priority Production Areas are approved by the Associated of Bay Area Governments (ABAG) and are a key piece of the Bay Area's regional growth framework for coordinated housing, transportation, and other types of land use planning. Therefore, it would not have the potential to substantially affect housing, employment, and population projections within the region, which is the basis of the 2017 Bay Area Clean Air Plan projections.

Furthermore, operation of the Project would also support the goals of the 2017 Clean Air Plan. The Clean Air Plan includes stationary source control measures, most of which are not applicable to the proposed project as they target major stationary sources associated with facilities such as heavy industrial facilities and oil and gas production and refineries. However, the proposed Project would include stationary sources such as emergency generators and fire water pumps. 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. Building Control Measures, BL1: Green Buildings and BL2: Decarbonize Buildings, which prioritize energy efficiency, renewable energy sources, and replacement of fossil fuel-based space and water heating systems (e.g., natural gas) in residential and commercial buildings. BL1, "Green Buildings," calls for identifying barriers to effective local implementation of the CALGreen (Title 24) statewide building energy code, and developing solutions to improve implementation and enforcement. The proposed Project would be subject to the provisions of the City of Suisun City Building Code, and therefore would comply with Title 24. Energy control measure EN2, "Decarbonize Buildings," plans to increase renewable energy production and consumption in bay area buildings. Compliance with Title 24 would also result in the

Project's implementation of energy efficient design features and incorporation of electric infrastructure to support current and future adoption of electric vehicles. 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 establishment of wetlands and bring additional funding and management oversight to 393 acres of the Suisun Marsh and adjacent uplands as the proposed Managed Open Space. 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. The Water Control Measures, WR2: Support Water Conservation, encourages reducing water consumption. The proposed Project would include water-efficient indoor fixtures consistent with the requirements of CALGreen and water-efficient and drought-tolerant landscaping outdoors.

The proposed Project does not contain features that would conflict with or obstruct implementation of any 2017 Clean Air Plan control measures. Therefore, the proposed Project would conform to this determination of consistency for the 2017 Clean Air Plan.

However, as detailed under Impact 4.2-2 below, the proposed Project would exceed the BAAQMD-recommended threshold of significance for construction-related average daily NOx emissions and for operational annual and maximum daily ROG and NO_X emissions. These thresholds are established to identify projects that have the potential to generate a level of emissions that would be cumulatively considerable, potentially resulting in significant adverse air quality impacts to the region's existing air quality conditions. Furthermore, the BAAQMD does not have quantitative mass emissions thresholds for fugitive PM_{10} and $PM_{2.5}$ fugitive dust. Instead, the BAAQMD recommends that all projects, regardless of the level of average daily emissions, implement applicable best management practices (BMPs), including those listed as Basic Best Management Practices for Construction-Related Fugitive Dust Emissions in the BAAQMD CEQA Air Quality Guidelines (BAAQMD 2023) in order to minimize fugitive dust in alignment with the regional plans for PM reduction. Fugitive dust emissions are considered to be significant unless the project implements the BAAQMD's BMPs for fugitive dust control during construction. Because the Project would exceed the construction threshold of significance for NO_X, operational thresholds of significance for ROG and NO_X, and without implementation of the BMPs for dust management, the proposed Project could result in a level of emissions that would result in a cumulatively considerable contribution to the existing air quality conditions of the SFBAAB. Therefore, the proposed Project could conflict with or obstruct implementation of the 2017 Bay Area Clean Air Plan and this impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure 4.2-1a: Implement BAAQMD Basic Best Management Practices for Construction-Related Fugitive Dust Emissions

The Project applicant shall require all construction contractors to implement the basic construction best management practices recommended by BAAQMD for construction-related fugitive dust. Emission reduction measures shall include, at a minimum, the following measures. Additional measures may be identified by BAAQMD or contractor as appropriate. The Project applicant shall demonstrate to the City the inclusion of these measures through applicable provisions of construction contracts requiring the use of the BAAQMD basic construction best management practices for fugitive dust prior to the issuance of a grading permit.

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt trackout 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 mph.
- 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.
- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.
- Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure 4.2-1b: Implement Construction Exhaust Emissions Control Measures

The Project applicant shall require that the construction contractor(s) comply with the following heavy-duty construction equipment exhaust emissions control measures. Prior to the issuance of grading permits for the Project, the Project applicant shall include all requirements in applicable bid documents, purchase orders, and contracts, with successful contractors demonstrating the ability to supply the compliant on- or off-road construction equipment for use prior to any ground-disturbing and construction activities. The Project applicant shall demonstrate to the City the inclusion of these measures through applicable provisions of construction contracts prior to the issuance of a grading permit.

- Use Tier 4 final certified engines for all on-site, diesel-powered construction equipment rated at equal to or greater than 50 horsepower.
- Prohibit the idling of construction equipment and trucks, if diesel-fueled, for more than two minutes. The Project applicant or construction contractor(s) shall provide appropriate signage onsite communicating this requirement to on-site equipment operators.
- Where grid power is available, prohibit portable diesel engines and provide electrical hook ups for electric construction tools, such as saws, drills and compressors, and using electric tools whenever feasible.

- Where grid power is not available, use alternative fuels, such as propane or solar electrical power, for generators at construction sites.
- Use battery-powered equipment for all off-road construction equipment with a power rating below 19kW (e.g., plate compactors, pressure washers) during construction.

Mitigation Measure 4.2-1c: Omit the Inclusion of Natural Gas Infrastructure

The City shall require the Project applicant to omit the inclusion of natural gas infrastructure in the design and construction of the proposed Project. The final design drawings must demonstrate the omission of natural gas connections to the Project Site and be provided to and approved by the City prior to the issuance of grading permits.

Mitigation Measure 4.2-1d: Implement Mitigation Measure 4.12-1, Transportation Demand Management (TDM) Plan

Mitigation Measure 4.2-1e: Incorporate CALGreen Tier 2 Standards for Electric Vehicle Infrastructure into Project Design

The City shall require the Project applicant to include electric vehicle (EV) capable parking at the rate consistent with the California Green Building Standards Code (CALGreen) Tier 2 standards for the proposed Project land use. The EV capable parking shall include the installation of the enclosed conduit that forms the physical pathway for electrical wiring and adequate panel capacity to accommodate future installation of a dedicated branch and charging stations(s). The total EV capable parking to be provided shall be based on the proposed size and scale of development and the most current CALGreen Tier 2 standards at the time of the application for a building permit.

Mitigation Measure 4.2-1f: Electrification of Yard Equipment

The Project applicant shall stipulate in tenant lease agreements that all yard equipment and similar on-site off-road equipment, such as forklifts, be electric. Prior to the issuance of an occupancy permit, the Project applicant shall provide the City with documentation, to the City's satisfaction, demonstrating that the building occupant shall only use on-site off-road equipment that is electric-powered.

Mitigation Measure 4.2-1g: Electrification of Transportation Refrigeration Units

The Project applicant shall require that all transportation refrigeration units operating on the Project Site be electric or alternative zero-emissions technology, including hydrogen fuel cell transport refrigeration and cryogenic transport refrigeration, to reduce emissions of NO_X without substantially increasing other emissions. The Project design shall also include necessary infrastructure; for example, requiring all dock doors serving transportation refrigeration units to be equipped with charging infrastructure to accommodate the necessary plug-in requirements for electric transportation refrigeration units while docked or otherwise idling, as well as the electrical capacity to support the on-site power demand associated with electric transportation refrigeration unit charging requirements.

Mitigation Measure 4.2-1h: Prohibition of Truck Idling for More than Two Minutes

The Project applicant shall require that onsite idling of all visiting gasoline- or diesel-powered trucks not exceed two minutes, and that appropriate signage and training for on-site workers and truck drivers be provided to support effective implementation of this limit.

Mitigation Measure 4.2-1i: Limitation of Model Year of Visiting Trucks

The Project applicant shall require that lease agreements stipulate that any gasoline- or diesel-powered vehicle, whether owned by tenant(s), that enters or operates on the Project Site and has a gross vehicle weight rating greater than 14,000 pounds, have a model year dated no older than model year 2014.

Mitigation Measure 4.2-1j: Diesel Backup Generator and Fire Pump Specifications

The Project applicant shall ensure that the diesel backup generators and fire pumps meet or exceed the air board's Tier 4 emission standards. Additionally, once operational, the diesel backup generators and fire pumps shall be maintained in good working order for the life of the equipment, and any future replacement of the equipment shall be required to be consistent with these emissions specifications. To ensure compliance with this measure, the Project applicant shall ensure that records of the testing schedule for the diesel backup generators and fire pumps are maintained for the life of the equipment and make these records available to the City upon request.

Significance after Mitigation

Implementation of Mitigation Measure 4.2-1a would ensure that proposed Project construction would incorporate measures to minimize fugitive dust from construction activities. As detailed in Impact 4.2-2, Mitigation Measure 4.2-1b would reduce exhaust emissions, including NO_X, from heavy duty construction equipment use to less than the BAAQMD thresholds of significance. Implementation of Mitigation Measures 4.2-1a and 4.2-1b together would ensure that Project construction would not conflict with or obstruct implementation of the 2017 Bay Area Clean Air Plan.

Implementation of Mitigation Measures 4.2-1c through 4.2-1j would reduce energy, area, and mobile source operational emissions associated with the proposed Project. As detailed in Impact 4.2-2, these mitigation measures would reduce operational emissions of NO_X to below the BAAQMD thresholds. However, ROG emissions would still exceed the BAAQMD thresholds of significance and Project operations could conflict with or obstruct implementation of the 2017 Bay Area Clean Air Plan. There is no additional feasible mitigation. Therefore, this impact would be **significant and unavoidable**.

Impact 4.3-2. Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in nonattainment under an applicable federal or state ambient air quality standard. *Emissions of criteria air pollutants and ozone precursors could exceed an ambient air quality standard or contribute substantially to an existing or predicted air quality exceedance. Therefore, this impact would be* ***significant.***

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the SFBAAB, and this regional impact is cumulative rather than being attributable to any one source. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development Projects.

The SFBAAB is classified as nonattainment for NAAQS for ozone and $PM_{2.5}$ and for CAAQS for ozone, $PM_{2.5}$, and PM_{10}. The nonattainment status of regional pollutants results from past and present development within the Air Basin, and this regional impact is a cumulative impact. 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. The BAAQMD thresholds of significance for construction and operational phases of a project are established to identify projects that have the potential to generate a level of emissions that would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Construction and operational emissions are discussed separately below.

Construction

Construction emissions are described as "short-term" or temporary; however, they have the potential to represent a significant impact with respect to regional and localized air quality. Construction-related activities would result in temporary emissions of criteria air pollutants and ozone precursors from fugitive dust generation associated with ground disturbing activities (e.g., excavation, grading, and clearing); exhaust emissions from use of off-road equipment and construction vehicle trips associated with import or export of fill, material delivery, and construction worker commutes; and off-gassing of ROG emissions during asphalt paving and application of architectural coatings. Ozone precursor emissions of ROG and NO_X are associated primarily with construction equipment exhaust and the application of architectural coatings. PM emissions are associated primarily with fugitive dust generated during site preparation and grading, and vary depending on the soil silt content, soil moisture, wind speed, acreage of disturbance, vehicle travel to and from the construction site, and other factors. PM emissions are also generated by equipment exhaust and re-entrained road dust from vehicle travel.

As shown in Table 4.2-6, construction-related emissions associated with the Project would exceed the average daily thresholds of significance for NOx emissions in the initial year of construction (2024). Furthermore, the BAAQMD does not have quantitative mass emissions thresholds for fugitive PM_{10} and $PM_{2.5}$ fugitive dust. Instead, the BAAQMD recommends that all projects, regardless of the level of average daily emissions, implement applicable best management practices (BMPs), including those listed as Basic Best Management Practices for Construction-Related Fugitive Dust Emissions in the BAAQMD CEQA Air Quality Guidelines (BAAQMD 2023) in order to minimize fugitive dust in alignment with the regional plans for PM reduction. Fugitive dust emissions are considered to be significant unless the project implements the BAAQMD's BMPs for fugitive dust control during construction. Because construction-related exhaust emissions would exceed the significance threshold for NO_X and without implementation of the BAAQMD Basic Construction Measures, the Project could result in a cumulatively considerable net increase of criteria pollutants for which the Project region is non-attainment under an applicable federal or state ambient air quality standard. Construction-related impacts from the proposed Project would therefore be **potentially significant**.

Table 4.2-6. Annual and Average Daily and Annual Criteria Air Pollutant Construction Emissions

Year/Description	ROG	NO_X	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
2024 Total Emissions (tons)	0.80	7.30	0.51	0.29
2024 Average Daily Emissions (pounds per day)[1]	6.10	55.73	3.91	2.21
2025 Total Emissions (tons)	4.96	1.87	0.51	0.06
2025 Average Daily Emissions (pounds per day)[1]	38.02	14.33	3.91	0.47
2026 Total Emissions (tons)	2.34	0.56	0.13	0.02
2026 Average Daily Emissions (pounds per day)[1]	17.95	4.29	0.98	0.14

Year/Description	ROG	NO_X	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
Threshold of Significance (pounds per day)	54	54	82	54
Exceeds Threshold?	No	**Yes (in 2024)**	No	No

Source: Modeled by AECOM in 2023. See Appendix B for detailed modelling assumptions, outputs, and results.

Notes: NOx = nitrogen oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ROG = reactive organic gases.

[1] Average daily emission estimates calculated based on the approximate construction workdays in 2024, 2025, and 2026, which is assumed to be 262 days, 261 days, and 106 days, respectively.

Operation

After construction, long-term emissions of criteria air pollutants would be generated from energy, area, stationary, and mobile sources during operation of the Project. Area sources would include emissions from use of consumer products, periodic architectural coatings, and landscape equipment. Energy sources would include natural gas for water or space heating. Mobile sources would involve vehicle trips associated with employee commute trips and visiting trucks, including TRUs associated with visiting trucks. Stationary source emissions would be associated with the emergency generator and fire pumps at each building. Emergency generators were assumed to operate 100 hours per year based on the maintenance and testing limits per BAAQMD regulations. Additional modeling details are provided in Appendix B.

As shown in Table 4.2-7, the total and net increase in operational emissions generated by the Project would exceed the BAAQMD daily and annual thresholds for ROG and NO_X.

Table 4.2-7. Annual and Average Daily Criteria Air Pollutant Operational Emissions

Description	ROG	NO_X	PM_{10}	$PM_{2.5}$
Annual Emissions (tons)	**35.62**	**52.61**	5.37	2.30
Threshold of Significance (tons/year)	10	10	15	10
Exceeds Threshold?	Yes	Yes	No	No
Average Daily Emissions (pounds per day)[1]	**195.20**	**288.25**	29.43	12.62
Threshold of Significance (pounds per day)	54	54	82	54
Exceeds Threshold?	Yes	Yes	No	No

Source: Estimated by AECOM in 2023. See Appendix B for detailed modelling assumptions, outputs, and results.

Notes: NO_X = oxides of nitrogen; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ROG = reactive organic gases.

[1] Average daily emission estimates are based on the annual operational emissions divided by 365 days.

Because operational emissions from the Project would exceed the BAAQMD daily and annual thresholds, the Project could not result in a cumulatively considerable net increase of a criteria pollutant for which the Project region is in nonattainment under an applicable federal or state ambient air quality standards. Therefore, operational activities associated with the Project would be **potentially significant**.

Mitigation Measures

Construction:

> ***Implement Mitigation Measures 4.2-1a and 4.2-1b.***

Operations:

> ***Implement Mitigation Measures 4.2-1c through 4.2-1j.***

Significance after Mitigation

Implementation of Mitigation Measure 4.2-1a would ensure that proposed Project construction would incorporate measures to minimize fugitive dust from construction activities. As shown in Table 4.2-8, Mitigation Measure 4.2-1b would reduce exhaust emissions, including NO_X, from heavy duty construction equipment use to less than the BAAQMD thresholds of significance. Implementation of Mitigation Measures 4.2-1a and 4.2-1b together would ensure that Project construction would not result in a cumulatively considerable net increase of criteria pollutants for which the Project region is non-attainment under an applicable federal or state ambient air quality standard.

Table 4.2-8. Mitigated Annual and Average Daily and Annual Criteria Air Pollutant Construction Emissions

Year/Description	ROG	NO_X	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
2024 Total Emissions (tons)	0.21	1.31	0.23	0.04
2024 Average Daily Emissions (pounds per day)[1]	1.62	10.02	1.79	0.27
2025 Total Emissions (tons)	2.29	0.91	0.47	0.02
2025 Average Daily Emissions (pounds per day)[1]	17.58	6.96	3.58	0.18
2026 Total Emissions (tons)	0.05	0.26	0.12	0.01
2026 Average Daily Emissions (pounds per day)[1]	0.36	1.97	0.89	0.05
Threshold of Significance (pounds per day)	54	54	82	54
Exceeds Threshold?	No	No	No	No

Source: Modeled by AECOM in 2023. See Appendix B for detailed modelling assumptions, outputs, and results.

Notes: NOx = nitrogen oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ROG = reactive organic gases.

[1] Average daily emission estimates calculated based on the approximate construction workdays in 2024, 2025, and 2026, which is assumed to be 262 days, 261 days, and 106 days, respectively.

Implementation of Mitigation Measures 4.2-1c through 4.2-1j would reduce energy, area, and mobile source operational emissions associated with the proposed Project. As shown in Table 4.2-9, these mitigation measures would reduce operational emissions of NO_X to below the BAAQMD thresholds. However, ROG emissions would still exceed the BAAQMD thresholds of significance and Project operations could result in a cumulatively considerable net increase of criteria pollutants for which the Project region is non-attainment under an applicable federal or state ambient air quality standard.

Table 4.2-9. Mitigated Annual and Average Daily Criteria Air Pollutant Operational Emissions

Description	ROG	NO_X	PM_{10}	$PM_{2.5}$
Annual Emissions (tons)	**13.05**	7.19	2.81	0.82
Threshold of Significance (tons/year)	10	10	15	10
Exceeds Threshold?	Yes	No	No	No

Average Daily Emissions (pounds per day)[1]	**<u>71.49</u>**	39.37	15.39	4.48
Threshold of Significance (pounds per day)	54	54	82	54
Exceeds Threshold?	Yes	Yes	No	No

Source: Estimated by AECOM in 2023. See Appendix B for detailed modelling assumptions, outputs, and results.

Notes: NO_X = oxides of nitrogen; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ROG = reactive organic gases.

[1] Average daily emission estimates are based on the annual operational emissions divided by 365 days.

There is no additional feasible mitigation. Therefore, this impact would be **significant and unavoidable**.

Impact 4.3-3. Expose sensitive receptors to substantial pollutant concentrations. *This impact would be **potentially significant.***

As discussed in the Environmental Setting section above, the nearest sensitive receptors include residents on the north side of SR 12 approximately 500 feet from the northern border of the Project Site and two commercial uses, an auto repair shop and U-Haul rental shop on one parcel and a concrete contractor on another, somewhat central to the Project parcels but not within the Project Site, adjacent to the west side of Pennsylvania Avenue at the intersection of Pennsylvania Avenue and Cordelia Street. Residences are also located east of the Union Pacific Railroad tracks, more than 1,500 feet from the easternmost border of the Development Area and 200 feet from the eastern border of the Project Site.

Incremental Increase in Regional Criteria Air Pollutants and Related Health Effects

As described in Section 4.2.1, under "Air Pollutants of Concern," and Section 4.2.3, under "Thresholds of Significance," receptor exposure to elevated concentrations of criteria air pollutants is capable of causing adverse health effects, particularly to sensitive populations. In the amicus brief filed by the South Coast Air Quality Management District (SCAQMD) on the California Supreme Court's decision in *Sierra Club v. County of Fresno*, the SCAQMD noted that, "[it] takes a large amount of additional precursor emissions [e.g., NOx] to cause a modeled increase in ambient ozone levels… a project emitting only 10 tons per year of NOx or ROG is small enough that its regional impact on ambient ozone levels may not be detected in the regional air quality models used to determine ozone levels…" (SCAQMD 2015). Although this information was submitted by the SCAQMD, it would generally apply to the SFBAAB as well since both the South Coast Air Basin and the SFBAAB are designated as nonattainment areas for state and national ozone standards the South Coast Air Basin is designated as severe non-attainment, while the SFBAAB is designated as marginal non-attainment.

Although implementation of the proposed Project would incrementally increase criteria air pollutant emissions within the SFBAAB, any analysis linking potential adverse health risks to corresponding pollutant concentrations would be speculative for several reasons. First, while not quantified, it is recognized that the majority of mass emissions associated with land use development such as the proposed Project would be a result of vehicle activity, such as visitor, employee, and residential trips to and from the Project Site, which would occur primarily not at the Project Site and be subject to varying meteorological and topographical influences. These emissions would be subject to small-scale air patterns, such as those formed as wind passes between buildings and other anthropogenic features (e.g., cars), creating eddies and other turbulence that affect pollutant transport. Second, as mentioned previously, the SCAQMD has stated: "For the so-called criteria pollutants, such as ozone, it may be more difficult to quantify health impacts… It takes time and the influence of meteorological conditions for these reactions to occur, so ozone may be formed at a distance downwind from the sources… Scientifically, health effects from ozone are correlated with increases in the ambient level of ozone in the air a person breathes… However, it takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels over an entire region. For example, the SCAQMD's 2012 AQMP [Air Quality Management Plan] showed that reducing NO_X by 432 tons per day (157,680 tons per year) and reducing ROG by 187 tons per day (68,255 tons per year) would reduce ozone levels at the SCAQMD's monitor site with the highest levels by only 9 parts per billion. SCAQMD staff does not currently know of a way to accurately quantify ozone-related health impacts caused by NO_X or ROG emissions from relatively small projects" (SCAQMD 2015, pgs. 10-11).

The proposed Project would not generate emissions anywhere near the levels cited by the SCAQMD in its amicus brief on the California Supreme Court's decision in Sierra Club v. County of Fresno (i.e., 432 tons per day of NOx and 187 tons per day of ROG). Furthermore, adverse health effects associated with receptor exposure to regional criteria air pollutant concentrations is cumulative in nature. In other words, such health effects are the result of regional air quality conditions and the nonattainment status of a region that results from past, present, and future emissions sources in the region, which are accounted for in the BAAQMDs planning efforts of the regional air quality attainment plans.

The BAAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of emissions in the SFBAAB. 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. Therefore, the nature of criteria pollutants is such that the emissions from an individual project such as the proposed Project cannot be directly identified as responsible for health impacts within any specific geographic location. As a result, attributing health risks at any specific geographic location to the proposed Project is not feasible, and this information and consideration is presented for informational purposes only.

Carbon Monoxide Hot Spots

Local mobile-source CO emissions and concentrations near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. However, under specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels with respect to local sensitive land uses, such as residential units, hospitals, schools, and childcare facilities.

As noted above, BAAQMD has developed a screening threshold to determine if a project would cause an intersection to potentially generate a CO hotspot. The screening thresholds have been developed with conservative assumptions to avoid underestimating CO concentrations. Therefore, a project that would not exceed the screening thresholds would be highly unlikely to generate a CO hotspot and would not expose sensitive receptors to CO concentrations harmful to public health. According to this methodology, projects would have the potential to generate a CO hotspot if it did not contribute a substantial volume of vehicle trips to an intersection that exceeded 44,000 vehicles per hour. For intersections located in areas where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway), the screening threshold is 24,000 vehicles per hour.

There are no affected intersections at which vertical and/or horizontal mixing is substantially limited. As detailed in the Level of Service Analysis for the proposed Project, peak-hour volumes of existing plus Project traffic and cumulative plus Project at study intersections would not exceed 7,500 vehicles at any given intersection (Fehr & Peers 2022). This is substantially below the BAAQMD-recommended screening level of 44,000 vehicles per hour at an affected intersection. Therefore, the proposed Project would not result in individually or cumulatively significant impacts from CO emission. This impact pertaining to CO emissions would be **less than significant**.

Toxic Air Contaminants

Construction

Sources evaluated in the health risk assessment include construction-related emissions from the Project to existing sensitive receptors (off-site residents, workers, childcare facilities, and schools) located within 1,000 feet of the proposed Project footprint and 500 feet of off-site construction traffic. The analysis utilized the EPA's AERMOD air dispersion model and the latest health risk assessment guidance from the Office of Environmental Health Hazard Assessment (OEHHA) to estimate excess lifetime cancer risks and annual averaged $PM_{2.5}$ concentrations. Consistent with BAAQMD and OEHHA guidance, for off-site residential receptors, the probability of contracting cancer risk from the proposed Project's emission sources was evaluated over the construction duration beginning at the age of the 3rd trimester in the womb. For off-site worker receptors, the probability of contracting cancer risk from the proposed Project's emission sources was evaluated over the construction duration beginning at a possible exposure age of 16 years. For off-site student and child (i.e., childcare facilities), the probability of contracting cancer risk from the proposed Project's emission sources was evaluated over the construction duration beginning at a possible exposure age of 4 years (assumes youngest students are in Kindergarten) and 0 years, respectively. Excess cancer risk exposure was also evaluated for operational-only proposed Project emission sources using the same starting ages as described above for construction. Additional modeling details and assumptions are provided in Appendix B. Although studies indicate that vegetation has the potential to reduce pollutant transport and dispersion[3], the model assumptions do not account for potential screening effects from existing or future vegetation on the proposed Project site.

Table 4.2-10, Table 4.2-11, Table 4.2-12, Table 4.2-13 summarize maximum $PM_{2.5}$ annual concentrations, excess cancer risk, chronic non-cancer risk, and acute risk, respectively, associated with Project construction emissions.

Table 4.2-10. Unmitigated Project Construction Emissions Maximum Annual $PM_{2.5}$ Concentrations

Receptor Type	2024 Maximum Annual $PM_{2.5}$ (µg/m³)	2025 Maximum Annual $PM_{2.5}$ (µg/m³)	2026 Maximum Annual $PM_{2.5}$ (µg/m³)	BAAQMD Threshold (µg/m³)	Exceeds Threshold?
Residential[1]	0.144	0.009	0.004	0.3	No

3 Vegetation, including plants and trees, has been studied as a means of improving air quality by assisting in the dispersion of near-roadway pollution (CARB 2017).

Receptor Type	2024 Maximum Annual $PM_{2.5}$ (μg/m³)	2025 Maximum Annual $PM_{2.5}$ (μg/m³)	2026 Maximum Annual $PM_{2.5}$ (μg/m³)	BAAQMD Threshold (μg/m³)	Exceeds Threshold?
Worker[2]	**0.630**	0.013	0.031	0.3	Yes
Student[3]	0.084	0.006	0.003	0.3	No
Child[4]	0.054	0.004	0.002	0.3	No

Source: Modeled by AECOM in 2022. See Appendix B for additional details.
Notes: **bold** values denote exceedance of Bay Area Air Quality Management District threshold;
μg/m³ = micrograms per cubic meter; BAAQMD = Bay Area Air Quality Management District: $PM_{2.5}$ = particulate matter 2.5 microns in diameter or less; UTM = Universal Transverse Mercator.
[1] Receptor location: X (UTM) = 582,642, Y (UTM) = 4,233,108.
[2] Receptor location: X (UTM) = 582,802, Y (UTM) = 4,232,488.
[3] Receptor location: X (UTM) = 582,142, Y (UTM) = 4,233,068.
[4] Receptor location: X (UTM) = 582,842, Y (UTM) = 4,233,448.

Table 4.2-11. Unmitigated Project Construction Emissions Maximum Modeled Excess Cancer Risk

Year	Duration	Cancer Risk – Residential (in a million)[1,5]	Cancer Risk – Worker (in a million)[2,6]	Cancer Risk – Student (in a million)[3,7]	Cancer Risk – Child (in a million)[4,8]
2024	1 year	1.29	0.26	0.13	0.53
2025	0.7 year	0.13	0.01	0.01	0.05
2026	0.9 year	0.11	0.06	0.01	0.06
Total Excess Cancer Risk	2.6 years	1.53	0.33	0.15	0.64
Threshold	-	10	10	10	10
Exceeds Threshold?	-	No	No	No	No

Source: Modeled by AECOM in 2023. See Appendix B for additional details.
Notes: UTM = Universal Transverse Mercator
1 Receptor location: X (UTM) = 582,652, Y (UTM) = 4,233,110.
2 Receptor location: X (UTM) = 582,792, Y (UTM) = 4,232,490.
3 Receptor location: X (UTM) = 582,152, Y (UTM) = 4,233,070.
4 Receptor location: X (UTM) = 582,832, Y (UTM) = 4,233,450.
5 Starting age for residences: 3rd trimester (2024), 0 year (2025), 0 year (2026).
6 Starting age for workers: 16 years (2024), 17 years (2025), 17 years (2026).
7 Starting age for students (Kindergarten): 4 years (2024), 5 years (2025), 5 years (2026).
8 Starting age for child: 0 year (2024), 1 year (2025), 1 year (2026).

Table 4.2-12. Unmitigated Project Construction Emissions Maximum Modeled Excess Chronic Non-Cancer Risk

Year	Chronic Non-Cancer Risk – Residential HI	Chronic Non-Cancer Risk – Worker HI	Chronic Non-Cancer Risk – Student HI	Chronic Non-Cancer Risk – Child HI
2024	1.46E-03[1]	4.78E-03[3]	9.20E-04[4]	6.42E-04[5]
2025	2.32E-04[1]	2.48E-04[3]	1.41E-04[4]	8.84E-05[5]
2026	1.45E-04[2]	1.33E-03[3]	9.81E-05[4]	8.29E-05[5]
Threshold	1.0	1.0	1.0	1.0
Exceeds Threshold?	No	No	No	No

Source: Modeled by AECOM in 2023. See Appendix B for additional details.
Notes: HI = Hazard Index; UTM = Universal Transverse Mercator
1 Receptor location: X (UTM) = 582,662, Y (UTM) = 4,233,108.
2 Receptor location: X (UTM) = 582,742, Y (UTM) = 4,232,128.
3 Receptor location: X (UTM) = 582,802, Y (UTM) = 4,232,488.
4 Receptor location: X (UTM) = 582,162, Y (UTM) = 4,233,068.
5 Receptor location: X (UTM) = 582,842, Y (UTM) = 4,233,448.

Table 4.2-13. Unmitigated Project Construction Emissions Maximum Modeled Excess Acute Risk

Year	Acute Risk – Residential HI	Acute Risk – Worker HI	Acute Risk – Student HI	Acute Risk – Child HI
2024	2.14E-04[1]	1.80E-04[2]	6.76E-05[3]	7.87E-05[4]
2025	3.19E-04[1]	2.68E-04[2]	1.01E-04[3]	1.17E-04[4]
2026	2.00E-04[1]	1.68E-04[2]	6.33E-05[3]	7.37E-05[4]
Threshold	1.0	1.0	1.0	1.0
Exceeds Threshold?	No	No	No	No

Source: Modeled by AECOM in 2023. See Appendix B for additional details.

Notes: HI = Hazard Index; UTM = Universal Transverse Mercator.

1 Receptor location: X (UTM) = 582,162, Y (UTM) = 4,233,288.

2 Receptor location: X (UTM) = 582,802, Y (UTM) = 4,232,488.

3 Receptor location: X (UTM) = 582,162, Y (UTM) = 4,233,068.

4 Receptor location: X (UTM) = 582,842, Y (UTM) = 4,233,448.

As shown in Table 4.2-11, Table 4.2-12, Table 4.2-13, Project construction activities would not exceed the BAAQMD threshold of significance for excess cancer, chronic non-cancer, or acute risk. As shown in Table 4.2-10, the maximum annual $PM_{2.5}$ concentrations would result in exceedances of the threshold for 2024 construction activities at the maximum worker receptor. Thus, this impact would be **potentially significant**.

Operation

Sources evaluated in the health risk assessment include operation-related emissions from the proposed Project to existing sensitive receptors (off-site residents, worker, schools, and childcare facilities) located within 1,000 feet of the proposed Project footprint and 500 feet of off-site traffic routes. Consistent with BAAQMD and OEHHA guidance, operational exposure for off-site sensitive receptors were assessed for 30-year, 25-year, 13-year and 5-year periods for residential, worker, student, and child, respectively. Starting ages for each receptor type were third trimester, 16 years of age, 4 years of age, and 0 year of age for residential, worker, student, and child, respectively.

Table 4.2-14, Table 4.2-15, Table 4.2-16, and Table 4.2-17 summarize maximum $PM_{2.5}$ annual concentrations, excess cancer risk, chronic non-cancer risks, and acute risks, respectively, associated with proposed Project operational unmitigated emissions. The HRA also assessed cancer risk from proposed Project construction and operational activities together (i.e., construction for 2.6 years followed by operations for the remaining exposure duration). Details on this analysis are provided in Appendix B. Annual averaged $PM_{2.5}$ concentrations, non-cancer chronic and non-cancer acute are presented in Table 4.2-14, Table 4.2-16, and Table 4.2-17 for both the interim and full buildout operational scenarios of the proposed Project, respectively. The anticipated duration for interim operations 0.9 years and would include fewer sources of emissions compared to the full buildout operational scenario. For these reasons, cancer risk is presented for the controlling scenario (i.e., highest cancer risk scenario), which is the full buildout in Table 4.2-15.

Table 4.2-14. Unmitigated Project Operational Emissions Maximum Annual $PM_{2.5}$ Concentrations

Receptor Type	Interim Operations Maximum Annual $PM_{2.5}$ ($\mu g/m^3$)	Full Buildout Operations Maximum Annual $PM_{2.5}$ ($\mu g/m^3$)	BAAQMD Threshold ($\mu g/m^3$)	Exceeds Threshold?
Residential[1]	**0.321**	**0.362**	0.3	Yes
Worker[2]	**0.673**	**1.164**	0.3	Yes
Student[3]	0.177	0.185	0.3	No
Child[4]	0.137	0.164	0.3	No

Source: Modeled by AECOM in 2022. See Appendix B for additional details.

Notes: bold values denote exceedance of BAAQMD threshold; $\mu g/m^3$ = micrograms per cubic meter; BAAQMD = Bay Area Air Quality Management District; UTM = Universal Transverse Mercator.

[1] Receptor location: X (UTM) = 582,642, Y (UTM) = 4,233,108.
[2] Receptor location: X (UTM) = 582,802, Y (UTM) = 4,232,488.
[3] Receptor location: X (UTM) = 582,142, Y (UTM) = 4,233,068.
[4] Receptor location: X (UTM) = 582,842, Y (UTM) = 4,233,448.

Table 4.2-15. Unmitigated Project Operational Emissions Maximum Modeled Excess Cancer Risk

Receptor Type	Duration	Full Buildout Operations Maximum Cancer Risk (in a million)	BAAQMD Threshold (in a million)	Exceeds Threshold?
Residential[1,5]	30 years	**117.26**	10	Yes
Worker[2,6]	25 years	**133.27**	10	Yes
Student[3,7]	13 years	**27.00**	10	Yes
Child[4,8]	5 years	**31.15**	10	Yes

Source: Modeled by AECOM in 2023. See Appendix B for additional details.

Notes: bold values denote exceedance of BAAQMD threshold; BAAQMD = Bay Area Air Quality Management District; UTM = Universal Transverse Mercator

1 Receptor location: X (UTM) = 582,652, Y (UTM) = 4,233,110.
2 Receptor location: X (UTM) = 582,792, Y (UTM) = 4,232,490.
3 Receptor location: X (UTM) = 582,152, Y (UTM) = 4,233,070.
4 Receptor location: X (UTM) = 582,832, Y (UTM) = 4,233,450.
5 Starting age for residences: 3rd trimester
6 Starting age for workers: 16 years
7 Starting age for students (Kindergarten): 4 years
8 Starting age for child (daycare): 0 year

Table 4.2-16. Unmitigated Project Operational Emissions Maximum Modeled Excess Chronic Non-Cancer Risk

Operational Phase	Chronic Non-Cancer Risk – Residential HI	Chronic Non-Cancer Risk – Worker HI	Chronic Non-Cancer Risk – Student HI	Chronic Non-Cancer Risk – Child HI
Interim Operation	2.74E-02[1]	5.92E-02[2]	1.45E-02[3]	1.25E-02[4]
Full Buildout Operation	3.24E-02[1]	1.05E-01[2]	1.78E-02[3]	1.55E-02[4]
Threshold	1.0	1.0	1.0	1.0
Exceeds Threshold?	No	No	No	No

Source: Modeled by AECOM in 2023. See Appendix B for additional details.

Notes: HI = Hazard Index; UTM = Universal Transverse Mercator.

1 Receptor location: X (UTM) = 582,652, Y (UTM) = 4,233,110.
2 Receptor location: X (UTM) = 582,792, Y (UTM) = 4,232,490.
3 Receptor location: X (UTM) = 582,152, Y (UTM) = 4,232,070.
4 Receptor location: X (UTM) = 582,832, Y (UTM) = 4,233,450.

Table 4.2-17. Unmitigated Project Operational Emissions Maximum Modeled Excess Acute Risk

Year	Acute Risk – Residential HI	Acute Risk – Worker HI	Acute Risk – Student HI	Acute Risk – Child HI
Interim Operation	8.62E-03[1]	9.40E-03[2]	3.84E-03[4]	3.76E-03[5]
Full Buildout Operation	1.20E-02[1]	1.32E-02[3]	5.18E-03[4]	4.70E-03[5]
Threshold	1.0	1.0	1.0	1.0
Exceeds Threshold?	No	No	No	No

Source: Modeled by AECOM in 2023. See Appendix B for additional details.

Notes: HI = Hazard Index; UTM = Universal Transverse Mercator.

1 Receptor location: X (UTM) = 582,292, Y (UTM) = 4,233,310.

2 Receptor location: X (UTM) = 582,252, Y (UTM) = 4,232,190

3 Receptor location: X (UTM) = 582,792, Y (UTM) = 4,232,490.

4 Receptor location: X (UTM) = 582,152, Y (UTM) = 4,232,070.

5 Receptor location: X (UTM) = 582,832, Y (UTM) = 4,233,450.

As shown in Table 4.2-16 and Table 4.2-17, chronic non-cancer and acute impacts from the proposed Project are below the BAAQMD thresholds for operational activities, respectively. As shown in Table 4.2-14 and Table 4.2-15, Project operational activities would expose sensitive receptors to substantial pollutant concentrations for annual $PM_{2.5}$ and excess cancer risk exposure, respectively. Thus, the operational impact would be **potentially significant**.

Mitigation Measures

Construction:

Implement Mitigation Measure 4.2-1a and 4.2-1b.

Operations:

Implement Mitigation Measures 4.2-1c through 4.2-1j.

Significance after Mitigation

Construction:

Table 4.2-18, Table 4.2-19, Table 4.2-20, Table 4.2-21, summarize maximum $PM_{2.5}$ annual concentrations, excess cancer risk, chronic non-cancer risk, and acute risk, respectively, associated with Project construction with the implementation Mitigation Measures 4.2-1a, reducing fugitive dust $PM_{2.5}$, and 4.2-1b, reduced exhaust emissions of ROG and DPM.

Table 4.2-18. Mitigated Project Construction Emissions Maximum Annual $PM_{2.5}$ Concentrations

Receptor Type	2024 Maximum Annual $PM_{2.5}$ (µg/m^3)	2025 Maximum Annual $PM_{2.5}$ (µg/m^3)	2026 Maximum Annual $PM_{2.5}$ (µg/m^3)	BAAQMD Threshold (µg/m^3)	Exceeds Threshold?
Residential[1]	0.048	0.004	0.002	0.3	No
Worker[2]	0.223	0.009	0.010	0.3	No
Student[3]	0.028	0.003	0.001	0.3	No
Child[4]	0.017	0.002	0.001	0.3	No

Source: Modeled by AECOM in 2022. See Appendix B for additional details.

Notes: bold values denote exceedance of BAAQMD threshold; µg/m^3 = micrograms per cubic meter; BAAQMD = Bay Area Air Quality Management District; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; UTM = Universal Transverse Mercator.

[1] Receptor location: X (UTM) = 582,642, Y (UTM) = 4,233,108.

[2] Receptor location: X (UTM) = 582,802, Y (UTM) = 4,232,488.

[3] Receptor location: X (UTM) = 582,142, Y (UTM) = 4,233,068.

4 Receptor location: X (UTM) = 582,842, Y (UTM) = 4,233,448.

Table 4.2-19. Mitigated Project Construction Emissions Maximum Modeled Excess Cancer Risk

Year	Duration	Cancer Risk – Residential (in a million)[1,5]	Cancer Risk – Worker (in a million)[2,6]	Cancer Risk – Student (in a million)[3,7]	Cancer Risk – Child (in a million)[4,8]
2024	1 year	0.09	0.03	0.01	0.06
2025	0.7 year	0.03	<0.01	<0.01	0.02
2026	0.9 year	0.03	0.02	<0.01	0.02
Total Excess Cancer Risk	2.6 years	0.15	0.05	0.01	0.10
Threshold	-	10	10	10	10
Exceeds Threshold?	-	No	No	No	No

Source: Modeled by AECOM in 2023. See Appendix B for additional details.

Notes: UTM = Universal Transverse Mercator

1 Receptor location: X (UTM) = 582,652, Y (UTM) = 4,233,110.

2 Receptor location: X (UTM) = 582,792, Y (UTM) = 4,232,490.

3 Receptor location: X (UTM) = 582,152, Y (UTM) = 4,233,070.

4 Receptor location: X (UTM) = 582,832, Y (UTM) = 4,233,450.

5 Starting age for residences: 3rd trimester (2024), 0 year (2025), 0 year (2026).

6 Starting age for workers: 16 years (2024), 17 years (2025), 17 years (2026).

7 Starting age for students (Kindergarten): 4 years (2024), 5 years (2025), 5 years (2026).

8 Starting age for child: 0 year (2024), 1 year (2025), 1 year (2026).

Table 4.2-20. Mitigated Project Construction Maximum Modeled Excess Chronic Non-Cancer Risk

Year	Chronic Non-Cancer Risk – Residential HI	Chronic Non-Cancer Risk – Worker HI	Chronic Non-Cancer Risk – Student HI	Chronic Non-Cancer Risk – Child HI
2024	1.59E-04[1]	5.15E-04[3]	1.02E-04[4]	7.15E-05[5]
2025	6.92E-04[1]	9.20E-05[3]	4.49E-05[4]	2.81E-05[5]
2026	4.20E-05[2]	3.50E-04[3]	2.98E-05[4]	2.40E-05[5]
Threshold	1.0	1.0	1.0	1.0
Exceeds Threshold?	No	No	No	No

Source: Modeled by AECOM in 2023. See Appendix B for additional details.

Notes: UTM = Universal Transverse Mercator; HI = Hazard Index

1 Receptor location: X (UTM) = 582,662, Y (UTM) = 4,233,108.

2 Receptor location: X (UTM) = 582,742, Y (UTM) = 4,232,128.

3 Receptor location: X (UTM) = 582,802, Y (UTM) = 4,232,488.

4 Receptor location: X (UTM) = 582,162, Y (UTM) = 4,233,068.

5 Receptor location: X (UTM) = 582,842, Y (UTM) = 4,233,448.

Table 4.2-21. Mitigated Project Construction Maximum Modeled Excess Acute Risk

Year	Acute Risk – Residential HI	Acute Risk – Worker HI	Acute Risk – Student HI	Acute Risk – Child HI
2024	2.14E-04[1]	1.80E-04[2]	6.76E-05[3]	7.87E-05[4]
2025	3.19E-04[1]	2.68E-04[2]	1.01E-04[3]	1.17E-04[4]
2026	2.00E-04[1]	1.68E-04[2]	6.33E-05[3]	7.37E-05[4]
Threshold	1.0	1.0	1.0	1.0
Exceeds Threshold?	No	No	No	No

Source: Modeled by AECOM in 2023. See Appendix B for additional details.

Notes: HI = Hazard Index; UTM = Universal Transverse Mercator.

1 Receptor location: X (UTM) = 582,162, Y (UTM) = 4,233,288.

2 Receptor location: X (UTM) = 582,802, Y (UTM) = 4,232,488.

3 Receptor location: X (UTM) = 582,162, Y (UTM) = 4,233,068.
4 Receptor location: X (UTM) = 582,842, Y (UTM) = 4,233,448.

As shown in Table 4.2-17 through Table 4.2-21, with implementation of Mitigation Measures 4.2-1a and 4.2-1b, the maximum annual $PM_{2.5}$ concentrations, cancer risk, chronic non-cancer and acute risks would be reduced below their respective recommended threshold of significance.

Operations:

Table 4.2-22, Table 4.2-23, Table 4.2-24, and Table 4.2-25 summarize maximum $PM_{2.5}$ annual concentrations, excess cancer risk, chronic non-cancer risks, and acute risks, respectively, associated with proposed Project operational mitigated emissions.

Table 4.2-22. Mitigated Project Operational Emissions Maximum Annual $PM_{2.5}$ Concentrations

Receptor Type	Interim Operations Maximum Annual $PM_{2.5}$ (μg/m^3)	Full Buildout Operations Maximum Annual $PM_{2.5}$ (μg/m^3)	BAAQMD Threshold (μg/m^3)	Exceeds Threshold?
Residential[1]	0.041	0.047	0.3	No
Worker[2]	0.049	0.050	0.3	No
Student[3]	0.016	0.014	0.3	No
Child[4]	0.014	0.016	0.3	No

Source: Modeled by AECOM in 2022. See Appendix B for additional details.
Notes: μg/m^3 = micrograms per cubic meter; BAAQMD = Bay Area Air Quality Management District; UTM = Universal Transverse Mercator.
[1] Receptor location: X (UTM) = 582,652, Y (UTM) = 4,233,110.
[2] Receptor location: X (UTM) = 582,792, Y (UTM) = 4,232,490.
[3] Receptor location: X (UTM) = 582,152, Y (UTM) = 4,233,070.
[4] Receptor location: X (UTM) = 582,832, Y (UTM) = 4,233,450.

Table 4.2-23. Mitigated Project Operational Emissions Maximum Modeled Excess Cancer Risk

Receptor Type	Duration	Full Buildout Operations Maximum Cancer Risk (in a million)	BAAQMD Threshold (in a million)	Exceeds Threshold?
Residential[1,5]	30 years	5.46	10	No
Worker[2,6]	25 years	4.22	10	No
Student[3,7]	13 years	1.13	10	No
Child[4,8]	5 years	1.27	10	No

Source: Modeled by AECOM in 2023. See Appendix B for additional details.
Notes: BAAQMD = Bay Area Air Quality Management District; UTM = Universal Transverse Mercator
1 Receptor location: X (UTM) = 582,152, Y (UTM) = 4,233,290.
2 Receptor location: X (UTM) = 582,792, Y (UTM) = 4,232,490.
3 Receptor location: X (UTM) = 582,152, Y (UTM) = 4,233,070.
4 Receptor location: X (UTM) = 582,832, Y (UTM) = 4,233,450.
5 Starting age for residences: 3rd trimester
6 Starting age for workers: 16 years
7 Starting age for students (Kindergarten): 4 years
8 Starting age for child (daycare): 0 year

Table 4.2-24. Mitigated Project Operational Emissions Maximum Modeled Excess Chronic Non-Cancer Risk

Operational Phase	Chronic Non-Cancer Risk – Residential HI	Chronic Non-Cancer Risk – Worker HI	Chronic Non-Cancer Risk – Student HI	Chronic Non-Cancer Risk – Child HI
Interim Operation	1.67E-03[1]	2.42E-03[2]	9.26E-04[3]	7.24E-04[4]
Full Buildout Operation	2.38E-03[1]	5.31E-03[2]	1.23E-03[3]	1.01E-03[4]
Threshold	1.0	1.0	1.0	1.0
Exceeds Threshold?	No	No	No	No

Source: Modeled by AECOM in 2023. See Appendix B for additional details.

Notes: HI = Hazard Index; UTM = Universal Transverse Mercator

1 Receptor location: X (UTM) = 582,652, Y (UTM) = 4,233,110.

2 Receptor location: X (UTM) = 582,792, Y (UTM) = 4,232,490.

3 Receptor location: X (UTM) = 582,152, Y (UTM) = 4,232,070.

4 Receptor location: X (UTM) = 582,832, Y (UTM) = 4,233,450.

Table 4.2-25. Mitigated Project Operational Emissions Maximum Modeled Excess Acute Risk

Year	Acute Risk – Residential HI	Acute Risk – Worker HI	Acute Risk – Student HI	Acute Risk – Child HI
Interim Operation	7.82E-03[1]	9.40E-03[2]	4.32E-03[4]	4.16E-03[5]
Full Buildout Operation	1.10E-02[1]	1.43E-02[3]	5.81E-03[4]	5.25E-03[5]
Threshold	1.0	1.0	1.0	1.0
Exceeds Threshold?	No	No	No	No

Source: Modeled by AECOM in 2023. See Appendix B for additional details.

Notes: HI = Hazard Index; UTM = Universal Transverse Mercator

1 Receptor location: X (UTM) = 582,292, Y (UTM) = 4,233,310.

2 Receptor location: X (UTM) = 582,252, Y (UTM) = 4,232,190

3 Receptor location: X (UTM) = 582,792, Y (UTM) = 4,232,490.

4 Receptor location: X (UTM) = 582,152, Y (UTM) = 4,232,070.

5 Receptor location: X (UTM) = 582,832, Y (UTM) = 4,233,450.

As shown in Table 4.2-22 through Table 4.2-25, with implementation of Mitigation Measures 4.2-1c through 4.2-1j, the maximum annual $PM_{2.5}$ concentrations, cancer risk, chronic non-cancer and acute risks would be reduced below their respective recommended threshold of significance.

Therefore, with implementation of Mitigation Measures 4.2-1a through 4.2-1j, proposed Project construction and operational activities would not expose sensitive receptors to substantial pollutant concentrations with implementation and this impact would be **less than significant with mitigation**.

Impact 4.2-4. Result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people. *The impact is **less than significant**.*

Construction

During Project-related construction activities, construction equipment exhaust, application of asphalt, and architectural coatings may temporarily generate odors. The Project would use typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. The BAAQMD does not identify construction sites as containing activities that would generate objectionable odors. Additionally, odors would be confined to the immediate vicinity of the construction equipment and construction activities that would generate other emissions, such as those leading to odors, would be intermittent in nature (i.e., the duration of these activities would not be continuous for an extended period of time). In addition, odor concentrations in the air decline with increasing distance. Furthermore, nuisance odors are regulated under the BAAQMD's Regulation 7, Odorous Substances, which requires abatement of any nuisance generating an odor complaint. Regulation 7 places general limitations on odorous substances, and specific emission limitations on certain odorous compounds. Therefore, Project construction would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people and impacts during construction would be **less than significant**.

Operation

The proposed Project would add new logistics and warehousing uses on the Project site, including the use of diesel-powered trucks, TRUs, and onsite equipment. The type of facilities that are considered to result in other emissions such as those leading to 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 processing facilities (BAAQMD 2017a). Thus, the Project's proposed land uses are not typical odor-generating facilities. Therefore, the Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. This impact would be **less than significant**.

Mitigation Measure

No mitigation is required.

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