4.3 AIR QUALITY

This chapter of the Draft Environmental Impact Report (EIR) describes the potential air quality impacts associated with the adoption and implementation of the proposed project. This chapter describes the regulatory framework and existing conditions, identifies criteria used to determine impact significance, provides an analysis of the potential air quality impacts, and identifies proposed General Plan 2050 goals, policies, and actions, as well as feasible mitigation measures, that would minimize any potentially significant impacts. This evaluation is based on the methodology recommended by the Bay Area Air Quality Management District (BAAQMD). The analysis focuses on air pollution from regional emissions and localized pollutant concentrations. Criteria air pollutant emissions modeling is included in Appendix B, *Air Quality and Greenhouse Gas Emissions Data*, of this Draft EIR. Transportation-sector impacts are based on trip generation and vehicle miles traveled (VMT) provided W-Trans. Cumulative impacts related to air quality are based on the regional boundaries of the San Francisco Bay Area Air Basin (SFBAAB).

4.3.1 ENVIRONMENTAL SETTING

4.3.1.1 TERMINOLOGY

The following are definitions for terms used throughout this section:

- AAQS: Ambient Air Quality Standards.
- CES: CalEnviroScreen is a mapping tool that helps identify the California communities most affected by sources of pollution and where people are often especially vulnerable to pollution's effects.
- Concentrations: Refers to the amount of pollutant material per volumetric unit of air. Concentrations are measured in parts per million (ppm), parts per billion (ppb), or micrograms per cubic meter ($\mu g/m^3$).
- Criteria Air Pollutants: Those air pollutants specifically identified for control under the federal Clean Air Act (currently seven—carbon monoxide, nitrogen oxides, lead, sulfur oxides, ozone, and coarse and fine particulates).
- DPM: Diesel particulate matter.
- Emissions: Refers to the actual quantity of pollutant, measured in tons per year.
- Overburdened Community: As defined by BAAQMD, an area located within a census tract identified by CES, Version 4, having an overall CES score at or above the 70th percentile, or located within 1,000 feet of any such census tract.
- ppm: Parts per million.
- Sensitive receptor: Land uses that are considered more sensitive to air pollution than others due to the types of population groups or activities involved. These land uses include residential, retirement facilities, hospitals, and schools.
- TAC: Toxic air contaminant.
- VMT: Vehicle miles traveled.

4.3.1.2 AIR POLLUTANTS OF CONCERN

Criteria Air Pollutants

The pollutants emitted into the ambient air by stationary and mobile sources are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC) or reactive organic gases (ROG), nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, nitrogen dioxide (NO_2), coarse inhalable particulate matter (PM_{10}), and fine inhalable particulate matter ($PM_{2.5}$) are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. ROG and NO_x are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants. Table 4.3-1, *Criteria Air Pollutant Health Effects Summary*, summarizes the potential health effects associated with the criteria air pollutants.

TABLE 4.3-1 CRITERIA AIR POLLUTANT HEALTH EFFECTS SUMMARY

Pollutant	Health Effects	Examples of Sources
Carbon Monoxide (CO)	▪ Chest pain in heart patients ▪ Headaches, nausea ▪ Reduced mental alertness ▪ Death at very high levels	▪ Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Ozone (O_3)	▪ Cough, chest tightness ▪ Difficulty taking a deep breath ▪ Worsened asthma symptoms ▪ Lung inflammation	▪ Atmospheric reaction of organic gases with nitrogen oxides in sunlight
Nitrogen Dioxide (NO_2)	▪ Increased response to allergens ▪ Aggravation of respiratory illness	▪ Same as carbon monoxide sources
Particulate Matter (PM_{10} and $PM_{2.5}$)	▪ Hospitalizations for worsened heart diseases ▪ Emergency room visits for asthma ▪ Premature death	▪ Cars and trucks (particularly diesels) ▪ Fireplaces and woodstoves ▪ Windblown dust from overlays, agriculture, and construction
Sulfur Dioxide (SO_2)	▪ Aggravation of respiratory disease (e.g., asthma and emphysema) ▪ Reduced lung function	▪ Combustion of sulfur-containing fossil fuels, smelting of sulfur-bearing metal ores, and industrial processes
Lead (Pb)	▪ Behavioral and learning disabilities in children ▪ Nervous system impairment	▪ Contaminated soil

Sources: California Air Resources Board, 2023, Common Air Pollutants: Air Pollution and Health, https://ww2.arb.ca.gov/resources/common-air-pollutants, accessed July 21, 2023; South Coast Air Quality Management District, 2005, Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning, http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf, accessed July 21, 2023.

A description of each of the primary and secondary criteria air pollutants and its known health effects is presented herein.

- Carbon Monoxide (CO) is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces its oxygen-carrying capacity. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.[1]
- Volatile Organic Compounds (VOCs) / Reactive Organic Gases (ROGs) 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 AAQS established for ROGs. However, because they contribute to the formation of O_3, BAAQMD has established a significance threshold for this pollutant.[2]
- Nitrogen Oxides (NO_x) are a by-product of fuel combustion and contribute to the formation of ground-level O_3, PM_{10}, and $PM_{2.5}$. The two major forms of NO_x are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. The principal form of NO_x produced by combustion is NO, but NO reacts quickly with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_x. NO_2 is an acute irritant and more injurious than NO in equal concentrations. At atmospheric concentrations, however, NO_2 is only potentially irritating. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 acts as an acute irritant and in equal concentrations is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (2 and 3 years old) has also been observed at concentrations below 0.3 ppm.[3]

[1] Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed August 30, 2023.

[2] Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed August 30, 2023.

[3] Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed August 30, 2023.

- **Sulfur Dioxide (SO_2)** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When sulfur dioxide forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_X). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to SO_2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing) at lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue.[4]
- **Suspended Particulate Matter (PM_{10})** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. In the SFBAAB, most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Inhalable coarse particles, or PM_{10}, include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004 inch) or less.

  Extended exposure to particulate matter can increase the risk of chronic respiratory disease. PM_{10} bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing). Motor vehicles are currently responsible for about half of particulates in the SFBAAB. Wood burning in fireplaces and stoves is another large source of fine particulates.[5]
- **Suspended Particulate Matter ($PM_{2.5}$)** is another form of fine particulate matter that has an aerodynamic diameter of 2.5 microns or less (i.e., 2.5 millionths of a meter or 0.0001 inch). Fine particulate matter originates from a variety of sources, including fossil fuel combustion, residential wood burning and cooking, and natural sources, such as wildfires and dust. As mentioned above, extended exposure to particulate matter can cause negative effects on the respiratory system, such as triggering asthma attacks, aggravating bronchitis, and diminishing lung function. $PM_{2.5}$ studies have also found harm to the cardiovascular system and impacts on the brain, such as reduced cognitive function.

  Local jurisdictions have the option of developing community risk reduction plans (CRRPs) to cumulatively reduce community wide $PM_{2.5}$ concentrations by following a comprehensive plan. Stationary source screening maps contain all the facilities in the Bay Area where a permit has been issued and that emit one or more TACs. These stationary source screening maps can be used as a basis for community baseline conditions and to evaluate screening-level health risk impacts using the

[4] Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed August 30, 2023.

[5] Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed August 30, 2023.

cavity effects equation. An alternative screening methodology is to use the California Air Resources Board's (CARB) gas station screening tool to estimate cancer risk and chronic/acute hazards from gas station emissions.[6]

- **Ozone (O_3)** is a key ingredient of "smog" and is a gas that is formed when ROGs and NO_x, both by-products of internal combustion engine exhaust, undergo photochemical reactions in sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O_3 can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma; reduce lung function; and inflame the linings of the lungs. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. O_3 can also damage plants and trees and materials such as rubber and fabrics.[7]
- **Lead (Pb)** is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phasing out of leaded gasoline, 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. Because emissions of lead are found only in projects that are permitted by BAAQMD, lead is not an air quality of concern for the proposed project.[8]

Toxic Air Contaminants

People exposed to toxic air contaminants (TAC) at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory, and other health problems.[9] At the time of the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs.[10] Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. There are no air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The majority of the estimated health risks from TACs can be

[6] Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed August 30, 2023.

[7] Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed August 30, 2023.

[8] Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed August 30, 2023.

[9] United States Environmental Protection Agency, last updated 2023, Health and Environmental Effects of Hazardous Air Pollutants. https://www.epa.gov/haps/health-and-environmental-effects-hazardous-air-pollutants, accessed August 30, 2023.

[10] California Air Resources Board, 1999, *Final Staff Report: Update to the Toxic Air Contaminant List*.

attributed to relatively few compounds, the most relevant to the proposed project being particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified DPM as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 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. Long-term (chronic) inhalation of DPM is likely a lung cancer risk. Short-term (i.e., acute) exposure can cause irritation and inflammatory symptoms and may exacerbate existing allergies and asthma symptoms.[11]

Placement of New Sensitive Receptors

Because placement of sensitive land uses falls outside CARB's jurisdiction, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* in 2005 to address the compatibility and associated health risks of siting sensitive land uses f in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities.

CARB's recommendations on the siting of new sensitive land uses, identified in Table 4.3-2, *CARB Recommendations for Siting New Sensitive Land Uses*, were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources.

TABLE 4.3-2 CARB RECOMMENDATIONS FOR SITING NEW SENSITIVE LAND USES

Source/Category	Advisory Recommendations
Freeways and High-Traffic Roads	Avoid 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.
Distribution Centers	Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units [TRUs] per day, or where TRU unit operations exceed 300 hours per week). Take into account the configuration of existing distribution centers and avoid locating residences and other sensitive land uses near entry and exit points.
Rail Yards	Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or CARB on the status of pending analyses of health risks.
Refineries	Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.

[11] United States Environmental Protection Agency, May 2002, Health Assessment Document for Diesel Engine Exhaust, EPA/600/8-90/057F, prepared by the National Center for Environmental Assessment, Washington, DC, for the Office of Transportation and Air Quality.

TABLE 4.3-2 CARB RECOMMENDATIONS FOR SITING NEW SENSITIVE LAND USES

Source/Category	Advisory Recommendations
Chrome Platers	Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.

Source: California Air Resources Board, May 2005, *Air Quality and Land Use Handbook: A Community Health Perspective,* http://www.aqmd.gov/docs/default-source/ceqa/handbook/california-air-resources-board-air-quality-and-land-use-handbook-a-community-health-perspective.pdf, accessed August 30, 2023.

The key observation in these studies is that proximity to air pollution sources substantially increases both exposure and the potential for adverse health effects. There are three carcinogenic TACs that constitute the majority of the known health risks from motor vehicle traffic: DPM from trucks and benzene and 1,3-butadiene from passenger vehicles.

In 2017, CARB provided a supplemental technical advisory to the handbook for near-roadway air pollution exposure, *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways.* Strategies include practices and technologies that reduce traffic emissions, increase dispersion of traffic pollution (or the dilution of pollution in the air), or remove pollution from the air.[12]

4.3.1.3 REGULATORY FRAMEWORK

Federal, state, and local air districts have passed laws and regulations intended to control and enhance air quality. Land use in the city is subject to the rules and regulations imposed by BAAQMD, CARB, and the United States Environmental Protection Agency (USEPA). The regulatory framework that is potentially applicable to the proposed project is also summarized below.

Federal and State Regulations

AAQS have been adopted at federal and state levels for criteria air pollutants. In addition, both the federal and state governments regulate the release of TACs. Santa Rosa in the SFBAAB and is subject to the rules and regulations imposed by BAAQMD, the National AAQS adopted by the USEPA, and the California AAQS adopted by CARB. Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

[12] California Air Resources Board, April 2017, *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways*, https://ww2.arb.ca.gov/sites/default/files/2017-10/rd_technical_advisory_final.pdf, accessed August 30, 2023.

Ambient Air Quality Standards for Criteria Air Pollutants

The Clean Air Act (CAA) was passed in 1963 by the United States Congress and has been amended several times. The 1970 CAA amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollutants. The California CAA, signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS.

The National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants, as shown in Table 4.3-3, *Ambient Air Quality Standards for Criteria Pollutants*. These pollutants are ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). Additionally, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

TABLE 4.3-3 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard [a]	Federal Primary Standard [b]	Major Pollutant Sources
Ozone (O_3) [c]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20.0 ppm	35.0 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9.0 ppm	
Nitrogen Dioxide (NO_2)	Annual Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	

TABLE 4.3-3 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard [a]	Federal Primary Standard [b]	Major Pollutant Sources
Respirable Particulate Matter (PM_{10}) [d]	Annual Arithmetic Mean	20.0 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50.0 µg/m^3	150.0 µg/m^3	
Respirable Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12.0 µg/m^3	12.0 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35.0 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarterly	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4) [e]	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo[f] =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Notes: ppm: parts per million; µg/m^3: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
a. California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
b. National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

TABLE 4.3-3 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard [a]	Federal Primary Standard [b]	Major Pollutant Sources

c. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
d. On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
e. On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual arithmetic mean standards were revoked.
Source: California Air Resources Board, 2016, *Ambient Air Quality Standards*, https://ww2.arb.ca.gov/resources/documents/ambient-air-quality-standards-0, accessed July 21, 2023.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- Assembly Bill (AB) 1493: Pavley Fuel Efficiency Standards
- Heavy-Duty (Tractor-Trailer) Greenhouse Gas (GHG) Regulation
- Advanced Clean Cars Regulation
- Advanced Clean Fleets Regulation
- Senate Bill (SB) 1078 and SB 107: Renewables Portfolio Standards
- California Code of Regulations (CCR) Title 20: Appliance Energy Efficiency Standards
- 24 CCR Part 6: Building Energy Efficiency Standards
- 24 CCR Part 11: Green Building Standards Code

Tanner Air Toxics Act and Air Toxics "Hot Spot" Information and Assessment Act

Public exposure to TACs is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal CAA (42 US Code Section 7412[b]) is a TAC. Under State law, the California Environmental Protection Agency (CalEPA), acting through CARB, is authorized to identify a substance as a TAC if it is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health. California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets up a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs that are identified as having no safe threshold. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High-priority facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

CARB has promulgated the following specific rules to limit TAC emissions:

- 13 CCR Chapter 10 Section 2485: Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling. This generally restricts on-road diesel-powered commercial motor vehicles with a gross vehicle weight rating of greater than 10,000 pounds from idling more than five minutes.
- 13 CCR Chapter 10 Section 2480: Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools. This generally restricts a school bus or transit bus from idling for more than five minutes when within 100 feet of a school.
- 13 CCR Section 2477 and Article 8: Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate. Regulations established to control emissions associated with diesel-powered TRUs.

Regional Regulations

Bay Area Air Quality Management District

BAAQMD is the agency responsible for ensuring that the National and California AAQS are attained and maintained in the SFBAAB. Air quality conditions in the SFBAAB have improved significantly since BAAQMD was created in 1955. BAAQMD prepares air quality management plans (AQMP) to attain AAQS in the SFBAAB. BAAQMD prepares ozone attainment plans for the National O_3 standard and clean air plans for the California O_3 standard. BAAQMD prepares these AQMPs in coordination with Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) to ensure consistent assumptions about regional growth.

BAAQMD 2017 Clean Air Plan

BAAQMD adopted the 2017 *Clean Air Plan: Spare the Air, Cool the Climate* (2017 Clean Air Plan) on April 19, 2017, making it the most recently adopted comprehensive plan. The 2017 Clean Air Plan incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2017 Clean Air Plan serves as an update to the adopted Bay Area 2010 Clean Air Plan and continues to provide the framework for SFBAAB to achieve attainment of the National and California AAQS. The 2017 Clean Air Plan updates the Bay Area's ozone plan, which is based on the "all feasible measures" approach to meet the requirements of the California CAA. It sets a goal of reducing health risk impacts to local communities by 20 percent between 2015 and 2020 and lays the groundwork for reducing GHG emissions in the Bay Area to meet the State's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.

A comprehensive multipollutant control strategy has been developed to be implemented in the next three to five years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, TACs, and GHGs from a full range of emission sources. These control measures cover the following sectors: 1) stationary (industrial) sources; 2) transportation; 3) energy; 4) agriculture; 5) natural and working lands; 6) waste management; 7) water; 8) super-GHG pollutants; and 9) buildings.

Overall, the proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
  - Increase efficiency of the energy and transportation systems.
  - Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
  - Make the electricity supply carbon-free.
  - Electrify the transportation and building sectors.[13]

BAAQMD Community Air Risk Evaluation Program

The BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor TACs in the Bay Area. Based on findings of the latest report, DPM was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant contributors: 1,3-butadiene contributed 4 percent of the cancer risk-weighted emissions, and benzene contributed 3 percent. Collectively, five compounds—diesel PM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. The most important sources of cancer risk-weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). Overall, cancer risk from TAC dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for State diesel regulations and other reductions.

The major contributor to acute and chronic non-cancer health effects in the SFBBAB is acrolein (C_3H_4O). Major sources of acrolein are on-road mobile sources and aircraft near freeways and commercial and military airports.[14] Currently, CARB does not have certified emission factors or an analytical test method

[13] Bay Area Air Quality Management District, April 19, 2017, *Final 2018 Clean Air Plan, Spare the Air Cool the Climate, A Blueprint for Clean Air And Climate Protection in the Bay Area*, http://www.baaqmd.gov/research-and-https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf, accessed August 30, 2023.

[14] Bay Area Air Quality Management District, 2006, Community Air Risk Evaluation Program, Phase I Findings and Policy Recommendations Related to Toxic Air Contaminants in the San Francisco Bay Area, https://www.baaqmd.gov/Divisions/Planning-and-Research/Planning-Programs-and-Initiatives/~/media/54D434A0EB8348B78A71C4DE32831544.ashx, accessed August 30, 2023.

for acrolein. Since the appropriate tools needed to implement and enforce acrolein emission limits are not available, BAAQMD does not conduct health risk screening analysis for acrolein emissions.[15]

Assembly Bill 617 Community Action Plans

AB 617 (Chapter 136, Statues of 2017) was signed into law in July 2017 to develop a new community-focused program to reduce exposure more effectively to air pollution and preserve public health in environmental justice communities. AB 617 directs CARB and all local air districts to take measures to protect communities disproportionally impacted by air pollution through monitoring and implementing air pollution control strategies.

On September 27, 2018, CARB approved BAAQMD's recommended communities for monitoring and emission reduction planning. The State approved communities for year 1 of the program as well as communities that would move forward over the next five years. Bay Area recommendations included all the Community Air Risk Evaluation areas, areas with large sources of air pollution (e.g., refineries, seaports, and airports), areas identified via statewide screening tools as having pollution and/or health burden vulnerability, and areas with low life expectancy.[16]

- Year 1 Communities:
  - *West Oakland.* The West Oakland community was selected for BAAQMD's first Community Action Plan. In 2017, cancer risk from sources in West Oakland (local sources) was 204 in a million. The primary sources of air pollution in West Oakland include heavy trucks and cars, port and rail sources, large industries, and to a lesser extent other sources such as residential sources (i.e., wood burning). The majority (over 90 percent) of cancer risk is from DPM.[17]
  - *Richmond.* Richmond was selected for a community monitoring plan in year 1 of the AB 617 program. The Richmond area is in western Contra Costa County and includes most of Richmond and portions of El Cerrito. It also includes communities just north and east of Richmond, such as San Pablo and several unincorporated communities, including North Richmond. The primary goals of the Richmond monitoring effort are to leverage historical and current monitoring studies, better characterize the area's mix of sources, and more fully understand the associated air quality and pollution impact.[18]

[15] Bay Area Air Quality Management District, 2016, *Air Toxics NSR Program, Health Risk Screening Analysis Guidelines*, https://www.baaqmd.gov/~/media/files/planning-and-research/permit-modeling/hra_guidelines_12_7_2016_clean-pdf.pdf?la=en, accessed August 30, 2023.

[16] Bay Area Air Quality Management District, April 19, 2019, AB 617 Fact Sheet: San Francisco Bay Area Community Health Protection Program, https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en&rev=9f6dcd6de8854fd9853ff0498c6bbdff, accessed August 30, 2023.

[17] Bay Area Air Quality Management District, October 2, 2019, West Oakland Community Action Plan, https://www.baaqmd.gov/community-health/community-health-protection-program/west-oakland-community-action-plan, accessed August 30, 2023.

[18] Bay Area Air Quality Management District, April 19, 2019, AB 617 Fact Sheet: San Francisco Bay Area Community Health Protection Program, https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en&rev=9f6dcd6de8854fd9853ff0498c6bbdff, accessed August 30, 2023.

- Year 2 to 5 Communities: East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, Tri-Valley, and Vallejo are slated for action in years 2 to 5 of the AB 617 program.[19]

Planning Healthy Places

BAAQMD adopted *Planning Healthy Places* in 2016 to provide a list of best practices that should be applied when placing sensitive uses in areas with high levels of air pollution or in close proximity to local sources of air pollution. The goal of *Planning Healthy Places* is to support and encourage infill development while promoting clean, healthy air for residents. The key observation in BAAQMD's *Planning Healthy Places* is that proximity to air pollution sources substantially increases exposure and the potential for adverse health effects. There are three carcinogenic TACs that constitute the majority of the known health risks from motor vehicle traffic: DPM from trucks, and benzene and 1,3-butadiene from passenger vehicles. *Planning Healthy Places* provides a list of "Best Practices to Reduce Exposure to Local Air Pollution" that BAAQMD recommends lead agencies require for projects that introduce new receptors in specific screening distances. These include practices that reduce local traffic emissions, increase site buffering between receptors and emission sources, or alter the design of proposed projects to remove receptors from locations expected to experience the highest pollutant concentrations.[20]

BAAQMD Rules and Regulations

Regulation 7, Odorous Substances

Sources of objectionable odors may occur within the City. BAAQMD's Regulation 7, *Odorous Substances*, places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under BAAQMD Regulation 1, Rule 1-301, *Public Nuisance*, which states that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property." Under BAAQMD's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance.

Other BAAQMD Regulations

In addition to the plans and programs described above, BAAQMD administers a number of specific regulations on various sources of pollutant emissions that would apply to individual development projects in the EIR Study Area, including:

[19] Bay Area Air Quality Management District, April 19, 2019, AB 617 Fact Sheet: San Francisco Bay Area Community Health Protection Program, https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en&rev=9f6dcd6de8854fd9853ff0498c6bbdff, accessed August 30, 2023.

[20] Bay Area Air Quality Management District, May 2016, *Planning Healthy Places: A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning*, https://www.baaqmd.gov/~/media/files/planning-and-research/planning-healthy-places/php_may20_2016-pdf.pdf?la=en, accessed May 25, 2023.

- BAAQMD, Regulation 2, Rule 2, *New Source Review*
- BAAQMD, Regulation 2, Rule 5, *New Source Review of Toxic Air Contaminants*
- BAAQMD Regulation 6, Rule 1, *General Requirements*
- BAAQMD Regulation 6, Rule 2, *Commercial Cooking Equipment*
- BAAQMD Regulation 8, Rule 3, *Architectural Coatings*
- BAAQMD Regulation 8, Rule 4, *General Solvent and Surface Coatings Operations*
- BAAQMD Regulation 8, Rule 7, *Gasoline Dispensing Facilities*
- BAAQMD Regulation 11, Rule 2, *Asbestos, Demolition, Renovation and Manufacturing*

Sonoma County Transportation Authority

The Sonoma County Transportation Authority (SCTA) is the congestion management agency for Sonoma County. SCTA is tasked with developing a comprehensive transportation improvement program among local jurisdictions that will reduce traffic congestion and improve land use decision-making and air quality. SCTA's latest congestion management program is the 2016 Comprehensive Transportation Plan (CTP). SCTA's countywide transportation model must be consistent with the regional transportation model developed by the MTC with ABAG data. The countywide transportation model is used to help evaluate cumulative transportation impacts of local land use decisions on the congestion management program system. In addition, SCTA's updated CTP includes multi-modal performance standards and trip reduction and transportation demand management (TDM) strategies consistent with the goals of reducing regional VMT in accordance with the Sustainable Communities and Climate Protection Act, commonly known by its legislative bill number SB 375.

As part of the implementing framework for the CTP, communities in Sonoma County have identified Priority Development Areas (PDA) to focus future population and employment growth. Increased density in PDAs is intended to locate more people near jobs and services in an effort to reduce travel and transportation related GHG emissions.[21] Furthermore, shifting travel to active transportation modes (such as walking, biking, or riding transit) would help improve neighborhood air quality conditions and overall community health.

Plan Bay Area

As described in Chapter 4.0, *Environmental Analysis*, of this Draft EIR, MTC and ABAG adopted *Plan Bay Area* 2050 on October 21, 2021.[22] *Plan Bay Area* provides transportation and environmental strategies to continue to meet the regional transportation-related GHG reduction goals of the Sustainable Communities and Climate Protection Act (SB 375). Strategies to reduce GHG emissions include focusing housing and commercial construction in walkable, transit-accessible places; investing in transit and active transportation; and shifting the location of jobs to encourage shorter commutes.

[21] Sonoma County Transportation Authority, September 2016, *Moving Forward 2040: Sonoma County's Comprehensive Transportation Plan*, https://scta.ca.gov/wp-content/uploads/2016/09/CTP16_090616.pdf, accessed August 30, 2023.

[22] Association of Bay Area Governments and Metropolitan Transportation Commission, October 2021, *Plan Bay Area 2050*, https://www.planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021.pdf, accessed July 21, 2023.

Similar to the County's CTP, local governments have identified PDAs[23] and Transit Priority Areas (TPAs)[24] to focus growth within the Bay Area region. As shown on Figure 4-1, *Priority Development Areas and Transit Priority Areas*, in Chapter 4.0 of this Draft EIR, the EIR Study Area has six PDAs and three TPAs—the Mendocino Avenue/Santa Rosa Avenue Corridor PDA, North Santa Rosa Station PDA and TPA, Downtown Station Area PDA and TPA, Sebastopol Road Corridor PDA, Roseland PDA, Santa Rosa Avenue PDA, and Santa Rosa Transit Mall TPA.

Local Regulations

Santa Rosa City Code

The Santa Rosa City Code (SRCC) includes directives to minimize adverse impacts to air quality in Santa Rosa. The SRCC is organized by title, chapter, and section and in some cases, articles. Most provisions related to air quality are in Title 9, *Health and Safety*, and Title 17, *Environmental Protection*, as follows:

- Chapter 9-20, ***Smoking Regulations***. This chapter provides regulations to protect the public health, safety, and general welfare by providing a smoke-free and vapor-free environment in public and private places where nonsmokers may be exposed to secondhand smoke and vapor.
- Chapter 17-30, ***Trip Reduction Program***. The purpose of this chapter is to reduce traffic and improve air quality within the City of Santa Rosa by promoting the development of trip reduction programs at existing and future work sites. Average vehicle ridership is established to measure progress toward achieving an increase in the use of commute alternatives and reducing peak hour vehicle trips. Section 17-30.060, *Employer responsibilities*, list the provisions for employers to implement and Section 17-30.070, *City participation*, outlines the City's roles in the trip reduction program.
- Chapter 17-35, ***Installation of Wood Burning Appliances, Removal, and Operation of Noncertified Wood Heaters***. This chapter aims to improve air quality by educating the public with regard to the impacts of burning wood and the various types of wood burning appliances, regulating the type of wood burning appliances that may be installed and maintained within the city, and banning the use of noncertified wood burning appliances after June 1, 2004.

4.3.1.4 EXISTING CONDITIONS

San Francisco Bay Area Air Basin

California is divided geographically into air basins for the purpose of managing the air resources of the State on a regional basis. An air basin generally has similar meteorological and geographic conditions throughout. The State is divided into 15 air basins. As previously stated, Santa Rosa is in the SFBAAB. The discussion below identifies the natural factors in the SFBAAB that affect air pollution. Air pollutants of concern are criteria air pollutants and TACs. Federal, State, and local air districts have adopted laws and regulations intended to control and improve air quality. BAAQMD is the regional air quality agency for the SFBAAB, which comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa

[23] PDAs are transit-oriented, infill development opportunity areas within existing communities.
[24] TPAs are half-mile buffers surrounding major transit stops or terminals.

Clara Counties; the southern portion of Sonoma County; and the southwestern portion of Solano County. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions:[25]

- Meteorology: 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[26] splits in the Bay Area, creating a western coast gap, the Golden Gate, and an eastern coast gap, the Carquinez Strait, which allows air to flow in and out of the Bay Area 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 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. Weak inversions coupled with moderate winds result in a low air pollution potential.
- Wind Patterns: During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately south of Mount Tamalpais in Marin County, the northwesterly winds accelerate considerably and come more directly from the west as they stream through the Golden Gate. This channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward Richmond and to the southwest toward San Jose when it meets the East Bay hills. Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate, or the San Bruno gap. For example, the average wind speed at San Francisco International Airport in July is about 17 knots (from 3:00 to 4:00 p.m.), compared with only 7 knots at San Jose and less than 6 knots at the Farallon Islands. The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part upon the height and strength of the inversion. Under normal atmospheric conditions, the air in the lower atmosphere is warmer than the air above it. An inversion is a change in the normal conditions that causes the temperature gradient to be reversed or inverted. If the inversion is low and strong, and hence stable, the flow of the sea breeze will be inhibited, and stagnant conditions are likely to result. In the winter, the SFBAAB frequently experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes (i.e., conditions where there is little mixing, which occurs when there is a lack of or little wind) are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from

[25] Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed August 30, 2023.

[26] The Coast Ranges traverse California's west coast from Humboldt County to Santa Barbara County.

the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the SFBAAB.

- Temperature: Summertime temperatures in the SFBAAB are determined in large part by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of cold water from the ocean bottom along the coast. On summer afternoons, the temperatures at the coast can be 35 degrees Fahrenheit cooler than temperatures 15 to 20 miles inland; at night, this contrast usually decreases to less than 10 degrees Fahrenheit. In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large.
- Precipitation: The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains (November through March) account for about 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the SFBAAB to another, even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys. During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing (an upward and downward movement of air) are usually high, and thus pollution levels tend to be low (i.e., air pollutants are dispersed more readily into the atmosphere rather than accumulate under stagnant conditions). However, during the winter, frequent dry periods do occur, where mixing and ventilation are low and pollutant levels build up.
- Wind Circulation: Low wind speed contributes to the buildup of air pollution because it allows more pollutants to be emitted into the air mass per unit of time. Light winds occur most frequently during periods of low sun (fall and winter, and early morning) and at night. These are also periods when air pollutant emissions from some sources are at their peak, namely, commuter traffic (early morning) and wood-burning appliances (nighttime). The problem can be compounded in valleys, when weak flows carry the pollutants up-valley during the day, and cold air drainage flows move the air mass down-valley at night. Such restricted movement of trapped air provides little opportunity for ventilation and leads to buildup of pollutants to potentially unhealthful levels.
- Inversions: As described above, an inversion is a layer of warmer air over a layer of cooler air. Inversions affect air quality conditions significantly because they influence the mixing depth (i.e., the vertical depth in the atmosphere available for diluting air contaminants near the ground). There are two types of inversions that occur regularly in the SFBAAB. Elevation inversions are when the air blows over elevated areas, it is heated as it is compressed into the side of the hill/mountain. When that warm air comes over the top, it is warmer than the cooler air of the valley. These are more common in the summer and fall. Radiation inversions occur during the night when the ground cools off, radiating the heat to the sky, and are more common during the winter. The highest air pollutant concentrations in the SFBAAB generally occur during inversions.

SFBAAB Area Designations

The AQMP provides the framework for air quality basins to achieve attainment of National and California AAQS through the State Implementation Plan. Areas that meet AAQS are classified attainment areas, and areas that do not meet these standards are classified nonattainment areas. Severity classifications for O_3 range from marginal, moderate, and serious to severe and extreme.

- **Unclassified:** A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- **Attainment:** A pollutant is in attainment if the AAQS for that pollutant was not violated at any site in the area during a three-year period.
- **Nonattainment:** A pollutant is in nonattainment if there was at least one violation of an AAQS for that pollutant in the area.
- **Nonattainment/Transitional:** A subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

The attainment status for the SFBBAB is shown in Table 4.3-4, *Attainment Status of Criteria Air Pollutants in the San Francisco Bay Area Basin.* The SFBBAB is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS.

TABLE 4.3-4 ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SAN FRANCISCO BAY AREA AIR BASIN

Pollutant	State	Federal
Ozone – 1-hour	Nonattainment	Classification revoked (2005)
Ozone – 8-hour	Nonattainment (serious)	Nonattainment (marginal) [a]
PM_{10}	Nonattainment	Unclassified/Attainment [b]
$PM_{2.5}$	Nonattainment	Unclassified/Attainment
CO	Attainment	Attainment
NO_2	Attainment	Unclassified
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	Unclassified/Attainment
All others	Unclassified/Attainment	Unclassified/Attainment

Notes:
a. Severity classification current as of February 13, 2017.
b. In December 2014, USEPA issued final area designations for the 2012 primary annual $PM_{2.5}$ national AAQS. 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.
Source: California Air Resources Board, 2023, Maps of State and Federal Area Designations, https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations, accessed July 21, 2023.

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of Santa Rosa have been documented and measured by BAAQMD. BAAQMD has 24 permanent monitoring stations located around the Bay Area, and data from the nearest station, Sebastopol-103 Morris Street in Sebastopol was used. The station closest to the EIR Study Area with data for PM_{10} was the Napa-Valley College Monitoring

Station. Data from these stations are summarized in Table 4.3-5, *Ambient Air Quality Monitoring Summary*. The data show occasional violations of the federal $PM_{2.5}$ and state PM_{10} standards.

TABLE 4.3-5 AMBIENT AIR QUALITY MONITORING SUMMARY

	Number of Days Threshold Were Exceeded and Maximum Levels During Such Violations		
Pollutant/Standard	**2019**	**2020**	**2021**
Ozone (O_3) [a]			
State 1-Hour ≥ 0.09 ppm	0	0	0
State & Federal 8-hour ≥ 0.07 ppm	0	0	0
Maximum 1-Hour Conc. (ppm)	0.070	0.068	0.071
Maximum 8-Hour Conc. (ppm)	0.060	0.059	0.063
Nitrogen Dioxide (NO_2)			
State 1-Hour ≥ 0.18 (ppm)	0	0	0
Maximum 1-Hour Conc. (ppb)	0.0319	0.0363	0.0263
Coarse Particulates (PM_{10}) [a]			
State 24-Hour > 50 µg/m^3	0	2	0
Federal 24-Hour > 150 µg/m^3	0	0	0
Maximum 24-Hour Conc. (µg/ m^3)	37.5	122.9	22.9
Fine Particulates ($PM_{2.5}$)			
Federal 24-Hour > 35 µg/m^3	0	7	0
Maximum 24-Hour Conc. (µg/m^3)	28.0	124.3	29.5

Notes: ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter; * = insufficient data/not available
a. Data obtained from the Napa-Valley College Monitoring Station for PM_{10}.
Source: California Air Resources Board, 2023, Air Pollution Data Monitoring Cards (2019, 2020, and 2021), https://www.arb.ca.gov/adam/topfour/topfour1.php, accessed July 21, 2023.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases. Disadvantaged communities (i.e., environmental justice communities) identified by CalEnviroScreen 4.0 (CES4) may be disproportionately affected by and vulnerable to poor air quality.[27, 28] The CES cumulative score is a cumulative measure of overall environmental justice burden based on 24 indicators, including pollution, social, and health indicators, four of which are specifically related to air quality or air pollution.

Residential areas are also considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial,

[27] Under SB 535, disadvantaged communities are defined as the top 25 percent scoring areas from CES along with other areas with high amounts of pollution and low populations.

[28] CES4 Indicator Maps can be found at: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40.

commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

Environmental Justice Communities

Disadvantaged communities identified by CES (i.e., environmental justice communities) may be disproportionately affected by and vulnerable to poor air quality.[29, 30] The CES cumulative score is a cumulative measure of overall environmental justice burden based on 24 indicators, including pollution, social, and health indicators, four of which specifically relate to air quality or air pollution (see Figure 4.3-1, *CES4 Indicator: Cumulative Score by Percentile*).

Within Sonoma County, there are the following identified sensitive community types, which are areas that are disproportionately burdened by pollution, both of which are based on CES4:

- BAAQMD's Overburdened Communities. Figure 4.3-2, *BAAQMD Overburdened Communities*, shows the areas that, according to BAAQMD, are disproportionately burdened by pollution. These Overburdened Communities were mapped using the CES4, a tool advocated for by community groups and developed by the State Office of Environmental Health Hazard Assessment (OEHHA) on behalf of the CalEPA.
- Santa Rosa Equity Priority Areas (EPAs).[31] The City's proposed General Plan 2050 identifies communities that suffer most from economic, health, and environmental burdens based on SB 1000 "disadvantaged communities" definition. These communities disproportionately burdened by pollution and health impacts in Santa Rosa are called Equity Priority Areas (see Figure 4.3-3, *Santa Rosa Equity Priority Area*s). EPAs were identified using the CES4 tool, which applies a formula to each census tract in the state to generate a score that ranks the level of cumulative impacts in each area relative to the rest of the census tracts in the state. In general, the higher the score, the more impacted a community is. Census tracts in the highest quartile of scores (i.e., 75 to 100 percent [75 percentile]) are considered EPAs. Additional EPAs were also identified pursuant to SB 535, which encourages cities to work with community members and stakeholders to refine the boundaries of these communities and identify additional communities.

CalEnviroScreen Air Quality Indicators

CES identifies California communities most affected by sources of pollution and where people are vulnerable to pollution's effects. People in environmental justice areas identified by CES4 by BAAQMD's Overburdened Communities, may be disproportionately affected by and vulnerable to poor air quality. CES's "pollution burden" map identifies communities exposed to pollution from human activities, such as air pollution (ozone, $PM_{2.5}$, DPM), water pollution (drinking water contaminants), and hazardous materials (pesticide use, children's lead exposure, toxic releases), and traffic density. Figure 4.3-4, *CES4 Indicator:*

[29] Under SB 535, disadvantaged communities are defined as the top 25 percent scoring areas from CES along with other areas with high amounts of pollution and low populations.

[30] CES4 Indicator maps can be found at: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40.

[31] Synonymous with Disadvantaged Communities under SB 1000.

Pollution Burden by Percentile, shows the pollution burden in the EIR Study Area relative to the rest of the state. In CES, the pollution burden score considers the disproportionate effect of pollution on environmental justice communities, because the score weighs socioeconomic factors (e.g., educational attainment and poverty) and sensitivity of the population (e.g., asthma rates and cardiovascular disease). Though the causes of asthma are poorly understood, it is established that exposure to traffic and outdoor air pollutants can trigger asthma attacks. Previous research has shown that children, the elderly, racial and ethnic minorities, and low-income Californians suffer disproportionately from asthma attacks and asthma-like symptoms.[32] Figure 4.3-5, *CES4 Indicator: Asthma by Percentile*, maps the percentile of spatially modeled, age-adjusted rate of emergency department visits for asthma per 10,000 (averaged over 2015 to 2017) relative to the rest of the state.[33]

Placement of New Sensitive Receptors

As previously described in Section 4.3.1.3, *Regulatory Framework*, BAAQMD adopted *Planning Healthy Places* to provide a list of best practices that should be applied when placing sensitive uses in areas with high levels of air pollution or in close proximity to local sources of air pollution. Figure 4.3-6, *BAAQMD Siting Recommendations*, identifies stationary sources (BAAQMD-permitted) in the EIR Study Area and major roadways where BAAQMD recommends either implementation of best practices to reduce risk or preparation of site-specific analysis (e.g., health risk assessments) to ensure air quality compatibility. [34]

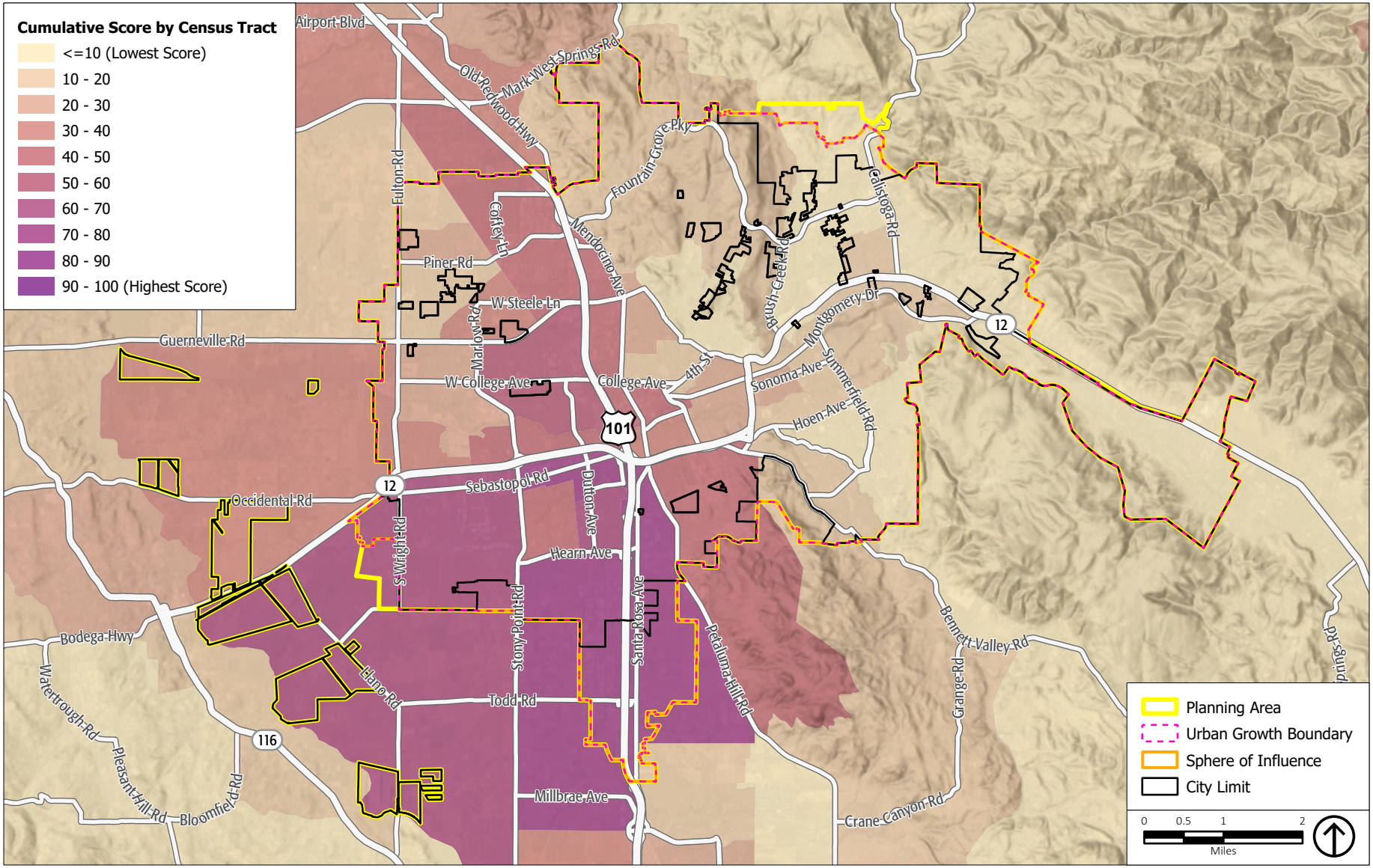
Existing Emissions

Table 4.3-6, *Existing EIR Study Area Regional Criteria Air Pollutant Emissions Inventory*, identifies the existing criteria air pollutant emissions inventory using emission rates for year 2019 (baseline conditions). The inventories are based on existing land uses in the EIR Study Area. The Year 2019 inventory represents the projected emissions currently generated by existing land uses using the baseline year 2019 emission factors for on-road vehicles.

[32] California Air Resources Board, October 2013, "Higher 'asthma burden' among minorities, low-income groups tied to increased exposure to air pollution," https://ww2.arb.ca.gov/news/higher-asthma-burden-among-minorities-low-income-groups-tied-increased-exposure-air-pollution, accessed May 25, 2023.

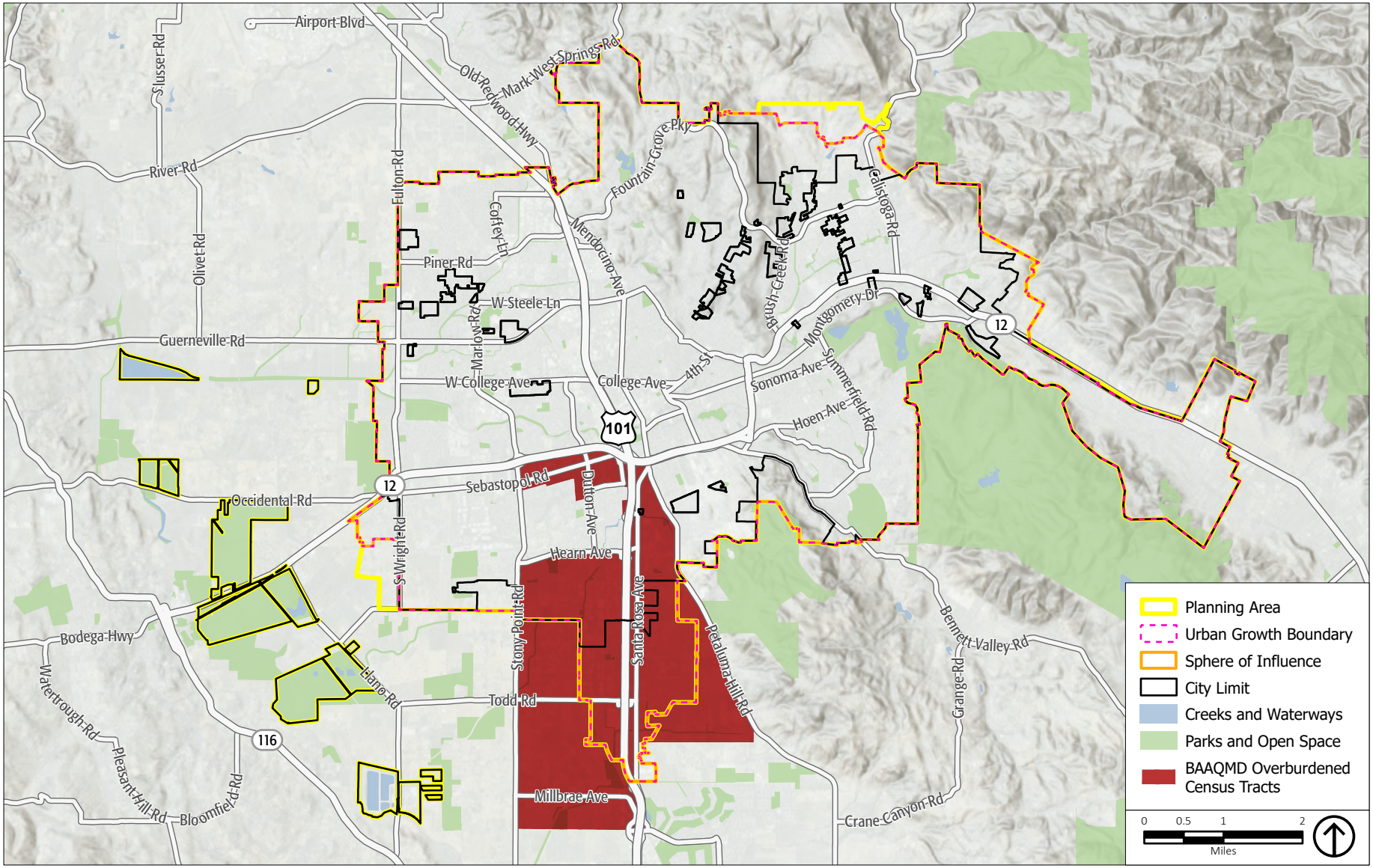
[33] Office of Environmental Health Hazard Assessment, May 1, 2023, CalEnviroScreen (CES) 4.0 Indicator Map, https://experience.arcgis.com/experience/ed5953d89038431dbf4f22ab9abfe40d/, accessed August 30, 2023.

[34] Bay Area Air Quality Management District, May 2016, *Planning Healthy Places: A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning*, https://www.baaqmd.gov/~/media/files/planning-and-research/planning-healthy-places/php_may20_2016-pdf.pdf?la=en, accessed May 25, 2023.



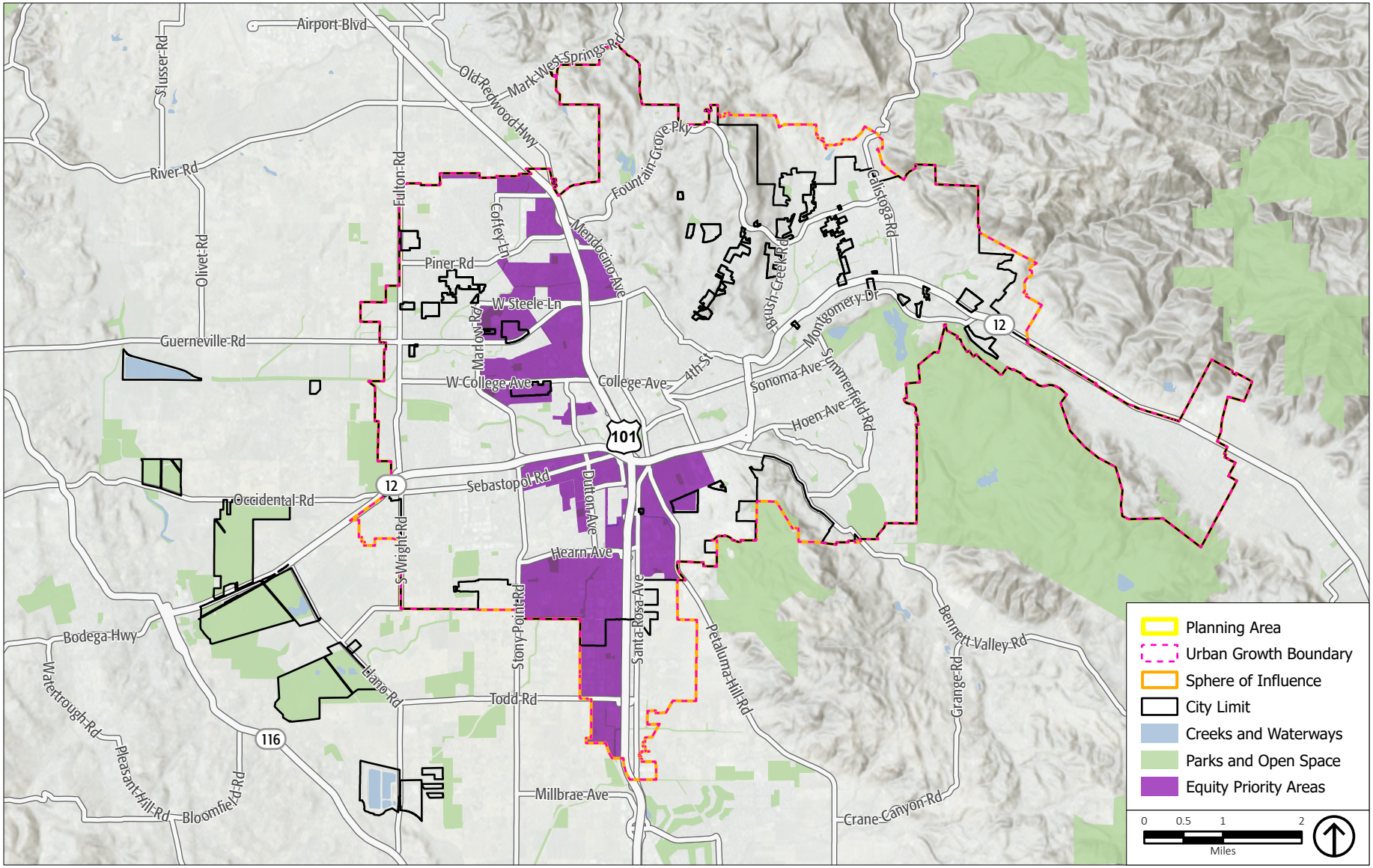
Source: OEHHA, 2021; ESRI, 2022; PlaceWorks, 2024.

Figure 4.3-1
CES4 Indicator - Cumulative Score by Percentile



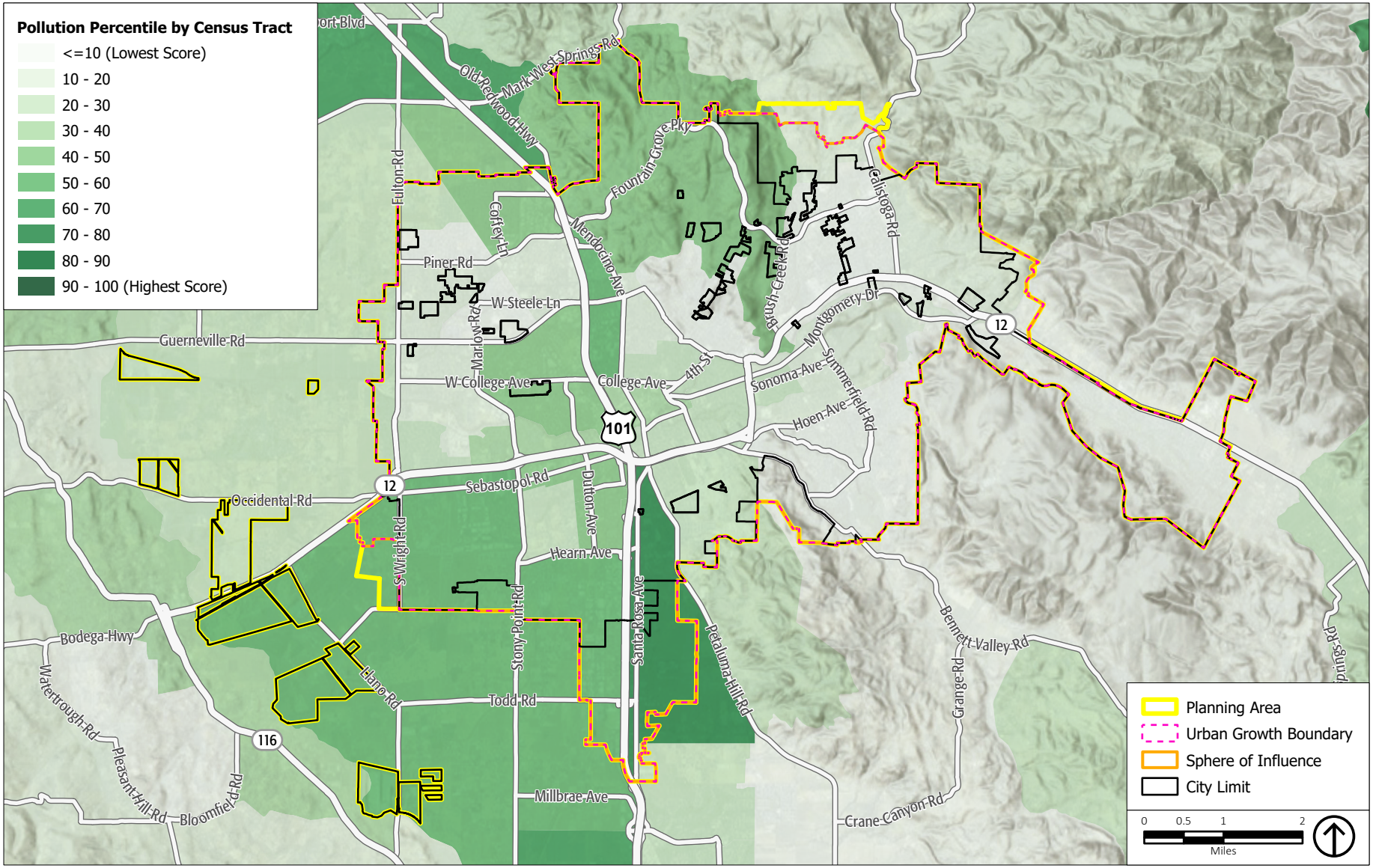
Source: ESRI, 2022; BAAQMD, 2023; PlaceWorks, 2024.

Figure 4.3-2
BAAQMD Overburdened Communities



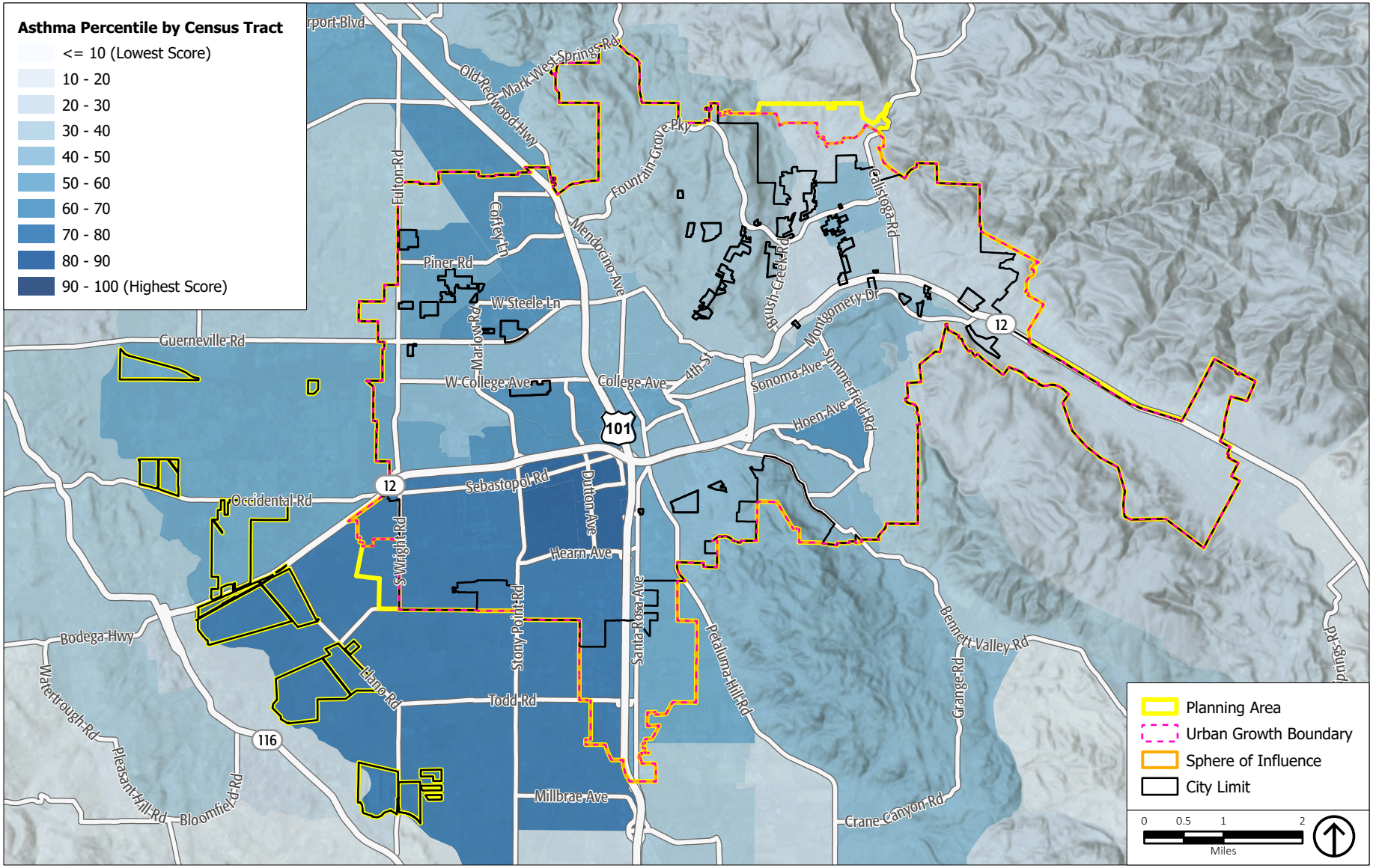
Source: ESRI, 2022; City of Santa Rosa, 2023; PlaceWorks, 2024.

Figure 4.3-3
Santa Rosa Equity Priority Areas



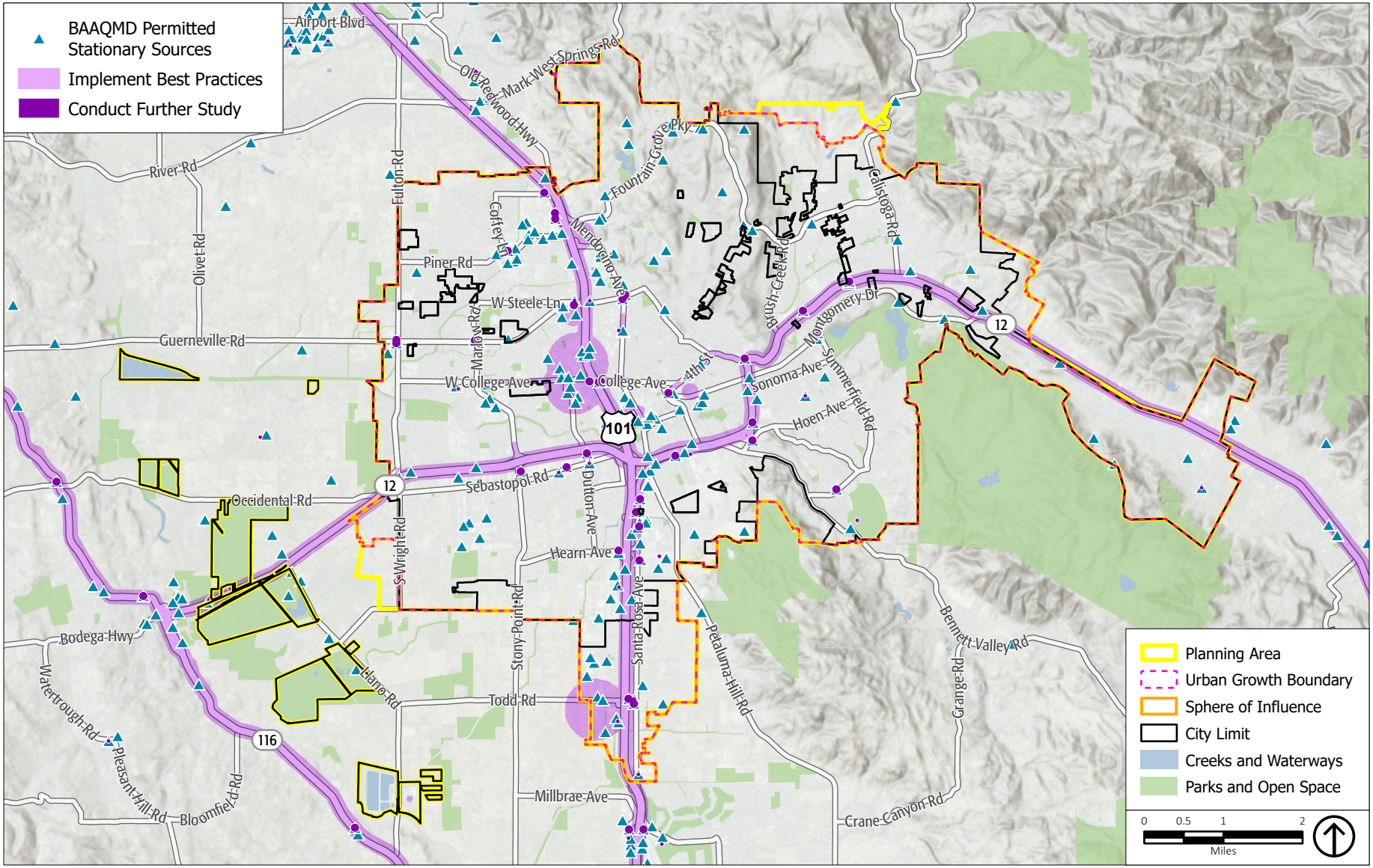
Source: OEHHA, 2021; ESRI, 2022; PlaceWorks, 2024.

Figure 4.3-4
CES4 Indicator - Pollution Burden by Percentile



Source: OEHHA, 2021; ESRI, 2022; PlaceWorks, 2024.

Figure 4.3-5
CES4 Indicator - Asthma by Percentile



Source: ESRI, 2022; BAAQMD, 2023; PlaceWorks, 2024.

Figure 4.3-6
BAAQMD Siting Recommendations

TABLE 4.3-6 EXISTING EIR STUDY AREA REGIONAL CRITERIA AIR POLLUTANT EMISSIONS INVENTORY

	Tons per year			
Pollutant/Standard	ROG	NO_X	PM_{10}	$PM_{2.5}$
Transportation [a]	46	376	22	7
Energy [b]	11	209	16	16
Off-road Equipment [c]	143	173	9	8
Consumer Products [d]	529	—	—	—
Total	**729**	**758**	**47**	**30**

Notes:
a. On-road transportation VMT is provided by VMT and modeled with EMFAC2021. VMT for the proposed project is based on the "project's effect" of VMT in the EIR Study Area.
b. Building electricity and natural gas are based on data provided by the City for the GHG emissions inventory conducted for their GHG Reduction Strategy from PG&E, SCP, and CalEEMod User's Guide for natural gas criteria air pollutant emissions. The electricity rates were adjusted to reflect the increase in housing units and employment within the EIR Study Area.
c. On-road vehicles and equipment are based on the OFFROAD2021 emissions inventory and include construction equipment and commercial equipment.
d. Based on CalEEMod User's Guide methodology to calculate ROG emissions from use of household consumer cleaning products.
Source: PlaceWorks, 2023.

Stationary Sources

Stationary sources of air pollution—including complex sources such as metal smelting, wastewater treatment plants, and refineries as well as smaller facilities such as diesel generators, gasoline dispensing facilities (GDFs or gas stations), and boilers—are regulated and subject to permit conditions established by BAAQMD.[35] Stationary sources in the EIR Study Area are shown on Figure 4.3-2.

Odors

Santa Rosa has a wastewater treatment plant that has the potential to generate odors. Odors are also associated with certain manufacturing processes and with some commercial operations (restaurants, etc.) that may be located near residential uses. Nuisance odors are regulated under BAAQMD Regulation 7, *Odorous Substances*, and Regulation 1, Rule 1-301, *Public Nuisance*. 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.

4.3.2 STANDARDS OF SIGNIFICANCE

Implementation of the proposed project would result in significant impacts to air quality if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
3. Expose sensitive receptors to substantial pollutant concentrations.

[35] Permitted facilities are mapped by BAAQMD and can be found at: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65.

4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.
5. In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to air quality.

4.3.2.1 BAAQMD PLAN-LEVEL THRESHOLDS

The BAAQMD *CEQA Air Quality Guidelines* (BAAQMD CEQA Guidelines) were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The BAAQMD CEQA Guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with California Environmental Quality Act (CEQA) requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. The BAAQMD CEQA Guidelines also include recommended assessment methodologies for air toxics, odors, GHG emissions, and environmental justice.

In June 2010, BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of the BAAQMD CEQA Guidelines. These thresholds are designed to establish the level at which the BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. BAAQMD published a new version of the BAAQMD CEQA Guidelines in April 2023, which was the version used to prepare the analysis in this EIR.[36]

Clean Air Plan Consistency

Under its plan-level review criteria, which apply to long-range plans such as the proposed project, BAAQMD recommends a consistency evaluation of the plan with its current AQMP control measures. BAAQMD considers a plan to be consistent with the applicable AQMP, which is currently the 2017 Clean Air Plan, if it is consistent with below considerations:

- Does the plan support the primary goals of the AQMP?
- Does the plan include applicable control measures from the AQMP?
- Does the plan disrupt or hinder implementation of any AQMP control measure?
- Does the plan result in VMT growth that is equal to or less than the projected population growth?

Criteria Air Pollutant Emissions and Precursors

Regional Significance Criteria

BAAQMD's regional significance criteria for projects that exceed the screening thresholds are shown in Table 4.3-7, *BAAQMD Regional (Mass Emissions) Criteria Air Pollutant Significance Thresholds*. Criteria for both the construction and operational phases of the proposed project are shown.

[36] Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed July 21, 2023.

TABLE 4.3-7 BAAQMD REGIONAL (MASS EMISSIONS) CRITERIA AIR POLLUTANT SIGNIFICANCE THRESHOLDS

	Construction Phase	Operational Phase	
Air Pollutant	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (Tons/year)
Project-Level			
ROG	54	54	10
NO_X	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
PM_{10} and $PM_{2.5}$ Fugitive Dust	Best Management Practices	None	None
Plan-Level			
All Criteria Air Pollutants	No Net Increase		

Source: Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed July 21, 2023.

While the proposed General Plan 2050 is a local long-range plan, the land use pattern it envisions has regional implications, such as interjurisdictional transportation behavior and jobs-to-housing ratios; therefore, it would have a less-than-significant impact related to air quality if it demonstrates "no net increase" in criteria air pollutants and risks and hazards. To demonstrate no net increase, BAAQMD's Guidelines require two comparative analyses for the projected future emissions:

- Scenario 1: Project to Existing Conditions (base-to-future-year comparison). Compare the existing (base year) emissions with projected future year emissions plus the regional plan's emissions (base year/regional plan comparison).
- Scenario 2: Project to Future No Project Conditions (future baseline comparison). Compare projected future year emissions with projected future year emissions plus the regional plan's emissions (no regional plan/regional plan comparison). This scenario isolates changes in emissions due solely to the project since both the scenarios consider emissions reductions from federal and state regulations.

If both comparative analyses demonstrate no net increase in emissions, the air quality impacts of the proposed General Plan 2050 would be less than significant.

Health Effects of Criteria Air Pollutants

If projects exceed the emissions in Table 4.3-7, emissions would cumulatively contribute to the nonattainment status and would contribute to elevating health effects associated with these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants.

However, for projects that exceed the emissions in Table 4.3-7, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in

the SFBAAB would be affected by the health effects cited above. BAAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the SFBAAB; at the present time, it has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health in order to address the issue raised in *Sierra Club v. County of Fresno (Friant Ranch, L.P.)* (2018) 6 Cal.5th 502, Case No. S21978 (Friant Ranch).

Ozone concentrations are dependent upon a variety of 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 in relation to the National and California AAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds. To achieve the health-based standards established by the EPA, the air districts prepare air quality management plans that detail regional programs to attain the AAQS. However, if a project within the EIR Study Area exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until such time the attainment standards are met in the SFBAAB.

Receptor Exposure to Pollutant Concentrations

Local Carbon Monoxide Hotspots

Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots. The significance criteria for CO hotspots are based on the California AAQS for CO, which are 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average). Under a plan-level review, BAAQMD does not require an evaluation of CO hotspots. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology, the SFBAAB is in attainment of the National and California AAQS for CO emissions, and CO concentrations in the SFBAAB have steadily declined. Because CO concentrations have improved, BAAQMD does not require a CO hotspot analysis if the following criteria are met:[37]

- A 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.
- A project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- A project traffic would not increase traffic volumes at affected intersection to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

[37] Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed July 21, 2023.

Community Risk and Hazards

BAAQMD's significance thresholds for local community risk and hazard impacts apply to both the siting of a new source and to the siting of a new receptor. Local community risk and hazard impacts are associated with TACs and $PM_{2.5}$ because emissions of these pollutants can have significant health impacts at the local level. The proposed project would generate TACs and $PM_{2.5}$ during construction activities that could elevate concentrations of air pollutants at the nearby receptors. The thresholds for construction-related local community risk and hazard impacts are the same as for project operations. BAAQMD has adopted screening tables for air toxics evaluation during construction. Construction-related TAC and $PM_{2.5}$ impacts should be addressed on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and proximity to off-site and on-site receptors, as applicable.[38, 39]

Community Risk and Hazards: Project

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

- An excess (i.e., increased) cancer risk level of more than 10 in one million.
- Noncancer (i.e., chronic or acute) hazard index greater than 1.0.
- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$.[40]

Community Risk and Hazards: Cumulative

Cumulative sources represent the combined total risk values of each of the individual sources within the 1,000-foot evaluation zone. A project would have a cumulatively considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source or location of a receptor, plus the contribution from the project, exceeds any of the following in the absence of a qualified community risk reduction plan:[41]

- An excess cancer risk level of more than 100 in one million (from all sources).
- Chronic noncancer hazard index (from all local sources) greater than 10.0.
- 0.8 $\mu g/m^3$ annual average $PM_{2.5}$ (from all local sources).

[38] Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed July 21, 2023.

[39] Bay Area Air Quality Management District, January 5, 2017, Air Quality Standards and Attainment Status, http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status#thirteen, accessed July 21, 2023.

[40] Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed July 21, 2023.

[41] Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed July 21, 2023.

In February 2015, OEHHA adopted new health risk assessment guidance that includes several efforts to be more protective of children's health. These updated procedures include the use of age sensitivity factors to account for the higher sensitivity of infants and young children to cancer-causing chemicals, and age-specific breathing rates.[42]

Odor Impacts

BAAQMD's thresholds for odors are qualitative based on BAAQMD's Regulation 7, *Odorous Substances*. This rule places general limitations on odorous substances and specific emission limitations on certain odorous compounds. In addition, odors are also regulated under BAAQMD Regulation 1, Rule 1-301, *Public Nuisance*, which states that no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property. Under BAAQMD's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance. BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants.[43]

For a plan-level analysis, BAAQMD requires:

- Potential existing and planned locations of odor sources to be identified.
- Policies to reduce odors.

4.3.2.2 METHODOLOGY

Emissions Quantification

This air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur in conjunction with future development that would be accommodated by the proposed project. BAAQMD has published CEQA Guidelines that provide local governments with guidance for analyzing and mitigating air quality impacts and were used in this analysis. The EIR Study Area's criteria air pollutant emissions inventory includes the following sectors:

- Transportation: Transportation emissions forecasts were modeled using emission rates from CARB's EMFAC2021, version 1.0.2 web database. Model runs were based on Origin Destination (OD) Method using VMT data provided by W-Trans, calendar year 2019, and 2050 emission rates (see Chapter 4.15, *Transportation*, of this Draft EIR). VMT that have an origin or destination in the EIR Study Area use a transportation origin-destination methodology. Accounting of VMT is based on the recommendations

[42] California Office of Environmental Health Hazard Assessment, February 2015, *Air Toxics Hot Spots Program Risk Assessment Guidelines*, https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf, accessed July 21, 2023.

[43] Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed July 21, 2023.

of CARB's Regional Targets Advisory Committee (RTAC) created under SB 375. For accounting purposes, there are three types of trips:

- Internal-Internal. Vehicle trips that originated and terminated within the EIR Study Area (Internal-Internal, I-I). Using the accounting rules established by RTAC, 100 percent of the length of these trips and their emissions are attributed to the EIR Study Area.
- Internal-External/External-Internal. Vehicle trips that either originated or terminated (but not both) in the EIR Study Area (Internal-External or External-Internal, I-X and X-I). Using the accounting rules established by RTAC, 50 percent of the trip length for these trips is attributed to the EIR Study Area.
- External-External. Vehicle trips that neither originated nor terminated in the EIR Study Area. These trips are commonly called pass-through trips (External-External, X-X). Using the accounting rules established by RTAC, these trips are not counted toward the EIR Study Area's VMT or emissions.

- Energy: Energy use for residential and nonresidential land uses in the EIR Study Area were modeled using natural gas data provided by PG&E and Sonoma Clean Power as part of the GHG Reduction Strategy (Appendix B, *Air Quality and Greenhouse Gas Emissions Data,* of this Draft EIR and Appendix A, *Greenhouse Gas Reduction Strategy*, of the proposed General Plan 2050). Residential energy and non-residential energy forecasts are adjusted for increases in population and based on State actions energy forecasts conducted for the GHG Reduction Strategy.
- Off-Road Equipment: Emission rates from CARB's OFFROAD2021, version 1.0.4, web database were used to estimate criteria air pollutant emissions from light commercial and construction equipment in the EIR Study Area. OFFROAD2021 is a database of equipment use and associated emissions for each county compiled by CARB. Emissions were compiled using OFFROAD2021 for the County of Sonoma for year 2019 and forecast based on the increase in agricultural acreage, housing permits, employment, and housing units as a percentage of Sonoma County.
- Area Sources: Area sources are based on the emission factors from the CalEEMod Users Guide for emissions generated from use of household consumer products and cleaning supplies.

4.3.2.3 IMPACTS OF THE ENVIRONMENT ON A PROJECT

BAAQMD's CEQA Guidelines include methodology for jurisdictions wanting to evaluate the potential quantitative impacts from placing sensitive receptors proximate to major air pollutant sources as part of individual projects. For assessing community risk and hazards for siting a new receptor, sources within a 1,000-foot radius of a project site are typically considered. Sources are defined as freeways, high volume roadways, large distribution centers, and permitted sources. For plan-level impact determination such as this EIR, the analysis is limited to whether the plan has policies or overlay zones to reduce impacts.[44]

[44] Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed July 21, 2023.

Buildout under the proposed project could result in siting sensitive uses (e.g., residential) near sources of emissions (e.g., freeways, industrial uses, etc.). Developing new sensitive land uses near sources of emissions could expose people to potential air quality-related impacts. However, the purpose of this environmental evaluation is to identify the significant effects of the proposed project on the environment, not the significant effects of the environment on the proposed project, as determined by the California Supreme Court in *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369 (Case No. S213478). Thus, CEQA does not require analysis of the potential environmental effects from siting sensitive receptors near existing sources, and this type of analysis is not provided in the impact discussion below.

While it is generally not within the purview of CEQA to analyze impacts of the environment on a project, the proposed General Plan 2050 includes policy guidance which would ensure priority of the health of the city's residents through enforcement of the municipal code and incorporation of design features to minimize air quality impacts and to achieve appropriate health standards. Chapter 2, *Land Use and Economic Development*, Chapter 5, *Safety, Climate Resilience, Noise, and Public Services and Facilities*, and Chapter 6, *Health, Equity, Environmental Justice, and Parks*, of the proposed General Plan 2050 include the following goals, policies, and actions that would serve to protect sensitive receptors from poor air quality in the EIR Study Area:

- Goal 2-1: Ensure that growth and change serve community needs, protect the environment, improve the City's fiscal stability, and enhance quality of life for all members of the community.
  - Policy 2-1.1: Ensure that growth and change serve community needs, protect the environment, improve the City's fiscal stability, and enhance quality of life for all members of the community.
    - Action 2-1.2: Work with developers to ensure new development respects the integrity and character of surrounding uses, especially when nonresidential uses are proposed adjacent to residential areas. Consider use of buffers, landscaping, and other types of screening to minimize noise, light, glare, and odor.
- Goal 2-5: Create a business-friendly, diverse, and sustainable economy through the attraction of new business, and the expansion, retention, and support of existing business.
  - Policy 2-5.1: Create a business-friendly, diverse, and sustainable economy through the attraction of new business, and the expansion, retention, and support of existing business.
    - Action 2-5.6: Maintain and expand industrial zoned land close to established transportation corridors, including Highway 101, State Route 12, and the SMART rail line, focusing on areas away from sensitive receptors.
- Goal 2-9: Create a business-friendly, diverse, and sustainable economy through the attraction of new business, and the expansion, retention, and support of existing business.
  - Policy 2-9.3: Protect industrial land supply and ensure compatibility between industrial development and surrounding neighborhoods.
    - Action 2-9.4: Require industrial development adjacent to residential areas to provide buffers and institute setback, landscaping, and screening requirements intended to minimize noise, light, glare, and other impacts.

- Goal 5-9: Provide adequate and high-quality city services for water, wastewater, recycled water, stormwater, and solid waste.
  - Policy 5-9.6: Identify and work with partners to address impacts from groundwater threats and solid waste.
    - Action 5-9.41: Identify solid waste and hazardous waste facilities that do not comply with standards for preventing contamination of air, water, and soil with hazardous waste, and work with owners to upgrade those facilities to meet those standards, prioritizing facilities in Equity Priority Areas.
- Goal 6-1: Improve health and well-being for all community members by emphasizing community health in all City policies, programs, actions, and activities.
  - Policy 6-1.1: Promote efforts to improve community health outcomes and ensure that City investments support community health goals.
    - Action 6-1.3: Collaborate with health service organizations, including Sonoma County Health and Human Services, to identify environmental risk factors for asthma, especially in Equity Priority Areas and areas where more than 10 percent of adults have asthma.
    - *Action 6-1.5: As recommended by the California Air Resources Board, require projects that would result in construction activities within 1,000 feet of residential and other land uses that are sensitive to toxic air contaminants (e.g., hospitals, nursing homes, day care centers), as measured from the property line of the project, to prepare a construction health risk assessment in accordance with policies and procedures of the Office of Environmental Health Hazard Assessment and the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines that identifies mitigation measures and appropriate enforcement mechanisms capable of reducing potential cancer and non-cancer risks below the BAAQMD threshold.

      *Action 6-1.6: Require an operational health risk assessment for new industrial or warehousing development projects that 1) have the potential to generate 100 or more diesel truck trips per day or have 40 or more trucks with operating diesel-powered transport refrigeration units, and 2) are within 1,000 feet of a sensitive land use or Overburdened Community, as defined by BAAQMD. The operational HRA shall be prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and BAAQMD. If the operational HRA shows that the incremental cancer risk exceeds 10 in a million, the noncancer hazard index of 1.0, or the thresholds as determined by BAAQMD, require the project applicant to identify and demonstrate measures, such as those listed in the General Plan Environmental Impact Report, that can reduce potential cancer and noncancer risks to acceptable levels.
    - Action 6-1.7: Require applicants for residential and/or other sensitive land use projects (e.g., hospitals, nursing homes, day care centers) to implement the best practices identified in the BAAQMD Planning Healthy Places Guidebook (Guidebook) where the site is located within the recommended screening distance of the Guidebook.

- Action 6-1.11: Update the Zoning Code to require health impact assessments for nonresidential projects of 100,000 square feet or more in Equity Priority Areas to identify and address any potential negative health implications of the project.

- Goal 6-2: Advance health equity by understanding and addressing key social determinants of health.
  - Policy 6-2.4: Address conditions contributing to risk of asthma and adverse air quality.
    - Action 6-2.11: Consult with Sonoma County Public Health Division as appropriate to reduce risk of asthma through land use planning and community programs.

4.3.3 IMPACT DISCUSSION

As described in Chapter 4.0, *Environmental Analysis*, of this Draft EIR, some proposed General Plan 2050 policies and actions are required as means to mitigate environmental impacts under CEQA. These policies and actions are fully enforceable at the discretion of the decision-maker through permit conditions, agreements, or other legally binding instruments. These mitigating policies and actions use the imperative "shall," include performance criteria, and are marked with an asterisk (*). Note that all actions are required to be implemented by the City and therefore the imperative "shall," if not explicitly stated, is implied.

AIR-1	**Implementation of the proposed project would not conflict with or obstruct implementation of the BAAQMD Clean Air Plan.**

BAAQMD 2017 Clean Air Plan

The proposed project plays an important role in local agency project review by linking local planning and individual projects to the 2017 Clean Air Plan. It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration at an early enough stage to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to clean air goals in the Bay Area. As discussed in Section 4.3.2.1, *BAAQMD Plan-Level Thresholds*, BAAQMD requires a consistency evaluation of a proposed plan with the current AQMP control measures. In addition, proposed long-range plans must demonstrate if the project VMT or vehicle trip increase is less than or equal to the projected population increase.

The primary goals of the 2017 Clean Air Plan are to attain the National and California AAQS, reduce population exposure and protect public health in the Bay Area, and reduce GHG emissions and protect the climate. Furthermore, the 2017 Clean Air Plan lays the groundwork for reducing GHG emissions in the Bay Area to meet the State's 2030 GHG reduction target and the long-term GHG reduction goals.

Attain Air Quality Standards

BAAQMD's 2017 Clean Air Plan strategy is based on regional population and employment projections in the Bay Area compiled by ABAG, which are based in part on cities' general plan land use designations. These demographic projections are incorporated into *Plan Bay Area*. Demographic trends incorporated into *Plan Bay Area* determine VMT in the Bay Area, which BAAQMD uses to forecast future air quality

trends. The 2017 Clean Air Plan is based on data used in *Plan Bay Area* 2050. The SFBAAB is currently designated a nonattainment area for O_3, $PM_{2.5}$, and PM_{10} (California AAQS only).

As discussed in Chapter 4.13, *Population and Housing*, of this Draft EIR, the expected buildout under the proposed project would be able to accommodate the next three Regional Housing Needs Allocation (or RHNA) cycles and would not induce a substantial amount of unplanned population growth or growth for which inadequate planning has occurred. Additionally, the proposed project would result in an overall decrease in total VMT per service population compared to existing conditions (see Table 4.15-4, *Daily VMT Performance Metrics for the EIR Study Area*, in Chapter 4.15, *Transportation*, of this Draft EIR). Chapter 2, *Land Use and Economic Development,* of the proposed General Plan 2050 also provides goals, policies, and actions that would serve to minimize potential adverse impacts related to growth in the EIR Study Area (see impact discussion POP-1 in Chapter 4.13 of this Draft EIR). Therefore, implementation of the proposed project would not introduce a substantial unplanned growth in population in the EIR Study Area and all potential future development would be required to comply with any required site-specific infrastructure improvements and to pay any project-specific impact fees.

As discussed in greater detail under impact discussion AIR-2, potential future development projects from implementation of the proposed project would be required to undergo their own project-specific CEQA environmental review. In determining whether an individual development project would be considered a project under CEQA that would have potentially significant impacts on local and regional air quality, including consideration of an individual development project's contribution to an existing or forecasted air quality violation, BAAQMD recommends project-level significance thresholds for criteria pollutants and ozone precursors. Therefore, the population projections of the proposed project would be consistent with regional projections. The emissions resulting from potential future development associated with the proposed project are included in the BAAQMD projections, and future development accommodated under the proposed project would not hinder BAAQMD's ability to attain the National or California AAQS. Accordingly, this impact would be *less than significant*.

Reduce Population Exposure and Protect Public Health

Potential future development and activities from implementation of the proposed project could result in new sources of TACs and $PM_{2.5}$. Stationary sources, including smaller stationary sources associated with residential development (e.g., emergency generators and boilers), are subject to review by BAAQMD as part of the permitting process. Adherence to the BAAQMD permitting regulations would ensure that new stationary sources of TACs do not expose populations to significant health risk. Mobile sources of air toxics (e.g., truck idling) are not regulated directly by BAAQMD. However, residential development associated with the proposed project would not generate substantial truck traffic or idling. Furthermore, individual development projects would be required to achieve the project-level risk thresholds established by BAAQMD to ensure the sensitive receptor impact resulting from the subject development project would be *less than significant*.

Reduce GHG Emissions and Protect the Climate

Consistency of the proposed project with State, regional, and local plans adopted for the purpose of reducing GHG emissions are discussed in Chapter 4.8, *Greenhouse Gas Emissions*, of this Draft EIR. Potential future development under the proposed project would be required to adhere to statewide measures that have been adopted to achieve the GHG reduction targets of SB 32 and AB 1279, as outlined in the GHG Reduction Strategy (see Appendix B, *Air Quality and Greenhouse Gas Emissions Data,* of this Draft EIR and Appendix A, *Greenhouse Gas Reduction Strategy*, of the proposed General Plan 2050), which updates the City's Climate Action Plan. The proposed project is consistent with regional strategies for infill development identified in *Plan Bay Area*. Moreover, as discussed under impact discussion GHG-1 in Chapter 4.8 of this Draft EIR, the proposed project would meet legislative GHG emission reduction targets established under SB 32 and AB 1279 with implementation of the proposed GHG Reduction Strategy. Therefore, the proposed project is consistent with the goal of the 2017 Clean Air Plan to reduce GHG emissions and protect the climate, and the impact would be *less than significant*.

2017 Clean Air Plan Control Measures

Table 4.3-8, *Control Measures from the BAAQMD 2017 Clean Air Plan*, identifies the control measures included in the *2017 Clean Air Plan* that are required by BAAQMD to reduce emissions for a wide range of both stationary and mobile sources.

TABLE 4.3-8 CONTROL MEASURES FROM THE BAAQMD 2017 CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
Stationary Source Control Measures	▪ SS 1 – Fluid Catalytic Cracking in Refineries ▪ SS 2 – Equipment Leaks ▪ SS 3 – Cooling Towers ▪ SS 4 – Refinery Flares ▪ SS 5 – Sulfur Recovery Units ▪ SS 6 – Refinery Fuel Gas ▪ SS 7 – Sulfuric Acid Plants ▪ SS 8 – Sulfur Dioxide from Coke Calcining ▪ SS 9 – Enhanced NSR Enforcement for Changes in Crude Slate ▪ SS 10 – Petroleum Refining Emissions Tracking ▪ SS 11 – Petroleum Refining Facility-Wide Emission Limits ▪ SS 12 – Petroleum Refining Climate Impacts Limit ▪ SS 13 – Oil and Gas Production, Processing and Storage ▪ SS 14 – Methane from Capped Wells ▪ SS 15 – Natural Gas Processing and Distribution ▪ SS 16 – Basin-Wide Methane Strategy ▪ SS 17 – GHG BACT Threshold ▪ SS 18 – Basin-Wide Combustion Strategy	Stationary and area sources are regulated directly by BAAQMD; therefore, as the implementing agency, new stationary and area sources in the EIR Study Area would be required to comply with BAAQMD regulations. BAAQMD routinely adopts/revises rules or regulations to implement the stationary source (SS) control measures to reduce stationary source emissions. Based on the new development under the proposed project, implementation of the proposed project would not hinder the ability of BAAQMD to implement these SS control measures. Major stationary sources are more commonly associated with industrial manufacturing or warehousing. However, BAAQMD and the City have existing regulations in place to ensure potential future development under the proposed project would not conflict with the applicable SS control measures. Nonresidential land uses may generate small quantities of stationary source emissions during project operation (e.g., emergency generators, dry cleaners, and gasoline dispensing facilities); however, these small-quantity generators would require review by BAAQMD for permitted sources of air toxics, which would ensure consistency with the 2017 Clean Air Plan. The proposed project involves residential and commercial uses that would not include major stationary sources of emissions. Boilers and emergency generators for multifamily residential products would be required to follow BAAQMD's permitting requirements.

TABLE 4.3-8 CONTROL MEASURES FROM THE BAAQMD 2017 CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
	▪ SS 19 – Portland Cement ▪ SS 20 – Air Toxics Risk Cap and Reduction from Existing Facilities ▪ SS 21 – New Source Review for Toxics ▪ SS 22 – Stationary Gas Turbines ▪ SS 23 – Biogas Flares ▪ SS 24 – Sulfur Content Limits of Liquid Fuels ▪ SS 25 – Coatings, Solvents, Lubricants, Sealants and Adhesives ▪ SS 26 – Surface Prep and Cleaning Solvent ▪ SS 27 – Digital Printing ▪ SS 28 – LPG, Propane, Butane ▪ SS 29 – Asphaltic Concrete ▪ SS 30 – Residential Fan Type Furnaces ▪ SS 31 – General Particulate Matter Emission Limitation ▪ SS 32 – Emergency Backup Generators ▪ SS 33 – Commercial Cooking Equipment ▪ SS 34 – Wood Smoke ▪ SS 35 – PM from Bulk Material Storage, Handling and Transport, Including Coke and Coal ▪ SS 36 – PM from Trackout ▪ SS 37 – PM from Asphalt Operations ▪ SS 38 – Fugitive Dust ▪ SS 39 – Enhanced Air Quality Monitoring ▪ SS 40 – Odors	
Transportation Control Measures	▪ TR 1 – Clean Air Teleworking Initiative ▪ TR 2 – Trip Reduction Programs ▪ TR 3 – Local and Regional Bus Service ▪ TR 4 – Local and Regional Rail Service ▪ TR 5 – Transit Efficiency and Use ▪ TR 6 – Freeway and Arterial Operations ▪ TR 7 – Safe Routes to Schools and Safe Routes to Transit ▪ TR 8 – Ridesharing, Last-Mile Connection ▪ TR 9 – Bicycle and Pedestrian Access and Facilities ▪ TR 10 – Land Use Strategies ▪ TR 11 – Value Pricing ▪ TR 12 – Smart Driving	Transportation (TR) control measures are strategies to reduce vehicle trips, vehicle use, VMT, vehicle idling, and traffic congestion for the purpose of reducing motor vehicle emissions. Although most of the TR control measures are implemented at the regional level—that is, by MTC or Caltrans—the 2017 Clean Air Plan relies on local communities to assist with implementation of some measures. Potential future development over the buildout horizon of the proposed project would be reviewed based on the goals, policies, and actions of the proposed General Plan 2050. Chapter 3, *Circulation, Open Space, Conservation, and Greenhouse Gas Reduction,* contains the following goals, policies, and actions to expand the pedestrian and bicycle network: ▪ **Goal 3-1:** Provide an integrated land use and transportation system with safe and efficient movement of people and goods for all modes of travel that prioritizes reduction of VMT and transportation-related GHG emissions.

TABLE 4.3-8 CONTROL MEASURES FROM THE BAAQMD 2017 CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
	▪ TR 13 – Parking Policies ▪ TR 14 – Cars and Light Trucks ▪ TR 15 – Public Outreach and Education ▪ TR 16 – Indirect Source Review ▪ TR 17 – Planes ▪ TR 18 – Goods Movement ▪ TR 19 – Medium and Heavy-Duty Trucks ▪ TR 20 – Ocean Going Vessels ▪ TR 21 – Commercial Harbor Craft ▪ TR 22 – Construction, Freight and Farming Equipment ▪ TR 23 – Lawn and Garden Equipment	▪ **Policy 3-1.2:** Promote a citywide mode shift away from single-occupancy vehicles to support ambitious VMT and GHG reduction goals. ▪ **Action 3-1.5:** Develop a process that invests in and prioritizes non-automobile modes of transportation in capital improvement projects to reduce VMT and GHGs, prioritizing, in order: 1. Active transportation modes, including walking, bicycling, and rolling. 2. Public transportation, including inter-city and regional systems. 3. Other shared vehicles such as carpool, vanpool, and rideshare/transportation network companies. ▪ **Action 3-1.11:** Update the Zoning Code to discourage cul-de-sac design and require any new developments with cul-de-sacs or other limited street connectivity layouts to provide enhanced connectivity for pedestrians and bicyclists to sites adjacent to or behind the new developments. ▪ **Action 3-1.13:** Work with developers in the beginning phases of project conception to install Class I and Class IV bicycle lanes, wherever feasible. ▪ **Goal 3-2:** Provide a safe and accessible active and public transportation network that emphasizes active transportation connections and service to Equity Priority Areas and Areas of Change. ▪ **Policy 3-2.1:** Ensure that the active transportation network remains in good condition by maintaining facilities, tracking the state of infrastructure, and managing the network in a way that serves all users. ▪ **Action 3-2.2:** Use mapping to identify gaps in the active transportation network, and complete those gaps, except where it may be infeasible due to lack of City right-of way. ▪ **Action 3-2.4:** Improve connections in the active transportation network to ensure that all who choose to walk, roll, or ride have adequate access to public transportation amenities, especially in Equity Priority Areas and Areas of Change. ▪ **Action 3-2.6:** Ensure that major arterials have active transportation infrastructure that accommodates all road users and does not present a barrier to regional travel for any mode. ▪ **Action 3-2.7:** Improve active transportation crossings of major transportation barriers, such as the SMART rail lines, Highway 101, and Highway 12. ▪ **Policy 3-2.2:** Continue to expand and improve the active transportation network toward completing a safe, continuous, convenient, and attractive network of designated routes that connect all neighborhoods and that is equitably accessible for all ages and abilities.

TABLE 4.3-8 CONTROL MEASURES FROM THE BAAQMD 2017 CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
		▪ **Action 3-2.12:** Identify and analyze arterial corridors and improve them by preparing and implementing corridor plans to address all transportation modes, specifically active transportation, focusing on separated or protected facilities for all ages and abilities. ▪ **Action 3-2.13:** Ensure that there are no physical barriers to bicyclists or pedestrians as they cross high traffic roadways at intersections of Class I or Class IV facilities through improvements such as crosswalks and beacon lights. ▪ **Action 3-2.18:** Prioritize addressing active transportation deficiencies in Equity Priority Areas.
Energy and Climate Control Measures	▪ EN 1 – Decarbonize Electricity Production ▪ EN 2 – Renewable Energy Decrease Electricity Demand	The energy and climate (EN) control measures are intended to reduce energy use as a means to reducing adverse air quality emissions. Potential future development over the buildout horizon of the proposed project would be reviewed based on the goals, policies, and actions of the proposed General Plan 2050. The proposed Chapter 2, *Land Use and Economic Development*, and Chapter 3, *Circulation, Open Space, Conservation, and Greenhouse Gas Reduction,* contain the following goal, policies, and actions that align with the City's goals to reduce energy use: ▪ **Goal 3-7:** Strive to achieve net carbon neutrality no later than 2045. ▪ **Policy 3-7.2:** Reduce energy use and increase energy efficiency in existing and new residential, commercial, industrial, and public structures. ▪ **Action 3-7.11:** Use education and incentives to promote and sustain energy-conserving design and practices. ▪ **Policy 3-7.3:** Increase the use of renewable, carbon-free, and distributed energy resources throughout the city. ▪ **Action 3-7.14:** Participate in State and local efforts to develop appropriate policies and review procedures for the installation of photovoltaic solar and other forms of distributed energy generation. ▪ **Action 3-7.15:** Continue to participate in utility-sponsored renewable energy programs that allow the city to receive a significant portion of energy from renewable sources. ▪ **Action 3-7.16:** Seek and identify resources to assist low-income homeowners and small business owners with identifying financing options for installation of rooftop solar energy systems, energy storage, and electrification of existing buildings. ▪ **Action 3-7.17:** Support the development of local-serving renewable energy projects that expand the availability of local renewable energy, provide sustainable local jobs, and support local and regional housing, economic development, and sustainability goals and initiatives.

TABLE 4.3-8 CONTROL MEASURES FROM THE BAAQMD 2017 CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
		Furthermore, new developments accommodated under the proposed project would be built to comply with the latest Building Energy Efficiency Standards and CALGreen standards. Therefore, implementation of the proposed project would not conflict with these EN control measures.
Buildings Control Measures	▪ BL 1 – Green Buildings ▪ BL 2 – Decarbonize Buildings ▪ BL 3 – Market-Based Solutions ▪ BL 4 – Urban Heat Island Mitigation	The buildings (BL) control measures focus on working with local governments to facilitate adoption of best GHG emissions control practices and policies. Potential future development over the buildout horizon of the proposed project would be reviewed based on the goals, policies, and actions of the proposed General Plan 2050. Chapter 3, *Circulation, Open Space, Conservation, and Greenhouse Gas Reduction,* and Chapter 5, *Safety, Climate Resilience, Noise, and Public Services and Facilities,* contain the following goals, policies, and actions to promote energy efficiency and sustainability: ▪ **Goal 3-7:** Strive to achieve net carbon neutrality no later than 2045. ▪ **Policy 3-7.2:** Reduce energy use and increase energy efficiency in existing and new residential, commercial, industrial, and public structures. ▪ **Action 3-7.5:** Require regular energy audits of existing City-owned and operated structures, identifying levels of existing energy use and potential conservation and efficiency measures. ▪ **Action 3-7.7:** Provide information on the cost-savings potential and other benefits of energy audits and energy-efficient retrofits to encourage their preparation for buildings throughout the city. ▪ **Action 3-7.8:** Guide project applicants toward site planning, solar orientation, cool roofs, and landscaping that decrease summer cooling and winter heating needs. ▪ **Action 3-7.9:** Identify incentives to encourage new buildings to exceed State energy efficiency requirements and/or meet or exceed the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) Program or equivalent standards. ▪ **Policy 3-7.3:** Reduce the use of fossil fuels as an energy source in new and existing buildings. ▪ **Action 3-7.18:** Encourage the establishment of neighborhood renewable energy microgrids to support resilience. ▪ **Action 3-7.19:** Support State and utility efforts to improve grid resilience and capacity. ▪ **Policy 3-7.4:** Reduce the use of fossil fuels as an energy source in new and existing buildings. ▪ **Action 3-7.21:** Evaluate and adopt changes to the building code or other municipal codes and policies to decarbonize the building stock while also maximizing energy efficiency.

TABLE 4.3-8 CONTROL MEASURES FROM THE BAAQMD 2017 CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
		▪ **Action 3-7.22:** Amend the building or energy code to incentivize building owners to upgrade residential appliances, including water and space heaters, to increase energy efficiency and reduce GHG emissions. ▪ **Action 3-7.23:** Develop new and retrofit existing City facilities to be zero net energy. ▪ **Action 3-7.24:** Continue to update the Building Code, consistent with State law, to increase the use of low-carbon construction materials. ▪ **Policy 3.7-5:** Continue the City's role as a leader in sustainability and climate action. ▪ **Action 3-7.27:** Continue using 100 percent renewable electricity for all City buildings. ▪ **Goal 5-6:** Ensure Santa Rosa is a resilient city able to adapt to, recover from, and thrive under changing climate conditions. ▪ **Policy 5-6.4:** Encourage collaboration among City departments and with nonprofit organizations to create a network of equitably located resilience centers throughout the city. ▪ **Action 5-6.10:** Seek funding to upgrade existing warming and cooling centers to offer refuge from extreme heat events and poor air quality due to regional wildfire smoke and be equipped with renewable energy generation and backup power supplies. ▪ **Action 5-6.11:** Continue to provide backup power and emergency supplies at critical City facilities, emergency shelters, community resilience centers, and cooling centers in case of power and water outages. Transition to carbon-free backup power sources as available and appropriate. In addition, as stated, potential development over the buildout horizon of the proposed project would be built to comply with the latest Building Energy Efficiency Standards and CALGreen standards. Thus, the proposed project would not conflict with these BL control measures.
Agriculture Control Measures	▪ AG 1 – Agricultural Guidance and Leadership ▪ AG 2 – Dairy Digesters ▪ AG 3 – Enteric Fermentation ▪ AG 4 – Livestock Waste	Agricultural practices in the Bay Area account for a small portion, roughly 1.5 percent, of the Bay Area GHG emissions inventory. The GHGs from agriculture include methane and nitrous oxide, in addition to carbon dioxide. While the Agriculture (AG) control measures target larger scale farming practices that are not included in the proposed project, the potential development under the proposed project does not constitute any sites that currently host commercial agricultural operations. Therefore, implementation of the proposed project would not conflict with these AG control measures.
Natural and Working Lands Control Measures	▪ NW 1 – Carbon Sequestration in Rangelands ▪ NW 2 – Urban Tree Planting ▪ NW 3 – Carbon Sequestration in Wetlands	The control measures for the natural and working lands sector focus on increasing carbon sequestration on rangelands and wetlands. Potential future development over the buildout horizon of the proposed project would be reviewed based on the goals, policies, and actions of the proposed General Plan

TABLE 4.3-8 CONTROL MEASURES FROM THE BAAQMD 2017 CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
		2050. Chapter 3, *Circulation, Open Space, Conservation, and Greenhouse Gas Reduction,* and Chapter 5, *Safety, Climate Resilience, Noise, and Public Services and Facilities,* contain the following goals, policies, and actions to promote carbon sequestration: ▪ **Goal 3-5:** Protect, expand, maintain, and restore natural resources, open space, and the limited remaining agricultural land. ▪ **Policy 3-5.1:** Maximize the benefits of open space, including by supporting passive recreation and conservation. ▪ **Action 3-5.1:** Give priority to multi-benefit recreational projects that maximize pollution reduction and adaptation, carbon sequestration, heat-island reduction, stormwater capture that increases infiltration, habitat protection and biodiversity, and/or community health improvements. ▪ **Policy 3-5.3:** Conserve and protect creeks, wetlands, vernal pools, wildlife ecosystems, rare plant habitats, and waterways from development. ▪ **Action 3-4.5:** Explore options that help to conserve wetlands and rare plants, riparian habitat and other sensitive natural communities, and essential habitat for special- status species, such as: ▪ Avoidance of sensitive habitat. ▪ Clustered development. ▪ Transfer of development rights. ▪ Compensatory mitigation, such as restoration or creation. ▪ **Action 3-5.6:** Protect high-quality wetlands and vernal pools from development and other activities. ▪ **Action 3-5.8:** Inventory wetlands, floodplains, marshlands, and adjacent lands that could potentially support climate adaptation (e.g., through flood management, filtration, or other beneficial ecosystem services) and mitigation (e.g., carbon sequestration). ▪ ***Action 3-5.10:** Continue to implement existing regulations and procedures, including subdivision guidelines, zoning, design review, and environmental law, to conserve wetlands and rare plants, riparian habitat and other sensitive natural communities, and essential habitat for special-status species ▪ **Policy 3-5.4:** Use existing (and/or restore historical) natural features and ecosystem processes for conservation, preservation, or sustainable management of open space, including, but not limited to, aquatic or terrestrial vegetated open space, systems that provide clean water, conserve ecosystem values and functions, and provide a wide array of benefits to people and wildlife.

TABLE 4.3-8 CONTROL MEASURES FROM THE BAAQMD 2017 CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
		▪ *Action 3-5.11: Require a qualified biologist to prepare a biological resource assessment as part of project approval for proposed development on sites that may support special-status species, sensitive natural communities, important wildlife corridors, or regulated wetlands and waters to identify potential impacts and measures for protecting the resource and surrounding habitat. ▪ Goal 3-6: Use nature- and science-based strategies to preserve and create environments that provide ecosystem benefits. ▪ Policy 3-6.8: Capture and sequester more carbon in soils and plants citywide. ▪ Action 3-6.21: Conduct a carbon sequestration feasibility study of City-owned open space, parks, agricultural lands, and conservation lands, and implement the recommendations as feasible. ▪ Action 3-6.22: Conduct carbon sequestration farming pilot projects and research as part of ongoing ecological restoration of degraded habitats. ▪ Action 3-6.23: Work with the County to support the implementation of forest management practices that protect existing carbon stocks by reducing the risk of catastrophic wildfire. At the same time, support activities such as mulching in place, prescribed fire, conservation burns, and off-site uses, including compost and mulch production. ▪ Action 3-6.24: Work with regional partners on strategic land protection and stewardship actions that increase carbon sequestration, minimize conversion to land uses that have a lower capacity to sequester carbon, and preserve contiguous open space areas to better protect ecosystems that are under pressure from a changing climate, allowing greater mobility of species. ▪ Action 3-6.27: Coordinate with the County and private landowners to support local agricultural producers to plan, implement, and scale natural carbon sequestration. ▪ Action 3-6.29: Amend the composting ordinance to advance compost infrastructure and support soil carbon sequestration activities. ▪ Goal 5-6: Ensure Santa Rosa is a resilient city able to adapt to, recover from, and thrive under changing climate conditions. ▪ Policy 5-6.5: Support the preservation and restoration of natural landscapes to reduce the heat island effect, improve air quality, and improve community health. ▪ Action 5-6.15: Increase the city's urban tree canopy, starting with Equity Priority Areas, and expand urban greening throughout the city to reduce the heat Island effect.

TABLE 4.3-8 CONTROL MEASURES FROM THE BAAQMD 2017 CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
		▪ **Action 5-6.16:** Seek resources to conduct a community-wide tree canopy assessment to quantify how much of the City's land area is covered by trees, including streets with street tree canopy cover; identify the location of those trees; and identify opportunities to plant trees. ▪ **Action 5-6.18:** Work with the Water Team and Master Gardeners to refine guidelines on specific tree species and management procedures that integrate carbon sequestration, ecosystems services, and biodiversity. ▪ **Action 5-6.23:** Seek resources to create and regularly update an Urban Greening Plan to increase the urban tree canopy, open spaces, and green roofs to reduce the heat island effect, giving priority to areas of the city with vulnerable populations. ▪ **Action 5-6.24:** Explore incentives for shading features, such as large eaves and cantilevers on south- and west-facing walls to reduce air conditioning requirements and heat island effects that contribute to the entire community's reduced quality of life, but especially those living in high-density, low-income neighborhoods.
Water Control Measures	▪ WR 1 – Limit GHGs from publicly owned treatment works (POTWs) ▪ WR 2 – Support Water Conservation	The 2017 Clean Air Plan includes measures to reduce water use. Potential future development over the buildout horizon of the proposed project would be reviewed based on the goals, policies, and actions of the proposed General Plan 2050. Chapter 5, *Safety, Climate Resilience, Noise, and Public Services and Facilities,* contains the following goal, policies, and actions to increase plumbing water efficiency and reduce landscape water use: ▪ **Goal 5-9:** Provide adequate and high-quality city services for water, wastewater, recycled water, stormwater, and solid waste. ▪ **Policy 5-9.1:** Ensure water quality, water service delivery, and wastewater treatment are sufficient to meet the needs of current and future residents. ▪ **Action 5-8.3:** Maintain water, wastewater, and recycled water system integrity and capacity by continuing to prioritize maintenance and preserve funding for maintenance, rehabilitation, and replacement of existing infrastructure. ▪ **Action 5-8.4:** Evaluate cost and other implications of new initiatives to avoid impacting funding and resources needed for proper management of existing infrastructure. ▪ **Action 5-8.5:** Ensure that new programs and infrastructure do not impact funding of existing infrastructure maintenance, rehabilitation, and replacement. ▪ **Policy 5-9.2:** Maintain water quality and encourage Santa Rosa Water customers to save water.

TABLE 4.3-8 CONTROL MEASURES FROM THE BAAQMD 2017 CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
		▪ **Action 5-9.13:** Require new development projects to provide water-efficient landscaping in accordance with the City's Water Efficient Landscape Ordinance. ▪ **Action 5-9.14:** Continue to comply with statewide regulations for long- term urban water use efficiency. ▪ **Action 5-9.15:** Promote water efficiency through public education, incentives, rebates, technical assistance, customer programs, and information about indoor and outdoor water use efficiency measures. ▪ **Action 5-9.16:** Provide information and explore incentive opportunities to encourage property owners to install catchment, graywater systems, and other water recycling systems; remove paving; and install low-impact development features, such as permeable pavers, bioswales, and other green infrastructure components.
Super-GHG Control Measures	▪ SL 1 – Short-Lived Climate Pollutants ▪ SL 2 – Guidance for Local Planners ▪ SL 3 – GHG Monitoring and Emissions Measurements Network	Super-GHGs include methane, black carbon, and fluorinated gases. The compounds are sometimes referred to as short-lived climate pollutants because their lifetime in the atmosphere is generally fairly short. Measures to reduce super GHGs are addressed on a sector-by-sector basis in the 2017 Clean Air Plan. Through ongoing implementation of the City's GHG Reduction Strategy, the City will continue to reduce local GHG emissions and meet State, regional, and local reduction targets, which would ensure implementation of the proposed project would not conflict with these SL control measures. Potential future development over the buildout horizon of the proposed project would be reviewed based on the goals, policies, and actions of the proposed General Plan 2050. Chapter 2, *Land Use and Economic Development*, and Chapter 3, *Circulation, Open Space, Conservation, and Greenhouse Gas Reduction,* contains the following goals, policies, and actions for encouraging use of renewable energy: ▪ **Goal 2-3:** Create dense and varied housing types near transit to reduce greenhouse gas emissions and promote livability. ▪ **Goal 3-7:** Strive to achieve net carbon neutrality no later than 2045. ▪ **Policy 3-7.1:** Significantly reduce community- wide and municipal GHG emissions, achieving at least an 85 percent reduction of GHG emissions from community sources below 1990 levels by no later than 2045 with a commitment to accelerate reductions, as feasible, in support of the City's and State's carbon neutrality goals. ▪ **Action 3-7.2:** Implement the actions in the GHG Reduction Strategy to achieve the City's GHG reduction goals. ▪ **Action 3-7.3**: Continue regular inventories of community-wide and municipal GHG emissions, at least every five years, consistent with the GHG Reduction Strategy and this General Plan.

TABLE 4.3-8 CONTROL MEASURES FROM THE BAAQMD 2017 CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
		▪ **Action 3-7.4:** Provide public information to educate residents and businesses on the GHG Reduction Strategy and to support individual changes in energy and water use, transportation mode choices, material use, and waste reduction. ▪ **Policy 3.7-5:** Continue the City's role as a leader in sustainability and climate action. ▪ **Action 3-7.25:** Continue to enhance the City's ability to optimize energy use, minimize energy costs, prepare for emergencies, and power provider outages, protect public health, sustain natural resources, and reduce municipal GHG emissions ▪ **Action 3-7.26:** Enhance efforts to reduce GHG emissions in municipal operations after understanding the scope, effectiveness, and resource commitments of existing GHG reduction initiatives. ▪ **Action 3-7.28:** Integrate GHG emissions reduction and climate resilience into all municipal projects, policies, and procedures as applicable.
Further Study Control Measures	▪ FSM SS 1 – Internal Combustion Engines ▪ FSM SS 2 – Boilers, Steam Generator and Process Heaters ▪ FSM SS 3 – GHG Reductions from Non Cap-and Trade Sources ▪ FSM SS 4 – Methane Exemptions from Wastewater Regulation ▪ FSM SS 5 – Controlling start-up, shutdown, maintenance, and malfunction (SSMM) Emissions ▪ FSM SS 6 – Carbon Pollution Fee ▪ FSM SS 7 – Vanishing Oils and Rust Inhibitors ▪ FSM SS 8 – Dryers, Ovens and Kilns ▪ FSM SS 9 – Omnibus Rulemaking to Achieve Continuous Improvement ▪ FSM BL 1 – Space Heating ▪ FSM AG 1 – Wineries	The majority of the further study control measures apply to sources regulated directly by BAAQMD. Because BAAQMD is the implementing agency, new and existing sources of stationary and area sources in the EIR Study Area would be required to comply with these additional further study control measures in the 2017 Clean Air Plan.

Source: Bay Area Air Quality Management District, April 19, 2017, *Final 2017 Clean Air Plan, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area*, https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en, accessed July 21, 2023.

As shown in Table 4.3-8, the proposed project would not conflict with the 2017 Clean Air Plan and would not hinder BAAQMD from implementing the control measures in the 2017 Clean Air Plan. Accordingly, this impact would be *less than significant*.

Regional Growth Projections for VMT and Population

As previously discussed, one of the criteria for determining consistent with the current AQMP is comparing the proposed project's VMT growth with its population growth over the same planning horizon. Consistency with BAAQMD's AQMP requires that the VMT increase by less than or equal to the projected population increase from the proposed project (e.g., generate the same or less VMT per population). However, because the proposed project accommodates both residential and nonresidential growth, a better indicator of how efficiently the city is growing can be made by comparing the increase in VMT to the increase in service population (e.g., generate the same or less VMT per service population). This approach is similar to the efficiency metrics for GHG emissions, which consider the total service population when calculating project efficiency.

VMT for the proposed project was evaluated to estimate the weekday citywide VMT generation for the proposed project in the Baseline Year (2019) No Project and Cumulative Year (2050) with Project scenarios (see Chapter 4.15, *Transportation*, of this Draft EIR for a more detailed VMT discussion). Table 4.3-9, *Comparison of the Change in Population and Daily VMT in the EIR Study Area*, displays the Baseline Year (2019) No Project and Cumulative Year (2050) with Project estimates.

TABLE 4.3-9 COMPARISON OF THE CHANGE IN POPULATION AND DAILY VMT IN THE EIR STUDY AREA

Category	Base Year (2019)	Cumulative Year (2050)	Change from Existing	
			Change	Percent
Service Population [a]	275,569	355,425	79,856	29%
Daily VMT [b]	2,229,977	2,745,678	515,701	23%
VMT/Service Population [c]	8.1	7.7	-0.4	-5%

Notes:
a. Service Population accounts for total population and jobs. See Table 3-6, *Proposed 2050 Buildout Projections in the EIR Study Area*, in Chapter 3, *Project Description*, of this Draft EIR.
b. W-Trans, 2023. VMT modeled by W-Trans is conservative because it assumed slightly higher population and employees. VMT identified in this table is consistent with the accounting recommendations of CARB's RTAC created under SB 375 (see Methodology above) and is not the same as accounting for VMT under SB 74.
c. Daily per Capita VMT estimates are identified by dividing the Daily VMT estimates by the City Population for the corresponding year. It should be noted that the Daily per capita VMT estimates above do not necessarily reflect VMT by each resident as the total Daily VMT estimates include nonresidential VMT.
Source: W-Trans, 2023; PlaceWorks, 2023.

VMT estimates based on data provided by W-Trans were calculated for the EIR Study Area. As shown in Table 4.3-9, implementation of the proposed project would result in an increase for daily VMT by 515,701 vehicle miles per day[45] in the EIR Study Area (about 23 percent increase) but lead to a lower VMT per service population than existing conditions (approximately 5 percent decrease). Thus, the proposed project would be consistent with the goals of the 2017 *Clean Air Plan* and this impact would be *less than significant*.

[45] VMT identified in this table is consistent with the accounting recommendations of CARB's RTAC created under SB 375 (see Methodology above) and is not the same as accounting for VMT under SB 743.

Environmental Justice

BAAQMD's CEQA Air Quality Guidelines also require an analysis of consistency of the proposed project with applicable Community Emission Reduction Plans and local environmental justice policies. Environmentally overburdened, underserved, and economically distressed communities may be subject to a higher risk of pollutant-related health effects than the general population because they may be exposed to higher pollutant concentrations; they may experience a larger health impact at a given pollutant concentration; or they may be adversely affected by lower pollutant concentrations than the general population. The most critical air pollutant affecting health in the SFBAAB is $PM_{2.5}$, which includes DPM. The burden of breathing unhealthy air is often disproportionately borne by low-income communities and communities of color, many of which are situated closer to busy highways, ports, factories, and other pollution sources.[46]

Chapter 6, *Health, Equity, Environmental Justice, and Parks*, of the proposed General Plan 2050 integrates goals, policies, and actions to lessen the environmental burden on disadvantaged populations. The process to develop environmental justice policy guidance involved extensive discussions and many meetings with community members and other stakeholders who live in, work in, or engage with communities that are most impacted by environmental justice issues to ensure the plan directly responds to the specific needs of EPAs. Furthermore, the City has launched work with an equity and organizational development consulting team (Seed Collaborative) that will collaborate directly with City staff to develop a comprehensive work plan to establish a lasting culture of equity and belonging.[47]

The proposed General Plan 2050 Chapter 3, *Circulation, Open Space, Conservation, and Greenhouse Gas Reduction*, Chapter 4, *Urban Design, Cultural and Tribal Cultural Resources, Historic Preservation, and Art and Culture*, and Chapter 6, *Health, Equity, Environmental Justice, and Parks*, include broad policy guidance for environmental justice that require local planning and development decisions to help address vulnerabilities in EPAs. In addition to the proposed General Plan 2050 goals, policies, and actions listed in Section 4.3.2.3, *Impacts of the Environment on a Project*, the following proposed goals, policies, and actions would serve to reduce and/or avoid environmental effects on vulnerable populations:

- Goal 3-2: Provide a safe and accessible active and public transportation network that emphasizes active transportation connections and service to Equity Priority Areas and Areas of Change.
  - Policy 3-2.1: Ensure that the active transportation network remains in good condition by maintaining facilities, tracking the state of infrastructure, and managing the network in a way that serves all users.
    - Action 3-2.4: Improve connections in the active transportation network to ensure that all who choose to walk, roll, or ride have adequate access to public transportation amenities, especially in Equity Priority Areas and Areas of Change.

[46] Bay Area Air Quality Management District, 2022, *Best Practices for Centering Environmental Justice, Health, and Equity*, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapter-2-environmental-justicefinal-pdf.pdf?la=en, accessed June 1, 2023.

[47] City of Santa Rosa, Equity SR, https://www.srcity.org/3610/Equity-SR, accessed July 27, 2023.

- Policy 3-2.2: Continue to expand and improve the active transportation network toward completing a safe, continuous, convenient, and attractive network of designated routes that connect all neighborhoods and that is equitably accessible for all ages and abilities.
    - Action 3-2.18: Prioritize addressing active transportation deficiencies in Equity Priority Area.
- Goal 3-3: Transition away from single-occupancy vehicles.
    - Policy 3-3.6: Ensure that the transit system serves all members of the community equitably, especially in Equity Priority Areas.
- Goal 4-1: Preserve and enhance Santa Rosa's community character through attractive urban and environmental design and intentional development.
    - Policy 4-1.5: Create public/civic spaces at the neighborhood, city, and regional scale to serve residents of all areas of the city, and particularly Equity Priority Areas where these spaces provide vital resources for vulnerable populations.
- Goal 6-1: Improve health and well-being for all community members by emphasizing community health in all City policies, programs, actions, and activities.
    - Policy 6-1.1: Promote efforts to improve community health outcomes and ensure that City investments support community health goals.
        - Action 6-1.9: Provide training for City staff and officials about how the built environment and transportation choices affect health equity, economic opportunity, well-being, and quality of life.
        - Action 6-1.10: Create healthy development guidelines or checklists to track and monitor how new developments are incorporating health-promoting features such as opportunities for physical activity, healthy food, drinking water, urban farming, affordable housing, and sustainable design.
- Goal 6-2: Advance health equity by understanding and addressing key social determinants of health.
    - Policy 6-2.1: Promote awareness of the role of social determinants of health and health inequities, and ensure that City policies, services, and programs can improve the lives and well-being of everyone in the community, especially in Equity Priority Areas and among Equity Priority Populations at a higher risk for health inequities.

The proposed project includes measures to reduce emissions and improve community health within Overburdened Communities consistent with BAAQMD's environmental justice goals. Thus, the proposed project would be consistent with BAAQMD's environmental justice goals, and the impact would be *less than significant*.

Significance without Mitigation: Less than significant.

AIR-2 Implementation of the proposed project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard.

The proposed General Plan 2050 guides growth within the EIR Study Area by designating land uses and implementing goals, policies, and actions. New development would increase air pollutant emissions in the EIR Study Area and contribute to the overall emissions inventory in the SFBAAB. A discussion of health effects associated with air pollutant emissions generated by operational activities is included in Section 4.3.1.2, *Air Pollutants of Concern*.

Construction

The proposed project would not directly result in construction of any development or infrastructure; however, future development under the proposed project would result in short-term construction-related criteria pollutant emissions that have the potential to have an adverse effect on air quality. Short-term criteria pollutant emissions would occur during demolition, site preparation, grading, building construction, paving, and architectural coating activities associated with individual development projects. ROG and NO_X emissions are primarily associated with gasoline and diesel equipment exhaust and the application of architectural coatings. Fugitive dust emissions (PM_{10} and $PM_{2.5}$) are primarily associated with site preparation and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and VMT by construction vehicles on- and off-site. Typical construction equipment associated with development and redevelopment projects includes dozers, graders, excavators, loaders, and trucks.

Although the exact coverage, location, or duration of future construction projects is unknown at the time of preparation of this program-level EIR, future development activities would generally entail demolition, site preparation, grading, building construction, paving, and painting. As discussed in Chapter 3, *Project Description,* of this Draft EIR, potential future development from implementation of the proposed project is expected to occur in the proposed General Plan 2050 Areas of Change and would be concentrated in the form of infill/intensification on sites either already developed and/or underutilized and/or in close proximity to existing development. Accordingly, many new projects in the EIR Study Area will likely require the demolition of existing structures to make room for newer ones. Fugitive dust emissions would typically be greatest during building demolition, site preparation, and grading activities due to the disturbance of soils and transport of material. NO_X emissions would also result from the combustion of diesel fuels used to power off-road heavy-duty vehicles and equipment (e.g., backhoes, bulldozers, excavators). The types and quantities of equipment as well as duration of construction activities would be dependent on project-specific conditions. Larger developments would require more equipment over a longer time frame than that required for redevelopment of a single, residential home.

BAAQMD does not recommend plan-level thresholds of significance for construction emissions; however, BAAQMD does maintain and recommend project-level thresholds of significance for construction emissions that future development projects facilitated by the proposed project would be subject to. In addition, BAAQMD's CEQA Air Quality Guidelines identify and recommend a series of "Basic" measures to

control and reduce construction-related fugitive dust emissions. For all project, BAAQMD recommends implementation of Basic Construction Measures to reduce construction fugitive dust and determines a project's fugitive dust impacts during construction to be less than significant if the Basic Construction Measures are incorporated into project construction. BAAQMD Basic Control Measures for fugitive dust control[48] include:

- Water all active construction areas at least twice daily, or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible.
- Pave, apply water twice daily or as often as necessary to control dust, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
- Sweep daily (with water sweepers using reclaimed water if possible) or as often as needed all paved access roads, parking areas, and staging areas at the construction site to control dust.
- Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material.
- Hydroseed or apply nontoxic soil stabilizers to inactive construction areas.
- Enclose, cover, water twice daily, or apply nontoxic soil binders to exposed stockpiles (dirt, sand, etc.).
- Limit vehicle traffic speeds on unpaved roads to 15 miles per hour.
- Replant vegetation in disturbed areas as quickly as possible.

Chapter 3, *Circulation, Open Space, Conservation, and Greenhouse Gas Reduction,* of the proposed General Plan 2050 includes goals, policies, and actions that require local planning and development decisions to consider impacts from emissions and to reduce those emissions. The following goal, policy, and actions would ensure compliance with BAAQMD requirements:

- Goal 3-6: Use nature- and science-based strategies to preserve and create environments that provide ecosystem benefits.
  - Policy 3-6.9: Achieve and maintain ambient air quality standards.
    - *Action 3-6.31: Require projects that exceed the Bay Area Air Quality Management District (BAAQMD) screening sizes to evaluate project-specific operation and construction emissions in conformance with the BAAQMD methodology and if operation or construction-related criteria air pollutants exceed the BAAQMD thresholds of significance, require the project applicant to mitigate the impacts to an acceptable level.

[48] BAAQMD's current CEQA Guidelines can be found on their website: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa

- *Action 3-6.32: Continue to implement the Bay Area Air Quality Management District (BAAQMD) Basic Control Measures included in the latest version of BAAQMD's CEQA Air Quality Guidelines to control fugitive dust (i.e., particulate matter $PM_{2.5}$ and PM_{10}) during demolition, ground-disturbing activities, and/or construction.

As the SFBAAB is currently designated a nonattainment area for PM (fugitive dust emissions (PM_{10} and $PM_{2.5}$), mitigation would be required to ensure that individual development projects facilitated by the proposed project would minimize construction fugitive dust impacts. Therefore, construction-related regional air quality impacts associated with implementation of the proposed project are considered potentially *significant.*

Impact AIR-2a: Construction activities that could occur over the buildout horizon of the proposed General Plan 2050 could potentially violate an air quality standard or cumulatively contribute to an existing or projected air quality violation.

Significance with Mitigation. Less than significant. Because the Bay Area Air Quality Management District (BAAQMD) considers all impacts related to fugitive dust emissions ($PM_{2.5}$ and PM_{10}) from construction from all development in their jurisdiction to be less than significant with implementation of BAAQMD's best management practices (see Table 4.3-7, *BAAQMD Regional (Mass Emissions) Criteria Air Pollutant Significance Thresholds*), the ongoing implementation of BAAQMD's requirements by the City pursuant to proposed General Plan 2050 *Action 3-6.31 and *Action 3-6.32 would ensure impacts would be *less than significant*.

Operation

Operational activities associated with potential future development over the buildout horizon of the proposed project could generate a substantial increase in long-term criteria air pollutant emissions from existing conditions that could exceed BAAQMD's regional significance thresholds and cumulatively contribute to the nonattainment designations of the SFBAAB.

Implementation of the proposed project would result in direct and indirect criteria air pollutant emissions from transportation, energy (e.g., natural gas use), and area sources (e.g., aerosols and landscaping equipment). Mobile-source criteria air pollutant emissions are based on the traffic analysis conducted by W-Trans for this EIR. The emissions forecast for the EIR Study Area under the proposed project compared to existing conditions (with 2050 emissions rates) is shown in Table 4.3-10, *Proposed Project Criteria Air Pollutant Emissions Forecast (Scenario 1, Comparison to Existing Conditions)*. This is "Scenario 1" as required by BAAQMD and explained under the "BAAQMD Significance Criteria" subheading in Section 4.3.2, *Standards of Significance*.

TABLE 4.3-10 PROPOSED PROJECT CRITERIA AIR POLLUTANT EMISSIONS FORECAST (SCENARIO 1, COMPARISON TO EXISTING CONDITIONS)

	Criteria Air Pollutants (Tons/Year)			
Year	ROG	NO_X	PM_{10}	$PM_{2.5}$
Existing Land Uses – Year 2050				
On-Road Transportation	6	42	19	6
Energy	11	209	16	16
Off-road Equipment	143	173	9	8
Consumer Products	529	–	–	–
Total Existing Land Uses (tons/year)	**689**	**424**	**44**	**29**
Proposed Land Use Plan – Year 2050 Total Buildout				
On-Road Transportation	7	52	23	7
Energy	12	230	17	17
Off-road Equipment	178	181	10	8
Consumer Products	745	–	–	–
Proposed Land Uses Total (tons/year)	**942**	**463**	**50**	**32**
Change in Emissions from Existing Land Uses (Year 2050)				
On-Road Transportation	1	10	4	1
Energy	1	21	2	2
Off-road Equipment	35	8	<1	<1
Consumer Products	216	–	–	–
Net Change from Existing Land Uses (Year 2050)	**253**	**39**	**6**	**3**
BAAQMD Threshold (Tons/Year)	0	0	0	0
Exceeds BAAQMD Threshold?	**Yes**	**Yes**	**Yes**	**Yes**

Note: Numbers may not sum due to rounding.
Source: PlaceWorks, 2023. See Appendix B, *Air Quality and Greenhouse Gas Emissions Data*, of this Draft EIR.

As shown in Table 4.3-11, *Net Change in Regional Criteria Air Pollutant Emissions Forecast (Scenario 2, Comparison to Future No Project Conditions)*, compared to existing baseline year conditions, emissions of NO_X are projected to decrease from current levels despite growth associated with the proposed project. However, operational (long-term) emissions associated with the future no project conditions would also remain above the BAAQMD significance thresholds.

TABLE 4.3-11 NET CHANGE IN REGIONAL CRITERIA AIR POLLUTANT EMISSIONS FORECAST (SCENARIO 2, COMPARISON TO FUTURE NO PROJECT CONDITIONS)

	Criteria Air Pollutants (Tons/Year)			
Year	ROG	NO_X	PM_{10}	$PM_{2.5}$
Existing Land Uses – Existing Baseline				
On-Road Transportation	46	376	22	7
Energy	11	209	16	16
Off-road Equipment	143	173	9	8
Consumer Products	529	–	–	–
Existing Baseline Land Uses Total	**729**	**758**	**47**	**30**
Proposed Land Use Plan – Year 2050 Total Buildout				
On-Road Transportation	7	52	23	7
Energy	12	230	17	17
Off-road Equipment	178	181	10	8
Consumer Products	745	–	–	–
Proposed Land Uses Total	**942**	**463**	**50**	**32**
Change in Emissions from Existing Baseline				
On-Road Transportation	-39	-324	1	<1
Energy	1	21	2	2
Off-road Equipment	35	8	<1	<1
Consumer Products	216	–	–	–
Net Change from Existing Baseline	**213**	**-295**	**3**	**2**
BAAQMD Threshold (Tons/Year)	0	0	0	0
Exceeds BAAQMD Threshold?	**Yes**	No	**Yes**	**Yes**

Note: Numbers may not add up due to rounding.
Source: See Appendix B, *Air Quality and Greenhouse Gas Emissions Data*, of this Draft EIR.

Compliance with applicable policies and programs would contribute to minimizing long-term emissions. However, implementation of the proposed project would still exceed the BAAQMD significance threshold for operation. Therefore, implementation of the proposed project could result in *significant* long-term regional air quality impacts.

Consistency with AQMP Control Measures

As previously mentioned, BAAQMD's plan-level guidance does not require an emissions inventory of criteria air pollutants for plan-level analysis; however, BAAQMD recommends that one method used for determining plan-level impact significance is to analyze the proposed plan's consistency with the current AQMP control measures. As discussed in Table 4.3-8, the proposed project would be consistent with the applicable 2017 Clean Air Plan control measures. As such, the proposed project would be consistent with the current AQMP control measures, and this impact would be *less than significant*.

Proposed Plan VMT and Population Growth

As previously mentioned, BAAQMD's plan-level guidance does not require an emissions inventory of criteria air pollutants for plan-level analysis; however, BAAQMD recommends that the second method for determining plan-level impact significance is to analyze the proposed plan's projected VMT growth versus its projected population growth from existing conditions through its planning horizon year (2050). A significant impact could occur if a proposed plan's projected VMT growth outpaces its projected population growth resulting in a cumulatively considerable net increase in criteria pollutants.

As discussed under impact discussion AIR-1, the daily VMT per service population would decrease from the city's current levels. However, there would be an increase in the total magnitude at buildout. The reduction in citywide VMT per service population below existing levels is a positive indicator that the land use and circulation changes associated with the proposed project will, overall, reduce the amount of VMT generated by each person living or working in Santa Rosa. Therefore, the forecasted VMT growth would not outpace the forecasted population growth facilitated by the proposed project. As such, this impact would be *less than significant*.

While growth within the EIR Study Area would cumulatively contribute to operational (long-term) regional criteria air pollutant emissions, Chapter 3, *Circulation, Open Space, Conservation, and Greenhouse Gas Reduction,* of the proposed General Plan 2050 includes goals, policies, and actions that require local planning and development decisions to consider impacts from emissions and to reduce those emissions. In addition to the proposed General Plan 2050 goals, policies, and actions listed in Section 4.3.2.3, *Impacts of the Environment on a Project*, the following goals, policies, and actions would serve to minimize potential adverse impacts related associated with buildout of the proposed project:

- Goal 3-1: Provide an integrated land use and transportation system with safe and efficient movement of people and goods for all modes of travel that prioritizes reduction of VMT and transportation-related GHG emissions.
  - Policy 3-1.1: Work with partner agencies to reduce VMT using existing techniques and explore feasibility of new techniques as they arise.
    - Action 3-1.3: Continue to participate in discussions addressing regional through-traffic with SCTA, the County of Sonoma, MTC, and other municipalities, prioritizing investments that will reduce VMT and GHG emissions.
  - Policy 3-1.2: Promote a citywide mode shift away from single-occupancy vehicles to support ambitious VMT and GHG reduction goals.
    - Action 3-1.5: Develop a process that invests in and prioritizes non-automobile modes of transportation in capital improvement projects to reduce VMT and GHGs, prioritizing, in order:
      1. Active transportation modes, including walking, bicycling, and rolling.
      2. Public transportation, including inter-city and regional systems.
      3. Other shared vehicles such as carpool, vanpool, and rideshare/transportation network companies.

- Goal 3-2: Provide a safe and accessible active and public transportation network that emphasizes active transportation connections and service to Equity Priority Areas and Areas of Change.
  - Policy 3-2.5: Address traffic volumes and speeds in neighborhoods to reduce cut-through traffic and promote use of existing low-stress streets for active transportation travel.
    - Action 3-2.33: Construct or require roundabouts in lieu of stop/signal-controlled intersections, where appropriate, to improve safety, reduce delay and idling time, and lower vehicle emissions.
- Goal 3-3: Transition away from single-occupancy vehicles.
  - Policy 3-3.1: Continue to offer and improve TDM programs that incentivize a shift away from single-occupancy vehicles.
    - Action 3-3.1: Work with local employers and existing residential and commercial development to expand TDM and related efforts to help meet employee transportation needs through modes that reduce VMT from single-occupancy automobile trips less than five miles, such as:
      - Unlimited free access to transit service (CityBus, Sonoma County Transit, and SMART).
      - Funding for increased transit frequency.
      - Paid incentives to active transportation and micromobility users, including a transportation allowance and secure on-site bicycle parking, lockers, showers and other facilities that support bicycling commuting to and from work.
      - Programs and incentives to expand carpooling, vanpooling, and car sharing.
      - Staggered work shifts, flex time (e.g., 9/80 work schedule), and telecommuting.
      - Paid-parking disincentives for single-occupant vehicles and/or parking cash-out incentives.
    - Action 3-3.2: Implement a TDM program for City employees—potentially in partnership with other local governments, public agencies, and transit providers—and promote the program as a model for larger local employers.
  - Policy 3-3.3: Encourage transit ridership to reduce GHG emissions and provide convenient and efficient public transportation to workplaces, shopping, and other destinations.
    - Action 3-3.12: Continue to require transit-supportive TDM measures for new development, including CityBus/Sonoma County Transit/SMART pass products.
- Goal 3-6: Use nature- and science-based strategies to preserve and create environments that provide ecosystem benefits.
  - Policy 3-6.9: Achieve and maintain ambient air quality standards.
    - Action 3-6.33: Require all new development to be electric vehicle charging ready at a minimum. Explore opportunities to amend the City's municipal codes to require new development to install electric vehicle charging infrastructure beyond the minimum State requirements.
    - Action 3-6.35: Review and amend the City's Building Code and Zoning Code to facilitate the installation of electric vehicle charging infrastructure.

- Action 3-6.37: Expand installation and operation of electric vehicle charging stations on City properties, including curbside in areas of the community where other options are limited.
- Action 3-6.38: Budget for clean fuel and zero-emission vehicles in the City's long-range capital expenditure plans to transition the existing fleet of gasoline- and diesel- powered vehicles, and work to make the City's fleet among the cleanest in the North Bay by:
  - Purchasing zero-emission vehicles whenever possible that meet or exceed requirements under the California Advanced Clean Fleets Regulation. If zero- emission vehicles are not available, purchase plug-in hybrids, or other vehicle types to minimize emissions.
  - Using biodiesel and pollution- reducing fuel additives in the City's diesel fuel vehicles.
- Action 3-6.39: Continue to implement the City's Wood Burning Appliance Ordinance to reduce particulate matter emissions from wood-burning appliances.

While BAAQMD rules and the proposed General Plan 2050 goals, policies, and actions identified above may reduce operation-related regional air quality impacts of individual projects accommodated under the proposed project to a less-than-significant level, due to the magnitude of development allowed, the projected cumulative emissions associated with future development projects would exceed the threshold. Therefore, implementation of the proposed project would significantly contribute to the nonattainment designations of the SFBAAB, resulting in a *significant* impact.

Impact AIR-2b: Buildout of the proposed project could generate operational emissions that could exceed the Bay Area Air Quality Management District's (BAAQMD) regional significance thresholds for reactive organic compounds (ROG), nitrogen oxides (NO_X) and particulate matter ($PM_{2.5}$ and PM_{10}).

Significance with Mitigation: Significant and unavoidable. Buildout in accordance with the proposed project would generate long-term emissions that would exceed BAAQMD's regional significance thresholds and cumulatively contribute to the nonattainment designations of the San Francisco Bay Area Air Basin (SFBAAB). The proposed General Plan 2050 goals, policies, and actions would reduce air pollutant emissions to the extent practicable. Additionally, the proposed General Plan 2050 goals, policies, and actions covering topics such as expansion of the pedestrian and bicycle networks, promotion of public and active transit, and support to increase building energy efficiency and energy conservation would also reduce criteria air pollutants within the EIR Study Area. Specifically, proposed *Action 3-6.31 requires potential future development in Santa Rosa that exceeds the BAAQMD screening sizes to evaluate project-specific operation emissions in conformance with the BAAQMD methodology. Where the technical assessment determines the BAAQMD-adopted thresholds are exceeded, the applicants for new development projects would be required to incorporate mitigation measures to reduce air pollutant emissions during operational activities. Possible mitigation measures to reduce long-term emissions could include, but are not limited to the following:

- Implementing commute trip reduction programs.
- Unbundling residential parking costs from property costs.
- Expanding bikeway networks.
- Expanding transit network coverage or hours.
- Using cleaner-fueled vehicles.
- Exceeding the current Title 24 Building Envelope Energy Efficiency Standards.

- Establishing on-site renewable energy generation systems.
- Implementing all-electric buildings.
- Replacing gas-powered landscaping equipment with zero-emission alternatives.
- Implementing organics diversion programs.
- Expanding urban tree planting.

This EIR quantifies the increase in criteria air pollutants emissions in the EIR Study Area. However, at the programmatic level, it is not feasible to quantify the increase in toxic air contaminants (TAC) from stationary sources associated with the proposed project or meaningfully correlate how regional criteria air pollutant emissions above BAAQMD's significance thresholds correlate with basin wide health impacts.

To determine cancer and noncancer health risk, the location, velocity of emissions, meteorology and topography of the area, and locations of receptors are equally important as model parameters as the quantity of TAC emissions. The white paper prepared by the Association of Environmental Professionals' Climate Change Committee, *We Can Model Regional Emissions, But Are the Results Meaningful for CEQA,* describes several of the challenges of quantifying local effects—particularly health risks—for large-scale, regional projects, and these are applicable to both criteria air pollutants and TACs. Similarly, the two amicus briefs filed by the air districts on the Friant Ranch case describe two positions regarding CEQA requirements, modeling feasibility, variables, and reliability of results for determining specific health risks associated with criteria air pollutants. The discussions also include the distinction between criteria air pollutant emissions and TACs with respect to health risks. The following summarizes major points about the infeasibility of assessing health risks of criteria air pollutant emissions and TACs associated with implementation of a general plan. The white paper and amicus briefs are provided in Appendix B, *Air Quality and Greenhouse Gas Emissions Data*, of this Draft EIR.

To achieve and maintain air quality standards, BAAQMD has established numerical emission indicators of significance for regional and localized air quality impacts for both construction and operational phases of a local plan or project. The numerical emission indicators are based on the recognition that the air basin is a distinct geographic area with a critical air pollution problem for which ambient air quality standards (AAQS) have been promulgated to protect public health. The thresholds represent the maximum emissions from a plan or project that are expected not to cause or contribute to an exceedance of the most stringent applicable national or state ambient air quality standard. By analyzing the plan's emissions against the thresholds, an EIR assesses whether these emissions directly contribute to any regional or local exceedances of the applicable AAQS and exposure levels.

BAAQMD currently does not have methodologies that would provide the City with a consistent, reliable, and meaningful analysis to correlate specific health impacts that may result from a proposed project's mass emissions. For criteria air pollutants, exceedance of the regional significance thresholds cannot be used to correlate a project to quantifiable health impacts unless emissions are sufficiently high to use a regional model. BAAQMD has not provided methodology to assess the specific correlation between mass emissions generated and their effect on health (note Appendix B, *Air Quality and Greenhouse Gas Emissions Data*, of this Draft EIR provides the San Joaquin Valley Air

Pollution Control District's amicus brief, and South Coast Air Quality Management District's amicus brief).

Ozone concentrations depend on a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Secondary formation of particulate matter and ozone can occur far from sources as a result of regional transport due to wind and topography (e.g., low-level jet stream). Photochemical modeling depends on all emission sources in the entire domain (i.e., modeling grid). Low resolution and spatial averaging produce "noise" and modeling errors that usually exceed individual source contributions. Because of the complexities of predicting ground-level ozone concentrations in relation to the National and California AAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds.

Current models used in CEQA air quality analyses are designed to estimate potential project construction and operation emissions for defined projects. The estimated emissions are compared to significance thresholds, which are keyed to reducing emissions to levels that will not interfere with the region's ability to attain the health-based standards. This serves to protect public health in the overall region, but there is currently no CEQA methodology to determine the impact of emissions (e.g., pounds per day) on future concentration levels (e.g., parts per million or micrograms per cubic meter) in specific geographic areas. CEQA thresholds, therefore, are not specifically tied to potential health outcomes in the region.

The EIR must provide an analysis that is understandable for decision making and public disclosure. Regional-scale modeling may provide a technical method for this type of analysis, but it does not necessarily provide a meaningful way to connect the magnitude of a project's criteria pollutant emissions to health effects without speculation. Additionally, this type of analysis is not feasible at a general plan level because the location of emissions sources and quantity of emissions are not known. However, because cumulative development within the EIR Study Area would exceed the regional significance thresholds, this EIR finds that the proposed project could contribute to an increase in health effects in the basin until the attainment standards are met in the SFBAAB.

In summary, as described above, implementation of the proposed project would generate emissions that would exceed BAAQMD's regional significance thresholds (no net increase). The proposed General Plan 2050 includes goals, policies, and actions to reduce these long-term regional criteria air pollutant emissions. However, due to the programmatic nature of the proposed project, no additional mitigating measures are available, and the impact is considered *significant and unavoidable*. The identification of this program-level impact does not preclude the finding of less-than-significant impacts for subsequent individual projects that meet applicable project-level thresholds of significance.

AIR-3 Implementation of the proposed project could expose sensitive receptors to substantial pollutant concentrations.

Implementation of the proposed project would cause or contribute significantly to elevated pollutant concentration levels such that it would expose sensitive receptors to elevated pollutant concentrations. Unlike regional emissions, localized emissions are typically evaluated in terms of air concentration rather than mass so they can be more readily correlated to potential health effects.

Construction Community Risk and Hazards

Future construction over the buildout horizon of the proposed project would temporarily elevate concentrations of TACs and DPM in the vicinity of sensitive land uses during construction activities. Since the details regarding future construction activities are not known at this time due to this analysis being conducted at a program level—including phasing of future individual projects, construction duration and phasing, and preliminary construction equipment—construction emissions are evaluated qualitatively in accordance with BAAQMD's plan-level guidance. Subsequent environmental review of future development projects would be required to assess potential impacts under BAAQMD's project-level thresholds. However, construction emissions associated with the proposed project could exceed BAAQMD's project level and cumulative significance thresholds for community risk and hazards. As recommended by CARB, applicants for construction within 1,000 feet of residential and other sensitive land uses (e.g., hospitals, nursing homes, and day care centers), as measured from the property line of the project to the property line of the source/edge of the nearest travel lane, are required to prepare construction HRAs in accordance with policies and procedures of the OEHHA and BAAQMD to identify and mitigate health risk impacts from construction. The latest OEHHA guidelines are required to be applied for the analysis, including age sensitivity factors, breathing rates, and body weights appropriate for children ages 0 to 16 years. If the construction HRA shows that the incremental cancer risk exceeds the respective threshold established by BAAQMD—project-level risk of 10 in a million in all other areas, $PM_{2.5}$ emissions that exceed 0.3 $\mu g/m^3$, or the appropriate noncancer hazard index exceeds 1.0—the applicant would be required to identify and demonstrate that mitigation measures are capable of reducing potential cancer and non-cancer risks below the respective threshold, including appropriate enforcement mechanisms. Measures to reduce risk may include, but are not limited to:

- Use of construction equipment rated as United States Environmental Protection Agency Tier 4 Interim or higher for equipment of 50 horsepower or more.
- Use of construction equipment fitted with Level 3 Diesel Particulate Filters for all equipment of 50 horsepower or more.

However, construction emissions associated with the proposed General Plan 2050 could exceed BAAQMD's project level and cumulative significance thresholds for community risk and hazards. Therefore, construction-related health risk impacts associated with the proposed General Plan 2050 are considered potentially *significant*.

Impact AIR-3a: Construction activities associated with potential future development could expose nearby receptors to substantial concentrations of toxic air contaminants.

Significance with Mitigation. Less than significant. The same proposed General Plan 2050 goals, policies, and actions listed in Section 4.3.2.3, *Impacts of the Environment on a Project*, would serve to protect sensitive receptors from poor air quality in the EIR Study Area. Specifically, proposed *Action 6-1.5 would require projects that result in construction activities within 1,000 feet of residential and other land uses that are sensitive to toxic air contaminants to prepare a construction health risk assessment that identifies mitigation measures and appropriate enforcement mechanisms capable of reducing potential cancer and non-cancer risks below the Bay Area Air Quality Management District threshold. Therefore, with implementation of the proposed General Plan 2050 goals, policies, and actions, construction-related health risk impacts associated with the proposed project are considered *less than significant*.

Operation

Implementation of the proposed project could result in individual development projects that cause or contribute significantly to elevated pollutant concentration levels such that it would expose sensitive receptors to elevated pollutant concentrations. Unlike regional emissions, localized emissions are typically evaluated in terms of air concentration rather than mass so they can be more readily correlated to potential health effects. Types of land uses that typically generate substantial quantities of TACs and $PM_{2.5}$ include industrial and manufacturing (stationary sources) and warehousing land uses that have the potential to generate DPM from onsite equipment and mobile sources (trucks). While these types of land uses are not prevalent in the EIR Study Area, nor are they anticipated to be introduced as part of the planned land uses envisioned in the proposed General Plan 2050, commercial and retail uses that generate small- and medium-sized truck trips for deliveries could similarly generate localized substantial concentrations of TACs and $PM_{2.5}$. Additionally, operation of new land uses consistent with the proposed project could generate new sources of criteria air pollutants and TACs in the EIR Study Area associated with CO hotspots. The following describes potential localized operational air quality impacts from implementation of the proposed project.

Operational CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. These pockets have the potential to exceed the State 1-hour standard of 20 ppm or the 8-hour standard of 9.0 ppm. Since CO is produced in the greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds.

An overarching goal of *Plan Bay Area* 2050 is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth in outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle VMT and associated GHG emissions reductions. As described under impact discussion GHG-2 in Chapter 4.8, *Greenhouse Gas Emissions*, of this Draft EIR, the proposed project would be consistent with the overall

goals of *Plan Bay Area* 2050. Additionally, the proposed project would not hinder the capital improvements outlined in *Plan Bay Area* 2050. Thus, the proposed project would not conflict with *Plan Bay Area* 2050.

Pursuant to BAAQMD, under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection to more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited—to generate a significant CO impact.[49] Implementation of the proposed project would not increase traffic volumes at affected intersections to more than BAAQMD screening criteria of 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited. The highest intersection volumes in the city are:[50]

- Farmers Lane at Fourth Street-Highway 12: approximately 4,800 vehicles per hour
- Guerneville Road at US Highway 101 South Offramp: approximately 4,400 vehicles per hour
- Highway 12 at Fulton Road-Wright Road: approx. 4,300 vehicles per hour

Moreover, the proposed General Plan 2050 includes land use designations, goals, policies, and actions that will help reduce VMT and therefore reduce emissions from automobiles (see Chapter 4.15, *Transportation*, of this Draft EIR for a complete list of these goals, policies, and actions). Therefore, the proposed project would not have the potential to substantially increase CO hotspots at intersections in the EIR Study Area and vicinity. Overall, these components of the proposed project would contribute to reducing congestion and associated emissions. Localized air quality impacts related to mobile-source emissions would be *less than significant*.

Operational Community Risk and Hazards

Common sources of TAC emissions are stationary sources (e.g., dry cleaners, diesel backup generators, and gasoline stations), which are subject to the BAAQMD permit requirements. Future development and activities under the proposed project could result in new sources of TACs and $PM_{2.5}$. Stationary sources, including smaller stationary sources associated with residential development (e.g., emergency generators and boilers), are subject to review by BAAQMD as part of the permitting process. Adherence to the BAAQMD permitting regulations would ensure that new stationary sources of TACs do not expose populations to significant health risk. Mobile sources of air toxics (e.g., truck idling) are not regulated directly by BAAQMD. However, residential development associated with the proposed project would not generate substantial truck traffic or idling. Permitted stationary sources and nonpermitted sources are discussed in greater detail below.

[49] Bay Area Air Quality Management District, April 2023, *California Environmental Quality Act: Air Quality Guidelines*, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed May 8, 2023.

[50] W-Trans, 2023.

Stationary (Permitted) Sources

Various industrial and commercial processes (e.g., manufacturing, dry cleaning) in the EIR Study Area from implementation of the proposed project would be expected to release TACs. TAC emissions generated by stationary and point sources of emissions within the SFBAAB are regulated and controlled by BAAQMD. Land uses that would require a permit from BAAQMD for emissions of TACs include chemical processing facilities, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. Emissions of TACs from stationary sources would be controlled by BAAQMD through permitting and would be subject to further study and health risk assessment prior to the issuance of any necessary air quality permits under Regulation 2, *New Source Review*, as well as Regulation 11, Rule 18, *Reduction of Risk from Air Toxic Emissions at Existing Facilities*.

Review under New Source Review ensures that stationary source emissions (permitted sources) would be reduced or mitigated below the BAAQMD community risk and hazards thresholds. Though these sources would incrementally contribute to emissions in the EIR Study Area individually, they would be mitigated to the BAAQMD standards. Moreover, the proposed General Plan 2050 goals, policies, and actions listed in Section 4.3.2.3, *Impacts of the Environment on a Project*, would serve to minimize potential adverse impacts on air quality by requiring new development to follow standards to reduce health risks from stationary sources.

Though the proposed General Plan 2050 includes goals, policies, and actions to reduce exposure of sensitive receptors to pollution, and BAAQMD would ensure that emission achieve their permit thresholds on a project-by-project basis, emissions cannot be determined or modeled until specific development projects are proposed. Therefore, implementation of the proposed project may result in projects that emit TACs and $PM_{2.5}$ throughout the EIR Study Area and result in potentially *significant* localized air quality impacts.

Nonpermitted Sources

TACs and $PM_{2.5}$ from mobile sources when operating at a property (e.g., truck idling) are regulated by statewide rules and regulations, not by BAAQMD, and have the potential to generate substantial concentrations of air pollutants. The primary mobile source of TACs within the EIR Study Area includes truck idling and use of off-road equipment.

New warehousing operations present the potential to generate substantial DPM and $PM_{2.5}$ emissions from off-road cargo-handling equipment use and truck idling. In addition, some warehousing and industrial facilities may include use of transport refrigeration units (TRU) for cold storage. New land uses in the EIR Study Area that would be permitted under the proposed project that use trucks and TRUs could generate an increase in DPM that would contribute to cancer and noncancer health risk in the SFBAAB. Additionally, these types of facilities could also generate particulate matter (PM_{10} and $PM_{2.5}$) that may cause an exceedance or contribute to the continuing exceedance of the National and California AAQS. These new land uses could be near existing sensitive receptors. In addition, trucks would travel on regional transportation routes through the Bay Area, contributing to near-roadway DPM concentrations.

The proposed project would result in an increase of up to 1,415,095 square feet of industrial and warehouse land use. The proposed project could result in specific development projects that could emit localized concentrations of TACs and $PM_{2.5}$. The emissions associated with these facilities cannot be determined or modeled until specific development projects are proposed. Therefore, implementation of the proposed project may result in projects that emit TACs and $PM_{2.5}$ in the vicinity of EPAs and result in potentially *significant* localized air quality impacts without project-specific analysis of operational health risk impacts from nonpermitted sources associated with development of industrial and commercial land uses.

Impact AIR-3b: Large industrial or warehouse development projects under the proposed project could expose air quality-sensitive receptors to substantial toxic air contaminants (TAC) and particulate matter ($PM_{2.5}$) concentrations and exceed the Bay Area Air Quality Management District's (BAAQMD) project-level and cumulative significance thresholds.

Significance with Mitigation: Significant and unavoidable. Potential future development over the buildout horizon of the proposed project could result in new sources of TACs or $PM_{2.5}$ near existing or planned sensitive receptors. Review of development projects by BAAQMD for permitted sources of air toxics (e.g., industrial facilities, dry cleaners, and gas stations) in addition to proposed General Plan 2050 goals, policies, and actions would ensure that health risks are minimized. Specifically, the implementation of project-specific operational health risk assessments (HRA) as required by proposed General Plan 2050 *Action 6-1.6 would identify any impacts and mitigation measures to reduce the operational health risks for new industrial or warehousing development projects that 1) have the potential to generate 100 or more diesel truck trips per day or have 40 or more trucks with operating diesel-powered transport refrigeration units, and 2) are within 1,000 feet of a sensitive land use (e.g., residential, schools, hospitals, nursing homes) or an "Overburdened Community," as measured from the property line of the project to the property line of the nearest sensitive use. Operational HRAs would be required to be prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and BAAQMD. If the operational HRA shows that the cumulative and project-level incremental cancer risk, noncancer hazard index, and/or $PM_{2.5}$ exceeds the respective threshold as established by BAAQMD and project-level risk of 10 in one million at the time a project is considered, the project applicant would be required to identify "best available control technologies for toxics" and appropriate enforcement mechanisms, and demonstrate that they are capable of reducing potential cancer, noncancer risks, and $PM_{2.5}$ to an acceptable level. Best available control technologies for toxics may include but are not limited to:

- Restricting idling on-site beyond air toxic control measures idling restrictions
- Electrifying warehousing docks
- Requiring use of newer equipment
- Requiring near-zero or zero-emission trucks for a portion of the vehicle fleet based on opening year
- Truck electric vehicle (EV) capable trailer spaces
- Restricting off-site truck travel through the creation of truck routes

The same proposed General Plan 2050 goals, policies, and actions listed in Section 4.3.2.3, *Impacts of the Environment on a Project*, would serve to protect sensitive receptors from poor air quality in the EIR Study Area. Specifically, proposed Action 6-1.11 would require the City to update the Zoning Code to require health impact assessments for nonresidential and developments of 100,000 square feet or more in Equity Priority Areas (EPA) to identify and address any potential negative health implications of the project. Individual development projects would be required to achieve the incremental risk thresholds established by BAAQMD, and TAC and $PM_{2.5}$ project-level impacts would be less than significant. However, these projects could contribute to significant cumulative risk in the Bay Area that could affect sensitive populations and EPAs. As a result, the proposed project's contribution to cumulative health risk is considered *significant and unavoidable*. The identification of this program-level impact does not preclude the finding of less-than-significant impacts for subsequent individual projects that meet applicable project-level thresholds of significance.

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

Construction

While odors could be generated during future construction activities associated with development and activities under the proposed project, the proposed project would not directly result in construction of any development project. Identification of potential impacts to odor receptors resulting from construction-generated odors, such as equipment exhaust, would require project-specific information for future individual land use development projects that is not currently known. Nonetheless, odors are regulated under BAAQMD Regulation 1, Rule 1-301, *Public Nuisance*. Compliance with BAAQMD Regulation 1 would ensure that odor impacts associated with the proposed project are minimized. As previously discussed, consistent with BAAQMD's CEQA Air Quality Guidelines, a plan-level analysis must acknowledge odor sources within the EIR Study Area and identify policies, goals, and objectives aimed at reducing potential odor impacts to ensure that potential impacts would be l*ess than significant*.

Operation

According to BAAQMD's 2022 *CEQA Air Quality Guidelines*, land uses associated with odor complaints typically include agricultural operations, wastewater treatment plants, landfills, and certain industrial operations such as chemical and other manufacturing. While odors do not themselves present a health risk, they are often considered a nuisance by people who live, work, or otherwise are located near outdoor odor sources. Future environmental review could be required for industrial projects listed in BAAQMD's CEQA Guidelines Table 4, *Project Screening Trigger Levels for Potential Odor Sources,* to ensure that sensitive land uses are not exposed to nuisance odors. Consequently, review of projects using BAAQMD's odor screening distances is necessary to ensure that odor impacts are minimized.

Increase in residential uses would not generate odors that would affect a substantial number of people. During operation, residences could generate odors from cooking. However, odors from cooking are not substantial enough to be considered nuisance odors that would affect a substantial number of people.

The proposed General Plan 2050 provides guidance for the development, management, and preservation of Santa Rosa's natural, open space, and agricultural lands, including air quality. Specifically, proposed General Plan 2050 Policy 2-1.1, Action 2-1.2, Policy 5-9.6, and Action 5-9.41 listed in Section 4.3.2.3, *Impacts of the Environment on a Project*, would serve to minimize impacts related to potential adverse impacts related to odors. Therefore, compliance with proposed General Plan 2050 goals, policies, and actions, as well applicable BAAQMD rules and regulations, would prevent odor emissions from adversely affecting a substantial number of people in the EIR Study Area.

Furthermore, nuisance odors are regulated under BAAQMD Regulation 7, *Odorous Substances*, which requires abatement of any nuisance generating an odor complaint, and BAAQMD Regulation 1, Rule 1-301, *Public Nuisance*. Compliance with BAAQMD Regulations would ensure that odor impacts associated with the proposed project are minimized. This impact would be *less than significant*.

Significance without Mitigation: Less than significant.

AIR-5 Implementation of the proposed project could, in combination with past, present, and reasonably foreseeable projects, result in cumulative air quality impacts in the area.

The cumulative area of analysis is the SFBAAB which is currently designated a nonattainment area for O_3 and particulate matter (PM_{10} and $PM_{2.5}$). As identified in Section 4.3.1*, Environmental Setting*, California is divided into air basins for the purpose of managing the air resources of the state on a regional basis based on meteorological and geographic conditions. Similar to GHG emissions impacts, air quality impacts are regional in nature as no single project generates enough emissions that would cause an air basin to be designated as a nonattainment area. Therefore, the impacts previously discussed are evaluated in the cumulative context and no additional cumulative analysis is needed.

Buildout of the proposed project would generate new sources of TAC near existing or planned sensitive receptors. Review of development projects by BAAQMD for permitted sources of air toxics (e.g., industrial facilities, dry cleaners, and gasoline dispensing facilities) would ensure that health risks are minimized. Implementation of proposed General Plan 2050 goals, policies, and actions would ensure that mobile sources of TACs not covered by BAAQMD permits are considered during subsequent project-level environmental review by the City. Individual development projects would be required to achieve the incremental risk thresholds established by BAAQMD. However, implementation of the proposed project would generate TACs that could contribute to elevated levels in the SFBAAB. While individual projects would achieve the project-level risk threshold of 10 per million, they would nonetheless contribute to the higher levels of cancer risk in the SFBAAB. Therefore, the cumulative contribution to health risk resulting from implementation of the proposed project is *significant*.

Impact AIR-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, could result in cumulative air quality impacts with respect to generation of criteria pollutant and exposure of substantial pollutant concentrations to sensitive receptors.

Significance with Mitigation: Significant and unavoidable. Criteria air pollutant emissions generated by land uses within the proposed project could exceed the Bay Area Air Quality Management District's regional thresholds. Air quality impacts identified in Impacts AIR-2a, AIR-2b, AIR-3a, and AIR-3b constitute the proposed project's contribution to cumulative air quality impacts in the San Francisco Bay Area Air Basin. Proposed General Plan 2050 goals, policies, and actions would help reduce project-related emissions to the extent feasible. Specifically, proposed *Action 3-6.31, *Action 3-6.32, *Action 6-1.5, and *Action 6-1.6 would reduce impacts at the project level. However, due to the programmatic nature of the proposed project, no additional mitigation measures are available. Air pollutant emissions associated with the proposed project would result in a cumulatively considerable contribution to air quality impacts and remain *significant and unavoidable* at the program level.

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