4.3 AIR QUALITY

This chapter describes the potential impacts associated with the adoption and implementation of the proposed project that are related to air quality. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of potential impacts and cumulative impacts from implementation of the proposed project. Greenhouse gas (GHG) emissions impacts are addressed in Chapter 4.8, Greenhouse Gas Emissions, of this Draft Environmental Impact Report (EIR).

The evaluation in this chapter 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. In this chapter "emissions" refers to the actual quantity of pollutant, measured in pounds per day (lbs/day) and "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 ($\mu g/m^3$).

The analysis in this chapter is based on buildout of the proposed General Plan 2040, which includes the buildout of the Downtown Precise Plan Area. The proposed buildout is modeled using the California Air Resources Board's (CARB) 2017 Emissions Factor Model (EMFAC2017); the Off-Road Emissions Factor Model (OFFROAD2017); natural gas use provided by Pacific Gas and Electric (PG&E) compiled for the City's recent GHG emissions inventory; and trip generation and vehicle miles traveled (VMT) provided by Fehr & Peers. Trip generation is available as Appendix I, Transportation Data, and VMT calculation are in Chapter 4.16, Transportation, of this Draft EIR. The criteria air pollutant emissions modeling is included in Appendix D, Air Quality and Greenhouse Gas Emissions Data, of this Draft EIR.

4.3.1 ENVIRONMENTAL SETTING

4.3.1.1 AIR POLLUTANTS OF CONCERN

Criteria Air Pollutants

Pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and State law under the federal Clean Air Act ("National") and California Clean Air Act, respectively. 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 a specific source; secondary air pollutants occur through chemical reactions. Carbon monoxide (CO), 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, NO_2, PM_{10}, and $PM_{2.5}$ 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. Each of the primary and secondary criteria air pollutants and its known health effects are described next, and Table 4.3-1 summarizes the potential health effects associated with the criteria air pollutants.

- **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]
- **Reactive Organic Gases (ROGs)/Volatile Organic Compounds (VOCs)** 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, the BAAQMD has established a significance threshold for this pollutant.
- **Nitrogen Oxides (NO_x)** are a by-product of fuel combustion and contribute to the formation of O_3, PM_{10}, and $PM_{2.5}$. The two major components of NO_x are nitric oxide (NO) and NO_2. The principal component of NO_x produced by combustion is NO, but NO reacts with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. 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.[5] 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 parts per million (ppm).
- **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 SO_2 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. At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue.[2]
- **Suspended Particulate Matter (PM_{10} and $PM_{2.5}$)** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. In the San Francisco Bay Area Air Basin (SFBAAB), most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities,

[1] Bay Area Air Quality Management District, 2017, Revised. *California Environmental Quality Act Air Quality Guidelines*.
[2] Bay Area Air Quality Management District, 2017, Revised. *California Environmental Quality Act Air Quality Guidelines*.

and motor vehicles. Two forms of fine particulates are now recognized and regulated. 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. Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., 2.5 millionths of a meter or 0.0001 inch). Diesel particulate matter (DPM) is also classified a carcinogen by the Air Resources Board.

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. The United States Environmental Protection Agency (USEPA) scientific review concluded that $PM_{2.5}$ penetrates even more deeply into the lungs, and this is more likely to contribute to health effects—at concentrations well below current PM_{10} standards. 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.[7]

- **Ozone (O_3)** is commonly referred to as "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 the presence of 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 to the formation of this pollutant. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. O_3 levels usually build up during the day and peak in the afternoon hours. Short-term exposure can irritate the eyes and cause constriction of the airways. 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.[3]
- **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 the BAAQMD, lead is not an air quality of concern for the proposed project.

[3] Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed on March 12, 2019.

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. 2009, December 2. ARB Fact Sheet: Air Pollution and Health. Accessed on February 21, 2019. https://www.arb.ca.gov/research/health/fs/fs1/fs1.htm; South Coast Air Quality Management District. 2005, May. 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

Toxic Air Contaminants

The California Health and Safety Code defines a toxic air contaminant (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 Clean Air Act (42 US Code Section 7412[b]) is a toxic air contaminant. People exposed to toxic air pollutants 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.[4] At the time of the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs.[5] Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control measures. The majority of the estimated health risks from TACs can be attributed to relatively few compounds. The most important compounds are particulate matter from diesel-fueled engines.

[4] United States Environmental Protection Agency. 2019. Health and Environmental Effects of Hazardous Air Pollutants. https://www.epa.gov/haps/health-and-environmental-effects-hazardous-air-pollutants

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

In 1998, CARB identified Diesel Particulate Matter (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. According to the BAAQMD, PM emitted from diesel engines contributes to more than 85 percent of the cancer risk in the SFBAAB. Cancer risk from TACs is highest near major DPM sources.[6]

4.3.1.2 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 the USEPA, CARB, the California Environmental Protection Agency (CalEPA), and BAAQMD. 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. San Rafael is in the SFBAAB and is subject to the rules and regulations imposed by the 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.

Ambient Air Quality Standards

The Clean Air Act was passed in 1963 by the United States Congress and has been amended several times. The 1970 Clean Air Act 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 Clean Air Act allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act, 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, based on even greater health and welfare concerns.

Both California and the federal government have established health based AAQS for seven air pollutants, which are shown in Table 4.3-2. These National AAQS 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 persons 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

[6] Bay Area Air Quality Management District, 2014, Improving Air Quality & Health in Bay Area Communities, Community Air Risk Evaluation Program Retrospective & Path Forward (2004-2013), April.

observed. California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:[7]

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

TABLE 4.3-2 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 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	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	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 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 µg/m^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$) [d]	Annual Arithmetic Mean	12 µg/m^3	12 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 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	

[7] See Chapter 4.8, Greenhouse Gas Emissions, of this Draft EIR for a description of regulations that reduce emissions including Assembly Bill 32, also known as the Global Warming Solutions Act, Senate Bill 375, also known as the Sustainable Communities and Climate Protection Act. See Chapter 4.16, Transportation, for a description on Senate Bill 743, and how it relates to reducing vehicle miles traveled or "VMT".

TABLE 4.3-2 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard [a]	Federal Primary Standard [b]	Major Pollutant Sources
	Calendar Quarter	*	1.5 µg/m^3	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	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 =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 hours	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 3 years, are equal to or less than the standard.
[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 primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
Source: California Air Resources Board, 2017, Short-Lived Climate Pollutant Reduction Strategy, https://www.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf, accessed on October 24, 2018.

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 reduce exposure to these contaminants to protect public health. A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code Section 7412[b]) is a toxic air contaminant. Under State law, 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). AB 1807 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 airborne toxics control measure must reduce exposure to below that threshold. If there is no safe threshold, the airborne toxics control 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[8] 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
- 13 CCR Chapter 10, Section 2480, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- 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

Regional Regulations

Bay Area Air Quality Management District

The 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 the

[8] Each district is responsible for establishing the prioritization score threshold at which facilities are required to prepare a health risk assessment. In the Bay Area, facilities that generate a cancer risk of greater or equal to 10 in a million and a non-cancer chronic or acute risk greater or equal to 10 in a million are high priority facilities. Types of facilities that have the potential to generate risks of this level include refineries, other heavy industrial manufacturing/industrial processes, and fueling stations.

BAAQMD was created in 1955.[9] The BAAQMD prepares air quality management plans (AQMP) to attain ambient air quality standards in the SFBAAB. The BAAQMD prepares ozone attainment plans for the National O_3 standard and clean air plans for the California O_3 standard. The BAAQMD prepares these air quality management plans in coordination with Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) to ensure consistent assumptions about regional growth.

2017 Clean Air Plan

The 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 recent 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 California and National 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 Clean Air Act. Additionally, it sets a goal of reducing health risk impacts to local communities by 20 percent between 2015 and 2020. Furthermore the 2017 Clean Air Plan also 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: [10]

- 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 multipollutant control strategy was 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 GHG 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; and 8) super-GHG pollutants. The control strategy includes these 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.

[9] Bay Area Air Quality Management District, 2010 (Revised 2017), Appendix C: Sample Air Quality Setting, in California Environmental Quality Act Air Quality Guidelines.

[10] Bay Area Air Quality Management District, 2017, April 19, Final 2017 *Clean Air Plan*, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area, http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans, accessed on March 18, 2019.

- Decarbonize the energy system.
- Make the electricity supply carbon-free.
- Electrify the transportation and building sectors.

Community Air Risk Evaluation Program

The BAAQMD Community Air Risk Evaluation program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor TACs in the Bay Area, primarily DPM. The last update to this program was conducted in 2014. Based on findings of the 2014 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 cancer risks: 1,3-butadiene contributed 4 percent of the cancer risk-weighted emissions and benzene contributed 3 percent. Collectively, five compounds—DPM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All of these compounds are associated with emissions from internal combustion engines. 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 TACs dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for state diesel regulations and other reductions.[11]

The major contributor to acute and chronic noncancer health effects in the SFBAAB is acrolein (C_3H_4O). Major sources of acrolein are on-road mobile sources and aircraft near freeways and commercial and military airports.[12] Currently CARB does not have certified emission factors or an analytical test method for acrolein. Since the appropriate tools needed to implement and enforce acrolein emission limits are not available, the BAAQMD does not conduct health risk screening analysis for acrolein emissions.[13]

Assembly Bill 617 Community Action Plans

AB 617 was signed into law in July 2017 to develop a new community-focused program to more effectively reduce exposure 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 by monitoring emissions 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

[11] Bay Area Air Quality Management District, 2014, Improving Air Quality & Health in Bay Area Communities, Community Air Risk Program Retrospective & Path Forward (2004 – 2013), http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CARE%20Program/Documents/CARE_Retrospective_April2014.ashx, accessed on March 12, 2019.

[12] 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/~/media/files/planning-and-research/care-program/care_p1_findings_recommendations_v2.pdf, accessed on March 12, 2019.

[13] Bay Area Air Quality Management District, 2010, Air Toxics NSR Program, Health Risk Screening Analysis Guidelines. http://www.baaqmd.gov/~/media/Files/Engineering/Air%20Toxics%20Programs/hrsa_guidelines.ashx, accessed on March 12, 2019.

communities that would move forward over the next five years. Bay Area recommendations included all the Community Air Risk Evaluation areas as well as areas with large sources of air pollution (refineries, seaports, airports, etc.), areas identified via statewide screening tools as having pollution and/or health burden vulnerability, and areas with low life expectancy.[14]

- 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 $DPM_{2.5}$.[15]
  - 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 the City 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, to better characterize the area's mix of sources, and to more fully understand the associated air quality and pollution impact.[16]
- 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.[17]

As identified above, AB 617 is not directly applicable to San Rafael since BAAQMD has not currently designated the City of San Rafael or communities within the City as disproportionally impacted by air pollution in either the Year 1 or Year 2-to-5 communities.

Air District Rules and Regulations

Regulation 7, Odorous Substances

Sources of objectionable odors may occur within the city. The 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 the 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

[14] BAAQMD. 2019, April 16. San Francisco Bay Area Community Health Protection Program. https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en

[15] BAAQMD. 2019, October 2. West Oakland Community Action Plan. https://www.baaqmd.gov/community-health/community-health-protection-program/west-oakland-community-action-plan

[16] BAAQMD. 2019, April 16. San Francisco Bay Area Community Health Protection Program. https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en

[17] BAAQMD. 2019, April 16. San Francisco Bay Area Community Health Protection Program. https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en

or property." Under the 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 Air District Regulations

In addition to the plans and programs described above, the BAAQMD administers several specific regulations on various sources of pollutant emissions that would apply to potential future development constructed over the buildout of the proposed General Plan 2040 and Downtown Precise Plan, including:

- Regulation 2, Rule 2, New Source Review
- Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants
- Regulation 6, Rule 1, General Requirements
- Regulation 6, Rule 2, Commercial Cooking Equipment
- Regulation 8, Rule 3, Architectural Coatings
- Regulation 8, Rule 4, General Solvent and Surface Coatings Operations
- Regulation 8, Rule 7, Gasoline Dispensing Facilities
- Regulation 11, Rule 2, Asbestos, Demolition, Renovation and Manufacturing)
- Regulation 11, Rule 18, Reduction of Risk from Air Toxic Emissions at Existing Facilities

Transportation Authority of Marin

The Transportation Authority of Marin (TAM) is the congestion management agency for Marin County. TAM 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 plans. TAM's latest congestion management program (CMP) is the Marin County Congestion Management Program 2017 Update. TAM'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 CMP system. In addition, TAM's updated CMP includes multimodal performance standards and trip reduction and transportation demand management strategies consistent with the goal of reducing regional VMT in accordance with Senate Bill 375 (SB 375). Strategies identified in the 2013 CMP for Marin County, where local jurisdictions are responsible agencies, include:

- Designated Roadway System. Establish and maintain the designated CMP roadway system that allows performance monitoring in terms of established level-of-service LOS standards.
- Roadway System Level of Service. Establish level-of-service standards using the Transportation Research Board's Highway Capacity Manual or an accepted alternative.
- System Performance. Establish performance measures to evaluate current and future multimodal system performance for the movement of people and goods.
- Travel Demand Management. Promote alternative transportation methods to reduce traffic congestion, increase use of park-and-ride lots, improvements in the balance between jobs and housing, and other strategies for reducing vehicle trips, including flexible work hours, telecommuting, and parking management programs.

- Land Use Analysis. Analyze the impacts of land use decisions made by local jurisdictions on the regional transportation system (both highways and transit).
- Travel Demand Model. Develop a uniform database on traffic impacts for use in a countywide travel demand.
- Capital Improvement Program. Include a seven-year Capital Improvement Program to maintain or improve the performance of the multimodal system for the movement of people and goods and to mitigate regional transportation impacts identified through the Land Use Analysis Program.
- Deficiency Plan Procedures. Determine every two years whether Marin County and cities and towns within the county conform to the requirements of the CMP based on information obtained through monitoring.

Plan Bay Area 2040

As described in Chapter 4, Environmental Evaluation, of this Draft EIR, ABAG and MTC are regional planning agencies tasked with coordinating land use and transportation planning in the Bay Area, including development of the Bay Area's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), known as *Plan Bay Area*. The 2040 update to *Plan Bay Area* was adopted jointly by the ABAG and MTC on July 26, 2017. *Plan Bay Area* incorporates the region's SCS, which is required pursuant to SB 375 to reduce per capita VMT and associated GHG emissions. As part of the implementing framework for *Plan Bay Area*, local governments have identified Priority Development Areas (PDAs) and Transit Priority Areas (TPAs) to focus growth. PDAs are transit-oriented, infill development opportunity areas within existing communities. TPAs are half-mile buffers surrounding major transit stops or terminals. Overall, well over two-thirds of all regional growth in the Bay Area by 2040 is allocated within PDAs. As shown on Figure 4-1, in Chapter 4.0, Environmental Evaluation, the EIR Study Area has three PDAs and three TPAs.[18]

Local Regulations[19]

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs that are relevant to the protection of air quality are primarily in the Air and Water Quality Element, which cross-references the Circulation Element. As part of the proposed project, some existing General Plan goals, policies, and programs would be amended, substantially changed, or new policies would be added. A comprehensive list of goal, policy, and program changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness

[18] Metropolitan Transportation Commission and Association of Bay Area Governments, 2017, Plan Bay Area 2040 Final, http://2040.planbayarea.org/, accessed on March 12, 2019.

[19] The current San Rafael Climate Change Action Plan (2019 CCAP) was approved and adopted by the City on May 20, 2019. While the 2019 CCAP includes measures that reduce emissions, the 2019 CCPC is not directly applicable to criteria air pollutants and air toxics (i.e., the focus of the air quality analysis). Please see Chapter 4.8, Greenhouse Gas Emissions, of this Draft EIR, for a discussion on how the 2019 CCAP relates to reduced emissions.

and potential to result in an adverse physical impact later in this chapter under Section 4.3.3, impact discussion.

San Rafael Municipal Code

The San Rafael Municipal Code (SRMC) includes various directives to minimize adverse impacts to air quality. The SRMC is organized by title, chapter, and section. Most provisions related to air quality impacts are included in Title 5, Traffic Regulations, Title 9, Health and Sanitation, Title 10, Business, Professions, Occupations, Industries, and Trades, Title 12, Building Regulations, and Title 14, Zoning, as follows

- Chapter 5.81, Trip Reduction and Travel Demand Requirements. Requires the City to implement a trip reduction and travel demand ordinance (Ord. 1657 Section 1 (part), 1994).
- Chapter 9.19, Refuse and Recycling Materials Collection and Disposal. The burning of solid waste is prohibited without a permit from the City and government body or agency responsible for fire protection, air pollution, or public health and safety.
- Chapter 10.92, Prohibits Polystyrene Foam Disposal Food Packaging. Retail food vendors are prohibited from providing prepared food or take-out food to customers in, on, or with disposable food packaging that includes polystyrene foam.
- Chapter 12.345, Wood-Burning Appliances. Prohibits non-EPA Phase II-certified wood heaters or wood-burning fireplaces to be installed in new construction, additions, or remodels of any size. The conversion of a gas fireplace to a wood-burning fireplace is prohibited.
- Chapter 14.16, Site and Use Regulations. Section 14.16.305, Small Wind Energy Systems, establishes standards to regulate the design and placement of small wind energy systems on public and private property to minimize the potential safety and aesthetic impacts on neighboring property owners and the community. Section 14.16.307, Solar Installations, identifies requirements for solar installations on developed properties (e.g., rooftop solar) and solar energy production facilities for off-site power distribution.
- Chapter 14.18, Parking Standards. Section 14.18.45, Designated Parking for Clean Air Vehicles, requires parking spaces serving new nonresidential buildings be designated for low-emitting, fuel-efficient, and carpool/van pool vehicles, as defined by Section 5.102 of CALGreen. Section 14.18.090, Bicycle Parking, requires bicycle parking be provided for new nonresidential buildings and major renovations of nonresidential buildings that have 30 or more parking spaces, and for all public/quasi-public uses.

4.3.1.3 EXISTING CONDITIONS

San Francisco Bay Area Air Basin Conditions

The SFBAAB comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties; the southern portion of Sonoma County; and the southwestern portion of Solano County.

Air quality in the SFBAAB is determined by such natural factors as topography, meteorology, and climate in addition to the presence of existing air pollution sources and ambient conditions, as described below.[20]:

- Meteorology: The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, that distort normal wind flow patterns. The Coast Range[21] 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 semipermanent, 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 José 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. 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, and the sea breeze deepens and increases in velocity while spreading inland. Under normal atmospheric conditions, the air in the lower atmosphere is warmer than the air above it. In the winter, stormy conditions with moderate to strong winds are frequent, as are periods of stagnation with very light winds. Winter stagnation episodes (i.e., conditions where there is little mixing because of little or no wind) are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the SFBAAB.
- 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.

[20] Bay Area Air Quality Management District, 2017, Revised, California Environmental Quality Act Air Quality Guidelines.
[21] The Coast Ranges traverses California's west coast from Humboldt County to Santa Barbara County.

- **Inversions:** 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. Elevation inversions[22] are more common in the summer and fall, and radiation inversions[23] are more common during the winter. The highest air pollutant concentrations generally occur during inversions.
- **Temperature:** Summer temperatures are determined in large part by the effect of differential heating between land and water surfaces. 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 day the temperature contrast between the coast and inland areas is small, and at night it 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 disperse 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.

Attainment Status of the SFBAAB

The AQMP provides the framework for air quality basins to achieve attainment of the State and federal 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.

[22] 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.

[23] During the night, the ground cools off, radiating the heat to the sky.

The attainment status for the SFBAAB is shown in Table 4.3-3. The SFBAAB is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS.

TABLE 4.3-3 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} – 24-hour	Nonattainment	Unclassified/ Attainment [b]
$PM_{2.5}$ – 24-hour and Annual	Nonattainment	Nonattainment
CO – 8-hour and 1-hour	Attainment	Attainment
NO_2 – 1-hour	Attainment	Unclassified
SO_2 – 24-hour and 1-hour	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	Unclassified/Attainment
All others	Unclassified/Attainment	Unclassified/Attainment

a. Severity classification current as of February 13, 2017.
b. In December 2014, US EPA 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, 2017, Area Designations Maps: State and National, http://www.arb.ca.gov/desig/adm/adm.htm, accessed on October 24, 2018; Bay Area Air Quality Management District. 2017. Air Quality Standards and Attainment Status. http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status#thirteen, accessed on October 22, 2018.

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the city have been documented and measured by the BAAQMD. In 2019 BAAQMD had 31 operational monitoring stations around the Bay Area.[24] The nearest station is the San Rafael Monitoring Station at 534 Fourth Street. Data from this station is summarized in Table 4.3-4. The data show regular violations of the State and federal PM_{10} standards and federal $PM_{2.5}$ standard. Based on BAAQMD's Planning Healthy Places, the City of San Rafael is within a 24-hour $PM_{2.5}$ exceedance area.[25]

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 identified by CalEnviroScreen 3.0 (i.e., environmental justice communities) may be disproportionately affected by

[24] BAAQMD. 2019. July 1. 2109 Air Monitoring Network Plan. https://www.baaqmd.gov/~/media/files/technical-services/2019_network_plan-pdf.pdf?la=en

[25] BAAQMD. 2016, May 20. Planning Health 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

and vulnerable to poor air quality.[26] Figure 4.3-1 shows the communities that may be disproportionately affected by poor air quality in the city. The CalEnviroScreen 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 having to do with air quality or air pollution.

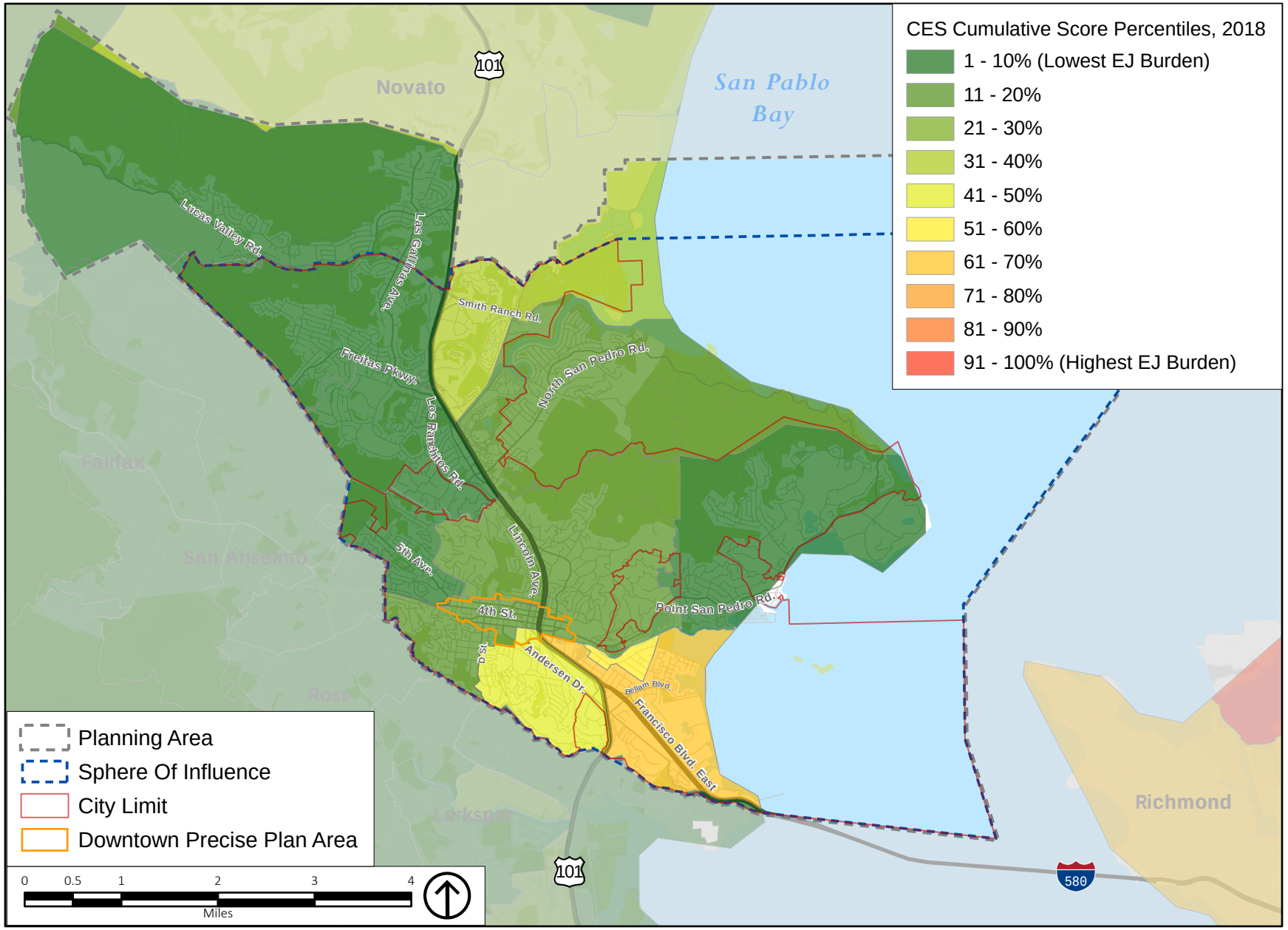
Residential areas are considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, 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, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, since 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.

TABLE 4.3-4 AMBIENT AIR QUALITY MONITORING SUMMARY

	Number of Days Threshold Were Exceeded and Maximum Levels During Such Violations				
Pollutant/Standard	**2014**	**2015**	**2016**	**2017**	**2018**
Ozone (O_3)					
State 1-Hour ≥ 0.09 ppm	0	0	0	0	0
State 8-hour ≥ 0.07 ppm	0	0	0	0	0
Federal 8-Hour > 0.075 ppm	0	0	0	0	0
Maximum 1-Hour Conc. (ppm)	0.088	0.081	0.088	0.088	0.072
Maximum 8-Hour Conc. (ppm)	0.068	0.070	0.067	0.063	0.053
Nitrogen Dioxide (NO_2)					
State 1-Hour ≥ 0.18 (ppm)	0	0	0	0	0
Maximum 1-Hour Conc. (ppb)	0.0624	0.0440	0.0455	0.0534	0.0553
Coarse Particulates (PM_{10})					
State 24-Hour > 50 µg/m^3	0	0	0	2	2
Federal 24-Hour > 150 µg/m^3	0	0	0	0	1
Maximum 24-Hour Conc. (µg/ m^3)	39.0	42.2	26.6	91.5	160.0
Fine Particulates ($PM_{2.5}$)					
Federal 24-Hour > 35 µg/m^3	1	2	0	8	13
Maximum 24-Hour Conc. (µg/m^3)	38.1	36.3	15.6	74.7	167.6

Notes: ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter. Data from the San Rafael Monitoring Station.
Source: California Air Resources Board, 2020, Air Pollution Data Monitoring Cards (2014, 2015, 2016, 2017, and 2018), http://www.arb.ca.gov/adam/index.html, accessed on March 1, 2020.

[26] Under Senate Bill 535, disadvantaged communities are defined as the top 25% scoring areas from CalEnviroScreen along with other areas with high amounts of pollution and low populations.



Source: CalEnviroScreen, 2018; ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.3-1
CalEnviroScreen 3.0 Cumulative Score by Percentile

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* (2005) to address the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources.

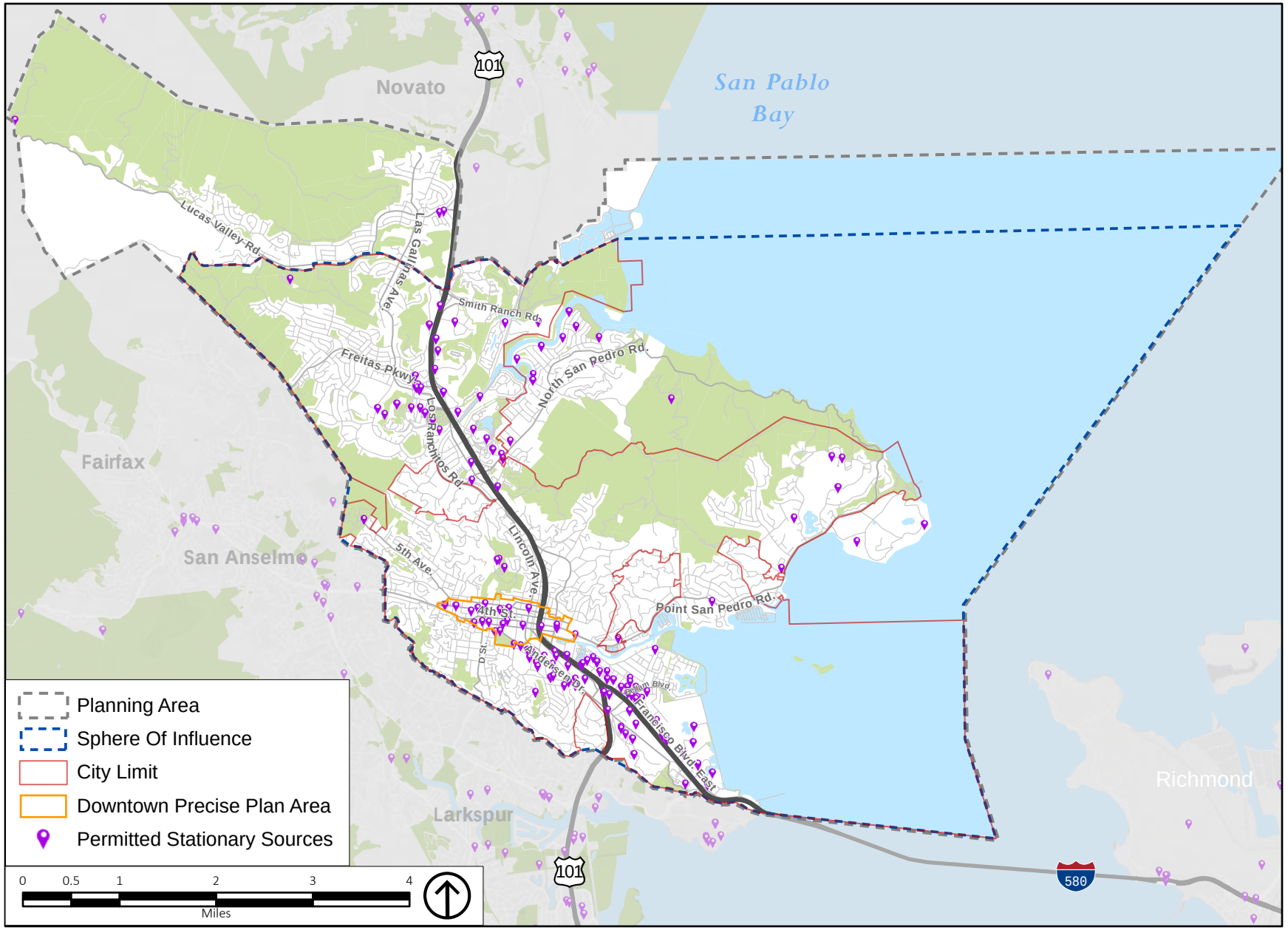
CARB's recommendations on the siting of new sensitive land uses identified in Table 4.3-5 were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that proximity to air pollution sources substantially increases both exposure and the potential for adverse health effects. There are three carcinogenic toxic air contaminants 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.

TABLE 4.3-5 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.
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*.

Figure 4.3-2 identifies stationary sources (BAAQMD-permitted sources) in the city as well as major roadways where BAAQMD recommends either implementation of best management practices to reduce risk or preparation of site-specific analysis to ensure air quality compatibility.



Source: BAAQMD, 2018; ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.3-2

BAAQMD Air Quality Compatibility Siting Recommendations for San Rafael

Existing Emissions

Criteria Air Pollutant Emissions Inventory

Table 4.3-6 identifies the existing criteria air pollutant emissions inventory using emission rates for year 2019 (current conditions). The inventories are based on existing land uses in the City and SOI. 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.

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 the BAAQMD.[27] Stationary sources in the city are shown on Figure 4.3-2.

TABLE 4.3-6 EXISTING SAN RAFAEL CITY AND SOI REGIONAL CRITERIA AIR POLLUTANT EMISSIONS INVENTORY

	2019 EIR Study Area Criteria Air Pollutant Emissions (pounds per day)					
Pollutant/Standard	**VOC**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Transportation [a]	140	878	1,416	4	398	166
Energy [b]	52	451	219	3	36	36
Off-Road Equipment [c]	82	110	3,854	0	17	13
Consumer Products [d]	1,142	0	0	0	0	0
Total	**1,416**	**1,439**	**5,490**	**7**	**451**	**216**
	2019 EIR Study Area Criteria Air Pollutant Emissions (tons per year)					
Pollutant/Standard	**VOC**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Transportation [a]	24	152	246	1	69	29
Energy [b]	10	82	40	1	7	7
Off-Road Equipment [c]	15	20	703	0	3	2
Consumer Products [d]	208	0	0	0	0	0
Total	**257**	**255**	**989**	**1**	**79**	**38**

Notes:
a. On-road transportation VMT is provided by VMT and modeled with EMFAC2017. VMT for the General Plan is based on the "project's effect" of VMT in the City and SOI. As a result, unlike the Climate Change Action Plan inventory, the inventory conducted for the proposed General Plan 2040 includes the full trip length of intrajurisdictional trips.
b. Building electricity and natural gas are based on data provided by the City for the GHG emissions inventory conducted for their Climate Change Action Plan from PG&E and MCE. The electricity rates were adjusted to reflect the increase in housing units and employment within the City.
c. On-road vehicles and equipment are based on the OFFROAD2017 emissions inventory and include construction equipment and commercial equipment.
d. Residential consumer product use based on the emissions factors in the CalEEMod Users Guide Version 2016.3.2.
Source: PlaceWorks, 2020.

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

Odors

The city of San Rafael has a solid waste transfer station and two wastewater treatment plants that have 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 by under BAAQMD Regulation 7, Odorous Substances, and Regulation 1, Rule 1-301, Public Nuisance. Under the 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

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would result in significant air quality impacts 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 in non-attainment under applicable federal or State ambient air quality standard.
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.
5. Result in significant cumulative air quality impact.

4.3.2.1 BAAQMD AIR QUALITY CEQA GUIDELINES

As described earlier in this chapter, the analysis presented below is based on the methodology recommended by the BAAQMD. The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed in the Bay Area and provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended numeric thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and GHG emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Air Quality Guidelines. These thresholds are designed to establish the level at which the BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA.

In May 2011, the updated BAAQMD CEQA Air Quality Guidelines were amended to include a risk and hazards threshold for new receptors and modified procedures for assessing impacts related to risk and hazard impacts; however, this later amendment regarding risk and hazards was the subject of a December 17, 2015, California Supreme Court decision (*California Building Industry Association v BAAQMD*) which clarified that CEQA does not require an evaluation of impacts of the environment on a project.[28] The court

[28] On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the BAAQMD CEQA Air Quality Guidelines. The court did not rule on

also found that CEQA requires the analysis of exposing people to environmental hazards in specific circumstances, including the location of development near airports, schools near sources of toxic contamination, and certain exemptions for infill and workforce housing. The court also held that public agencies remain free to conduct this analysis regardless of whether it is required by CEQA. To account for these updates, BAAQMD published a new version of the Guidelines, dated May 2017, that includes revisions made to address the California Supreme Court's opinion. This latest version of the BAAQMD CEQA Guidelines was used to prepare the analysis in this EIR.

Criteria Air Pollutant Emissions and Precursors

Regional Significance Criteria

The BAAQMD's criteria for regional significance for projects that exceed the screening thresholds are shown in Table 4.3-7. Criteria for both the construction and operational phases of the project are shown.

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

	Construction Phase	Operational Phase	
Pollutant	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (Tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
PM_{10} and $PM_{2.5}$ Fugitive Dust	Best Management Practices	None	None

Notes: pounds per day = lbs/day
Source: Bay Area Air Quality Management District, 2017, CEQA Guidelines May 2017.

BAAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals exposed to elevated concentrations of air pollutants in the SFBAAB and has established thresholds that would be protective of these individuals. To achieve the health-based standards established by the USEPA, BAAQMD prepares the Clean Air Plan that details regional programs to attain the AAQS. Mass emissions in

the merits of the thresholds of significance, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD complied with CEQA. Following the court's order, the BAAQMD released revised CEQA Air Quality Guidelines in May of 2012 that include guidance on calculating air pollution emissions, obtaining information regarding the health impacts of air pollutants, and identifying potential mitigation measures, and which set aside the significance thresholds. The Alameda County Superior Court, in ordering BAAQMD to set aside the thresholds, did not address the merits of the science or evidence supporting the thresholds, and in light of the subsequent case history discussed below, the science and reasoning in the BAAQMD 2017 CEQA Air Quality Guidelines provide the latest state-of-the-art guidance available. On August 13, 2013, the First District Court of Appeal ordered the trial court to reverse the judgment and upheld the BAAQMD's CEQA Guidelines. (*California Building Industry Association v. BAAQMD*, Case Nos. A135335 and A136212 (Court of Appeal, First District, August 13, 2013)).

Table 4.3-7 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SFBAAB. The thresholds are based on the trigger levels for the federal New Source Review Program, which was created to ensure projects are consistent with attainment of health-based federal AAQS. Regional emissions from a single project do not single-handedly trigger a regional health impact, and it is speculative to identify how many more individuals in the SFBAAB would be affected. Projects that do not exceed the BAAQMD regional significance thresholds in Table 4.3-7 would not violate any air quality standards or contribute substantially to an existing or projected air quality violation.

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 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—because mass emissions are not correlated with concentrations of emissions—or how many additional individuals in the SFBAAB would experience the health effects cited above.

BAAQMD 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. 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 AAQS and California AAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds. However, if a project in the Bay Area exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until the attainment standard are met in the SFBAAB.

CO Hotspots

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

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.
- The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.

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

Community Risk and Hazards

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 residential sensitive receptors. The thresholds for construction-related local community risk and hazard impacts are the same as for project operations. The BAAQMD has adopted screening tables for air toxics evaluation during construction.[29] Project-level 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 receptors, as applicable.[30]

Community Risk and Hazards: Project

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

- An excess cancer risk level of more than 10 in one million, or a noncancer (i.e., chronic or acute) hazard index greater than 1.0 would be a significant project contribution.
- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$ from a single source would be a significant project contribution.[31]

Community Risk and Hazards: Cumulative

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

- An excess cancer risk level of more than 100 in one million or a chronic noncancer hazard index (from all local sources) greater than 10.0.
- 0.8 $\mu g/m^3$ annual average $PM_{2.5}$.[32]

[29] Bay Area Air Quality Management District, 2010, Screening Tables for Air Toxics Evaluations during Construction.

[30] Bay Area Air Quality Management District, 2017, Revised, California Environmental Quality Act Air Quality Guidelines, http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed on October 25, 2018.

[31] Bay Area Air Quality Management District, 2017, Revised, California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed on October 25, 2018.

[32] Bay Area Air Quality Management District, 2017, Revised, California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed on October 25, 2018.

In February 2015, Office of Environmental Health Hazard Assessment 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 as well as age-specific breathing rates.[33]

Odors

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. 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 cause, or has a natural tendency to cause, injury, or damage to business or property. Under BAAQMD's Rule 1-301. 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.[34] For a plan-level analysis, BAAQMD requires the identification of potential existing and planned location of odors sources and policies to reduce odors.

4.3.2.2 METHODOLOGY

The air quality analysis was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur in conjunction with potential future development that could occur during the buildout horizon of the proposed project.

Emissions Inventory

The emissions inventory for the EIR Study Area includes the following sectors:

- Transportation: Transportation emissions forecasts were modeled using emission rates from CARB's EMFAC2017, version 1.0.2, Project Level (PL) web database. Modeling includes the SAFE Part 1 and Part 2 EMFAC2017 model adjustment factors released by CARB. Model runs were based on daily VMT data provided by Fehr & Peers and calendar year 2019 (existing) and 2040 emission rates. The VMT provided includes the full trip length for land uses in the city. This differs from the emissions inventory prepared for the *City of San Rafael Climate Change Action Plan* (CCAP), which includes a 50 percent reduction in trip lengths for trips that start or end the city but travel outside the city (intra-jurisdictional trips). Consistent with CARB's methodology within the *Climate Change Scoping Plan*

[33] Office of Environmental Health Hazard Assessment, 2015, February, Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments.

[34] Bay Area Air Quality Management District, 2017, May, California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed on October 25, 2018.

Measure Documentation Supplement, daily VMT was multiplied by 347 days per year to account for reduced traffic on weekends and holidays to determine annual emissions.

- Energy: Energy use for residential and nonresidential land uses in the EIR Study Area were modeled using natural gas data provided by the City from the 2016 GHG emissions inventory conducted for the CCAP, which is based on natural gas use provided by PG&E. Residential and nonresidential energy forecasts are adjusted for increases in housing units and employment, respectively. The emissions rates for residential and nonresidential natural gas are based on the CalEEMod Users Guide.
- Off-Road Equipment: Emission rates from CARB's OFFROAD2017, version 1.0.1, web database were used to estimate criteria air pollutant emissions from light commercial and construction equipment in the EIR Study Area. OFFROAD2017 is a database of equipment use and associated emissions for each county compiled by CARB. Emissions were compiled using OFFROAD2017 for the county of Marin for year 2019. In order to determine the percentage of emissions attributable to the EIR Study Area, light commercial equipment is estimated based on employment for San Rafael as a percentage of Marin County. Construction equipment use is estimated based on building permit data for the city of San Rafael and the county of Marin from data compiled by the United States Census. The light commercial equipment emissions forecast is adjusted for changes in employment in the EIR Study Area. It is assumed that construction emissions for the forecast year would be similar to historical levels. Annual emissions are derived by multiplying daily emissions by 365 days.
- Area Sources: Area sources are based on the emission factors from the CalEEMod Users Guide for emissions generated from use of consumer products and cleaning supplies.

Impacts of the Environment on a Future Project

BAAQMD's CEQA Guidelines include methodology for jurisdictions wanting to evaluate the potential impacts from placing sensitive receptors proximate to major air pollutant sources. 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 (with volume of 10,000 vehicles or more per day or 1,000 trucks per day) and permitted sources.[35] Figure 4.3-2 identifies areas within San Rafael where BAAQMD recommends best management practices or further study to ensure air quality compatibility of new sensitive land uses proximate to major sources of air pollution.

Buildout under the proposed General Plan 2040 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 persons that inhabit these sensitive land uses 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. *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 Section 4.3.4, impact discussion.

[35] Bay Area Air Quality Management District, 2010 (Revised 2011). California Environmental Quality Act Air Quality Guidelines.

While it is generally not within the purview of CEQA to analyze impacts of the environment on a project, the proposed Conservation and Climate Change (C) and Equity, Diversity, and Inclusion (EDI) Elements of the proposed General Plan 2040 include a goal, policy, and programs that would require new sensitive land uses to incorporate setbacks, barriers, landscaping, or other design features to minimize air quality impacts and achieve appropriate health standards. The following goals, policies, and programs would serve to protect air quality in the EIR Study Area:

Goal C-2: Clean Air. Reduce air pollution to improve environmental quality and protect public health.

- Policy C-2.2: Land Use Compatibility and Building Standards. Consider air quality conditions and the potential for adverse health impacts when making land use and development decisions. Buffering, landscaping, setback standards, filters, insulation and sealing, home HVAC measures, and similar measures should be used to minimize future health hazards.
  - Program C-2.2A: Protection of Sensitive Receptors. Use the development review process to require adequate buffering when a sensitive receptor (a use with occupants sensitive to the effects of air pollutants, such as children and the elderly) is proposed near an existing source of toxic contaminants or odors. For proposed sensitive receptors within 500 feet of US-101 or I-580, an analysis of mobile source toxic air contaminant health risks should be performed. The analysis should evaluate the adequacy of the setback from the highway and, if necessary, identify design mitigation measures and building standards to reduce health risks to acceptable levels. Mitigation standards and requirements should be periodically updated as air quality conditions and pollution control technology change.
  - Program C-2.2B: New Sources of Air Pollution. Use the development review process to ensure that potential new local sources of air pollution or odors provide adequate buffering and other measures necessary to comply with health standards.

Goal EDI-2: Healthy Communities and Environmental Justice. Support public health and wellness through community design in all parts of the city.

- Policy EDI-2.3: Community Health. Increase community awareness about best practices for maintaining physical and mental health. Incorporate such practices in City-sponsored activities and programs (see also Policy PROS-2.5).
  - Program EDI-2.3C: Municipal Code Review. Periodically evaluate City codes and ordinances for their impact on health, including provisions for tobacco, vaping, and smoke-free multi-family housing; standards for indoor air quality; and HVAC [heating, ventilation, and air conditioning] systems able to sustain safe living conditions during wildfires, power outages, and extreme weather events.

4.3.3 IMPACT DISCUSSION

AIR-1 Implementation of the proposed project could conflict with or obstruct implementation of the applicable air quality plan.

General Plan 2040

A consistency determination 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 described in Section 4.3.2, Standards of Significance, BAAQMD requires a consistency evaluation of a plan with its current AQMP measures. BAAQMD considers project consistency with the AQMP in accordance with the following:

- Does the project support the primary goals of the AQMP?
- Does the project include applicable control measures from the AQMP?
- Does the project disrupt or hinder implementation of any AQMP control measures?
- A comparison that the project VMT or vehicle trip increase is less than or equal to the projected population increase.

Bay Area Air Quality Management District 2017 Clean Air Plan Goals

The primary goals of the 2017 Clean Air Plan are to attain the State and federal 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 also 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.

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* 2040. Demographic trends incorporated into *Plan Bay Area* 2040 determine VMT in the Bay Area, which BAAQMD uses to forecast future air quality trends. The SFBAAB is currently designated a nonattainment area for O_3, $PM_{2.5}$, and PM_{10} (State AAQS only).

Future growth associated with the proposed General Plan 2040 would occur incrementally throughout the 2040 buildout horizon. As discussed further in Chapter 4.14, Population and Housing, of this Draft EIR, the proposed population and employment projections of the General Plan 2040 would result in a less-than-significant impact related to regional growth. As described in Chapter 4.14, the proposed General Plan 2040 contains goals, policies, and programs that are intended to guide development in San Rafael through the 2040 horizon year in a manner that reduces/minimizes VMT. Potential future development in the city

is projected to occur primarily in TPA s and PDAs on a limited number of vacant parcels, as infill/intensification on already developed and/or underutilized sites, in close proximity to existing residential and residential-serving development, and in areas with close proximity to public transportation. Thus, emissions resulting from potential future development associated with the proposed General Plan 2040 would not hinder BAAQMD's ability to attain the California or National AAQS. Accordingly, impacts would be *less than significant*.

Reduce Population Exposure and Protect Public Health

Buildout of the proposed General Plan 2040 could result in new sources of TACs and $PM_{2.5}$. Stationary sources, including smaller stationary sources (e.g., dry cleaners, restaurants with char-broilers, emergency generators, and boilers) are subject to review by BAAQMD as part of the permitting process. Adherence to 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. As a result, development allowed by the proposed General Plan 2040 could result in new sources of criteria air pollutant emissions and/or TACs near existing or planned sensitive receptors. Mitigation Measure AIR-3.2—described in Impact Discussion AIR-3—would ensure mobile sources of TACs not covered under 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. Thus, implementation of the proposed General Plan 2040 would not result in introducing new sources of TACs that on a cumulative basis that could expose sensitive populations to significant health risk. Therefore, impacts would be *less than significant*.

Reduce GHG Emissions and Protect the Climate

Consistency of the proposed General Plan 2040 with State, regional, and local plans adopted for the purpose of reducing GHG emissions are discussed under Impact Discussion GHG-2 in Chapter 4.6, Greenhouse Gas Emissions, of this Draft EIR. Future development allowed by the proposed General Plan 2040 would be required to adhere to statewide measures that have been adopted to achieve the GHG reduction targets of AB 32 and SB 32. The proposed General Plan 2040 is consistent with regional strategies for infill development identified in *Plan Bay Area* 2040. Furthermore, the proposed General Plan 2040 would also be consistent with the City's CCAP. While Impact Discussion GHG-1 identifies that the proposed General Plan 2040 would generate a substantial increase in emissions, Impact Discussion GHG-2 identifies that the proposed General Plan 2040 is consistent with state, regional, and local plans to reduce GHG emissions. Therefore, the proposed General Plan 2040 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 identifies the control measures in the 2017 Clean Air Plan that are required by BAAQMD to reduce emissions for a wide range of both stationary and mobile sources. As shown in Table 4.3-8, the proposed General Plan 2040 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, impacts would be *less than significant*.

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

Type	Consistency
Stationary Source Control Measures	Stationary and area sources are regulated directly by BAAQMD; therefore, as the implementing agency, new stationary and area sources in the city 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 type of the proposed land uses (primarily residential and commercial) under the proposed project, implementation of the proposed project would not hinder the ability of BAAQMD to implement these SS control measures. Major stationary source 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 includes the following policies and programs in the Equity, Inclusion, and Diversity Element (EDI) to support emissions reductions from stationary sources proximate to disadvantaged communities: ▪ Policy EDI-2.5: Environmental Justice ▪ Program EDI-2.5A: Reducing Exposure to Hazards ▪ Program EDI-2.5B: Reducing Indoor Air Pollution ▪ Program EDI-2.5C. Environmental Hazard Data The Conservation and Climate Change (C) Element also include policies and programs for coordination with BAAMQD on air pollutant reductions and considering air quality conditions when siting new receptors: ▪ Policy C-2.1: State and Federal Air Quality Standards ▪ Program C-2.1A: Cooperation with Other Agencies ▪ Policy C-2.2: Land Use Compatibility and Building Standards ▪ Program C-2.2A: Protection of Sensitive Receptors ▪ Program C-2.2B: New Sources of Air Pollution
Transportation Control Measures	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. The proposed project includes the policies in the Mobility (M) Element to address the TR control measures as follows: Expanding the pedestrian and bicycle network: ▪ Policy M-6.1: Encouraging Walking and Cycling ▪ Program M-6.1A: Bicycle and Pedestrian Master Plan Implementation ▪ Program M-6.1B: Station Area Plans ▪ Program M-6.1C: Canal Community Based Transportation Plan (CBTP) ▪ Program M-6.2A Pedestrian and Bicycle Safety ▪ Program M-6.2B: Vision Zero ▪ Policy M-6.3L Connectivity ▪ Program M-6.3A: Implementation of Pathway Improvements ▪ Program M-6.3B: Improvements in Unincorporated Areas ▪ Program M-6.3C: Bicycle Parking ▪ Policy M-6.4: Urban Trails Network ▪ Program M-6.4A: Urban Trails Master Plan ▪ Policy M-6.5: Pilot Projects

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

Type	Consistency
	▪ Policy M-6.6: Coordination ▪ Program M-6.6A: Bikeshare Program Reduce vehicle travel in the city. ▪ Policy M-3.3: Transportation Demand Management ▪ Policy M-4.3L Smart Improvements ▪ Policy M-4.7: Intermodal Transit Hubs ▪ Program M-4.7A: Transit Center Relocation ▪ Policy M-5.6: Truck Impacts ▪ Policy M-7.B: Parking Standards ▪ Policy M-7.9: Parking for Transit Users Support implementation of zero-carbon transportation solutions: ▪ Policy M-3.6: Low-Carbon Transportation ▪ Program M-3-6A: ZEV Plan ▪ Program P-3.6B: Zero Emission Municipal Vehicles ▪ Program M-7.8A: Charging Station ▪ Program M-6.3D: Electric Bicycles Safe Routes to Schools: ▪ Program M-6.2D: Safe Routes Programs ▪ Policy M-5.5: School-Related Traffic ▪ Program M-5.5A: School Transportation The Conservation and Climate Change (C) Element includes policies and programs that support the transition to cleaner fuels, including: ▪ Policy C-2.3: Improving Air Quality through Land Use and Transportation Choices ▪ Policy C-2.6: Education and Outreach ▪ Program C-2.6B: Equipment and Generators
Energy and Climate Control Measures	The energy and climate (EN) control measures are intended to reduce energy use as a means to reducing adverse air quality emissions. The Conservation and Climate Change (C) Element includes policies and programs to align the City's goals with that of Marin Clean Energy and other countywide plans addressing energy conservation and renewable energy. ▪ Policy C-4.1: Renewable Energy ▪ Policy C-4.1A: Marin Clean Energy Targets ▪ Program C-4.1E: Municipal Buildings ▪ Policy C-4.5: Resource Efficiency in Site Development ▪ Program C-4.5A: Solar Site Planning ▪ Policy C-5.3: Advocacy ▪ Program C-5.3B: State and Federal Actions ▪ Program C-5.3C: Regional Collaboration Furthermore, potential future development in the buildout of the proposed General Plan 2040 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	The buildings (BL) control measures focus on working with local governments to facilitate adoption of best GHG emissions control practices and policies. The Community Design and Preservation (CDP) Element and the Conservation and Climate Change (C) Element include policies and programs for energy efficiency and sustainability: ▪ Policy CDP-5.11: Sustainability ▪ Program CDP-5.11A: Energy Retrofits ▪ Policy C-4.1: Renewable Energy ▪ Program C-4.1B: PACE Financing

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

Type	Consistency
	▪ Program C-4.1C: Regulatory Barriers ▪ Program C-4.1D: Reducing Natural Gas ▪ Program C-4.1E: Municipal Buildings ▪ Policy C-4.2: Energy Conservation ▪ Program C-4.2A: Energy Efficiency Outreach ▪ Program C-4.2B: Green Building Standards ▪ Program C-4.2C: Energy Efficiency Incentives ▪ Program C-4.2D: Time-of-Sale Energy Audits ▪ Program C-4.2E: Cool Roofs and Pavements ▪ Policy C4.3 Managing Energy Demand ▪ Program C-4.3A: innovative Technologies ▪ Policy C-4.4: Sustainable Building Materials ▪ Program C-4.4A: Use of Alternative Building Materials ▪ Policy C-4.5: Resource Efficiency in Site Development ▪ Program C-4.5A: Solar Site Planning In addition, new developments accommodated under 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	Agricultural practices in the Bay Area accounts 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 proposed under the project, the type of urban farming (i.e., community gardens) associated with the proposed project would support reduced GHG emissions by increasing the amount of food grown and consumed locally. The Conservation and Climate Change (C); the Parks, Open Space, and Recreation (PROS); and the Equity, Inclusion, and Diversity (EDI) Elements include the following policies and programs that would reduce emissions from agriculture. ▪ Program C-3.3B: Non-traditional Gardens ▪ Policy PROS-2.8: Community Gardens ▪ Policy EDI-2.8: Food Access ▪ Program EDI-2.8A: Incentives ▪ Policy EDI-2.9: Urban Agriculture ▪ Program EDI-2.9A: Obstacles to Food Production Therefore, implementation of the proposed project would not conflict with these AG control measures.
Natural and Working Lands Control Measures	The control measures for the natural and working lands sector focus on increasing carbon sequestration on rangelands and wetlands. The Community Design and Preservation (CDP); the Conservation and Climate Change (C); the Parks, Open Space, and Recreation (PROS); and the Safety (S) Elements include the following policies and programs on carbon sequestration: ▪ Policy CDP-3.5: Street Trees ▪ Program CDP-3.5A: Street Tree Planting and Maintenance ▪ Program CDP-3.5B: Street Tree Inventory ▪ Program CDP-3.5C: Street Trees for New Development ▪ Program CDP-3.5D: Street Tree Maintenance ▪ Policy C-1.9: Enhancement of Creeks and Drainageways ▪ Policy C-3.3: Low Impact Development ▪ Program C-3.3B: Non-traditional Gardens ▪ Policy C-3.4: Green Streets ▪ Program C-3.4A: Green Streets Planning ▪ Program C-3.4B: Funding ▪ Policy C-5.5: Carbon Sequestration ▪ Policy PROS-1.18: Sustainable Park Operations ▪ Program PROS-1.18A: Sustainable Design

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

Type	Consistency
	▪ Policy PROS-3.3: Open Space Management Plan ▪ Program PROS-3.3A: Open Space Management Plan ▪ Policy PROS-3.10: Public Education ▪ Program S-4.1G: Open Space and Forestry Management
Waste Management Control Measures	The waste management (WA) control measures include strategies to increase waste diversion rates through efforts to reduce, reuse and recycle. The Community Services and Infrastructure (CSI) Element includes the following policies and programs to reduce landfilled waste: ▪ Policy CSI-4.17: Reducing Landfilled Waste Disposal ▪ Program CSI-4.17A: Waste Reduction ▪ Program CSI-4.17B: Recycling ▪ Program CSI-4.17C: Construction and Demolition Waste ▪ Program CSI-17D: Waste Reduction Programs ▪ Program CSI-4.17E: Community Composting ▪ Program CSI-4.17F: Food to Energy ▪ Program CSI-4.17G: Recyclable Waste Receptacles ▪ Policy CSI-4.18: Waste Reduction Advocacy and Education ▪ Program CSI-4.18A: Recycling Education Implementation of the ongoing City regulations and proposed policies to reduce waste would ensure implementation of the proposed project would not conflict with these WA control measures.
Water Control Measures	The 2017 Clean Air Plan includes measures to reduce water use. The Conservation and Climate Change (C) and the Community Services and Infrastructure (CSI) Elements include the following policies and programs to increase plumbing water efficiency and reduce landscape water use: ▪ Policy C-3.8: Water Conservation ▪ Program C-3.8A: Water Conservation Programs ▪ Program C-3.8B: Public Education ▪ Program C-3.8C: Reclaimed Water Use ▪ Program C-3.8D: Greywater and Rainwater ▪ Program C-3.8E: Reducing Municipal Water Use ▪ Policy C-3.9: Water Efficient Landscaping ▪ Program C-3.9A: Demonstration Gardens ▪ Policy CSI-4.12: Recycled Water ▪ Program CSI-4.12A: CMSA Capacity Expansion ▪ Program CSI-4.12B: Las Gallinas Expansion Project ▪ Program CSI-4.12C: Sewer Line Replacement.
Super-GHG Control Measures	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 CCAP, the City will continue to reduce local GHG emissions, meet State, regional, and local reduction targets, which would ensure implementation of the proposed project would not conflict with these SL control measures. The Community, Design, and Preservation (CDP) and the Conservation and Climate Change (C) Elements include policies and programs for encouraging use of renewable energy. ▪ Policy CDP-5.11: Sustainability ▪ Program CDP-5.11A: Energy Retrofits ▪ Policy C-4.1: Renewable Energy ▪ Program C-4.1B: PACE Financing ▪ Program C-4.1C: Regulatory Barriers ▪ Program C-4.1D: Reducing Natural Gas ▪ Program C-4.1E: Municipal Buildings ▪ Policy C-4.5: Resource Efficiency in Site Development ▪ Program C-4.5A: Solar Site Planning

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

Type	Consistency
	▪ Policy C-5.3: Advocacy ▪ Program C-5.3B: State and Federal Actions ▪ Program C-5.3C: Regional Collaboration
Further Study Control Measures	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 project area would be required to comply with these additional study control measures in the 2017 Clean Air Plan.

Source: Bay Area Air Quality Management District, 2017 Revised, California Environmental Quality Act Air Quality Guidelines.

Regional Growth Projections for VMT and Population

BAAQMD's 2017 Clean Air Plan incorporates the growth projections from the City's current General Plan 2020. Potential future development as a result of implementing the proposed General Plan 2040 would result in additional sources of criteria air pollutants. Growth accommodated by the proposed General Plan 2040 could occur through the 2040 buildout horizon. BAAQMD's approach to evaluating impacts from criteria air pollutants generated by a plan's long-term growth is to compare population estimates to the VMT estimates. This is because BAAQMD's AQMP plans for growth in the SFBAAB are based on regional population projections identified by ABAG and growth in VMT identified by TAM. Changes in regional, community-wide emissions in the EIR Study Area could affect the ability of BAAQMD to achieve the air quality goals in the AQMP. Therefore, air quality impacts for a plan-level analysis are based on consistency with the regional growth projections. Table 4.3-9 compares the projected increase in population with the projected increases in total VMT.

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

				Change from Baseline		Change from 2040 No Project	
Category	Baseline	2040 Without Project [a]	2040 With Project	Change	Percent	Change	Percent
City							
Population	61,230	NA	69,240	8,010	13%	NA	NA
Employment	42,050	NA	46,100	4,050	10%	NA	NA
SP	103,280	111,825	115,340	12,060	12%	3,515	3%
VMT per Day [a]	3,214,988	3,391,163	3,352,369	137,381	4%	-38,794	-1%
VMT/person	52.5	NA	48.4	-4.1	-8%	NA	NA
VMT/SP	31.1	30.3	29.1	-2.1	-7%	**-1.3**	**-4%**
Remainder of EIR Study Area							
Population	14,521	NA	15,421	900	6%	NA	NA
Employment	2,150	NA	2,215	65	3%	NA	NA
SP	16,671	17,286	17,636	965	6%	350	2%
VMT per Day [a]	399,338	420,975	385,521	-13,817	-3%	-35,454	-8%
VMT/person	27.5	NA	25.0	-2.5	-9%	NA	NA
VMT/SP	24.0	24.4	21.9	-2.1	-9%	**-2.5**	**-10%**

Notes: SP: Service Population
[a] Based on VMT data provided by Fehr & Peers. The 2040 without-project scenario is the Current General Plan.
Source: City of San Rafael, PlaceWorks, and Fehr & Peers, 2020.

As previously stated, BAAQMD's AQMP requires that the VMT increase by less than or equal to the projected population increase from the proposed General Plan 2040 (e.g., generate the same or less VMT per population). However, because the proposed General Plan 2040 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. In addition, because the 2017 Clean Air Plan used growth projections based, in part, on cities' General Plan land use designations, the growth rate in VMT compared to service population is evaluated between buildout under the proposed General Plan 2040 and buildout under the currently allowed under General Plan 2020.

VMT estimates based on data provided by Fehr & Peers were calculated for the EIR Study Area. As shown in Table 4.3-9, implementation of the proposed General Plan 2040 would increase daily VMT by 137,381 vehicle miles per day in the city, or about 4 percent, when compared to existing conditions. However, implementation of the proposed General Plan 2040 would result in lower VMT per capita than under existing conditions (8 percent lower in the city and 9 percent lower in the remainder of the EIR Study Area), and lower VMT per service population than under existing conditions (7 percent lower in the city and 9 percent lower in the remainder of the EIR Study Area). Compared to the demographic and VMT growth projections of the 2040 Without Project conditions (i.e., growth that would occur as currently allowed and projected under General Plan 2020), the 2040 With Project conditions would also decrease the VMT/SP by approximately 4 percent in the city and 10 percent in the remainder of the EIR Study Area. This indicates that buildout conditions under the proposed General Plan 2040 would be more efficient in reducing VMT on a per service population basis. Thus, the proposed General Plan 2040 would be consistent with the goals of the 2017 Clean Air Plan. Therefore, impacts would be *less than significant*.

In summary, implementation of the proposed General Plan 2040 would not conflict with the 2017 Clean Air Plan, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

The Downtown Precise Plan Area is mostly within the Downtown San Rafael SMART Station PDA and TPA (see Figure 4-4 in Chapter 4, Environmental Evaluation, of this Draft EIR), which includes 503 acres surrounding the San Rafael Transit Center. About 200 acres of the Downtown Precise Plan Area is within 0.25 mile, or a 10-minute walking distance, of the San Rafael Transit Center. Potential future development would primarily occur within this TPA and PDA on a limited number of vacant parcels, as infill/intensification on already developed and/or underutilized sites, in close proximity to existing residential and residential-serving development, and in areas with close proximity to public transportation. Potential future development in this area, like the proposed General Plan 2040, would occur incrementally throughout the 2040 buildout horizon, would be compatible with regional growth projections, would be required to achieve the incremental risk thresholds established by BAAQMD, and would reduce GHG emissions and protect the climate. Implementation of Mitigation Measure AIR-3.2—described in Impact Discussion AIR-3—would ensure mobile sources of TACs not covered under BAAQMD permits are considered during subsequent project-level environmental review by the City. The proposed

Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce air pollutants; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, implementation of the Downtown Precise Plan would not conflict with the 2017 Clean Air Plan, and impacts 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 a criteria pollutant for which the project region is in nonattainment under applicable federal or State ambient air quality standard.

This section analyzes potential impacts related to air quality that could occur from the buildout associated with the proposed General Plan 2040 and the Downtown Precise Plan in combination with the regional growth in the SFBAAB from construction and operational activities. The SFBAAB is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS. At a plan level, air quality impacts are measured by the potential for a project to exceed BAAQMD's significance criteria and contribute to the State and federal nonattainment designations in the SFBAAB. Any project that produces a significant regional air quality impact in an area that is in nonattainment adds to the cumulative impact. As described in Impact Discussion AIR-1, the proposed General Plan 2040 and Downtown Precise Plan would be consistent with the 2017 Clean Air Plan. However, construction and operational activities associated with potential future development under the proposed General Plan 2040 and Downtown Precise Plan could generate a substantial increase in criteria air pollutant emissions that could exceed the BAAQMD regional significance thresholds.

General Plan 2040: Construction

Construction activities would temporarily increase criteria air pollutant emissions within the SFBAAB. The primary source of NO_x emissions is the operation of construction equipment. The primary sources of particulate matter (PM_{10} and $PM_{2.5}$) emissions are activities that disturb the soil, such as grading and excavation, road construction, and building demolition and construction. BAAQMD considers all impacts related to fugitive dust emissions (PM_{10} and $PM_{2.5}$) from construction to be less than significant with implementation of BAAQMD's best management practices (see Table 4.3-7). The primary sources of VOC emissions are the application of architectural coating and off-gas emissions associated with asphalt paving. A discussion of health impacts associated with air pollutant emissions generated by construction activities is included under Section 4.3.1.1, Air Pollutants of Concern.

Construction activities associated with the potential future development from implementation of the proposed General Plan 2040 would occur over the buildout horizon, causing short-term emissions of criteria air pollutants. Information regarding specific development projects, soil types, and the locations of receptors would be needed in order to quantify the level of impact associated with construction activity. Due to the scale of development activity associated with buildout of proposed General Plan 2040, cumulative emissions would likely exceed the BAAQMD regional significance thresholds. In accordance

with the BAAQMD methodology, emissions that exceed the regional significance thresholds would cumulatively contribute to the nonattainment designations of the SFBAAB. Emissions of VOC and NO_X are precursors to the formation of O_3. In addition, NO_X is a precursor to the formation of particulate matter (PM_{10} and $PM_{2.5}$). Therefore, the proposed General Plan 2040 would cumulatively contribute to the nonattainment designations of the SFBAAB for O_3 and particulate matter (PM_{10} and $PM_{2.5}$) during construction.

For the proposed General Plan 2040, which is a broad-based policy plan, it is not possible to determine whether the scale and phasing of individual projects would exceed the BAAQMD's short-term regional or localized construction emissions thresholds. When applicable, potential future development under the proposed General Plan 2040 would be subject to separate environmental review pursuant to CEQA in order to identify and mitigate potential air quality impacts. Any such subsequent environmental review of development projects would be required to assess potential impacts under BAAQMD's project-level thresholds based on site-specific construction phasing and buildout characteristics. Existing federal, State, and local regulations and goals, policies, and programs of the proposed General Plan 2040 described throughout this chapter protect local and regional air quality. Continued compliance with these regulations would reduce construction-related impacts.

The proposed Conservation and Climate Change (C) Element contains one policy and one program that require local planning and development decisions to consider impacts from particulate matter pollution (i.e., fugitive dust). The following General Plan policy and program would minimize potential adverse impacts related to particulate matter air pollution:

Goal C-2: Clean Air. Reduce air pollution to improve environmental quality and protect public health.

- Policy C-2.1: State and Federal Air Quality Standards. Continue to comply with state and federal air quality standards.
  - Program C-2.1A: Cooperation with Other Agencies. Work with the Bay Area Air Quality Management District (BAAQMD) and other agencies to ensure compliance with air quality regulations and proactively address air quality issues.
- Policy C-2.4: Particulate Matter Pollution Reduction. Promote the reduction of particulate matter from roads, parking lots, construction sites, agricultural lands, wildfires, and other sources.
  - Program C-2.4A: Particulate Matter Exposure. Through development review, require that Best Available Control Technology (BACT) measures (such as setbacks, landscaping, paving, soil and dust management, and parking lot street sweeping) are used to protect sensitive receptors from particulate matter. This should include control of construction-related dust and truck emissions as well as long-term impacts associated with project operations. Where appropriate, health risk assessments may be required to evaluate risks and determine appropriate mitigation measures.

Fugitive Dust from Construction

As part of the City's development approval process pursuant to General Plan Programs C-2.1A and C-2.4A, the City of San Rafael requires applicants of discretionary development projects that are subject to CEQA

to control construction-related dust by complying with the current BAAQMD basic control measures for fugitive dust control[36]as follows:

- 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.

Because BAAQMD considers all impacts related to fugitive dust emissions (PM_{10} and $PM_{2.5}$) 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), the ongoing implementation of BAAQMD's requirements by the City pursuant General Plan Programs C-2.1A and C-2.4A would ensure impacts would be *less than significant*.

Other Air Pollutants from Construction

BAAQMD identifies screening sizes of development projects in the BAAQMD CEQA Guidelines that apply to development projects in San Rafael and throughout BAAQMD's jurisdiction. Development projects that are below the screening size are assumed to have less-than-significant impacts. Development projects that are larger than the screening size are required to demonstrate that the construction phase of the project would not exceed the BAAQMD thresholds of significance, as identified in the BAAQMD CEQA Guidelines. If construction-related criteria air pollutants are determined to have the potential to exceed the BAAQMD thresholds of significance, as identified in the BAAQMD CEQA Guidelines, the City requires the project applicants to incorporate project-specific mitigation measures to reduce air pollutant emissions (NO_X) during construction activities to below the thresholds (e.g., see BAAQMD CEQA Guidelines, Table 8-2, Additional Construction Mitigation Measures Recommended for Projects with Construction Emissions Above the Threshold, or applicable construction mitigation measures subsequently approved by BAAQMD). Therefore, without the preparation of project-specific analysis on a

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

project-by-project basis for development proposals that exceed the BAAQMD screening sizes, construction emission impacts at the program level are considered *significant*.

Impact AIR-2.1: Construction activities associated with potential future development could potentially violate an air quality standard or cumulatively contribute to an existing or projected air quality violation.

Mitigation Measure AIR-2.1: To reduce temporary increases in criteria air pollutant emissions (NO_X) during the construction phase for discretionary development projects that are subject to CEQA which exceed the screening sizes in the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines, the City shall adopt the following General Plan Program to support Policy C-2.4 (Particulate Matter Pollution Reduction) to be implemented as part of the project approval process:

- New Program: Require projects that exceed the BAAQMD screening sizes to evaluate project-specific construction emissions in conformance with the BAAQMD methodology and if construction-related criteria air pollutants exceed the BAAQMD thresholds of significance, require the project applicant to mitigate the impacts to an acceptable level.

Significance with Mitigation: Less than significant.

Downtown Precise Plan: Construction

Same as potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area has the potential to generate a substantial increase in criteria air pollutant emissions from construction. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce air pollutants; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *less than significant*.

Significance with Mitigation: Less than significant.

General Plan 2040: Operation

BAAQMD has identified thresholds of significance for criteria pollutant emissions and criteria air pollutant precursors, including VOC, NO, PM_{10}, and $PM_{2.5}$. Development projects below the significance thresholds are not expected to generate sufficient criteria pollutant emissions to violate any air quality standard or contribute substantially to an existing or projected air quality violation. According to BAAQMD's CEQA Guidelines, long-range plans, such as the proposed General Plan 2040, present unique challenges for assessing impacts. Due to the SFBAAB's nonattainment status for ozone and PM and the cumulative impacts of growth on air quality, these plans almost always have significant, unavoidable, adverse air quality impacts.

Implementation of the proposed General Plan 2040 would result in an increase in development intensity in the EIR Study Area. Buildout of the proposed General Plan 2040 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). Although BAAQMD's CEQA Air Quality Guidelines only require an emissions inventory of criteria air pollutants for project-level analyses, enough information regarding the

buildout of the proposed General Plan 2040 is available to generate an inventory of criteria air pollutants to identify the magnitude of emissions. Table 4.3-10 identifies these emissions. Subsequent environmental review of applicable development projects would be required to assess potential impacts under BAAQMD's project-level thresholds.

TABLE 4.3-10 CITY OF SAN RAFAEL AND SOI CRITERIA AIR POLLUTANT EMISSIONS FORECAST

	Criteria Air Pollutants (Average Pounds/Day)			
Category	VOC	NO_x	PM_{10}	$PM_{2.5}$
Existing Land Uses (City + SOI) at 2040				
Transportation [a]	104	341	402	163
Energy [b]	52	451	36	36
Off Road Equipment [c]	82	110	17	13
Consumer Products [d]	1,142	—	—	—
Total Average Daily (pounds/day)	1,380	902	455	213
Proposed Project Land Uses (City + SOI) 2040				
Transportation [a]	107	353	415	169
Energy [b]	59	510	41	41
Off-Road Equipment [c]	89	120	19	15
Consumer Products [d]	1,391	—	—	—
Total Average Daily (pounds/day)	1,647	983	475	224
Change from Existing Land Uses	**268**	**80**	**20**	**11**
BAAQMD Average Daily Project-Level Threshold	54	54	82	54
Exceeds Average Daily Threshold	Yes	Yes	No	No
Scenario	**Tons per Year**			
	VOC	NO_x	PM_{10}	$PM_{2.5}$
Existing Land Uses at 2040	251	162	79	37
Proposed Project Land Uses at 2040	300	176	83	39
Change from Existing Land Uses	**49**	**15**	**4**	**2**
BAAQMD Annual Project-Level Threshold	10	10	15	10
Exceeds Annual Threshold	Yes	Yes	No	No

Note: Emissions may not total to 100 percent due to rounding.
[a] On-road transportation VMT is provided by Fehr & Peers and modeled with EMFAC2017 using 2040 emission rates. VMT for the General Plan is based on the "project's effect" of VMT in the City and SOI. As a result, unlike the CCAP inventory, the inventory conducted for the General Plan includes the full trip length of intrajurisdictional trips.
[b] Building electricity and natural gas are based on data provided by the City for the GHG emissions inventory conducted for their CCAP from PG&E and MCE. The electricity rates were adjusted to reflect the increase in dwelling units and employment within the City.
[c] On-road vehicles and equipment are based on the OFFROAD2017 emissions inventory and include construction equipment and commercial equipment.
[d] Emissions from consumer products is based on the CalEEMod User's Guide Version 2016.3.2 for residential consumer product use.
Source: PlaceWorks, 2020.

The proposed Conservation and Climate Change (C) Element contains a goal, policies, and programs that require local planning and development decisions to consider impacts to air quality. The following General Plan goal, policies, and programs would serve to minimize potential adverse impacts to air quality:

Goal C-2: Clean Air. Reduce air pollution to improve environmental quality and protect public health.

- Policy C-2.1: State and Federal Air Quality Standards. Continue to comply with state and federal air quality standards.

- Program C-2.1A: Cooperation with Other Agencies. Work with the Bay Area Air Quality Management District (BAAQMD) and other agencies to ensure compliance with air quality regulations and proactively address air quality issues.

- Policy C-2.2: Land Use Compatibility and Building Standards. Consider air quality conditions and the potential for adverse health impacts when making land use and development decisions. Buffering, landscaping, setback standards, filters, insulation and sealing, home HVAC measures, and similar measures should be used to minimize future health hazards.
  - Program C-2.2A: Protection of Sensitive Receptors. Use the development review process to require adequate buffering when a sensitive receptor (a use with occupants sensitive to the effects of air pollutants, such as children and the elderly) is proposed near an existing source of toxic contaminants or odors. For proposed sensitive receptors within 500 feet of US-101 or I-580, an analysis of mobile source toxic air contaminant health risks should be performed. The analysis should evaluate the adequacy of the setback from the highway and, if necessary, identify design mitigation measures and building standards to reduce health risks to acceptable levels. Mitigation standards and requirements should be periodically updated as air quality conditions and pollution control technology change.
  - Program C-2.2B: New Sources of Air Pollution. Use the development review process to ensure that potential new local sources of air pollution or odors provide adequate buffering and other measures necessary to comply with health standards.

- Policy C-2.3: Improving Air Quality Through Land Use and Transportation Choices. Recognize the air quality benefits of reducing dependency on gasoline-powered vehicles. Implement land use and transportation policies, supportable by objective data, to reduce the number and length of car trips, improve alternatives to driving, and support the shift to electric and cleaner-fuel vehicles.
  - Program C-2.3A: Air Pollution Reduction Measures. Implement air pollution reduction measures as recommended by BAAQMD's Clean Air Plan and supporting documents to address local sources of air pollution in community planning. This should include Transportation Control Measures (TCM) and Transportation Demand Management (TDM) programs to reduce emissions associated with diesel and gasoline-powered vehicles.

- Policy C-2.4: Particulate Matter Pollution Reduction. Promote the reduction of particulate matter from roads, parking lots, construction sites, agricultural lands, wildfires, and other sources..
  - Program C-2.4C: Wood-Burning Stoves and Fireplaces. Regulate wood-burning stoves and fireplaces to reduce particulate pollution.
  - Program C-2.6B: Equipment and Generators. Encourage the use of non- gasoline powered leaf blowers and other yard maintenance equipment, as well as clean-powered generators.

As shown in Table 4.3-10, buildout of the proposed General Plan 2040 would generate a substantial increase in criteria air pollutant emissions that exceeds the BAAQMD regional significance thresholds for VOC, NO_x, PM_{10}, and $PM_{2.5}$. As stated above in the discussion of construction impacts, BAAQMD identifies screening sizes of development projects in the BAAQMD CEQA Guidelines. Development projects that are below the screening size are assumed to have less-than-significant impacts. Development projects that are larger than the screening size are required to demonstrate that the operational phase of the project would not exceed the BAAQMD thresholds of significance, as identified in the BAAQMD CEQA Guidelines. If operation-related criteria air pollutants are determined to have the potential to exceed the BAAQMD

thresholds of significance, as identified in the BAAQMD CEQA Guidelines, the City requires the project applicants to incorporate project-specific mitigation measures to reduce long-term air pollutant emissions during operation to below these thresholds. Possible mitigation measures to reduce long-term emissions can include, but are not limited to, the following:

- For site-specific development that requires refrigerated vehicles, the construction documents shall demonstrate an adequate number of electrical service connections at loading docks for plug-in of the anticipated number of refrigerated trailers to reduce idling time and emissions.
- Site-specific developments with truck delivery and loading areas and truck parking spaces shall include signage as a reminder to limit idling of vehicles while parked for loading/unloading in accordance with Section 2485 of 13 California Code of Regulations Chapter 10.
- Implement Tier 1 or Tier 2 voluntary measures that improve energy efficiency identified in the California Green Building Standards Code.
- Fuel switching: Require appliances to be electric rather than gas powered.

Therefore, compliance with applicable policies and programs would contribute to minimizing long-term emissions. However, implementation of the proposed General Plan 2040 would still exceed the BAAQMD significance thresholds for operation as shown in Table 4.3-10. Accordingly, implementation of the proposed General Plan 2040 could result in *significant* long-term regional air quality impacts.

Impact AIR-2.2: Operational activities associated with potential future development could cumulatively contribute to the non-attainment designations of the San Francisco Bay Area Air Basin.

Mitigation Measure AIR-2.2: To reduce long-term increases in air pollutants during the operation phase for discretionary development projects that are subject to CEQA which exceed the screening sizes in the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines, the City shall adopt the following General Plan Program to support Policy C-2.2 (Land Use Compatibility and Building Standards) be implemented as part of the project approval process:

- New Program: Require projects that exceed the BAAQMD screening sizes to evaluate project-specific operation emissions in conformance with BAAQMD CEQA Guidelines, and if operation-related air pollutants exceed the BAAQMD-adopted thresholds of significance, require the project applicants to mitigate the impact to an acceptable level.

Significance with Mitigation: Significant and unavoidable. Compliance with the policies and programs in the proposed General Plan 2040 and implementation of Mitigation Measure AIR-2.2 would reduce impacts to the maximum extent feasible. Further, as shown in Table 4.3-11, 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, regional and localized operational emissions could exceed the BAAQMD significance thresholds. Consequently, implementation of the proposed project could cumulatively contribute to the nonattainment designations of the SFBAAB. The identification of this program-level impact does not preclude the finding of less-than-significant impacts for subsequent individual projects that comply with BAAQMD screening criteria or meet applicable thresholds of significance. However, due to the programmatic nature of the proposed General Plan 2040, no additional mitigating policies are available, and the impact is considered *significant and unavoidable*.

TABLE 4.3-11 NET CHANGE IN REGIONAL CRITERIA AIR POLLUTANT EMISSIONS FROM EXISTING BASELINE

	Criteria Air Pollutants (Average Pounds/Day)			
Category	**VOC**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Existing Average Daily	1,416	1,439	451	216
Proposed Project Average Daily	1,647	983	475	224
Change from Existing Land Uses	**231**	**-456**	**24**	**8**
BAAQMD Average Daily Project-Level Threshold	54	54	82	54
Exceeds Average Daily Threshold	Yes	No	No	No
Scenario	**Tons per Year**			
	VOC	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Existing Annual Emission	257	255	79	38
Proposed Project Annual Emissions	300	176	83	39
Change from Existing Land Uses	**42**	**-79**	**4**	**1**
BAAQMD Annual Project-Level Threshold	10	10	15	10
Exceeds Annual Threshold	Yes	No	No	No

Note: Emissions may not total to 100 percent due to rounding.
Source: PlaceWorks, 2020.

Downtown Precise Plan: Operation

Same as potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area 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). The impact analysis described under the proposed General Plan 2040 includes the buildout projections for the Downtown Precise Plan Area. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce air pollutants; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *significant and unavoidable.* An evaluation of project-specific details for future development could demonstrate future projects are below the applicable thresholds; therefore, this program-level conclusion does not prohibit a less-than-significant conclusion at the project level in the future.

Significance with Mitigation: Significant and unavoidable.

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

If implementation of the proposed General Plan 2040 and the Downtown Precise Plan would cause or contribute significantly to elevated pollutant concentration levels, it could expose sensitive receptors to air pollutants to elevated pollutant concentrations for construction and operation, which are evaluated in the analysis below. 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. A discussion of the proposed General Plan 2040 policies and programs that ensure that air quality is considered when siting new sensitive receptors to air pollutants is included in Section 4.3.2.2,

Methodology, under subheading "Impacts of the Environment on a Future Project" (see also Program C-2.2A: Protection of Sensitive Receptors).

General Plan 2040: Construction Community Risk and Hazards

Future construction under the proposed General Plan 2040 would temporarily elevate concentrations of TACs and diesel-$PM_{2.5}$ in the vicinity of sensitive land uses during construction activities. Because the details regarding future construction activities are not known at this time—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 project-specific evaluation of qualifying future development projects would be required to assess potential impacts under BAAQMD's project-level thresholds and mitigate those impacts to acceptable levels. Mitigation Measures to reduce risk may include, but are not limited to, using construction equipment rated as US Environmental Protection Agency Tier 4 Interim for equipment of 50 horsepower or more, or using 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 2040 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 2040 are considered *significant*.

Impact AIR-3.1: Construction activities associated with potential future development could expose nearby receptors to substantial concentrations of toxic air contaminants.

Mitigation Measure AIR-3.1a: Implement Mitigation Measure AIR-2.1.

Mitigation Measure AIR-3.1b: To ensure sensitive receptors are not exposed to toxic air contaminant emissions during the construction phase for discretionary development projects that are subject to CEQA that exceed the screening sizes in the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines, the City shall adopt the following General Plan Program to support Policy C-2.2: (Land Use Compatibility and Building Standards) be implemented as part of the project approval process:

- New Program: 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 BAAQMD CEQA Guidelines that identifies mitigation measures are capable of reducing potential cancer and noncancer risks to an acceptable level (i.e., below ten in one million or a hazard index of 1.0).

Significance with Mitigation: Less than significant.

Downtown Precise Plan: Construction Community Risk and Hazards

Same as potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area would cause or contribute significantly to elevated pollutant

concentration levels that could expose sensitive receptors. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce air pollutants; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *less than significant.*

Significance with Mitigation: Less than significant.

General Plan 2040: Operational Phase Community Risk and Hazards

Types of land uses that typically generate substantial quantities of TACs and $PM_{2.5}$ include industrial and manufacturing (stationary sources) and warehousing (truck idling) land uses.

Stationary (Permitted) Sources

Various industrial and commercial processes (e.g., manufacturing, dry cleaning) allowed under the proposed General Plan 2040 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. However, emissions of TACs 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.

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 BAAQMD significance thresholds. Though these sources would incrementally contribute to the proposed General Plan 2040's inventory individually, they would be mitigated to the standards identified above. The proposed Conservation and Climate Change (C) and the Equity, Diversity, and Inclusion (EDI) Elements contain goals, policies, and programs that require local planning and development decisions to consider impacts to air quality. The following General Plan goals, policies, and programs would serve to minimize potential adverse impacts on air quality by increasing standards and promoting cooperation with outside agencies:

Goal C-2: Clean Air. Reduce air pollution to improve environmental quality and protect public health.

- Policy C-2.1: State and Federal Air Quality Standards. Continue to comply with state and federal air quality standards.
  - Program C-2.1A: Cooperation with Other Agencies. Work with the Bay Area Air Quality Management District (BAAQMD) and other agencies to ensure compliance with air quality regulations and proactively address air quality issues.
- Policy C-2.2: Land Use Compatibility and Building Standards. Consider air quality conditions and the potential for adverse health impacts when making land use and development decisions. Buffering,

landscaping, setback standards, filters, insulation and sealing, home HVAC measures, and similar measures should be used to minimize future health hazards.

- Program C-2.2B: New Sources of Air Pollution. Use the development review process to ensure that potential new local sources of air pollution or odors provide adequate buffering and other measures necessary to comply with health standards.

- Policy C-2.4: Particulate Matter Pollution Reduction. Promote the reduction of particulate matter from roads, parking lots, construction sites, agricultural lands, wildfires, and other sources.
  - Program C-2.6B: Equipment and Generators. Encourage the use of non–gasoline powered leaf blowers and other yard maintenance equipment, as well as clean-powered generators.

Goal EDI-2: Healthy Communities and Environmental Justice. Support public health and wellness through community design in all parts of the city.

- Policy EDI-2.5: Environmental Justice. Ensure that land use and transportation decisions do not create disparate environmental health conditions, such as air pollution and exposure to hazardous materials, for lower income residents and other vulnerable populations. Work to reduce or eliminate such hazards where they currently exist.
  - Program EDI-2.5A: Reducing Exposure to Hazards. As appropriate, utilize conditional use permit requirements for businesses adjacent to residential neighborhoods to reduce resident exposure to noise, odor, smoke, vibration, and other potentially harmful impacts. Work with business owners to encourage responsiveness when these issues arise.
  - Program EDI-2.5B: Reducing Indoor Air Pollution. Support the distribution of bilingual information on indoor air pollution hazards to vulnerable populations, including lower income renters. Respond to complaints about smoke and odors in multi-family projects and facilitate remediation.
  - Program EDI-2.5C: Environmental Hazard Data. Maintain data on environmental hazards, such as soil and groundwater contamination and the vulnerability of the population to such hazards, using sources such as Cal Enviroscreen.

The policies and programs listed above would contribute to minimizing potential health risk impacts to sensitive receptors. Overall, combined with the standards and permitting processes described above, impacts related to permitted stationary sources of TACs are considered *less than significant.*

Nonpermitted Sources

Mobile sources of TACs are not regulated by BAAQMD. The primary mobile source of TACs within the EIR Study Area is truck idling and use of off-road equipment. New warehousing operations could generate substantial DPM emissions from off-road equipment use and truck idling. In addition, some warehousing and industrial facilities may include use of TRUs for cold storage. New land uses in the city that would be permitted under the proposed General Plan 2040 that use trucks, including trucks with 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 federal and State 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. As described in Impact Discussion AIR-2, the City requires the project applicants to prepare project-specific

analysis of qualifying project and incorporate project-specific mitigation measures to reduce toxic air contaminants. If the results show that the incremental cancer risk exceeds ten in one million (or the risk thresholds in effect at the time a project is considered), or the appropriate noncancer hazard index exceeds 1.0, or 0.3 μ/m^3 of $PM_{2.5}$; or the thresholds as determined by the BAAQMD at the time a project is considered, the applicant shall be required to mitigate the potential cancer and noncancer risks to an acceptable level. Typical mitigation measures to reduce risk impacts may include but are not limited to:

- Restricting idling on-site beyond Air Toxic Control Measures idling restrictions, as feasible.
- Electrifying warehousing docks.
- Truck Electric Vehicle (EV) Capable trailer spaces.
- Requiring use of newer equipment and/or vehicles.
- Restricting off-site truck travel through the creation of truck routes.

Therefore, without project-specific analysis health risk impacts from nonpermitted sources associated with development of industrial and commercial land uses are considered *significant*.

Impact AIR-3.2. Operational activities associated with potential future development could expose sensitive receptors to substantial toxic air contaminant concentrations from nonpermitted sources.

Mitigation Measure AIR-3.2: To ensure sensitive receptors are not exposed to toxic air contaminant emissions during the operation phase for discretionary development projects that are subject to CEQA which exceed the screening sizes in the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines, the City shall adopt the following General Plan Program to support Policy C-2.2: (Land Use Compatibility and Building Standards) be implemented as part of the project approval process:

- New Program: Require applicants for industrial or warehousing land uses or commercial land uses that would generate substantial diesel truck travel (i.e., 100 diesel trucks per day or 40 or more trucks with diesel-powered transport refrigeration units per day) to contact BAAQMD to determine the appropriate level of operational health risk assessment (HRA) required. If required, the operational HRA shall be prepared in accordance with the Office of Environmental Health Hazard Assessment and BAAQMD requirements and mitigated to an acceptable level.

Significance with Mitigation: Significant and unavoidable. Development allowed by the proposed General Plan 2040 could result in new sources of criteria air pollutant emissions and/or TACs 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) in addition to proposed General Plan 2040 goals, policies, and programs would ensure that health risks are minimized. Additionally, Mitigation Measure AIR-3.2 would ensure mobile sources of TACs not covered under BAAQMD permits are considered during subsequent project-level review by the City of San Rafael. 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 disadvantaged communities. As a result, the General Plan Update's contribution to cumulative health risk is considered *significant and unavoidable*.

Downtown Precise Plan: Operational Phase Community Risk and Hazards

Same as potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area would be expected to release TACs, and applicable land uses would require a permit from BAAQMD for emissions of TACs. Likewise, mobile emissions that are not regulated by BAAQMD are also expected. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce air pollutants; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *significant and unavoidable.*

Significance with Mitigation: Significant and unavoidable.

General Plan 2040: 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. Because 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.

TAM's CMP must be consistent with the ABAG/MTC's *Plan Bay Area*, which is updated periodically. An overarching goal of the *Plan Bay Area* 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 discussed in Impact Discussion AIR-2 under subheading, "Operational Emissions," the proposed General Plan 2040 includes requiring local planning and development decisions to consider impacts to air quality related to travel demand management, including Policy-2.3: Improving Air Quality Through Land Use and Transportation Choices, which requires the City to recognize the air quality benefits of reducing dependency on gasoline-powered vehicles and implement land use and transportation policies, supportable by objective data, to reduce the number and length of car trips, improve alternatives to driving, and support the shift to electric and cleaner-fuel vehicles. This policy is supported by Program C-2.3A: Air Pollution Reduction Measures, which requires the City to implement air pollution reduction measures as recommended by BAAQMD's Clean Air Plan and supporting documents to address local sources of air pollution in community planning. Additional goals, polices, and programs are identified in the Mobility (M) Element as follows:

Goal M-3: Cleaner Transportation. Coordinate transportation, land use, community design, and economic development decisions in a way that reduces greenhouse gas emissions, air and water pollution, noise, and other environmental impacts related to transportation.

- Policy M-3.3: Transportation Demand Management. Encourage, and where appropriate require, transportation demand measures that reduce VMT and peak period travel demand. These measures include, but are not limited to, transit passes and flextime, work schedules, pedestrian and bicycle

improvements, ridesharing, and changes to project design to reduce trip lengths and encourage cleaner modes of travel.

- Program M-3.3A: Develop TDM Program Guidelines. Develop TDM Program Guidelines – or work in partnership with other local governments to develop Guidelines-- than can be used to mitigate potential VMT increases in new development and encourage reductions in existing development.
- Program M-3.3B: Support for TDM. Work cooperatively with governmental agencies, non- profits, businesses, institutions, schools, and neighborhoods to provide and support TDM programs.
- Program M-3.3C: City TDM Program. Implement a TDM program for City employees, potentially in partnership with other local governments, public agencies, and transit providers. Promote the program as a model for other employers.
- Program M-3.3D: Shifting Peak Hour Trips. Support efforts to limit traffic congestion by shifting peak hour trips to non-peak hour, modifying school hours to stagger start and end times, and encouraging flexible work schedules.

Overall, these components of the proposed General Plan 2040 would be consistent with the overall goals of the *Plan Bay Area*. Additionally, the proposed General Plan 2040 would not hinder the capital improvements outlined in the CMP. Thus, the proposed General Plan 2040 would not conflict with TAM's CMP. Furthermore, under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited—in order to generate a significant CO impact.[37] Based on the transportation analysis conducted as part of this environmental analysis, the highest increase in traffic associated with proposed General Plan 2040 would be 6,343 daily trips at Mission Avenue from Lincoln Avenue to Grand Avenue. There are no locations where traffic volumes would exceed the BAAQMD screening criteria of 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited.[38] Therefore, overall, the proposed project would not have the potential to substantially increase CO hotspots at intersections in the city and vicinity. Localized air quality impacts related to mobile-source emissions would therefore be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan: CO Hotspots

Like development in the remainder of the city, potential future development in the Downtown Precise Plan Area could have areas of vehicle congestion that have the potential to create pockets of CO, called hotspots. As described above, a maximum increase of 6,343 daily trips would occur on Mission Avenue from Lincoln Avenue to Grand Avenue, which is partially in the Downtown Precise Plan Area. This would not increase traffic volumes at affected intersections by 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.[39] The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce air pollutants; therefore, the impacts and mitigation described for the

[37] Bay Area Air Quality Management District, 2017 (Revised). *CEQA Air Quality Guidelines*.
[38] Based on information provided by Fehr & Peers.
[39] Based on information provided by Fehr & Peers.

proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

AIR-4 Implementation of the proposed project could result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The following discusses potential operation- and construction-related odor impacts associated with implementation of the proposed General Plan 2040 and the Downtown Precise Plan.

General Plan 2040: Operation-Related Odors

Potential impacts could occur if new sources of nuisance odors are placed near sensitive receptors. Table 4.3-12 identifies screening distances from potential sources of objectionable odors within the SFBAAB. Odors from these types of land uses are regulated under BAAQMD Regulation 7, Odorous Substances.[40]

TABLE 4.3-12 BAAQMD ODOR SCREENING DISTANCES

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

Source: Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines, Table 3-3, Odor Screening Distances, and associated Appendix D of these Guidelines.

[40] It should be noted that while restaurants can generate odors, these sources are not identified by BAAQMD as nuisance odors since they typically do not generate significant odors that affect a substantial number of people. Larger restaurants that employ five or more people are subject to BAAQMD Regulation 7, Odorous Substances.

While not all sources in Table 4.3-12 are found in San Rafael (e.g., rendering plants, confined animal facilities), commercial and industrial areas in the city have the potential to include land uses that generate nuisance odors. Buildout permitted under the proposed General Plan 2040 could include new sources of odors, such as composting, green waste, and recycling operations; food processing; and painting/coating operations, because these are types of uses in the commercial and/or industrial areas in the city. Future environmental review could be required for industrial projects listed in Table 4.3-12 to ensure that sensitive land uses are not exposed to objectionable odors. BAAQMD Regulation 7, Odorous Substances, requires abatement of any nuisance generating an odor complaint.[41] Facilities listed in Table 4.3-12 would need to consider measures to reduce odors as part of their project approval process, which could include CEQA review.

The proposed Land Use (LU), Conservation and Climate Change (C), and Equity, Diversity, and Inclusion (EDI) Elements contain goals, policies, and programs that require local planning and development decisions to consider impacts to air quality from odors. The following General Plan goals, policies, and programs would serve to minimize potential adverse impacts on odors:

Goal LU-2: A Complete Community. San Rafael is a complete community, with balanced and diverse land uses.

- Policy LU-2.13: Odor Impacts. Consider odor impacts when evaluating land uses and development projects near wastewater treatment plants, treatment plant expansion projects, waste transfer stations, and other odor potential sources.
  - Program LU-2.13A: Evaluation of Odor Impacts. Evaluate odor impacts as part of development review.

Goal C-2: Clean Air. Reduce air pollution to improve environmental quality and protect public health.

- Policy C-2.2: Land Use Compatibility and Building Standards. Consider air quality conditions and the potential for adverse health impacts when making land use and development decisions. Buffering, landscaping, setback standards, filters, insulation and sealing, home HVAC measures, and similar measures should be used to minimize future health hazards.
  - Program C-2.2A: Protection of Sensitive Receptors. Use the development review process to require adequate buffering when a sensitive receptor (a use with occupants sensitive to the effects of air pollutants, such as children and the elderly) is proposed near an existing source of toxic contaminants or odors. For proposed sensitive receptors within 500 feet of US-101 or I-580, an analysis of mobile source toxic air contaminant health risks should be performed. The analysis should evaluate the adequacy of the setback from the highway and, if necessary, identify design mitigation measures and building standards to reduce health risks to acceptable levels. Mitigation standards and requirements should be periodically updated as air quality conditions and pollution control technology change.

[41] Typical abatement includes passing air through a drying agent followed by two successive beds of activated carbon to render air odor free.

- Program C-2.2B: New Sources of Air Pollution. Use the development review process to ensure that potential new local sources of air pollution or odors provide adequate buffering and other measures necessary to comply with health standards.

Goal EDI-2: Healthy Communities and Environmental Justice. Support public health and wellness through community design in all parts of the city.

- Policy EDI-2.5: Environmental Justice. Ensure that land use and transportation decisions do not create disparate environmental health conditions, such as air pollution and exposure to hazardous materials, for lower income residents and other vulnerable populations. Work to reduce or eliminate such hazards where they currently exist.
  - Program EDI-2.5A: Reducing Exposure to Hazards. As appropriate, utilize conditional use permit requirements for businesses adjacent to residential neighborhoods to reduce resident exposure to noise, odor, smoke, vibration, and other potentially harmful impacts. Work with business owners to encourage responsiveness when these issues arise.
  - Program EDI-2.5B: Reducing Indoor Air Pollution. Support the distribution of bilingual information on indoor air pollution hazards to vulnerable populations, including lower income renters. Respond to complaints about smoke and odors in multi-family projects and facilitate remediation.

The proposed General Plan 2040 would also accommodate future residential, retail, and commercial development. These uses would not generate substantial odors that would affect a substantial number of people. During operation, residences and restaurants 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. Furthermore, nuisance odors are regulated under BAAQMD Regulation 7, Odorous Substances, which requires abatement of any nuisance generating an odor complaint. Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds.[42] In addition, odors are regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance.

Review of projects using BAAQMD's odor screening distances during future CEQA review, implementation of the policies and programs above, and compliance with BAAQMD Regulation 7 would ensure that odor impacts are minimized to *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan: Operation-Related Odors

Like potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area would permit uses that could generate odors. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce air pollutants; therefore, the impacts and mitigation described for the proposed General Plan 2040 would

[42] It should be noted that while restaurants can generate odors, these sources are not identified by BAAQMD as nuisance odors since they typically do not generate significant odors that affect a substantial number of people. Larger restaurants that employ five or more people are subject to BAAQMD Regulation 7, Odorous Substances.

also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

General Plan 2040: Construction-Related Odors

During construction activities of future developments in the city, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment. By the time such emissions reach any sensitive receptor sites, they would be diluted to well below any level of air quality concern, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan: Construction-Related Odors

As with potential future development in the remainder of the city, potential future development in the Downtown Precise Plan could generate temporary and intermittent odors from construction. Accordingly, like the General Plan 2040, impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

AIR-5	Implementation of the proposed project could cumulatively contribute to air quality impacts in the San Francisco Bay Area Air Basin.

The cumulative area of analysis is the SFBAAB, which includes the EIR Study Area. 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 because no single project generates enough emissions that would cause an air basin to be designated a nonattainment area. Therefore, the impacts previously discussed are evaluated in the cumulative context and no additional cumulative analysis is needed.

In summary, implementation of Mitigation Measures AIR-2.1, AIR-3.1a, and AIR-3.1b would reduce construction level impacts to a less than significant level, and Mitigation Measures AIR-2.2 and AIR-3.2 would reduce project-level impacts on an individual basis; however, cumulative impacts are considered *significant and unavoidable* for criteria air pollutants and air toxics during the operational phases as described above.

Significance with Mitigation: Significant and unavoidable. Criteria air pollutant emissions generated by land uses within the proposed project could exceed the BAAQMD thresholds (see Impact AIR-2). Air quality impacts identified in Impact Discussion AIR-2 constitute the proposed project's contribution to cumulative air quality impacts in the SFBAAB. Mitigation Measures AIR-2.1 through AIR-3.2, identified

previously to reduce project-related emissions, would reduce impacts to the extent feasible. 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 impacts would be *significant and unavoidable*.