

4.4 AIR QUALITY

4.4.1 INTRODUCTION

This section describes the potential impacts to air quality associated with the proposed General Plan Update. The impact analysis examines air pollutant emissions associated with both construction and operational activities within the Planning Area. To provide context for the impact analysis, this chapter begins with a discussion of the environmental setting, describing the existing local and regional air quality conditions. Next, the regulatory framework is described, which provides part of the basis for significance thresholds used in the impact analysis and identifies existing rules and regulations with which the implementation of the proposed General Plan Update would be consistent. The regulatory framework includes the existing General Plan Air Quality and Climate Change Element policies, as well as relevant policies from the General Plan Land Use and Circulation Elements. The section concludes with impact analysis methodology and significance criteria, an analysis of changes to air quality, an examination of the impact of proposed policy changes, impact analysis findings, recommended mitigation measures, and a conclusion of significance after the application of mitigation measures.

Information related to air quality conditions was obtained from various sources, including Placer County Air Pollution Control District (PCAPCD), California Air Resources Board (ARB), and other specific studies evaluating air pollutant emission sources within the Planning Area and Sacramento Valley Air Basin. The analysis also makes use of traffic analysis to estimate mobile emissions attributable to activities in the Planning Area (please see Section 4.3 for more details about transportation).

The City has reviewed, and incorporated recommendations, as appropriate, based on a letter from the PCAPCD provided in response to the EIR Notice of Preparation (NOP), including those related to impact analysis methodology, significance thresholds, and mitigation measures.¹

4.4.2 ENVIRONMENTAL SETTING

Air quality is defined by the concentration of pollutants in relation to their impact on human health. California's air basins have been created to group together regions that have similar natural factors that affect air quality. Ambient concentrations of air pollutants are determined by the level of emissions released by pollutant sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport, dilution, and generation of air pollutants include terrain, wind, atmospheric stability, and the presence of sunlight. These natural and environmental factors, air pollutants of concern and pollutant sources are each discussed separately below.

¹¹ The comment letter provided recommendations regarding appropriate methods of evaluation and thresholds of significance. PCAPCD recommended using the CalEEMod emission modeling software to estimate project-related emissions from construction and operational phases and recommended comparing emissions estimates to the PCAPCD-adopted thresholds of significance as a metric for the level of significance of potential impacts of such emissions. PCAPCD also noted that discussion of the Sacramento Valley Air Basin (SVAB) area designations for federal and state standards should be included within the air quality analysis, and that, because the SVAB does not currently meet federal and state standards for ambient air concentrations of particulate matter (PM), wood burning devices should be prohibited with any new construction and allowable appliances should be clearly delineated on the floor plans submitted in conjunction with building permit applications for future development. To evaluate potential impacts from local carbon monoxide emissions at roadway intersections, PCAPCD provided recommended scenarios to serve as screening criteria.

4.4.2.1 CLIMATE, TOPOGRAPHY, AND METEOROLOGY

Placer County spans multiple air basins. Roseville is in the southwestern portion of Placer County, which is within the Sacramento Valley Air Basin (SVAB). The SVAB is comprised of Sacramento, Shasta, Tehama, Butte, Glenn, Colusa, Sutter, Yuba, Yolo, the northeastern portion of Solano, and western portion of Placer counties. The region has a Mediterranean climate, characterized by hot, dry summers and cool, rainy winters. The inland location and surrounding mountains typically prevent the area from experiencing much of the ocean breeze that moderates the temperatures in coastal regions. Precipitation during the winter rainy season typically results when air masses move in from the Pacific Ocean and travel across California from west to east. The prevailing winds are moderate in speed and vary from moisture-laden breezes from the south to dry-land flows from the north. The predominant wind direction and speed is from the south at approximately 8 miles per hour, as measured at the Sacramento International Airport (WRCC 2019a, b).

In general, the SVAB is relatively flat and bounded by mountain ranges to the west and east. Air flows into the SVAB through the Carquinez Strait, the only breach in the western mountain barrier, and moves across the Sacramento–San Joaquin Delta from the San Francisco Bay Area. The mountains surrounding the Sacramento Valley create a barrier to air flow, which can trap in air pollutants, particularly in the autumn and early winter when large pressure cells lie over the Sacramento Valley and temperatures are lower. The lack of surface wind during these periods and reduced vertical flow caused by less surface heating, reduces the influx of outside air and allows air pollutants generated within the SVAB to become concentrated in a stable volume of air. Ground concentrations are the highest when these conditions are combined with smoke from agricultural burning or forest fires or temperature inversions that trap cool air, fog, and pollutants near the ground. Alternatively, winds and unstable atmospheric conditions associated with the passage of winter storms result in periods of low air pollution and excellent visibility. Characteristic of the winter months in the SVAB are periods of dense and persistent low-level fog, which are most prevalent between storms. This precipitation and fog also tend to reduce or limit some pollutant concentrations. However, between winter storms, high pressure and light winds contribute to low-level temperature inversions and stable atmospheric conditions, resulting in the concentration of air pollutants.

May through October is ozone season in the SVAB and is characterized by poor air movement in the mornings and the arrival of the Delta sea breeze from the southwest in the afternoons and evenings. Typically, the Delta breeze transports air pollutants northward out of the SVAB. However, during approximately half of the time from July to September, a phenomenon known as the Schultz Eddy prevents this from occurring. The Schultz Eddy phenomenon causes winds on the west side of the SVAB to shift to a northerly wind, blowing air pollutants southward back into the SVAB. This phenomenon exacerbates the concentration of air pollutant emissions in the air basin and can contribute to violations of ambient air quality standards.

4.4.2.2 CRITERIA AIR POLLUTANTS

California Air Resources Board (ARB) and the U.S. Environmental Protection Agency (EPA) have identified six air pollutants as being indicators of ambient air quality: ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM) (often analyzed separately as PM with aerodynamic diameter less than 10 microns [PM₁₀] and PM with aerodynamic diameter less than 2.5 microns [PM_{2.5}]), and lead. Because the ambient air quality standards for these air pollutants are regulated using human health and environmentally based criteria, they are commonly referred to as “criteria air pollutants.” The following provides a brief description of

these criteria air pollutants, including their source types and health effects, along with the most current attainment designations for the Planning Area.

Ozone

Ozone is a colorless gas that is odorless at ambient levels. It exists primarily as a beneficial component of the ozone layer in the upper atmosphere (stratosphere), shielding the earth from harmful ultraviolet radiation emitted by the sun, and as a pollutant in the lower atmosphere (troposphere).

Ozone is the primary component of urban smog; it is not emitted directly into the air but is formed through a series of reactions involving reactive organic gases (ROG) and nitrogen oxides (NO_x) in the presence of sunlight. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_x includes various combinations of nitrogen and oxygen, including nitric oxide, NO₂, and others, typically resulting from the combustion of fuels.

Emissions of both ROG and NO_x are considered critical to ozone formation; therefore, either ROG or NO_x can limit the rate of ozone production. When the production rate of NO_x is lower, indicating that NO_x is scarce, the rate of ozone production is NO_x-limited. Under these circumstances, ozone levels could be most effectively reduced by lowering current and future NO_x emissions (from fuel combustion), rather than by lowering ROG emissions. Rural areas tend to be NO_x-limited, while areas with dense urban populations tend to be ROG-limited. Both ROG and NO_x reductions provide ozone benefits in the region, but the Sacramento Federal Nonattainment Area, which includes Placer County, exhibits a NO_x-limited regime; therefore, NO_x reductions (such as those available through reducing mobile source emissions) are more effective than ROG reductions on a tonnage basis (SMAQMD et al. 2017).

Ozone concentrations reflect an interplay of emissions of ozone precursors, transport, meteorology, and atmospheric chemistry. Meteorology and terrain play a major role in ozone formation. Generally, low wind speeds or stagnant air, coupled with warm temperatures and clear skies provide the optimum conditions for formation. As a result, summer is generally the peak ozone season. Because of the reaction time involved, peak ozone concentrations often occur far downwind of the precursor emissions. Therefore, ozone is a regional pollutant that often affects large areas.

Individuals exercising outdoors, children, and people with lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible subgroups for ozone effects. Short-term ozone exposure (lasting for a few hours) can result in changes in breathing patterns, reductions in breathing capacity, increased susceptibility to infections, inflammation of lung tissue, and some immunological changes. In recent years, a correlation has also been reported between elevated ambient ozone levels and increases in daily hospital admission rates and mortality (EPA 2017a). An increased risk of asthma has been found in children who participate in multiple sports and live in communities with high ozone levels.

Emissions of the ozone precursors ROG and NO_x have decreased in the past several years. According to the most recently published edition of ARB's *California Almanac of Emissions and Air Quality*, NO_x and ROG emissions levels in the Sacramento metropolitan area (inclusive of the southern portion of the SVAB, as well as the western portions of El Dorado and Placer counties, within which the Planning Area is located) are projected to continue to decrease through 2035, largely because of more stringent motor vehicle standards and cleaner burning fuels, as well as rules for controlling ROG emissions from industrial coating and solvent operations (ARB 2013).

Carbon Monoxide

CO is a colorless and odorless gas that, in the urban environment, is produced primarily by the incomplete burning of carbon in fuels, primarily from mobile (transportation) sources. As of the 2014 EPA National Emissions Inventory, more than 50 percent of the nationwide CO emissions were from mobile sources (EPA 2018a). The remaining emissions are primarily from fires (both wildfires and prescribed fires), releases from vegetation and soil, wood-burning stoves, incinerators, and industrial sources. Relatively high concentrations are typically found near crowded intersections and along high-volume roadways carrying slow-moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300–600 feet) of high-volume roadways. Vehicular traffic emissions can cause localized CO impacts, and severe vehicle congestion at major signalized intersections can generate elevated CO levels, called “hot spots,” which can be hazardous to human receptors adjacent to the intersections. Overall, CO emissions are decreasing, in part because the Federal Motor Vehicle Control Program has mandated increasingly lower emission levels for vehicles manufactured since 1973.

CO enters the bloodstream through the lungs by combining with hemoglobin, which normally supplies oxygen to the cells. However, CO combines with hemoglobin much more readily than oxygen does, drastically reducing the amount of oxygen available to the cells. Adverse health effects from exposure to high CO concentrations, which typically can occur only indoors or within similarly enclosed spaces, include dizziness, headaches, and fatigue. CO exposure is especially harmful to individuals who suffer from cardiovascular and respiratory diseases (EPA 2017b).

Nitrogen Dioxide

NO₂ is one of a group of highly reactive gases known as oxides of nitrogen, or NO_x. NO₂ is formed when ozone reacts with nitric oxide (i.e., NO) in the atmosphere and is listed as a criteria pollutant because NO₂ is more toxic than nitric oxide. The major human-made sources of NO₂ are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. The combined emissions of nitric oxide and NO₂ are referred to as NO_x and reported as equivalent NO₂. Because NO₂ is formed and depleted by reactions associated with ozone, the NO₂ concentration in a geographical area may not be representative of local NO_x emission sources. NO_x also reacts with water, oxygen, and other chemicals to form nitric acids, contributing to the formation of acid rain.

Inhalation is the most common route of exposure to NO₂. Breathing air with a high concentration of NO₂ can lead to respiratory illness. Short-term exposure can aggravate respiratory diseases, particularly asthma, resulting in respiratory symptoms (such as coughing, wheezing, or difficulty breathing), hospital admissions, and visits to emergency rooms. Longer exposures to elevated concentrations of NO₂ may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these subgroups (EPA 2017c).

Sulfur Dioxide

SO₂ is one component of the larger group of gaseous oxides of sulfur (SO_x). SO₂ is used as the indicator for the larger group of SO_x, as it is the component of greatest concern and found in the atmosphere at much higher concentrations than other gaseous SO_x. SO₂ is typically produced by such stationary sources as coal and oil

combustion facilities, steel mills, refineries, and pulp and paper mills. The major adverse health effects associated with SO₂ exposure pertain to the upper respiratory tract. On contact with the moist mucous membranes, SO₂ produces sulfurous acid, a direct irritant. Concentration rather than duration of exposure is an important determinant of respiratory effects. Children, the elderly, and those who suffer from asthma are particularly sensitive to effects of SO₂ (EPA 2017d).

SO₂ also reacts with water, oxygen, and other chemicals to form sulfuric acids, contributing to the formation of acid rain. SO₂ emissions that lead to high concentrations of SO₂ in the air generally also lead to the formation of other SO_x, which can react with other compounds in the atmosphere to form small particles, contributing to particulate matter pollution, which can have health effects of its own.

Particulate Matter

PM is a complex mixture of extremely small particles and liquid droplets made up of several components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Natural sources of particulates include windblown dust and ocean spray. The major areawide sources of PM_{2.5} and PM₁₀ are fugitive dust, especially from roadways, agricultural operations, and construction and demolition. Other sources of PM₁₀ include crushing or grinding operations. PM_{2.5} sources also include all types of combustion, including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes. Exhaust emissions from mobile sources contribute only a very small portion of directly emitted PM_{2.5} and PM₁₀ emissions; however, they are a major source of ROG and NO_x, which undergo reactions in the atmosphere to form PM, known as secondary particles. These secondary particles make up the majority of PM pollution.

The size of PM is directly linked to its potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller, because these particles generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects, even death. The adverse health effects of PM₁₀ depend on the specific composition of the particulate matter. For example, health effects may be associated with metals, polycyclic aromatic hydrocarbons, and other toxic substances adsorbed onto fine PM (referred to as the “piggybacking effect”), or with fine dust particles of silica or asbestos. Effects from short- and long-term exposure to elevated concentrations of PM₁₀ include respiratory symptoms, aggravation of respiratory and cardiovascular diseases, a weakened immune system, and cancer (WHO 2016). PM_{2.5} poses an increased health risk because these very small particles can be inhaled deep in the lungs and may contain substances that are particularly harmful to human health.

Direct emissions of PM_{2.5} in the Sacramento metropolitan area decreased between 2000 and 2010, but are projected to increase very slightly through 2035. Similarly, emissions of diesel PM (DPM) decreased from 2000 through 2010 because of reduced exhaust emissions from diesel mobile sources; these emissions are anticipated to continue to decline through 2035 (ARB 2013).

Lead

Lead is a highly toxic metal that may cause a range of human health effects. Lead is found naturally in the environment and is used in manufactured products. Previously, the lead used in gasoline anti-knock additives represented a major source of lead emissions to the atmosphere. Soon after its inception, EPA began working to reduce lead emissions, issuing the first reduction standards in 1973. Lead emissions have decreased substantially

as a result of the near-elimination of leaded gasoline use. Metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Although the ambient lead standards are no longer violated, lead emissions from stationary sources still pose “hot spot” problems in some areas. As a result, ARB has identified lead as a toxic air contaminant (TAC).

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotients. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death, although it appears that lead does not directly affect the respiratory system.

Ambient Air Quality Standards and Attainment Area Designations

Health-based air quality standards have been established for criteria air pollutants by EPA at the national level and ARB at the state level. These standards, which include a margin of safety, were established to protect the public from adverse health impacts resulting from exposure to air pollution. California also has established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. Table 4.4-1 presents the California ambient air quality standards (CAAQS) and national ambient air quality standards (NAAQS). These health-based pollutant standards are reviewed with a legally prescribed frequency and are revised, as warranted by new data on health and welfare effects. Each standard is based on a specific averaging time over which the concentration is measured. Different averaging times are based on protection from short-term, high-dosage effects or longer term, low-dosage effects. Although EPA regulations may not be superseded, both state and local regulations may be more stringent. In general, the State of California’s standards, particularly those for ozone PM_{10} and $PM_{2.5}$, are more stringent than the federal standards. Differences in the standards are generally explained through interpretation of the health-effects studies considered during the standard-setting process.

Several ambient air quality monitoring stations in the SVAB measure concentrations of air pollutants to monitor progress toward attainment and maintenance of NAAQS and CAAQS. Both EPA and ARB use this type of monitoring data to designate areas according to attainment status for NAAQS and CAAQS. The purpose of these designations is to identify areas with air quality problems and thereby initiate planning efforts for improvement. The four designations are defined as:

- ▶ Nonattainment – Assigned to areas where monitored pollutant concentrations violate the standard in question.
- ▶ Maintenance – Assigned to areas where monitored pollutant concentrations exceeded the standard in question in the past but are no longer in violation of that standard.
- ▶ Attainment – Assigned to areas where pollutant concentrations meet the standard in question over a designated period of time.
- ▶ Unclassified – Assigned to areas where data are insufficient to determine whether a pollutant is violating the standard in question.

Table 4.4-1 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ^a	National Standards ^b	
		Concentration ^c	Primary ^{c,d}	Secondary ^{c,e}
Ozone ^f	1 hour	0.09 ppm (180 µg/m ³)	–	Same as primary standard
	8 hours	0.070 ppm (137 µg/m ³)	0.070 ppm (147 µg/m ³)	
Respirable particulate matter—10 micrometers or less ^g	24 hours	50 µg/m ³	150 µg/m ³	Same as primary standard
	Annual arithmetic mean	20 µg/m ³	–	
Fine particulate matter—2.5 micrometers or less ^g	24 hours	–	35 µg/m ³	Same as primary standard
	Annual arithmetic mean	12 µg/m ³	12 µg/m ³	
Carbon monoxide	8 hours	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	None
	1 hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	
	8 hours (Lake Tahoe)	6 ppm (7 mg/m ³)	–	
Nitrogen dioxide ^h	Annual arithmetic mean	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)	Same as primary standard
	1 hour	0.18 ppm (339 µg/m ³)	100 ppb (188 µg/m ³)	None
Sulfur dioxide ⁱ	Annual arithmetic Mean	–	0.030 ppm (for certain areas) ⁱ	–
	24 hours	0.04 ppm (105 µg/m ³)	0.14 ppm (for certain areas) ⁱ	–
	3 hours	–	–	0.5 ppm (1,300 µg/m ³)
	1 hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)	–
Lead ^{j,k}	30-day average	1.5 µg/m ³	–	–
	Calendar quarter	–	1.5 µg/m ³ (for certain areas) ^j	Same as primary standard
	Rolling 3-month average	–	0.15 µg/m ³	
Visibility-reducing particles ^l	8 hours	See footnote 1	No national standards	
Sulfates	24 hours	25 µg/m ³		
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m ³)		
Vinyl chloride ^j	24 hours	0.01 ppm (26 µg/m ³)		

Notes: µg/m³ = micrograms per cubic meter; mg/m³ = milligrams per cubic meter; ppb = parts per billion; ppm = parts per million

^a California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM₁₀, 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 ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24-hour is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than 1. For PM_{2.5}, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standards.

^c Concentration expressed first in the units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and reference pressure of 760 torr; "ppm" in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

^d *National Primary Standards:* The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

^e *National Secondary Standards:* Levels of air quality necessary to protect public welfare from any known or anticipated adverse effects of a pollutant.

^f On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

^g On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

^h To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards, the units can be converted from 100 ppb to 0.100 ppm.

ⁱ On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. 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 of 0.075 ppm.

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

^k The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.

^l In 1989, ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and the "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: ARB 2019

Table 4.4-2 summarizes the attainment status of the SVAB for NAAQS and CAAQS. As shown in Table 4.4-2, the portion of Placer County within the SVAB, where the Planning Area is located, meets the NAAQS for all criteria air pollutants except ozone and the 24-hour average PM_{2.5} standard, and meets the CAAQS for all criteria air pollutants except ozone, PM₁₀, and PM_{2.5}.

Pollutant	Federal Standard	California Standard
Ozone ^a	Nonattainment (1-hour) ^a	Nonattainment (1-hour) ^b
	Nonattainment (8-hour) ^c	Nonattainment (8-hour)
Particulate Matter— 10 Micrometers or Less	Attainment (24-hour)	Nonattainment (24-hour)
		Nonattainment (annual)
Particulate Matter— 2.5 Micrometers or Less	Nonattainment (24-hour)	Nonattainment (annual)
	Attainment (annual)	
Carbon Monoxide	Attainment (1-hour)	Attainment (1-hour)
	Attainment (8-hour)	Attainment (8-hour)
Nitrogen Dioxide	Unclassified (1-hour)	Attainment (1-hour)
	Attainment (annual)	Attainment (annual)
Sulfur Dioxide	Attainment/Unclassifiable (1-hour)	Attainment (1-hour)
	Attainment/Unclassifiable (24-hour)	Attainment (24-hour)
	Attainment/Unclassifiable (annual)	—
Lead	Attainment (3-month rolling average)	Attainment (30-day average)
Hydrogen Sulfide	No Federal Standard	Unclassified (1-hour)
Sulfates		Attainment (24-hour)
Visibility-Reducing Particles		Unclassified (8-hour)

Notes:
^a Air quality meets the federal 1-hour ozone standard (77 *Federal Register* 64036, October 18, 2012). The U.S. Environmental Protection Agency (EPA) revoked this standard, but some associated requirements still apply. The Sacramento Federal Nonattainment Area attained the standard in 2009, and has SMAQMD, on behalf of the counties within the Sacramento Federal Nonattainment Area, requested that EPA recognize attainment to fulfill the requirements.
^b Per Health and Safety Code Section 40921.5(c), the classification is based on 1989–1991 data, and therefore does not change.
^c 2008 standard.
Source: ARB 2018

In 2017, ARB approved and submitted to EPA the Sacramento Federal Ozone Nonattainment Area Redesignation Substitution Request for the 1-Hour Ozone Standard, which applies to all of Sacramento and Yolo counties, and portions of Placer (including the Planning Area), El Dorado, Solano, and Sutter counties (PCAPCD 2019). EPA approval is still outstanding.

4.4.2.3 TOXIC AIR CONTAMINANTS

In addition to criteria air pollutants, the U.S. EPA and the California Air Resources Board also regulate hazardous air pollutants, also known as TACs. The term TAC collectively refers to a diverse group of air pollutants that may cause or contribute to an increase in chronic (i.e., long-duration) and acute (i.e., severe but short-term) adverse effects on human health. There are hundreds of different types of toxic air contaminants with varying degrees of toxicity. The health risks of individual toxic air contaminants vary greatly; at a given level of exposure, one toxic air contaminant may pose a hazard that is many times greater than another. TACs are identified and their toxicity is studied by the California Office of Environmental Health Hazard Assessment (OEHHA).

TACs are usually present in minute quantities in the ambient air; however, their toxicity or health risk may pose a threat to public health even at low concentrations. TACs can be separated into carcinogens and noncarcinogens, based on the nature of the effects associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur. Noncarcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

TACs may be emitted by stationary, area, or mobile sources. Common stationary sources of TAC emissions include gasoline stations, dry cleaners, and diesel backup generators, which are subject to the requirements of local air districts' permits. The other, often more substantial, sources of TAC emissions are motor vehicles on freeways, on high-volume roadways, or in other areas with high numbers of diesel vehicles, such as distribution centers. Off-road mobile sources are also major contributors of toxic air contaminant emissions and include construction equipment, ships, and trains. According to the *California Almanac of Emissions and Air Quality* (ARB 2009), most of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines (i.e., DPM). Other TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene.

DPM differs from other TACs because it is not a single substance, but a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, type of lubricating oil, and presence or absence of an emission control system. Unlike the other TACs, no ambient monitoring data are available for DPM because no routine measurement method currently exists. However, emissions of DPM are forecasted to decline; it is estimated that emissions of DPM in 2035 will be less than half those in 2010, further reducing statewide cancer risk and non-cancer health effects (ARB 2020).

Asbestos is also an air toxic of concern, particularly in projects in areas identified as likely to contain naturally occurring asbestos and projects that involve demolition of older buildings or other structures in which asbestos may have been used during original construction. Asbestos is the name given to several naturally occurring fibrous silicate minerals. Asbestos has been mined for applications requiring thermal insulation, chemical and thermal stability, and high tensile strength. Asbestos is also found in its natural state in rock or soil (known as naturally occurring asbestos [NOA]). Mapping published by the United States Geological Survey and California Geological Survey indicates that the Planning Area is not located within an area known to contain NOA (USGS 2011). However, asbestos may have been used during construction of the existing structures that may be demolished during implementation of the General Plan.

4.4.2.4 SENSITIVE RECEPTORS

Some land uses are considered more sensitive to air pollution than others, because of the types of population groups or activities involved. Children, pregnant women, the elderly, those with existing health conditions, and athletes or others who engage in frequent exercise are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered sensitive receptors include schools, daycare centers, parks and playgrounds, and medical facilities.

Residential areas are considered sensitive 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 the pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution, even though exposure periods during exercise are generally short. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as most of the workers tend to stay indoors most of the time.

The proximity of sensitive receptors to proposed construction and operational activities with buildout of the General Plan would vary depending on the specific location of development projects and public facilities and infrastructure developed under the General Plan relative to existing uses. However, in general, sensitive receptors are located throughout the Planning Area.

4.4.2.5 ODORS

Odors are generally regarded as an annoyance rather than a health hazard. However, odor-generating compounds can affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, the substances that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects, such as stress.

The ability to detect odors varies considerably among the population and is subjective. Some individuals can smell minute quantities of specific substances, while others may not have the same sensitivity but may be sensitive to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person (e.g., from a fast-food restaurant or bakery) may be perfectly acceptable to another. Unfamiliar odors may be more easily detected and likely to cause complaints than familiar ones.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word strong to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Several examples of common land use types that generate substantial odors are wastewater treatment plants, landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants. In addition, odors can be caused by agricultural activities, such as dairy operations; horse, cattle, or sheep (livestock) grazing; fertilizer use; and aerial crop spraying.

Potential industrial sources of odor in and around the Planning Area include but are not limited to the Western Regional Sanitary Landfill (approximately 1 mile north of the city), City of Roseville Pleasant Grove Wastewater Treatment Plant (located in the western portion of the city), the Rio Bravo biomass plant (located just over a mile

north of the city), Mallard Creek composting facility (located adjacent to the northern border of the city), Dry Creek Wastewater Treatment Plant (located in the southwestern corner of the city), and dairy and chicken farms (dispersed throughout the region surrounding the western and northern boundaries of the Planning Area).

In addition, to these municipal facilities, the Planning Area also includes industrial uses (e.g., food production facilities, manufacturing facilities, biomass storage for biomass power generation) that could constitute potential odor sources. The Planning Area is also surrounded by agricultural uses in each direction that can generate odors from a variety of processes, such as agricultural burning, livestock pens, fertilization, and composting, among others. The City of Roseville and PCAPCD work in cooperation with industrial facilities and agricultural producers to limit the odor emissions associated with manufacturing processes and agricultural burning.

Other smaller and dispersed odor sources include residential and commercial dumpsters, which can be in proximity of sensitive receptors. However, with proper disposal containers and regular trash collection services, odors from residential and commercial dumpsters are typically minimized.

4.4.3 REGULATORY FRAMEWORK

Air quality within the Planning Area is regulated at the federal level by the EPA and at the state level by ARB. At the local level, PCAPCD develops rules, regulations, policies, and/or goals to comply with applicable federal and state legislation. Although EPA regulations may not be superseded, in general, both state and local regulations may be more stringent. The regulatory frameworks for criteria air pollutants, TACs, and odor emissions are described separately below.

4.4.3.1 FEDERAL PLANS, POLICIES, REGULATIONS AND LAWS

Clean Air Act and Ambient Air Quality Standards

The primary legislation that governs federal air quality regulations is the Clean Air Act, enacted in 1970 and amended by Congress most recently in 1990. The CAA delegates primary responsibility for clean air to EPA. EPA develops rules and regulations to preserve and improve air quality and delegates specific responsibilities to state and local agencies. The CAA directs USEPA to establish federal air quality standards, known as NAAQS for six criteria air pollutants: ozone, CO, PM (both PM₁₀ and PM_{2.5}), SO₂, NO₂ and lead. NAAQS include both primary and secondary standards; the former are set to protect public health with an adequate margin of safety, the latter to prevent degradation to the environment (e.g., impairment of visibility, damage to vegetation). Table 4.4-1 above summarizes NAAQS currently in effect for each criteria air pollutant.

The CAA places most of the responsibility on states to achieve compliance with NAAQS. Each state is required to submit and implement an air quality control plan, referred to as a SIP for local areas not meeting NAAQS. The SIP must include pollution control measures that demonstrate how the standards will be met by the dates specified in the CAA. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments and to determine whether implementing them will achieve ambient air quality standards. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. Failure to submit an approvable SIP or to implement the plan within the mandated time frame may result in sanctions to transportation funding and stationary air pollution sources in the air basin.

In California, USEPA has delegated authority to prepare SIPs to ARB, which, in turn, has delegated that authority to individual air districts. ARB traditionally has established state air quality standards, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emissions inventories, collecting air quality and meteorological data, and approving SIPs.

Corporate Average Fuel Economy (CAFE) Standards and the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule

USEPA and the National Highway Traffic Safety Administration set CAFE standards for passenger cars and for light trucks (collectively, light-duty vehicles), and separately sets fuel efficiency standards for passenger cars and light trucks (collectively, light-duty vehicles) for model years 2012 through 2025.

The Safer Affordable Fuel Efficient (SAFE) Vehicles Rule, proposed by the United States Department of Transportation and EPA in 2018, would amend the existing CAFE standards and establish new standards for model years 2021 through 2026. The proposed rule would retain the model year 2020 standards through model year 2026. In response to the proposed SAFE Vehicles Rule, on July 25, 2019, automobile manufactures Ford, Volkswagen, Honda, and BMW entered into a voluntary framework agreement with ARB to set fuel economy and carbon dioxide limits at levels between the existing federal standards and the standards proposed by the SAFE Vehicles Rule. Under this framework, the auto companies' party to the voluntary agreement would only sell cars in the United States that meet these levels.

On September 27, 2019, the EPA and the National Highway Traffic Safety Administration published the "SAFE Vehicles Rule Part One: One National Program" (84 Fed. Reg. 51310). The Part One Rule revokes California's authority to set its own GHG emissions standards and set zero-emission vehicle mandates in California. Part 2 of the regulations, which, if implemented, would address fuel efficiency standards for light-duty vehicles model years 2021 through 2026, have not been drafted as of the writing of this document.

Locomotive Emissions Standards

In March 2008, USEPA adopted a three-part emissions standard program to reduce emissions from diesel locomotives over time. The regulation tightens emission standards for existing, remanufactured locomotives, and sets exhaust emission standards for newly build locomotives of model years 2011-2014 (Tier 3) and 2015 and beyond (Tier 4). The regulation is expected to reduce PM emissions from locomotive engines by as much as 90 percent and oxides of nitrogen (NO_x) emissions by as much as 80 percent when fully implemented.

4.4.3.2 STATE PLANS, POLICIES, REGULATIONS AND LAWS

California Clean Air Act

In 1988, the state legislature adopted the California CAA, which established a statewide air pollution control program. The California CAA required ARB to establish CAAQS (as identified in Table 4.4-1). The California CAA requires that all air districts in the state endeavor to achieve and maintain the CAAQS by the earliest practicable date. The California CAA establishes increasingly stringent requirements for areas that will require more time to achieve the standards. The act specifies that local air districts should focus attention on reducing the emissions from transportation and areawide emission sources and provides districts with the authority to regulate indirect sources.

The CCAA requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest practical date. The CCAA requires that air quality plans be prepared for areas of the state that have not met state air quality standards for O₃, CO, NO₂, and SO₂. Among other requirements of the CCAA, the plans must include a wide range of implementable control measures, which often include transportation control measures and performance standards. In order to implement the transportation-related provisions of the CCAA, local air pollution control districts have been granted explicit authority to adopt and implement transportation control measures.

California Air Resources Board

ARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the California CAA. ARB also has primary responsibility in California to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by the EPA. Collectively, all regional air pollution control plans or air quality management plans to achieve the NAAQS throughout the state constitute the SIP. As California's air quality management agency, ARB regulates mobile emission sources and oversees the activities of county air pollution control districts and regional air quality management districts. ARB regulates local air quality indirectly by using state standards and vehicle emission standards, conducting research activities, and carrying out planning and coordinating activities. ARB also provides land use guidance, as it relates to air quality, including criteria for siting schools and other sensitive land uses.

While not law or adopted policy, ARB published the *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook), providing guidance on land use compatibility with sources of TACs (ARB 2005). The handbook offers advisory recommendations for the siting of sensitive receptors near uses associated with TACs, such as freeways and high-traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, and industrial facilities. Since the 2005 publication of the Handbook, ARB also published a Technical Advisory as a supplement to the Handbook to provide information on scientifically based strategies to reduce exposure to emissions near high-volume roadways in order to protect public health (ARB 2017). This Technical Advisory demonstrates that reduced exposure to traffic-related pollution can be achieved while pursuing infill development that independently provides public health benefits. The Technical Advisory identifies strategies to reduce air pollution exposure near roadways, including those that reduce vehicular emissions, such as incorporation of roundabouts for speed reduction, traffic signal management, and speed limit reductions on high-speed roadways (those greater than 55 miles per hour); strategies that reduce the concentrations of traffic pollution, such as urban design that promotes air flow, solid barriers to pollution, and vegetation to reduce pollutant concentrations; and strategies that remove pollution from indoor air such as through high efficiency filtration. This Technical Advisory does not negate the ARB Handbook but offers multiple variables for consideration for land use, transportation, and environmental planning and development.

ARB implements several statewide diesel-related programs and strategies designed to reduce diesel PM emissions and subsequent exposure. The following programs reduce and regulate criteria pollutant emissions, as well as diesel PM and TAC emissions, from exhaust:

- ▶ **In-Use Mobile Agricultural Equipment Regulation.** Used as a regulation for mobile agricultural equipment that moves California towards meeting ambient air quality standards for the San Joaquin Valley by using the cleanest available technologies. The regulation provides the administrative mechanism for emission

reductions resulting from mobile agricultural equipment program projects to be eligible for State Implementation Plan credit.

- ▶ **In-Use Off-Road Equipment.** Used as a regulation to reduce diesel particulate matter and oxides of nitrogen emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations.
- ▶ **New Off-Road Engines and Equipment.** This category consists of regulations applicable to Off-Road Compression-Ignition Engines (a.k.a. diesel engines), and is primarily for the interest and needs of manufacturers and others that are required to obtain certification from ARB. These engines are found in a wide variety of off-road applications, such as farming, construction, and industrial. Some familiar examples include tractors, excavators, dozers, scrapers, and portable generators.
- ▶ **Heavy-Duty In-Use Vehicle Regulation.** This regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet PM filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent. The regulation applies to nearly all privately and federally owned diesel fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds.
- ▶ **Heavy-Duty Vehicle Inspection Program.** Enforcement program developed to control excessive smoke emissions and tampering from heavy-duty diesel trucks and buses. The Heavy-Duty Vehicle Inspection Program requires heavy-duty trucks and buses to be inspected for excessive smoke and tampering, and engine certification label compliance. Any heavy-duty vehicle traveling in California, including vehicles registered in other states and foreign countries may be tested.
- ▶ **Heavy-Duty Diesel Emission Control Label Inspection Program.** Enforcement program developed as a way to reduce emissions of air contaminants through the fair, consistent and comprehensive enforcement of air pollution laws, and by providing training and compliance assistance. Each vehicle operating in California - including those in transit from Mexico, Canada, or any other state - must be equipped with engines that meet California and/or USEPA or equivalent emission standards as provided on specified Emission Control Labels (ECLs). The ECL must be legible, maintained at the location originally installed by the engine manufacturer and correspond to the engine serial number stamped on the engine.
- ▶ **In-Use Public and Utility Fleets (Heavy-Duty).** Regulation mandating Public Agency and utility vehicle owners reduce diesel PM emissions from their affected vehicles through the application of Best Available Control Technology on these vehicles by specified implementation dates. Implementation is phased-in by engine model year groups with the goal to reduce both criteria pollutant emissions and exposure to toxic air contaminants.
- ▶ **In-Use Solid Waste Collection Vehicles (SWCV).** Regulation targeting the reduction of cancer-causing particulate matter and smog-forming nitrogen oxide emissions from diesel-fueled waste collection trucks to reduce the harmful health impacts of exhaust. The regulation requires owners to use ARB-verified control technology that best reduces emissions, following a phased-in schedule from 2004 through 2010.

- ▶ **PCAPCD Rule 501 (General Permit Requirements).** The requirements are intended to provide an orderly procedure for the review of new stationary sources of air pollution and modification and operation of existing sources through the issuance of permits. Stationary Sources that would emit more than 2 pounds of any pollutant in any 24-hour period would be subject to PCAPCD's permit requirements.

CARB has also, and continues to, work to reduce emissions from locomotives. Emission reductions from the rail sector are critical to meet the criteria pollutant standards across the state, particularly as rail activity increases and is promoted as an alternative to personal automobile transportation. CARB and South Coast AQMD have developed draft concepts to reduce criteria pollutants, toxic air contaminants, and greenhouse gas emissions for locomotives in-use, idling, and maintenance activities, as well as emissions from other equipment at railyards. CARB has submitted the Locomotive Petition to the EPA, requesting EPA to update its emissions standards locomotives and create a new, cleaner Tier 5 emissions standard for locomotives that would take effect for remanufactured locomotives in 2023 and for newly built locomotives in 2025.

California Code of Regulations

Title 13 regulates motor vehicles.

Chapters 3.5 and 3.6 require that all heavy-duty vehicles powered by a diesel engine and operating on California highways, submit to a smoke emissions test. Vehicles with 1991 or newer model-year diesel engines may not exceed an opacity level of more than 40 percent. Vehicles with 1990 or older model-year diesel engines may not exceed an opacity level of 55 percent.

Chapter 9 regulates off-road vehicles and engine pollution control devices. Article 4.8 regulates diesel fleet emissions. The contractor shall use CARB ultra-low-sulfur diesel fuel for all diesel-powered equipment. In addition, low sulfur fuel shall be utilized for all stationary equipment. Targets for each year between 2011 and 2020 are mandated for particulate matter emissions. A large or medium fleet must meet a DPM index that is less than or equal to the calculated target rates. Small fleets will be required to comply with DPM averages starting in 2020. Article 5, the California Portable Equipment Registration Program, regulates portable equipment and requires that such equipment be registered with the air district. Registered portable engines shall not exceed the following emission limits:

- ▶ 550 pounds per day per engine of CO
- ▶ 150 pounds per day per engine of particulate matter less than 10 microns
- ▶ For registered portable engines operating onshore, 10 tons for each pollutant per district per year per engine for NO_x, SO_x, volatile organic carbon (VOC), PM₁₀ and CO in non-attainment areas.

Chapter 10 regulates mobile source operations and includes provisions to address airborne toxics from diesel-fueled off- and on-road vehicles. Sections 2449 and 2485 limit idling time to a maximum of 5 minutes for off-road diesel-fueled construction vehicles heavy-duty commercial diesel vehicles (defined as diesel vehicles heavier than 10,000 pounds gross vehicle rated weight) and, respectively.

Title 17, Section 93105, codifies the Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations. Each air pollution control and air quality management

district are required to implement and enforce the requirements of Section 93105 to minimize asbestos-containing dust.

Title 20 requires manufacturers of appliances to meet State and federal standards for energy and water efficiency. Performance of appliances must be certified through the California Energy Commission to demonstrate compliance with standards.

Title 24 serves to enhance and regulate California’s building standards.

Part 6, establishes building energy efficiency standards that save energy, increase electricity supply reliability, increase indoor comfort, and help preserve the environment.

Part 11, the California Green Building Standards Code, commonly referred to as CALGreen, set minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality.

Assembly Bill (AB) 1807 and AB 2588

State requirements specifically address air toxics issues through Assembly Bill (AB) 1807, which established the state air toxics program and AB 2588, the Air Toxics Hot Spots Information and Assessment Act. The Air Toxics Hot Spots Information and Assessment Act seeks to identify and evaluate risks from air toxics sources; however, AB 2588 does not regulate air toxics emissions. Stationary sources of emissions are required to report the types and quantities of certain substances that their facilities routinely release through the air. TAC emissions from individual facilities are quantified and prioritized. “High-priority” facilities must perform a health risk assessment and, if specific thresholds are violated, must communicate the results to the public in the form of notices and public meetings. The Air Toxics Hot Spots and Information Act requires OEHHA to develop risk assessment guidelines for the Hot Spots program, which OEHHA accomplishes through publication of the *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments* (OEHHA Guidance Manual), most recently updated in 2015. The OEHHA Guidance Manual contains a description of the algorithms, recommended exposure variates, and cancer and noncancer health values, and modeling protocols needed to perform a Hot Spots risk assessment under AB 2588. The use of consistent risk assessment procedures allows comparisons among individual facilities. The regulation of TACs generally occurs through statutes and rules that require the use of the maximum or best available control technology to limit TAC emissions.

4.4.3.3 LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

At the local level, air quality is managed through land use, development and transportation planning practices.

Placer County Air Pollution Control District

PCAPCD attains and maintains air quality conditions in Placer County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. PCAPCD inspects stationary sources of air pollution, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the CAA, CAAA, and CCAA. The clean-air strategy of PCAPCD includes preparing plans and programs for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, and issuing

permits for stationary sources of air pollution. The rules and regulations include procedures and requirements to control the emission of pollutants and to prevent adverse impacts.

All projects within PCAPCD's jurisdictional area are subject to PCAPCD rules and regulations in effect at the time of construction. Specific PCAPCD rules that could be applicable to projects implemented under the 2035 General Plan Update may include but are not limited to the following:

- ▶ **Rule 202:** Visible Emissions. A person shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated as number 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines.
- ▶ **Rule 205:** Nuisance. A developer and proposed project cannot emit any quantities of air contaminants or other materials that would cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public; or that would endanger the comfort, repose, health, or safety of any persons or the public; or that would cause or have natural tendency to cause injury or damage to business or property.
- ▶ **Rule 217:** Cutback and Emulsified Asphalt Paving Materials. The developer or contractor is required to use asphalt paving materials that comply with the VOC content limits specified in the rule.
- ▶ **Rule 218:** Architectural Coatings. The developer or contractor is required to use coatings that comply with the content limits for VOCs specified in the rule.
- ▶ **Rule 225:** Wood Burning Appliances. No person shall sell or supply new wood burning appliances unless it is an EPA phase II Certified wood burning appliance, pellet-fueled wood burning heater, masonry heater, or determined to meet the EPA standard for PM emissions standards.
- ▶ **Rule 228:** Fugitive Dust. The developer or contractor is required to control dust emissions from earthmoving activities or any other construction activity to prevent airborne dust from leaving the project site.
- ▶ **Rule 246:** Natural Gas-Fired Water Heaters. A person shall not distribute, offer for sale, sell, or install, any natural gas-fired water heater within the District, unless it is a natural gas-fired water heater that emits less than or equal to 40 nanograms of nitrogen oxides [calculated as NO₂] per joule (93 pounds per billion British thermal unit [BTU]) of heat output; and is certified in accordance with Section 402 of Rule 246 or it is a mobile home natural gas-fired water heater that emits less than or equal to 50 nanograms of nitrogen oxides [calculated as NO₂] per joule (116 pounds per billion BTU) of heat output; and is certified in accordance with Section 402 of Rule 246.
- ▶ **Rule 247:** Natural Gas-fired Water Heaters, Small Boilers, and Process Heaters. If a proposed project would install natural gas-fired units (i.e., boilers, steam generators, and process heaters) with a rated heat input capacity greater than or equal to 75,000 BTU [British thermal units] and less than 5 million Btu per hour, the unit is required to comply with the NO_x and CO emissions standards.
- ▶ **Rule 305:** Residential Allowable Burning. Except as provided in Regulation 3, no person shall use an open outdoor fire (including the use of a burn barrel) for the purposes of disposal or burning of any disallowed combustibles. Only allowable combustibles, originating at a residence, and free of disallowed combustibles,

and reasonably free from dirt, soil, and visible surface moisture, may be burned in an open outdoor burn pile. Burning in a burn barrel is prohibited.

- ▶ **Rule 501: General Permit Requirements.** To provide an orderly procedure for the review of new sources of air pollution and modification and operation of existing sources through the issuance of permits. Any project that includes the use of equipment capable of releasing emissions to the atmosphere may be required to obtain permit(s) from PCAPCD before equipment operation.
- ▶ **Rule 507: Federal Operating Permit Program.** Stationary sources subject to Rule 507 include major stationary sources, acid rain units subject to Title IV of the CAA, solid waste incinerators subject to Section 111 or 129 of the CAA, and any other stationary sources specifically designated by rule of the EPA.

PCAPCD has also produced a guidebook called the CEQA Air Quality Handbook (PCAPCD Handbook), which contains guidance for analyzing construction and operational emissions. The PCAPCD Handbook also includes a list of analysis expectations and methodologies for CEQA analyses. On October 13, 2016, the PCAPCD Board of Directors adopted the Review of Land Use Projects under CEQA Policy, which includes recommendations for thresholds of significance for criteria air pollutant emissions. In developing the thresholds, PCAPCD took into account health-based air quality standards and the strategies to attain air quality standards, historical CEQA project review data in Placer County, and the geographic and land use features of Placer County. PCAPCD's emissions thresholds of significance are discussed further below in Section 4.4.4.2, "Thresholds of Significance."

Because portions of Placer County do not attain the federal ozone and PM air quality standards, PCAPCD is responsible for working with the other air districts within the Sacramento Region to develop applicable air quality plans, as described below.

As part of the Sacramento Federal Nonattainment Area for ozone, and in accordance with requirements under the Clean Air Act (CAA), PCAPCD worked with the other local air districts within the Sacramento area to develop a regional air quality management plan to describe and demonstrate how Placer County, as well as the Sacramento nonattainment area, is meeting requirements under the federal CAA in demonstrating reasonable further progress and attainment of the NAAQS for ozone (PCAPCD 2017a). PCAPCD held a public hearing to consider, and ultimately adopted, the 2017 Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (Ozone Attainment and Progress Plan). The Ozone Attainment and Progress Plan documents how the region. Some elements of the Ozone Attainment and Progress Plan were updated in 2018 and included in the 2018 Updates to the California State Implementation Plan, which updated SIP elements for nonattainment areas throughout the State, as needed. These updates were adopted by ARB in October 2018. The Ozone Attainment and Progress Plan is the currently adopted and applicable air quality plan for the region and, therefore, PCAPCD is required to comply with and implement this plan.

Similarly, PCAPCD also adopted the 2013 PM_{2.5} Implementation and Maintenance Plan and Redesignation Request for Sacramento PM_{2.5} Nonattainment Area (PM_{2.5} Maintenance Plan and Redesignation Request) to address how the region attained and would continue to attain the 24-hour PM_{2.5} NAAQS. In 2017, EPA found that the area attained the 2006 24-hour PM_{2.5} NAAQS by the attainment date of December 31, 2015. The PM_{2.5} Maintenance Plan and Redesignation Request will be updated and submitted in the future based on the clean data finding made by the EPA.

In compliance with the requirements set forth in the CCAA, which specifically addressed the non-attainment status for ozone, CA, PM_{2.5} and PM₁₀, PCAPCD coordinated with the air quality management districts and air pollution control districts of El Dorado, Sacramento, Solano, Sutter, and Yolo counties to prepare and submit the 1991 Air Quality Attainment Plan (AQAP). The CCAA also requires a triennial assessment of the extent of air quality improvements and emission reductions achieved through the use of control measures. In accordance with this requirement, PCAPCD has prepared several triennial progress reports that build upon the AQAP. The most recently adopted report is the 2018 Triennial Progress Report for the 2015-2017 period.

Sacramento Area Council of Governments

The Sacramento Area Council of Governments (SACOG). SACOG serves as the Metropolitan Planning Organization for the Sacramento region, maintaining the regional Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) in coordination with each of the local 28 member cities and counties, including Placer County. SACOG plays a central role in transportation infrastructure planning for the region, while also serving as a form for the study, planning and resolution of other planning issues facing the local member governments. The most recent MTP/SCS for the SACOG region was adopted in November 2019. The 2020 MTP/SCS lays out a plan that links land use, air quality, and transportation needs.

Existing City of Roseville General Plan Policies

The existing City of Roseville General Plan (City of Roseville 2016) includes the following goals and policies related to air quality.

Air Quality Goal 1: Improve Roseville's air quality by: a) achieving and maintaining ambient air quality standards established by EPA and the CARB; and b) minimizing public exposure to toxic or hazardous air pollutants and any pollutants that create a public nuisance through irritation to the senses (such as unpleasant odors).

Air Quality Goal 2: Integrate air quality planning with the land use and transportation planning process.

Air Quality Goal 3: Encourage the coordination and integration of all forms of public transport while reducing motor vehicle emissions through a decrease in the average daily trips and vehicle miles traveled and by increasing the commute vehicle occupancy rate by 50 percent to 1.5 or more persons per vehicle.

Air Quality Goal 4: Increase the capacity of the transportation system, including the roadway system and alternate modes of transportation.

Air Quality Goal 5: Provide adequate pedestrian and bikeway facilities for present and future transportation needs.

Air Quality Goal 6: Promote a well-designed and efficient light rail and transit system.

Air Quality Goal 7: While recognizing that the automobile is the primary form of transportation, the City of Roseville should make a commitment to shift from the automobile to other modes of transportation.

- ▶ **Air Quality – General Policy 1:** Cooperate with other agencies to develop a consistent and effective approach to air pollution planning.

- ▶ **Air Quality – General Policy 2:** Work with PCAPCD to monitor all air pollutants of concern on a continuous basis.
- ▶ **Air Quality – General Policy 3:** Develop consistent and accurate procedures for evaluating the air quality impacts of new projects.
- ▶ **Air Quality – General Policy 4:** As part of the development review process, develop mitigation measures to minimize stationary and area source emissions.
- ▶ **Air Quality – Transportation and Circulation Related Policy 5:** Develop transportation systems that minimize vehicle delay and air pollution.
- ▶ **Air Quality – Transportation and Circulation Related Policy 6:** Develop consistent and accurate procedures for mitigating transportation emissions from new and existing projects.
- ▶ **Air Quality – Transportation and Circulation Related Policy 7:** Encourage alternative modes of transportation including pedestrian, bicycle, and transit usage.
- ▶ **Air Quality – Land-Use Related Policy 8:** Separate air pollution-sensitive land uses from sources of air pollution.
- ▶ **Air Quality – Land-Use Related Policy 9:** Encourage land use policies that maintain and improve air quality.
- ▶ **Air Quality – Energy Conservation Related Policy 10:** Conserve energy and reduce air emissions by encouraging energy efficient building designs and transportation systems.
- ▶ **Air Quality – Hazardous Materials Related Policy 11:** Protect City residents from the risks involved in the transport, distribution, storage, use, and disposal of hazardous materials.
- ▶ **Circulation – Level of Service Policy 1:** Maintain a level of service (LOS) “C” standard at a minimum of 70 percent of all signalized intersections and roadway segments in the City during the a.m. and p.m. peak hours. Exceptions to the LOS “C” standard may be considered for intersections where the City finds that the required improvements are unacceptable based on established criteria identified in the implementation measures. In addition, Pedestrian Districts may be exempted from the LOS standard.
- ▶ **Circulation – Level of Service Policy 2:** Strive to meet the level of service standard through a balanced transportation system that reduces the auto emissions that contribute to climate change, by providing alternatives to the automobile and avoiding excessive vehicle congestion through roadway improvements, Intelligent Transportation Systems, and transit improvements.
- ▶ **Circulation – Level of Service Policy 3:** Work with neighboring jurisdictions to provide acceptable and compatible levels of service on the roadways that cross the City's boundaries.
- ▶ **Circulation – Level of Service Policy 4:** Secure adequate funding for all components of the City's transportation system to ensure level of service policy is maintained.

- ▶ **Circulation – Level of Service Policy 5:** Enable the City to designate a Pedestrian District over a geographic area for the purpose of implementing measures that promote pedestrian walkability and reduce total vehicle miles traveled and resultant air pollution emissions that contribute to climate change. In these districts, the City recognizes that pedestrian travel takes a higher priority than automobile travel, which could reduce the vehicular level of service.

Circulation – Transit Goal 1: Promote a safe, convenient and efficient mass transit system, utilizing both bus and rail modes, to reduce congestion, reduce auto emissions, including emissions that contribute to climate change, improve the environment, and provide viable non-automotive means of transportation in and through Roseville.

- ▶ **Circulation – Transit Policy 1:** Pursue and support transit services within the community and region and pursue land use, design, and other mechanisms that promote the use of such services.

Circulation – Transportation Systems Management Goal 2: Reduce total vehicle emissions in the City of Roseville and the South Placer County region.

- ▶ **Circulation – Transportation Systems Management Policy 1:** Continue to enforce the City’s TSM ordinance and monitor its effectiveness.
- ▶ **Circulation – Transportation Systems Management Policy 2:** Work with appropriate agencies to develop measures to reduce vehicular travel demand and total vehicle miles traveled and meet air quality goals.

Circulation – Bikeways/Trails Goal 1: Increase the percentage of all trips made by bicycles in Roseville.

Circulation – Bikeways/Trails Goal 2: Establish and maintain a safe, comprehensive and integrated bikeway and trail system that encourages the use of bikes and walking for commuting, recreational and other trips.

- ▶ **Circulation – Bikeways/Trails Policy 1:** Develop a comprehensive and safe system of recreational and commuter bicycle routes and trails that provides connections between the City's major employment and housing areas and between its existing and planned bikeways.
- ▶ **Circulation – Bikeways/Trails Policy 2:** Coordinate Roseville’s bikeway and trail system with those of neighboring jurisdictions to provide both local and regional connections.
- ▶ **Land Use – Community Form – Relationship to Transit, Pedestrian, Air Quality (RTPAQ) Policy 1:** Promote land use patterns that support a variety of transportation modes and accommodate pedestrian mobility.
- ▶ **Land Use – Community Form – Relationship to Transit, Pedestrian, Air Quality (RTPAQ) Policy 2:** Allow for land use patterns and mixed-use development that integrate residential and non-residential land uses, such that residents may easily walk or bike to shopping, services, employment, and leisure activities.
- ▶ **Land Use – Community Form – Relationship to Transit, Pedestrian, Air Quality (RTPAQ) Policy 3:** Concentrate higher-intensity uses and appropriate support uses within close proximity of transit and bikeway corridors, as identified in the Bicycle Master Plan. In addition, some component of public use, such as parks,

plazas, public buildings, community centers, and/or libraries should be located within Pedestrian Districts and transit and bikeway corridors.

- ▶ **Land Use – Community Form – Relationship to Transit, Pedestrian, Air Quality (RTPAQ) Policy 4:** Promote and encourage the location of employee services, such as child care, restaurants, banking facilities, convenience markets, etc., within major employment centers for the purpose of reducing mid-day service-related vehicle trips.
- ▶ **Land Use – Community Form – Relationship to Transit, Pedestrian, Air Quality (RTPAQ) Policy 5:** Where feasible, improve existing development areas to create better pedestrian, bicycle, and transit accessibility.
- ▶ **Land Use – Community Form – Relationship to Transit, Pedestrian, Air Quality (RTPAQ) Policy 6:** Through City land use planning and development approvals, require that neighborhood-serving uses (e.g. neighborhood commercial uses, day care, parks, schools, and other community facilities) be physically linked with adjacent residential neighborhoods.
- ▶ **Land Use – Community Form – Relationship to Transit, Pedestrian, Air Quality (RTPAQ) Policy 7:** Encourage alternative modes of transportation including pedestrian, bicycle, and transit usage.
- ▶ **Land Use – Community Form – Relationship to Transit, Pedestrian, Air Quality (RTPAQ) Policy 10:** Conserve energy and reduce air emissions by encouraging energy efficient building designs and transportation systems.
- ▶ **Land Use – Community Form – Downtown Neighborhoods Policy 1:** Require that new development areas and associated community-wide facilities (open space resources, parks, libraries, etc.) be linked and oriented to existing developed areas of the community through road networks, public transit systems, open space systems, bike way and pedestrian systems, and other physical connections.
- ▶ **Land Use – Community Form – Community Design Policy 2:** Continue to develop and apply design standards that result in efficient site and building designs, pedestrian friendly projects that stimulate the use of alternative modes of transportation, and the establishment of a functional relationship between adjacent developments.

Adopted Specific Plans and Mitigation Measures

Currently, the City has adopted 14 Specific Plans. The Specific Plans provide comprehensive planning, zoning, design guidelines, and development and conservation standards to implement the General Plan for defined geographic locations within the Planning Area. Each Specific Plan has guidelines for site, architectural, landscaping, lighting, roadway networks, pedestrian/bicycle paths, open space corridors, parks, and other aspects of design. Each adopted Specific Plan included an EIR, which evaluated potential human health and environmental risks related to air quality. Where appropriate, mitigation measures were adopted to reduce the level of risk from air pollutant emissions, and these measures are required to be implemented in each Specific Plan Area. Adopted mitigation measures include requirements to provide dust and emissions controls during construction activities, and measures requiring design measures, such as exterior outlets for electric lawnmowers, to offset operational emissions. Adopted mitigation measures for air quality would reduce or off-set short-term

construction and long-term operational emissions, and provide siting and design guidance to reduce potential health risks associated with TAC emission sources. Copies of the adopted Specific Plans and their associated EIRs are available upon request from the City of Roseville Development Services Department, Planning Division.

4.4.4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.4.4.1 METHODOLOGY

The discussion below presents the methods used for the air quality analysis and how the significance of air quality impacts was determined. Buildout of the General Plan would generate air pollutant emissions as a result of short-term construction and long-term operational activities. Potential air quality impacts associated with short-term construction and long-term operations were evaluated according to guidance and methods from ARB and PCAPCD. A summary of the data inputs, emissions factors, and calculation methodologies used are provided below for both construction and operational elements of the project. Detailed project inputs, assumptions and calculations are provided in Appendix B, *Quantification of Criteria Air Pollutant and Greenhouse Gas Emissions, and Energy Use*.

Construction

Construction-related emissions would be generated throughout the buildout of the General Plan and would vary based on market conditions. A General Plan is a long-term planning document, and exact buildout schedules cannot be determined. Therefore, for the purposes of this EIR, a maximum annual construction level was estimated. The maximum annual housing production experienced within the City since 2001 was 2,019 housing units (SACOG 2019). This is equivalent to eight percent of the remaining unbuilt Planning Area being developed per year. Conservatively, this figure was rounded up and it was assumed that up to 10 percent of the Planning Area could be developed annually.

Construction activities would generate emissions of criteria pollutants, precursors, and TACs (i.e., DPM) from a variety of sources, including off-road construction equipment, on-road vehicles, earthmoving activities, off-gas from paving activities and application of architectural coatings.

Construction-related air emissions were modeled using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2, which is the most current version of the PCAPCD-recommended model for estimating construction and operational emissions from land use development projects. CalEEMod includes default assumptions for construction parameters, such as construction equipment, haul trucks, and worker trips, which were used to model the General Plan's construction-related emissions. Likewise, CalEEMod also allows the user to input project-specific parameters. In this case, project-specific construction inputs included site acreage for proposed land uses and a construction schedule, among others. Where project-specific information was not available, default parameters provided by the model were used. Default assumptions provided by the model are typically conservative to avoid underestimating emissions. Although it is unlikely that the most intensive days of construction would occur concurrently, to conservatively estimate maximum potential daily emissions, it is assumed that these various construction activities could occur concurrently throughout the Planning Area during a year of maximum-potential development. In order to estimate maximum potential emissions, all inputs were modeled using emission factors for the year 2021, the earliest possible year of construction. Construction activities occurring in a later year would be assumed to use a similar or newer fleet of off-road equipment and on-

road vehicles; as fleet turnover occurs over time, older equipment and vehicles are replaced by those with new engines meeting more recent and more stringent emission standards.

Operations

Operational emissions would be generated by area-, energy-, and mobile-sources. The analysis assumes full buildout of the proposed General Plan update, with a modeling year of 2035 because this is the cumulative horizon year for the General Plan. Area sources would include hearth and consumer products for residential uses, and periodic architectural coatings (such as paints) and landscape equipment for residential and non-residential land uses. Energy sources would include natural gas combustion for space and water heating in residential and non-residential buildings. CalEEMod was used to model area- and energy-source operational emissions based upon proposed land uses.

Mobile sources would involve vehicle trips associated with residential (e.g., work, shopping, and other trips) and non-residential (e.g., customers, employees, and material delivery trips) activities within the Planning Area. For mobile sources, an estimate of project-specific annual vehicle miles traveled (VMT) associated with the proposed land use development was developed by the traffic analysis prepared in support of the General Plan (see Appendix D). Because the current version of CalEEMod has not yet been updated with the most recent EMFAC2017 emission inventory data, operational mobile-source emissions were estimated manually using the most current version of ARB's on-road emissions inventory model, EMFAC2017. These emissions estimates were added to the CalEEMod outputs to estimate total operational emissions.

4.4.4.2 THRESHOLDS OF SIGNIFICANCE

An air quality impact would be considered significant if it would exceed any of the thresholds of significance listed below, which are based on Appendix G of the CEQA Guidelines and on PCAPCD's *CEQA Air Quality Handbook* (PCAPCD 2017b). Based on Appendix G of the CEQA Guidelines, the General Plan would result in a significant impact on air quality if it would:

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

As stated in Appendix G of the CEQA Guidelines, the significance criteria established by the applicable air quality management district may be relied on to make the above determinations. Thus, pursuant to the PCAPCD-recommended thresholds (PCAPCD 2017b) for evaluating project-related air quality impacts, the General Plan would result in a significant impact on air quality if it would:

- ▶ generate construction-related criteria air pollutant or precursor emissions that exceed the PCAPCD-recommended daily thresholds of 82 pounds per day (lb/day) for ROG, NO_x, or PM₁₀;

- ▶ generate long-term regional criteria air pollutant or precursor emissions that exceed the PCAPCD-recommended daily thresholds of 55 lb/day of ROG or NO_x, or 82 lb/day of PM₁₀;
- ▶ generate emissions of toxic air contaminants or PM_{2.5} that would cause an excess cancer risk level of more than 10 in in one million or exceed a Hazard Index of 1; or
- ▶ expose sensitive receptors to excessive nuisance odors, as defined under PCAPCD Rule 205. [See “Regional and Local Plans, Policies, Regulations, and Ordinances,” in Section 3.3.2.1, “Criteria Air Pollutants,” above.]

Because there is considerable overlap between the threshold questions, this section has been organized to address the following topics:

- ▶ Short-term, construction-related emissions
- ▶ Long-term, operational emissions
- ▶ Exposure of sensitive receptors to substantial pollutant concentrations
- ▶ Exposure to objectionable odors

Two of the Appendix G checklist questions address conflicts with an air quality plan and contribution to an air quality violation. As described under Section 4.4.2.3, “Local Plans, Policies, Regulations, and Laws,” PCAPCD has adopted the *2017 Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* and the *2013 PM_{2.5} Implementation and Maintenance Plan and Redesignation Request for Sacramento PM_{2.5} Nonattainment Area*, as well as the *2018 Triennial Progress Report* as the most recent assessment of air quality improvements and air quality planning progress under the regional Air Quality Attainment Plan. The PCAPCD CEQA Thresholds of Significance Justification Report (PCAPCD 2016) explains that the recommended criteria air pollutant significance thresholds adopted by PCAPCD serve as a proxy for these impacts; therefore, the evaluation of potential conflicts with air quality plans and air quality violations is consolidated within the analysis sections listed above.

For cumulative impacts, PCAPCD states that if a project’s impacts would be significant at the project level (i.e., would exceed any of the thresholds listed above), it could also be considered significant on a cumulative level. Chapter 5 of this EIR addresses cumulative impacts in detail.

Table 4.4-3 PCAPCD Mass Emission Thresholds		
	Temporary Construction	Long-term Operational/Cumulative
ROG	82 lbs/day	55 lbs/day
NO _x	82 lbs/day	55 lbs/day
PM ₁₀	82 lbs/day	82 lbs/day
Sources: Placer County Air Pollution Control District 2016.		
Notes: ROG = reactive organic gases; lbs = pounds; NO _x = nitrogen oxide; PM ₁₀ = particulate matter that is 10 microns in diameter and smaller; PM _{2.5} = particulate matter that is 2.5 microns in diameter and smaller; CO = carbon monoxide; SO _x = sulfur oxide; CAAQS = California ambient air quality standards; NAAQS = National ambient air quality standards		

4.4.4.3 ISSUES NOT DISCUSSED FURTHER

All issues related to air quality are discussed in detail below.

4.4.4.4 IMPACT ANALYSIS

IMPACT 4.4-1 Generation of Short-Term Construction-Related Emissions of Criteria Air Pollutants and Precursors that Would Result in a Cumulatively Considerable Net Increase of Any Criteria Pollutant for which the Project Region is in Nonattainment, and Conflict with or Obstruct an Air Quality Plan. *Emissions of criteria air pollutants and precursors could exceed an ambient air quality standard or contribute substantially to an existing or predicted air quality exceedance. The impact is considered significant.*

Construction emissions are described as short-term or temporary in duration but have the potential to adversely affect air quality. Construction-related activities would result in temporary emissions of criteria air pollutants (e.g., PM₁₀, PM_{2.5}, CO) and ozone precursors (e.g., ROG and NO_x) from ground-disturbing activities (e.g., excavation, grading, and clearing); exhaust emissions from use of off-road equipment, material delivery, and construction worker commutes; building construction; asphalt paving; and application of architectural coatings.

Criteria pollutant emissions generated by these sources were quantified using emission factors and methodologies described in Section 4.4.4.1, *Methodology*. As noted in the methodology description, the construction-related emissions estimates use conservative assumptions based on construction beginning in the year 2021, a construction scenario of maximum overlap of the most intensive days of equipment use of each construction phase (site prep, grading, building construction, paving, and architectural coating), and development of up to 10 percent of the proposed General Plan annually. Because of these conservative assumptions, actual emissions could be less than those estimated. If construction is delayed or occurs over a longer period, emissions could be reduced because of a more modern and cleaner burning (less emitting) construction equipment fleet mix and a less intensive and overlapping construction schedule.²

Table 4.4-4 summarizes the maximum daily emissions of ROG, NO_x, and PM₁₀ associated with the maximum construction intensity for proposed buildout of the General Plan. Refer to Appendix B for detailed model inputs, assumptions and calculations.

As shown in Table 4.4-4, based on the conservative assumptions applied for the purpose of this analysis, maximum daily emission of ROG, NO_x and PM₁₀ would exceed PCAPCD thresholds of significance. The PCAPCD thresholds of significance are considered the allowable amount of emissions each project can generate without conflicting with or obstructing implementation of the applicable air quality plans developed to maintain and attain ambient air quality standards (PCAPCD 2016).

² Equipment exhaust and particulate matter associated with potential rock grinding and crushing, which could be required in some cases of construction, were not specifically calculated, since rock crushing and grinding would not be required for most construction and since the quantity of rock grinding and crushing that would be required for any given site cannot be quantified at this time. However, it could be required in some locations within the Planning Area due to geological conditions. This is one example of why this analysis specifically uses conservative assumptions – so that the overall emissions estimates presented in this section do capture impacts associated with the occasional need for this specialized activity.

Table 4.4-4 Summary of Maximum Daily Construction-Related Emissions of Criteria Air Pollutants: Maximum Single-Year Construction Scenario (2021)			
Construction Phase	Maximum Daily Emissions (lb/dy)		
	ROG	NO _x	PM ₁₀
Demolition	3	33	2
Site Preparation	4	42	20
Grading	5	50	11
Building Construction	26	250	52
Paving	1	14	1
Architectural Coating	472	4	8
Maximum Daily Emissions	512	394	94
PCAPCD Thresholds of Significance	82	82	82
Does Project Exceed Thresholds?	Yes	Yes	Yes

Notes: lb/day = pounds per day; ROG = reactive organic gases; NO_x = oxides of nitrogen; PM₁₀ = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less; PCAPCD = Placer County Air Pollution Control District.

Source: AECOM 2019; See Appendix B for detailed modeling assumptions, outputs, and results.

The following goal and policy related to construction-related air quality in Roseville would be revised as a part of the proposed General Plan Update, with additions shown in **bold, underlined** text and deletions shown in ~~strikethrough~~ text:

Goal AQ1.1: ~~Improve Roseville's air quality by: a) Achieving and~~ **Reduce local air pollutant emissions to assist with meeting and** maintaining ambient air quality standards established by the U.S. Environmental Protection Agency and the California Air Resources Board; and, b) ~~M~~ **and** minimizing public exposure to toxic or hazardous air pollutants and air pollutants that create a public nuisance through irritation to the senses (such as unpleasant odors).

- ▶ **Policy AQ1.3:** ~~Projects that could generate substantial air pollutant emissions or expose sensitive uses to substantial air pollutant concentrations should incorporate strategies to reduce operational emissions, applicable emissions control~~ **exposure to such emissions using measures recommended by the Placer County Air Pollution Control District, and other relevant applicable, feasible strategies, as needed, to avoid significant air quality impacts** ~~Develop consistent and accurate procedures for evaluating the air quality impacts of new projects.~~

The proposed General Plan Update policy change listed above provide additional clarity for how projects implemented under the General Plan Update would reduce air pollutant emissions, including those associated with construction activities within the Planning Area. This policy change would not result in any adverse environmental impacts.

Conclusion

As discussed in the analysis above, the project will generate emissions that exceed PCAPCD significance thresholds. Existing laws and regulations, including PCAPCD rules and regulations, combined with existing

General Plan and proposed General Plan Update policies, would reduce these impacts. In particular, projects greater than one acre in size would be subject to PCAPCD Rule 228 to minimize fugitive dust emissions of PM through implementation of dust control measures, such as PCAPCD's standard Dust Control Requirements; projects smaller than this are considered by the Air District to emit de minimis levels of dust. PCAPCD Rules 202 and 205 would also reduce exhaust-related emissions from the use of construction equipment. PCAPCD Rules 217 and 218 would reduce VOC emissions associated with paving and architectural coating activities.

The proposed General Plan Update Policy AQ1.3 is designed to reduce construction-related emissions generated by projects developed within the Planning Area by incorporating strategies recommended by PCAPCD to reduce exposure to such emissions, such as the use of electrified equipment, setbacks for staging areas from sensitive users, limitations on vehicle idling, and other measures. All future development within the Planning Area that could generate substantial emissions would incorporate strategies to reduce emissions, consistent with General Plan policy. In addition, all of the City's Specific Plans have involved preparation of an EIR and adoption and incorporation of mitigation measures into the Specific Plan to reduce construction-related air pollutant emissions impacts, which would apply to all development within each Specific Plan Area.

While all future development with the potential to generate substantial emissions would be required to reduce those emissions, the effectiveness of these measures would depend on the number and extent of strategies feasible to incorporate as a part of any given project. Since the timing and level of construction activities for future development projects is speculative, and cannot be known, it is not possible to quantify the extent to which the reduction strategies would result in emission reductions. Consequently, even with adherence to PCAPCD rules, proposed General Plan Update Policy AQ1.3, and Specific Plan mitigation measures, it is conservatively assumed that emissions from buildout of the General Plan could exceed PCAPCD-recommended thresholds. Therefore, implementation of the proposed General Plan Update could generate substantial constructed-related pollutant emissions, conflict with or obstruct implementation of the applicable air quality plan, and result in a cumulatively considerable net increase of criteria air pollutants for which the project region is designated a nonattainment area under an applicable federal or state ambient air quality standard. Therefore, this impact would be **significant**.

Mitigation Measure

No feasible mitigation measures are available.

Significance after Mitigation

Existing rules, regulations, existing General Plan policies, and proposed General Plan Update policy changes provide all available, feasible mitigation to reduce construction-related emissions. Because the exact buildout schedule of the proposed land uses cannot be determined, identifying the level of effectiveness of these rules, regulations, and policies is not possible at this time. Therefore, it is conservatively assumed that construction-related emissions could still exceed significance thresholds. Such emissions could exceed or contribute substantially to an existing or projected air quality violation. In addition, these emissions could conflict with or obstruct implementation of the applicable air quality plan. There is no additional feasible mitigation to address this impact. The impact is **significant and unavoidable**.

**IMPACT
4.4-2**

Generation of Long-Term Operational Emissions of Criteria Air Pollutants and Precursors that Would Result in a Cumulatively Considerable Net Increase of Any Criteria Pollutant for which the Project Region is in Nonattainment, and Conflict with or Obstruct an Air Quality Plan. *Long-term operational emissions would be generated from day-to-day activities associated with residential and non-residential land uses under the proposed General Plan Update. Operational emissions associated would exceed applicable PCAPCD thresholds. The level of operational emissions could conflict with or obstruct implementation of the applicable air quality plan. The impact is considered **significant**.*

Implementation of the General Plan would include new development in the Planning Area, including buildings, structures, paved areas, roadways, utilities, and other improvements. Daily activities associated with the operation of these land uses would generate criteria air pollutant and precursor emissions from mobile, energy, and area sources. Mobile sources are primarily vehicle trips coming to and leaving existing and planned land uses. Area sources include, but are not limited to, natural gas combustion for water and space heating, landscape maintenance equipment, hearth (fireplace) operation, and periodic architectural coatings. While construction emissions are considered short-term and temporary, operational emissions are considered long-term and occur beyond the duration of the General Plan. Therefore, operational emissions have greater potential to affect the attainment status of an air basin, particularly as a result of increased traffic and energy demands from additional development.

Table 4.4-5 summarizes the maximum daily emissions of ROG, NO_x, and PM₁₀ associated with long-term operations land uses within the Planning Area that would occur with full buildout of the General Plan, based on a 2035 modeling year, consistent with the cumulative horizon year for the General Plan. Refer to Appendix B for detailed model inputs, assumptions and calculations.

Table 4.4-5 Summary of Maximum Daily Operational Emissions of Criteria Air Pollutants and Precursors: Full Buildout of the proposed General Plan Update (2035)			
Construction Phase	Maximum Daily Emissions (lb/dy)		
	ROG	NO _x	PM ₁₀
Area	38,745	748	6,437
Energy	26	227	18
Mobile ¹	161	1,643	3,487
Total Daily Operational Emissions²	38,931	2,618	9,942
PCAPCD Thresholds of Significance	55	55	82
Does Project Exceed Thresholds?	Yes	Yes	Yes
Notes: lb/day = pounds per day; VOC = volatile organic compounds; NO _x = oxides of nitrogen; PM ₁₀ = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less; PCAPCD = Placer County Air Pollution Control District. 1. Mobile emissions are calculated outside of CalEEMod using EMFAC 2017 emissions rates and VMT from the Transportation Impact Analysis. 2. Total emissions may not add correctly due to rounding. Source: AECOM 2019; See Appendix B for detailed modeling assumptions, outputs, and results.			

As shown in Table 4.4-5, full buildout of the proposed General Plan Update would generate long-term operational emissions of ROG, NO_x and PM₁₀ that would substantially exceed PCAPCD-recommended thresholds of significance.

In addition to typical land use development emission sources (i.e., mobile, energy, area), implementation of the General Plan could involve new stationary sources that generate long-term operational emissions above the emissions shown in Table 4.4-5. These stationary sources would be required to obtain permits from PCAPCD. These sources could include, but are not limited to, diesel engine or gas turbine generators for emergency power generation; central heating boilers for commercial or large residential buildings; process equipment for light industrial uses; kitchen equipment at restaurants and schools; service station equipment; and dry cleaning equipment. Information on stationary sources that could operate within the Planning Area in the future is not available at this time, and there is no reliable methodology to estimate these emissions; therefore, any analysis of these would be speculative. The emissions from these sources would be in addition to the estimated operational emissions described above.

The following goals and policies related to operational air pollutant emissions would be revised as a part of the proposed General Plan Update, with additions shown in **bold, underlined** text and deletions in ~~strikethrough~~ text:

Goal AQ1.1: ~~Improve Roseville's air quality by: a) Achieving and~~ **Reduce local air pollutant emissions to assist with meeting and** maintaining ambient air quality standards established by the U.S. Environmental Protection Agency and the California Air Resources Board; and, b) ~~M~~ **and** minimizing public exposure to toxic or hazardous air pollutants and ~~air pollutants that create a public nuisance through irritation to the senses (such as unpleasant odors).~~

Goal AQ1.3: ~~Encourage the coordination~~ **Coordinate** and integration of all forms of public transport while reducing motor vehicle emissions through a ~~to~~ **decrease in the average daily trips and vehicle miles traveled,** **while encouraging an increase in** and by increasing the commute vehicle occupancy rate by 50% ~~to 1.5 or more persons per vehicle.~~

Goal AQ1.4: Increase the capacity of the **pedestrian, bicycle, and transit** transportation systems ~~and~~ ~~Promote and the share of City owned~~ **vehicular transportation that uses less-polluting fuels, such as electricity;** including the roadway system and alternate modes of transportation.

Goal AQ1.5: Provide adequate pedestrian and ~~bikeway~~ **bicycle** facilities for present and future transportation needs.

Goal AQ1.6: Promote a well-designed and efficient ~~light rail and~~ transit system.

Goal AQ1.7: ~~While recognizing that the automobile is the primary form of transportation, the City of Roseville should make a commitment to shift from the automobile to other modes of transportation.~~ **Improve transit, biking, bicycle, and pedestrian access to lessen dependence on automobile travel and reduce household transportation costs**

- ▶ **Policy AQ1.1:** Cooperate with other agencies to develop a consistent and an effective approach to **reducing** air pollution ~~planning~~.

- ▶ **Policy AQ1.2:** Work with the Placer County Air Pollution Control District to monitor air pollutants of concern on a continuous basis, and support Air District efforts to minimize emissions from stationary sources.
- ▶ **Policy AQ1.3:** Projects that could generate substantial air pollutant emissions or expose sensitive uses to substantial air pollutant concentrations should incorporate strategies to reduce operational emissions, applicable emissions control exposure to such emissions using measures recommended by the Placer County Air Pollution Control District, and other relevant applicable, feasible strategies, as needed, to avoid significant air quality impacts Develop consistent and accurate procedures for evaluating the air quality impacts of new projects.
- ▶ **Policy AQ1.12.** Develop transportation systems that minimize vehicle delay and reduce vehicle emissions by improving the desirability of walking, bicycling, and public transportation relative to vehicular travel air pollution.
- ▶ **Policy AQ1.13.** Develop Identify feasible strategies to reduce consistent and accurate procedures for mitigating transportation emissions from new and existing projects and transportation associated with existing development within the Planning Area.
- ▶ **Policy AQ1.14.** Encourage alternative modes of transportation, including pedestrian, bicycle, and transit usage use.
- ▶ **Policy AQ1.15** Promote and incentivize low-emissions vehicles and associated charging infrastructure. Pursue funding from state programs and other sources to facilitate local purchase and use of electric vehicles.
- ▶ **Policy AQ1.16.** Encourage Implement land use policies that maintain and improve air quality and expand opportunities for transit-oriented development, which allows residents to significantly reduce vehicular transportation and associated air pollutant emissions.
- ▶ **Policy AQ1.17:** Conserve energy and reduce air pollutant emissions by encouraging energy efficient building designs and transportation systems and promoting energy efficiency retrofits of existing structures.
- ▶ **Policy AQ1.18:** Promote building and transportation energy efficiency in new residential and commercial development through encouraging and incentivizing implementation measures early in the design and development process.
- ▶ **Policy AQ1.22:** Support improvements to diesel engines, limits on idling, and incorporation of technology and management practices that reduce harmful emissions at the Rail Yard.

Goal CIRC4: Reduce travel demand vehicle miles traveled on the City's and regional roadway systems, while expanding mobility options for residents, employees, and visitors.

- ▶ **Policy CIRC3.6:** Identify opportunities to increase the number and/or capacity of park-and-ride lots as needed, to increase transit and carpool/vanpool use.

- ▶ **Policy CIRC4.1: Continue to enforce the City's TSM ordinance and monitor its effectiveness. The City will review and condition projects, as appropriate, to reduce travel demand per capita and per employee by promoting increased density near transit, improving the quality of non-vehicular transportation options, providing incentives for non-vehicular travel, encouraging the mixing of complementary land uses in proximity to one another, and using other feasible methods.**
- ▶ **Policy CIRC4.2: Work with appropriate agencies to develop implementation measures to reduce vehicular travel demand and total vehicle miles traveled and meet air quality goals.**
- ▶ **Policy CIRC4.3: Specific Plan Amendments and land use development projects not included in a Specific Plan shall be evaluated for consistency with the City's VMT Impact Standards.**
- ▶ **Policy CIRC4.4: If the evaluation required by CIRC4.3 finds a Specific Plan Amendment or land use development project not included in an adopted Specific Plan is inconsistent with thresholds established within the City's VMT Impact Standards, on-site land use, transportation, and urban design-related VMT-reducing features should be prioritized to demonstrate consistency. If feasible on-site features cannot achieve the VMT threshold, Specific Plan Amendments and land use development projects outside Specific Plan Areas may demonstrate equivalent consistency through off-site actions or fair-share fee contributions, or if consistency cannot be achieved, shall implement all feasible measures.**
- ▶ **Policy CIRC4.5: Policy CIRC4.3 does not apply to projects that propose residential or office uses in Transit Priority Areas or low-VMT areas. Low-VMT areas are those shown by the General Plan travel demand model or the SCS travel demand model to have per-capita, per-employee, or per-service-population VMT rates that are at least 15 percent less than the baseline citywide or regional rate.**
- ▶ **Policy CIRC4.6: Promote and incentivize Infill development, particularly affordable housing development, through assistance in obtaining outside grant funding and reductions or deferrals in impact fees.**
- ▶ **Policy CIRC5.1: Develop a comprehensive and safe system of recreational and commuter bicycle routes and trails that provides connections between the City's major employment destinations (including employment) and housing areas and between its existing and planned bikeways.**
- ▶ **Policy CIRC6.1: Establish and maintain a safe and continuous pedestrian network that provides connections between residential areas and commercial retail and services, employment, public services, parks, and public transit.**
- ▶ **Policy CIRC6.2: Promote development patterns that encourage people to walk to destinations.**
- ▶ **Policy CIRC6.3: Enhance pedestrian-friendly street environments and design public spaces and destinations in a way that encourages walking.**
- ▶ **Policy LU2.1: Promote land use development patterns that support a variety of transportation modes and accommodate pedestrian mobility.**

- ▶ **Policy LU2.2:** Allow ~~for land use patterns and~~ mixed-use development that integrates residential and non-residential land uses, ~~such~~ that residents may easily walk or bike to shopping, services, employment, and leisure activities.
- ▶ **Policy LU2.3:** Concentrate higher-intensity uses and appropriate support uses in **Pedestrian Districts and** within close proximity of transit and bikeway corridors, as identified in the **Transit Master Plans and** Bicycle Master Plan. ~~In addition, some component of public~~ **Public** uses, such as parks, plazas, public buildings, community centers, **schools**, and/or libraries, should be ~~located within Pedestrian Districts and transit and bikeway corridors~~ **easily accessible to the public.**
- ▶ **Policy LU2.4:** Promote and encourage the location of employee services, such as child care, restaurants, banking facilities, convenience markets, ~~etc~~ **and other daily needs**, within major employment centers for the purpose of reducing mid-day ~~service-related~~ vehicle trips.
- ▶ **Policy LU2.5:** Where feasible, improve existing developed ~~ment~~ areas to create better pedestrian, **bicycle**, and transit accessibility.
- ▶ **Policy LU2.6:** ~~Through City land use planning and development approvals,~~ Require **proposed** that neighborhood-serving uses (e.g. neighborhood commercial uses, day care, parks, schools, and other community facilities **and services**) **to** be physically linked with adjacent residential neighborhoods **through multi-modal transportation connections.**
- ▶ **Policy LU3.4:** Encourage infill development and ~~rehabilitation~~ **reinvestment** that:
 - Upgrades the quality and enhances the character of existing areas;
 - **Enhances the mix of land uses in proximity to one another so that more households can access services, recreation, and jobs without the use of a car;**
 - ~~enhances~~ **Facilitates pedestrian activity and** public transit use, ~~and pedestrian access;~~
 - **Results in land use patterns and densities that provide the opportunity for the construction of a variety of household-housing types that are** affordable to all income groups.

The proposed General Plan Update goal and policy changes listed above would reduce operational air pollutant emissions impacts by reducing vehicle miles traveled and thereby mobile emissions, promoting energy conservation and efficiency and thereby reducing indirect emissions from energy use, minimizing stationary and area source emissions, encouraging cleaner-fuel vehicles, such as electric vehicles, and working with PCAPCD to implement feasible strategies to reduce operational emissions. Therefore, the proposed goal and policy revisions would not result in any adverse environmental impacts.

Conclusion

As discussed in the analysis above, the project will generate emissions that exceed PCAPCD significance thresholds. PCAPCD currently enforces several rules and regulations that would reduce the long-term operational impacts described above. Rules that establish emissions standards for various commercial and industrial emission sources (e.g., internal combustion engines, gasoline dispensing facilities, water heaters and boilers) and ROG

concentrations in architectural coatings would help reduce operational emissions. In addition, vehicle emission standards established by ARB, such as the Low Emissions Vehicle Program and On-Road Heavy-Duty Program would help reduce long-term, mobile-source emissions.

Existing PCAPCD rules and regulations, combined with existing and proposed General Plan Update policies, would reduce operational emissions impacts. In particular, proposed General Plan Update policies would reduce air quality emissions from various sources (e.g., energy, water, transportation) through the promotion of energy efficient building designs and transportation systems. In addition, as noted above, the revised policies of the proposed General Plan Update promote development and transportation systems that would reduce vehicle emissions by reducing vehicle miles travelled. These policies have been developed to encourage locating residents, jobs, and retail amenities in proximity to each other to reduce the need for motor vehicle travel. These policies encourage modes of transportation that can reduce or eliminate air pollutant emissions. Since transportation is a major source of criteria air pollutants, this is important for reducing the operational impacts of the General Plan. Policies also support development of pedestrian and bicycle facilities that would promote non-vehicular modes of travel. Policies have also been designed to encourage pedestrian, bicycle, and transit access and mobility that would reduce transportation-related air quality impacts. Finally, the proposed General Plan Update would encourage the local use and purchase of electric vehicles, which would further reduce mobile-source emissions within the Planning Area and surrounding Air Basin.

All future development within the Planning Area that could generate substantial emissions would incorporate strategies to reduce emissions, consistent with General Plan policy. In addition, all of the City's Specific Plans have involved preparation of an EIR and adoption and incorporation of mitigation measures into the specific plan to reduce construction-related air pollutant emissions impacts, which would apply to all development within each Specific Plan Area.

Existing General Plan Air Quality Policy 4, Circulation - Transportation Systems Management Policy 2 (listed previously in the Regulatory Framework section, and which have been renumbered for the proposed General Plan Update), as well as revised proposed General Plan Update Goals AQ1.1-1.7 and Policies AQ1.1-1.3, AQ1.12-1.18, AQ1.22; Goal CIRC4 and Policies CIRC3.6, CIRC4.1-4.7, CIRC5.1, CIRC6.1-6.3; Policies LU2.1-2.6 and LU3.4, as listed above, would reduce long-term operational air pollutant emissions impacts. However, because the timing and design of future development projects is speculative, and is not known at this time, it is not possible to quantify the extent to which the reduction strategies would result in emission reductions. Consequently, even with adherence to General Plan policies and Specific Plan mitigation measures, operational emissions of all land uses within the Planning Area with full buildout of the General Plan could still result in a net increase of criteria air pollutant emissions that could exceed PCAPCD-recommended thresholds of significance. The PCAPCD thresholds of significance are considered to be the allowable amount of emissions each project can generate without conflicting with or obstructing implementation of the applicable air quality plans developed to maintain and attain ambient air quality standards (PCAPCD 2016). Consequently, because the General Plan could generate long-term criteria air pollutant emissions that exceed the PCAPCD-recommended thresholds, implementation of the General Plan could result in an exceedance of an ambient air quality standard or conflict with or obstruct implementation of the applicable air quality plans. Therefore, this impact would be **significant**.

Mitigation Measures

Mitigation Measure 4.4-2a – The proposed General Plan Update should be amended as follows:

Implementation Measure

Projects that could have a potentially significant effect, as demonstrated by exceedance of the PCAPCD-recommended thresholds of significance, shall incorporate applicable PCAPCD-recommended standard operational mitigation measures, as listed below or as they may be updated in the future, or those design features determined by the City to be as effective:

- ▶ Wood burning or pellet stoves shall not be permitted. Natural gas or propane fired fireplaces shall be clearly delineated on plans submitted to obtain building permits.
- ▶ Where natural gas is available, gas outlets shall be provided in residential backyards for use with outdoor cooking appliances such as gas barbeques.
- ▶ Electrical outlets should be installed on the exterior walls of both the front and back of residences to promote the use of electric landscape maintenance equipment.
- ▶ All newly constructed residential buildings including one- and two-family dwellings, townhomes, and multi-family units in low-rise and high-rise residential buildings shall comply with the California Green Building Standards Code (CalGreen).
- ▶ Covenants, Conditions & Restrictions (CC&Rs) shall include the required distribution of educational information on how homeowners can increase energy efficiency and conservation in their new homes. The information shall be delivered as part of a “move-in” packet prior to occupancy of the residence.
- ▶ Streets should be designed to maximize pedestrian access to transit stops.
- ▶ Site design shall maximize access to transit, to accommodate bus travel, and to provide lighted shelters at transit access points.
- ▶ A pedestrian access network shall link complementary land uses.
- ▶ Provide bicycle storage to promote bicycling.
- ▶ Vanpool parking only spaces and preferential parking for carpools should be required for employment-generating uses.
- ▶ Consider using concrete or other non-polluting materials for paving parking lots instead of asphalt.
- ▶ Landscaping should be designed to eventually shade buildings and parking lots.

Mitigation Measure 4.4-2b – *The proposed General Plan Update should be amended as follows:*

Implementation Measure

If, following implementation of Mitigation Measure 4.4-2a, a project’s operational emissions would still exceed PCAPCD-recommended thresholds of significance, the City would require the project to offset remaining project emissions in excess of thresholds by establishing off-site mitigation or participation in PCAPCD’s Off-site Mitigation Program.

Significance after Mitigation

As discussed above, Mitigation Measures 4.4-2a and 2b would establish on-site and off-site mitigation to reduce operational emissions of criteria air pollutants from development projects within the Planning Area. However, because the specific development projects within the Planning Area cannot be defined at the time of this analysis, precise effectiveness and feasibility of these measures cannot be determined for individual future projects, and operational emissions of criteria air pollutants and precursors could still exceed significance thresholds. After incorporating proposed General Plan Update policies and Mitigation Measure 4.4-2a, certain projects may still have operational emissions that exceed PCAPCD thresholds, and it may not be feasible for all such future projects to contribute to the PCAPCD offsite mitigation program at a level that would reduce the projects' net emissions below the District's recommended thresholds. Such emissions could exceed or contribute substantially to an existing or projected air quality violation and/or expose sensitive receptors to substantial pollutant concentrations. In addition, these emissions could conflict with or obstruct implementation of the applicable air quality plan. There are no additional feasible mitigation measures available to address this impact. This impact is **significant and unavoidable**.

IMPACT 4.4-3 **Expose Sensitive Receptors to Substantial Pollutant Concentrations.** *During construction and operation of the General Plan, localized air pollutant emissions would be generated that could affect existing and proposed sensitive receptors. Construction activities would generate diesel particulate matter (diesel PM) emissions that could affect existing and proposed sensitive receptors. Existing regulations and policies, as well as revised policies would reduce potential exposure to substantial pollutant concentrations. The impact is considered significant.*

Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Children, pregnant women, the elderly, those with existing health conditions, and athletes or others who engage in frequent exercise are especially vulnerable to the effects of air pollution. Accordingly, land uses that typically include sensitive receptors include schools, daycare centers, parks and playgrounds, and medical facilities.

Residential areas are considered sensitive 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 pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution, even though exposure periods during exercise are generally short. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent as most of the workers tend to stay indoors most of the time.

Construction activities and the operational phase of the General Plan could involve activities that could expose sensitive receptors to pollutant concentrations.

Short-Term Construction Emissions and Exposure to TACs at Surrounding Land Uses

Implementation of the General Plan would result in the construction of new buildings, structures, paved areas, roadways, utilities, and other improvements. Heavy-duty construction equipment, haul trucks, on-site generators, and construction worker vehicles associated with this construction could generate diesel PM, which the ARB has

identified as a TAC. This includes construction activities associated with development anticipated under the proposed General Plan Update.

Generation of diesel PM from construction projects typically occurs in a single area (e.g., at the project site) for a short period of time but could also include linear infrastructure projects to support new land uses. Because construction activities and subsequent emissions vary depending on the phase of construction (e.g., grading, building construction), the construction-related emissions to which nearby receptors are exposed would also vary throughout the construction period.

During some equipment-intensive phases, such as grading, construction-related emissions would be greater than other less equipment-intensive phases such as building construction or architectural coatings. Even in intensive phases of construction, there would not be substantial pollutant concentrations, with the potential exception of the immediate vicinity of the construction site. Concentrations of mobile-source diesel PM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (ARB 2005).

The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance in the environment and the extent of exposure a person has with the substance; a longer exposure period to a fixed amount of emissions would result in higher health risks for the Maximally Exposed Individual (MEI). According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments (HRAs) used to determine the exposure of sensitive receptors to TAC emissions should be based on a 30-year exposure period.

Construction activities associated with the General Plan would produce intermittent and temporary construction emissions. Development would occur throughout the Planning Area, including infill and mixed-use development and around existing sensitive receptors. However, because the use of off-road heavy-duty diesel equipment would be temporary and intermittent, and because of the highly dispersive properties of diesel PM (concentrations lower extremely quickly over distance; Zhu et al. 2002), construction-related TAC emissions associated with typical construction activities are not expected to expose sensitive receptors to substantial concentrations of TACs.

In addition, it is important to note that emissions from construction equipment would be reduced over the period of buildout of the General Plan. In January 2001, EPA promulgated a final rule to reduce emissions standards for heavy-duty diesel engines in 2007 and subsequent model years. These emissions standards represented a 90 percent reduction in NO_x emissions, 72 percent reduction of non-methane hydrocarbon emissions, and 90 percent reduction of PM emissions in comparison to the emissions standards for the 2004 model year. In December 2004, ARB adopted a fourth phase of emission standards (Tier 4) in the Clean Air Non-road Diesel Rule that are nearly identical to those finalized by EPA on May 11, 2004. As such, engine manufacturers were required to meet after-treatment-based exhaust standards for NO_x and PM starting in 2011 that are more than 90 percent lower than 2004 levels, putting emissions from off-road engines virtually on par with those from on-road heavy-duty diesel engines. As construction equipment continues to turnover and/or be retrofitted over time, diesel PM emissions associated with construction will continue to decrease.

The following goal and policy related to exposure of sensitive receptors to construction-related TAC emissions would be revised as a part of the proposed General Plan Update, with additions shown in **bold, underlined** text and deletions shown in ~~strikethrough~~ text:

Goal AQ1.1: ~~Improve Roseville's air quality by: a) — Achieving and~~ **Reduce local air pollutant emissions to assist with meeting and** maintaining ambient air quality standards established by the U.S. Environmental Protection Agency and the California Air Resources Board; and, ~~b) and~~ minimizing public exposure to toxic or hazardous air pollutants and air pollutants that create a public nuisance through irritation to the senses (such as unpleasant odors).

- ▶ **Policy AQ1.3: Projects that could generate substantial air pollutant emissions or expose sensitive uses to substantial air pollutant concentrations should incorporate strategies to reduce operational emissions, applicable emissions control exposure to such emissions using measures recommended by the Placer County Air Pollution Control District, and other relevant applicable, feasible strategies, as needed, to avoid significant air quality impacts** ~~Develop consistent and accurate procedures for evaluating the air quality impacts of new projects.~~

The proposed General Plan Update changes listed above would reduce air pollutant emissions, including TAC emissions, and therefore these changes would not result in any adverse environmental impacts.

Conclusion – Construction Emissions

Compliance with California state laws that limit the idling of heavy-duty vehicles and equipment would limit the on-site generation of DPM within the bounds of any construction site within the Planning Area. PCAPCD rules (including Rule 202, 205, 217, and 218) would limit construction-related emissions, including DPM and ROG emissions. The proposed General Plan Update Policy AQ1.3 calls for the implementation of strategies to reduce exposure to such emissions. Proposed General Plan Update Policy AQ1.3, is designed to reduce emissions generated by projects developed within the Planning Area by incorporating strategies recommended by PCAPCD to reduce exposure to such emissions, such as the use of electrified equipment, setbacks for staging areas from sensitive users, limitations on vehicle idling, and other measures. All future development within the Planning Area that could generate substantial emissions will incorporate strategies to reduce emissions, consistent with General Plan policy. While the selection of specific measures would be project-specific, incorporation of measures such as use of diesel-powered construction equipment with engines that meet high tier emission standards (such as Tier 2, 3, or 4), adherence to idling limitations, and use of alternatively-fueled equipment where possible, would all reduce construction-related emissions of diesel exhaust, and thereby DPM during short-term construction activities that could occur in proximity to sensitive receptors. In addition, all the City's Specific Plans included preparation of an EIR and mitigation measures to reduce air pollutant emissions impacts, which would apply to all development within each Specific Plan Area.

All future development with the potential to generate substantial construction-related emissions would be required to reduce those emissions. Adherence to California state law limiting idling of heavy-duty equipment and vehicles, PCAPCD rules, and proposed General Plan Update Policy AQ1.3, would reduce exposure of sensitive receptors to substantial TAC concentrations. Emissions from construction equipment would be reduced during the planning horizon as rules and regulations are phased in and the construction equipment fleet becomes cleaner. The use of off-road heavy-duty diesel equipment during construction would be temporary and intermittent and diesel PM would disperse quickly with distance from construction sites. Health risk assessments use a 30-year exposure period when analyzing potential effects, and construction schedules for projects implemented under the General Plan would be substantially shorter than this. While infill development will occur during the planning horizon, the

City does not anticipate the scale of infill development adjacent to sensitive receptors that would result in any potentially significant impact. Therefore, the impact is considered **less than significant**.

Long-Term Operational Emissions and Exposure to TACs at Surrounding Land Uses

The General Plan Land Use Map includes residential, commercial, and industrial uses. Residential land uses do not typically generate substantial TAC emissions. Commercial land uses may potentially include stationary sources of TACs, such as dry-cleaning establishments and diesel-fueled back-up generators.³ These types of stationary sources, in addition to any other stationary sources (including industrial land uses) that may emit TACs would be subject to PCAPCD Rules and Regulations. Land uses that are more likely to generate substantial TAC emissions include industrial land uses that involve stationary sources and manufacturing processes.

ARB has developed the *Air Quality and Land Use Handbook: A Community Health Perspective* (ARB Handbook) to provide guidance on land use compatibility with sources of TACs (ARB 2005). These sources include freeways and high-traffic roads, commercial distribution centers, rail yards, refineries, dry cleaners, gasoline stations, and industrial facilities. The handbook is not a law or adopted policy but offers advisory recommendations for the siting of sensitive receptors near uses associated with TACs. The handbook indicates that land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

The recommendations relevant to the General Plan include:

- ▶ 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.
- ▶ 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).
- ▶ 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.
- ▶ Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
- ▶ 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 3 or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perc dry cleaning operations.

³ Potential risk associated with dry cleaners has, and will continue to be, dramatically reduced. At its public hearing on January 25, 2007, the ARB approved amendments to the Dry Cleaning ATCM and the adoption of requirements for Perc manufacturers and distributors. The amendments will over time phase out the use of Perc dry cleaning machines and related equipment by January 1, 2023. In addition, the amendments will put in place revisions to the Curriculum for the Environmental Training Program for Perc Dry Cleaning Operations (Training Curriculum). On December 27, 2007, the approved Dry Cleaning ATCM and the requirements for Perc manufacturers and distributors became state law.

- ▶ 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.

Within or adjacent to the Planning Area, there are two freeways (Interstate 80 and State Highway 65), several distribution centers, a rail yard, dry cleaning operations, and gas stations, but there are no existing chrome platers. Areas with a land use designation of General Industrial on the City's General Plan Land Use Map allow heavy industrial uses, such as chrome platers, so there is the potential for such a use to be proposed in the future.

Freeways/High Capacity Roadways

None of the City's roadways would have traffic volumes in excess of 100,000 trips a day; therefore the ARB siting guidelines do not apply to the City's roadways. However, the City includes two freeways: Interstate 80 and Highway 65. Daily vehicle volumes on Interstate 80 within the Planning Area boundaries range from approximately 125,300 average annual daily trips at the northern boundary of the Planning Area along Interstate 80 at the junction with State Route 65 to approximately 192,100 average annual daily trips at the southern boundary of the Planning Area along Interstate 80 at the Sacramento – Placer County Line. Similarly, daily vehicle volumes along State Route 65 within the Planning Area range from approximately 76,800 average annual daily trips at Washington Boulevard to 117,000 average annual daily trips at the junction with Interstate 80. These traffic volumes exceed the 100,000 vehicles per day threshold that defines a high-volume roadway in an urban area (California Public Resources Code Section 21151.8) and for which ARB recommendations to avoid siting new sensitive land uses within 500 feet are applicable.

Although the ARB Handbook recommends siting sensitive receptors, such as residential uses, at least 500 feet from a freeway, it is recognized that siting such uses near major transportation hubs can reduce VMT and GHG. In many communities, infill and compact development is located near freeways and has many benefits, including the reduction of certain air emissions due to increased active transportation (promoting biking and walking), providing more transit-oriented development, and shortening personal vehicle trips, as well as facilitating community connectivity. While a per-capita reduction in vehicle miles travelled can often be achieved locally from infill and compact development, it is important to still consider potential exposure near high-volume roadways, particularly Interstate 80 and State Route 65 that see a substantial amount of traffic from pass-through regional trips, not only local trips.

Following the 2005 publication of the Handbook, ARB also published the *Technical Advisory: Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways* as a supplement to the Handbook to provide information on scientifically based strategies to reduce exposure to emissions near high-volume roadways in order to protect public health (ARB 2017). This Technical Advisory explains that reduced exposure to traffic-related pollution can be achieved while pursuing infill development that independently provides public health benefits. With careful evaluation of exposure, health risks, and affirmative steps to reduce risk, where necessary, ARB's assumption is that infill development, mixed use, higher density, transit-oriented development, and/or other development types that benefit regional air quality can be compatible with protecting the health of individuals at the neighborhood level. The Technical Advisory identifies strategies to reduce air pollution exposure near roadways, including those that reduce vehicular emissions, such as incorporation of roundabouts for speed reduction, traffic signal management, and speed limit reductions on high-speed roadways (those greater than 55 miles per hour); strategies that reduce the concentrations of traffic pollution, such as urban design that promotes

air flow, solid barriers to pollution, and vegetation to reduce pollutant concentrations; and strategies that remove pollution from indoor air such as through high efficiency filtration. Without the inclusion of such strategies, development near the high-volume roadways in the Planning Area could expose future sensitive receptors to substantial mobile sources of TACs.

Diesel Trucks: Loading Docks and Distribution Sites

Operational activities that require the use of diesel-fueled vehicles for extended periods, such as commercial trucking facilities or delivery/distribution areas, may generate diesel PM emissions that could expose sensitive receptors to diesel PM emissions. Although project-specific commercial and industrial uses that would be developed under the General Plan cannot be identified at this time, it is possible that uses developed under the General Plan could have tenants that would require large delivery and shipping trucks that use diesel fuel. The diesel exhaust PM emissions generated by these uses would be produced primarily at single locations on a regular basis (e.g., loading dock areas). Idling trucks, including TRUs, increase diesel PM levels at these locations. Occupants of nearby existing and proposed residences could be exposed to diesel exhaust PM emissions on a reoccurring basis.

To address these potential impacts, ARB has adopted an idling restriction Airborne Toxic Control Measure (ATCM) for large commercial diesel-powered vehicles, which became effective February 1, 2005. In accordance with this measure, affected vehicles are required to limit idling to no longer than 5 minutes, under most circumstances. In addition, projects that utilize TRUs as part of their operations or facilities that meet the required number of loading docks would be required to comply with the ARB's Transport Refrigeration Unit ATCM, which sets in-use emission performance standards for TRUs to limit diesel PM emissions.

The regulations described above address the smaller-scale loading docks and sites, such as large-format retail stores and grocery stores, which have intermittent deliveries. However, this may not be sufficient for distribution centers, which experience large volumes of daily truck traffic. The ARB Handbook recommends sensitive uses be located a minimum of 1,000 feet from distribution centers, to allow the dispersion (lowering concentration) of air pollutants over distance. Distribution centers are permitted within the City's industrial land use designations. None of the City's existing distribution centers are located within 1,000 feet of a residential area or other sensitive receptor, but future development could expose sensitive receptors to diesel exhaust PM emissions.

Roseville Rail Yard

In October 2004, ARB released the Roseville Rail Yard Study that included a health risk assessment of the DPM emissions from locomotive operations at the Rail Yard (ARB 2004). Key findings of the Roseville Rail Yard Study include:

- ▶ The DPM emissions in 2000 from locomotive operations at the Roseville Rail Yard were estimated to be about 25 tons per year.
- ▶ The health risk assessment showed elevated concentrations of DPM and associated cancer risk impacting a large area around the Rail Yard. These elevated concentrations, which are above the regional background level, contribute to an increased risk of acute and chronic health conditions.

- ▶ With implementation of mitigation, DPM emissions reported in 2007 were 19 tons (down from 25 tons in 2000).

Since the release of the ARB 2004 Roseville Rail Yard Study and subsequent report for the Roseville Rail Yard Air Monitoring Project, locomotive emissions standards have increased through the EPA adoption of regulations to tighten emission standards for existing and remanufactured locomotives, and set exhaust emission standards for newly build locomotives of model years 2011–2014 (Tier 3) and 2015 and beyond (Tier 4). The regulation is expected to reduce PM emissions from locomotive engines by as much as 90 percent and oxides of nitrogen (NO_x) emissions by as much as 80 percent when fully implemented. With use of engines that meet more stringent emissions standards, it is expected that the overall health risk associated with the Roseville Rail Yard has been reduced from that identified by the 2004 ARB study. However, an updated health risk assessment of the Roseville Rail Yard has not been prepared since 2004 and the recommended buffer distance identified in the Air Quality and Land Use Handbook (ARB 2005), which is based upon findings from the Roseville Rail Yard study, is a reasonable minimum buffer distance to adhere to for separation of the Roseville Rail Yard and sensitive receptors.

As discussed previously for high-volume roadways, there are strategies that can be implemented to reduce air quality impacts, and allow the siting of sensitive receptors in closer proximity to the Roseville Rail Yard. While the ARB Technical Advisory presents strategies specifically in the context of high-volume roadways, the ARB Technical Advisory acknowledges that scientific evidence indicates that implementing the strategies contained in the Technical Advisory would decrease exposure to air pollution in a variety of locations and contexts, so these strategies are applicable in a broad range of developments, not just those located near high-volume roadways. In addition, ARB is working to reduce harmful emissions from locomotives and railyards and has draft concepts to reduce toxic air contaminants for locomotives in-use, idling, and maintenance activities, as well as emissions from other equipment at railyards. While these actions are not yet approved or implemented, ARB has demonstrated success in working with the South Coast Air Quality Management District. ARB has also petitioned EPA for locomotive engine emissions standards that would exceed the current Tier 4 emissions standards. Should these concepts and more stringent emissions standards go into effect throughout the planning horizon of the General Plan, emissions associated with the Rail Yard can be assumed to be further reduced over time.

Other Sources of TACs

Other sources of TACs include, but are not limited to, industrial processes, such as petroleum refining and chrome plating operations, and commercial operations, such as gasoline stations and dry cleaners. Within or adjacent to the Planning Area, there are dry cleaning operations and gas stations, but there are no existing chrome platers. The City's Land Use Map includes light industrial, industrial, and commercial land uses. The City's land use designations define allowable land use broadly, and provide for a range of consistent land uses typical of each land use type. The Zoning Ordinance, Specific Plans, and Community Design Guidelines provide more specific standards to ensure compatibility among adjacent land uses. The Land Use Element of the General Plan specifies the uses allowable within each land use designation type, as well as compatibility for adjacent land use designations.

While these standards will help reduce potential exposure of sensitive receptors to operational-source TAC emissions, industrial and commercial operations within the Planning Area could include facilities that would emit TACs, such as fueling stations, in proximity to proposed or existing sensitive receptors. The ARB Handbook recommends sensitive uses be located a minimum of 1,000 feet of a chrome plater, 300 feet of any dry cleaning

operation or 500 feet of a dry cleaning operation with two or more machines, and 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater) or 50 feet from a typical gas dispensing facility, to allow the dispersion (lowering concentration) of air pollutants over distance. In addition, any future or proposed facility or equipment that may emit pollutants from a stationary source into the atmosphere must first obtain an Authority to Construct permit from the PCAPCD. The PCAPCD reviews each proposed use and if it is determined that there are potential risks, a risk assessment and menu of site-specific measures that would lessen impacts associated with TACs would be required to be implemented.

The following policies related to operational TAC emissions in Roseville would be revised as a part of the proposed General Plan Update, with additions shown in **bold, underlined** text and deletions shown in ~~strikethrough~~ text:

- ▶ **Policy AQ1.2:** Work with the Placer County Air Pollution Control District to monitor air pollutants of concern on a continuous basis: **and support Air District efforts to minimize emissions from stationary sources.**
- ▶ **Policy AQ1.3:** **Projects that could generate substantial air pollutant emissions or expose sensitive uses to substantial air pollutant concentrations should incorporate strategies to reduce operational emissions, applicable emissions control exposure to such emissions using measures recommended by the Placer County Air Pollution Control District, and other relevant applicable, feasible strategies, as needed, to avoid significant air quality impacts** ~~Develop consistent and accurate procedures for evaluating the air quality impacts of new projects.~~
- ▶ **Policy AQ1.12:** Develop transportation systems that ~~minimize vehicle delay and~~ **reduce vehicle emissions by improving the desirability of walking, bicycling, and public transportation relative to vehicular travel** ~~air pollution.~~
- ▶ **Policy AQ1.13:** ~~Develop~~ **Identify feasible strategies to reduce** ~~consistent and accurate procedures for mitigating transportation emissions from new and existing projects~~ **and transportation associated with existing development within the Planning Area.**
- ▶ **Policy AQ1.14:** Encourage alternative modes of transportation, including pedestrian, bicycle, and transit ~~usage~~ **use.**
- ▶ **Policy AQ1.16:** ~~Encourage~~ **Implement** land use policies that maintain and improve air quality **and expand opportunities for transit-oriented development, which allows residents to significantly reduce vehicular transportation and associated air pollutant emissions.**
- ▶ **Policy AQ1.22:** **Support improvements to diesel engines, limits on idling, and incorporation of technology and management practices that reduce harmful emissions at the Rail Yard.**

The proposed General Plan Update changes listed above would reduce potential health impacts associated with TAC emissions by promoting the separation of sensitive land uses from sources of TACs, minimizing emissions from stationary sources, reducing vehicle miles traveled and therefore congestion on the high-volume roadways (Interstate 80 and Highway 65) and associated mobile emissions, and reducing emissions associated with the Rail Yard. Therefore, the proposed policy revisions would not result in any adverse environmental impacts.

Conclusion – Long-term Operations

Existing General Plan Air Quality Policy 4 and 8 (listed previously in the Regulatory Framework section, and which have been renumbered for the proposed General Plan Update), as well as revised proposed General Plan Update Policies AQ1.2, 1.3, AQ1.12, AQ1.13, AQ1.14, AQ1.16, and AQ1.22, as listed above, would help to reduce operational TAC emissions. However, because specific development proposals cannot be determined at this time, it is possible that development planned under the General Plan could generate substantial TAC emissions as a result of long-term operations. In addition, individual development projects could be located within the siting distances recommended by ARB's Air Quality and Land Use Handbook, and sensitive receptors could experience the adverse health effects from TACs. With general plans, it is not possible to list each type of new stationary source or describe TAC exposure for any given project or location within the Planning Area without substantial speculation. It is expected that projects developed consistent with the General Plan would include stationary sources of TACs, such as gasoline-dispensing facilities, dry cleaners, and diesel-fueled backup generators. These stationary sources require permits from the PCAPCD, to ensure emissions do not exceed standards, and do not result in significant impacts. In addition, it is possible, particularly with the promotion of infill development near Interstate 80 and west of the Roseville Rail Yard, as well as development along State Route 65, that new sensitive receptors would be sited in proximity to existing sources of mobile TAC emissions. Without incorporation of recommended buffer distances between sensitive receptors and TAC sources, as described above, and/or inclusion of design features to reduce exposure to TACs, future sensitive receptors could be exposed to substantial concentrations of TACs. This impact is **significant**.

Mitigation Measures

Mitigation Measure 4.4-3 – The proposed General Plan Update should be amended as follows:

Implementation Measure

- ▶ The City shall require, as part of plans for development within the Planning Area, the implementation of ARB's *Air Quality and Land Use Handbook: A Community Health Perspective* guidance concerning land use compatibility and recommended setback distances with regard to sources of TAC emissions and sensitive land uses, or related guidance as it may be updated in the future.
- ▶ As an alternative to these buffer distances, proposed sensitive receptors, uses that involve substantial truck trips, and large gas stations may provide a site-specific health risk assessment, using methods consistent with applicable guidance from the Office of Environmental Health Hazard Assessment, with mitigation, if necessary, to demonstrate compliance with applicable PCAPCD-recommended health risk thresholds. When health risk impacts exceed PCAPCD-recommended thresholds, feasible on-site mitigation measures to reduce TAC exposure shall be implemented to mitigate health risk impacts below PCAPCD-recommended thresholds. On-site measures could include but are not limited to providing enhanced filtration systems (e.g., MERV 13 or greater) for near-by sensitive receptor buildings, use of solid barriers to pollution, and vegetation to reduce pollutant concentrations, changes to the TAC emission source's operation (e.g. technology or management practices that reduce harmful emissions at the Rail Yard), and positioning of exhaust and intake for ventilation systems to minimize exposure, among others.
- ▶ The City shall require, as part of development of land uses associated with sensitive receptors within 500 feet of high-volume roadways (defined as roadways carrying an average of 100,000 or more vehicles per day), the

incorporation of feasible design measures to reduce exposure by sensitive receptors of substantial emissions of TACs from nearby high-volume roadways and operation of the Roseville Rail Yard. Design measures shall include recommended strategies from the ARB Technical Advisory, as listed below or as they may be updated in the future, or those design features determined by the City to be as effective:

- Design that promotes air flow and pollutant dispersion along street corridors, including the use of wider sidewalks, bicycle lanes, and dedicated transit lanes, which create space for better air flow and pollutant dispersion along with increasing active transportation and mode shift;
- Installation of solid barriers, particularly in the downwind direction. Note that consideration of this strategy should also weigh the negative effect of dividing neighborhoods and obscuring sightlines.
- Installation of vegetation for pollutant dispersion; maximum benefit of this strategy is typically seen when combined with solid barriers.
- Installation of indoor high-efficiency filtration systems and devices to remove pollutants from the air. If this strategy is selected, a plan for ongoing operation and maintenance of the systems must also be developed to ensure long-term efficiency is achieved as intended by the system.

Significance after Mitigation

Conclusion – Construction Emissions

As noted above, construction-related effects are less than significant without the need for additional mitigation.

Long-Term Operations

As discussed under Impact 4.4-2, Mitigation Measure 4.4-2a would establish mitigation to reduce operational emissions of criteria air pollutants, including DPM, from development projects within the Planning Area. With implementation of this mitigation, buildout of the General Plan would be compliant with General Plan Policies AQ-3, AQ-14, and AQ-16. Mitigation Measure 4.4-3 discourages development in locations that would conflict with the buffer recommendations by ARB (ARB 2005). In the case that recommended buffer distances cannot be achieved, Mitigation Measure 4.4-3 also requires the implementation of design features specifically considering reduction in generation of and exposure to TACs. Mitigation Measure 4.4-3 would also reduce exposure for future sensitive receptors along high-volume roadways within the Planning Area by requiring the implementation of feasible design features identified by ARB as potential strategies to reduce exposure to TACs along high-volume roadways, such as Interstation 80 and State Route 65, as well as near the Roseville Rail Yard. Regarding permitted sources, as described above, the PCAPCD issues permits and monitors new and modified sources of air pollutants to ensure compliance with national, state, and local emissions standards that govern TAC sources. While these measures reduce potential likelihood of exposure of sensitive receptors to substantial pollutant concentrations, because the specific development projects within the Planning Area cannot be defined at the time of this analysis, precise effectiveness of these measures cannot be determined and the potential for sensitive receptors to be exposed to TACs is still considered significant. There are no additional feasible mitigation measures available. This impact is **significant and unavoidable**.

IMPACT
4.4-4

Result in Concentrated Carbon Monoxide Levels (“hotspots”). *Buildout of the General Plan would contribute vehicles to local intersections that could cause a CO hotspot (i.e., exceedance of the CO ambient air quality standard). However, due to requirements for cleaner vehicle emissions, proposed land use and transportation goals and policies, and use of intelligent transportation system equipment, it is not anticipated that the General Plan’s land uses would contribute substantial vehicle volumes to existing or future intersections that could cause a CO hotspot. The impact is considered less than significant.*

A mobile-source pollutant of localized concern is CO. Continuous engine exhaust may elevate localized CO concentrations, or “hot spots.” Local mobile-source emissions of CO near roadway intersections are a direct function of traffic volume, speed, and delay. CO typically disperses rapidly with distance from the source under normal meteorological conditions. Under specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels for local sensitive land uses such as residential units, hospitals, schools, and childcare facilities. CO hot spots are typically observed at heavily congested roadway intersections where a substantial number of gasoline-powered vehicles idle for prolonged durations throughout the day. Construction sites are less likely to result in localized CO hot spots due to the nature of construction activities, which normally utilize diesel-powered equipment for intermittent or short durations.

Emissions and ambient concentrations of CO have decreased substantially throughout California in the past three decades. The national statewide CO standard is attained statewide in California, and an exceedance of NAAQS or CAAQS in the region was last recorded in 1993. This is primarily attributable to requirements for cleaner vehicle emissions. The Federal Motor Vehicle Control Program has mandated increasingly lower emission levels for vehicles manufactured since 1973. Between 2000 and 2016, national average CO concentrations decreased by approximately 61 percent and regional average CO concentrations in the California and Nevada region decreased by approximately 60 percent (EPA 2018b).

While ambient CO concentrations in the region have not exceeded NAAQS or CAAQS in many years, localized CO concentrations could still occur, particularly at intersections of high-volume roadways. As described in the methodology section above, the PCAPCD screening criteria are used below to evaluate potential CO hot spot impacts. According to the PCAPCD screening criteria, a project could have the potential to create a violation of the CO standard if the project’s CO emissions from vehicle operations are more than 550 pounds per day and if either of the following scenarios are true for any affected intersection:

- ▶ A traffic study for the project indicates that the peak-hour LOS on one or more streets or at one or more intersections (both signalized and non-signalized) in the project vicinity will be degraded from an acceptable LOS (e.g., A, B, C, or D) to an unacceptable LOS (e.g., E or F); or
- ▶ A traffic study indicates that the project will substantially worsen an already existing unacceptable peak-hour LOS on one or more streets or at one or more intersections in the project vicinity. “Substantially worsen” includes situations where a delay would increase by 10 seconds or more when project-generated traffic is included.

Although emissions modeling for operations under full buildout of the General Plan indicates that mobile-generated emissions of CO would exceed 550 pounds per day, these emissions estimates account for all mobile operations throughout the Planning Area and not those associated with one specific development project associated with the 2035 General Plan.

The City of Roseville invests in intelligent transportation system (ITS) equipment, including interconnecting traffic signals, enhanced signal controllers, and traffic cameras that allow traffic engineers to monitor real-time conditions, make modifications to signal operations, and be alerted to problems at intersections or with the traffic signal system. ITS can also obtain congestion data and traffic counts. By making traffic flow more efficiently, ITS avoids excessive congestion and improves the operational performance of the City's roadway system.

While use of ITS equipment is likely to minimize traffic congestion and reduce the chance for CO hotspots throughout the Planning Area, because the traffic study indicates that the project will worsen already existing peak-hour LOS F on one or more streets or at one or more intersections in the Planning Area, it is conservatively assumed that buildout of the 2035 General Plan could exceed PCAPCD's recommend CO hotspot screening criteria.

PCAPCD works closely with the Sacramento Metropolitan Air Quality Management District (SMAQMD) due to their proximity and similar air quality issues. SMAQMD provides additional screening methods to determine if a project would have the potential to create a violation of the CO standard. If all of the following criteria are met, the General Plan would result in a less-than-significant impact on air quality for local CO:

- ▶ The project would not result in an affected intersection experiencing more than 31,600 vehicles per hour.
- ▶ The project would not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, below-grade roadway, or other locations where horizontal or vertical mixing of air would be substantially limited.
- ▶ The mix of vehicle types at the intersection is not anticipated to be substantially different from the County average.

According to traffic analysis performed in support of this EIR, average daily traffic volumes would range from approximately 3,100 vehicles per day to a maximum of 76,200 vehicles per day, which would occur on Blue Oaks Boulevard between Foothills and Washington boulevards. The peak-hour volumes are anticipated to be approximately 7,600 vehicles per hour. To exceed the screening criteria value of 31,600 vehicles per hour, traffic levels would need to increase by more than four times the volume that is anticipated with buildout of the General Plan. Therefore, buildout of the General Plan would not increase traffic volumes on the roadways and at intersections to more than 31,600 vehicles per hour. In addition, the ITS system would address concerns of potential CO concentrations being trapped in a tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadway by allow traffic engineers to monitor real-time conditions, make modifications to signal operations, and be alerted to problems at intersections or with the traffic signal system. Finally, the mix of vehicle types within the Planning Area would not be different from the County average. If anything, transportation planning would promote the reduced reliance on personal automobiles, increased use of public transit, and increased use of alternative fuel vehicles compared to the County average, thereby reducing potential mobile-source CO emissions.

The City's Specific Plans each included a traffic analysis and an evaluation of potential CO hotspots. Most recently, the City's existing General Plan land uses were adopted in conjunction with the adoption of the Amoruso Ranch Specific Plan and associated EIR. The Amoruso Ranch Specific Plan EIR included a quantified hotspots analysis of the City's most congested intersections, and the analysis of CO hotspots found that, even at

the most heavily travelled intersection within the Planning Area, CO concentrations would be expected to be significantly lower than the NAAQS and would not pose any risk of generating a CO hotspot.

The following policies related to CO hotspots would be revised as a part of the proposed General Plan Update, with additions shown in **bold, underlined** text and deletions shown in ~~strikethrough~~ text:

- ▶ **Policy AQ1.12:** Develop transportation systems that ~~minimize vehicle delay and~~ **reduce vehicle emissions by improving the desirability of walking, bicycling, and public transportation relative to vehicular travel** ~~air pollution.~~
- ▶ **Policy AQ1.13:** Develop **Identify feasible strategies to reduce** ~~consistent and accurate procedures for mitigating~~ transportation emissions from new ~~and existing~~ projects **and transportation associated with existing development within the Planning Area.**
- ▶ **Policy AQ1.14:** Encourage alternative modes of transportation, including pedestrian, bicycle, and transit ~~usage~~ **use.**
- ▶ **Policy AQ1.15: Promote and incentivize low-emissions vehicles and associated charging infrastructure. Pursue funding from state programs and other sources to facilitate local purchase and use of electric vehicles.**
- ▶ **Policy AQ1.16:** Encourage **Implement** land use policies that maintain and improve air quality **and expand opportunities for transit-oriented development, which allows residents to significantly reduce vehicular transportation and associated air pollutant emissions.**
- ▶ **Policy CIRC2.1:** Maintain a level of service (LOS) "C" standard at a minimum of 70 percent of all signalized intersections and roadway segments in the City during the a.m. and p.m. peak hours. Exceptions to the LOS "C" standard may be considered ~~for intersections where the City finds that the required improvements are unacceptable based on established criteria identified in the implementation measures~~ **required to achieve the standard would adversely affect pedestrian, bicycle, or transit access, or where feasible LOS improvements and travel-demand-reducing strategies have been exhausted.**
- ▶ **Policy CIRC2.2:** Strive to meet the level of service standards through a balanced transportation system that reduces the auto emissions that contribute to climate change by providing alternatives to the automobile and avoiding excessive vehicle congestion through roadway improvements, Intelligent Transportation Systems, **pedestrian and bicycle improvements,** and transit improvements.
- ▶ **Policy CIRC2.3:** Work with neighboring jurisdictions to provide acceptable and compatible levels of service on the roadways that cross the City's boundaries.
- ▶ **Policy CIRC2.4:** Secure adequate funding for all components of the City's transportation system to ensure level of service policy is maintained.
- ▶ **Policy CIRC2.5:** ~~Enable the City to designate a Pedestrian District over a geographic area for the purpose of implementing measures that promote pedestrian walkability and reduce total vehicle miles traveled and resultant air pollution emissions that contribute to climate change. In these districts, the City recognizes that pedestrian~~ **and bicycle travel takes and transit access have** a higher priority than automobile travel, ~~which~~

~~could reduce the vehicular level of service.~~ **in the City's Pedestrian Districts, and development projects in these areas are exempt from the City's LOS standard.**

► **Policy CIRC2.6: Prioritize investments in pedestrian, bicycle, and transit access in Pedestrian Districts.**

The proposed General Plan Update policy changes listed above would reduce the potential for CO hotspots to occur by reducing vehicle miles traveled and thereby roadway congestion, promoting and incentivizing low-emissions vehicles, requiring LOS standards be met, and promoting pedestrian, bicycle, and transit access in Pedestrian Districts, and therefore this change would not result in any adverse environmental impacts.

Conclusion

Existing General Plan Level of Service Policies 2, 3, and 4 (listed previously in the Regulatory Framework section, and which have been renumbered for the proposed General Plan Update), as well as revised proposed General Plan Update Policies AQ1.12 through 1.16, and CIRC2.5 and 2.6, listed above, would help to reduce the potential for CO hotspots. The City of Roseville ITS also serves to improve traffic flow, avoid excessive congestion, and improve the operational performance of the City's roadway system, thereby reducing the likelihood for and extent of delays at intersections. In addition, as described in the foregoing analysis, the level of traffic on the roadways within the Planning Area would not reach a level that would generate a quantity of CO emissions from mobile sources that would result in or substantially contribute to a CO hotspot within the Planning Area. This impact would be considered **less than significant**.

IMPACT 4.4-5 Result in Other Emissions (such as those leading to odors) Adversely Affecting a Substantial Number of People. *The proposed General Plan Update includes policies that would avoid exposure of a substantial number of people to objectionable odors. This impact is significant.*

Buildout of the General Plan could involve actions that would expose people to objectionable odors. The human response to odors is subjective and sensitivity to odors varies greatly among the public. Two situations increase the potential for odor problems. The first occurs when a new odor source is located near existing sensitive receptors. The second occurs when new sensitive receptors are developed near existing sources of odors.

During construction, the predominant source of power for construction equipment is diesel engines. Odors from these sources would be localized and generally confined to the immediate area surrounding the development area. Exhaust odors from diesel engines, as well as emissions associated with asphalt paving and the application of architectural coatings, may be considered offensive to some individuals. Similarly, diesel-fueled trucks traveling on local roadways would produce associated diesel exhaust fumes. However, odors associated with diesel fumes, asphalt paving, and architectural coatings would be temporary and would disperse rapidly with distance from the source. Projects constructed within the Planning Area would use typical construction techniques, and the odors would be typical of most construction sites and temporary in nature.

Operationally, the following land use types are widely considered major sources of odors: wastewater treatment and pumping facilities, chemical manufacturing facilities, sanitary landfills, fiberglass manufacturing facilities, transfer stations, painting/coating operations (e.g., auto body shops), composting facilities, food processing facilities, confined animal facilities, asphalt batch plants, rendering plants, metal smelting plants, and coffee roasters. This list is meant not to be entirely inclusive, but to act as general guidance. Future development of the Planning Area would include multiple land use types. Surrounding land uses include both agricultural and

industrial land uses, which are likely to generate odors that are detectable within and in the vicinity of the Planning Area. Future development within the Planning Area could result in the siting of sensitive receptors that would be exposed to these odor sources. It cannot be known at this time what specific development would be implemented and if any development would generate objectionable odors.

In the context of land use planning, one of the most important factors influencing the potential for an odor impact to occur is the distance between the odor source and receptors, or a “buffer zone.” The PCAPCD Handbook refers to the neighboring SMAQMD recommendations for buffer distances between sensitive receptors and a variety of odor-generating sources. These recommended buffer distances are listed below in Table 4.4-6.

Land Use / Type of Operation	Suggested Buffer Screening Distance
Wastewater Treatment Plant	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	1 mile
Transfer Station	1 mile
Composting Facility	2 miles
Petroleum Refinery	2 miles
Asphalt Batch Plant	2 miles
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting / Coating Operations	1 mile
Rendering Plant	4 miles
Coffee Roaster	1 mile
Food Processing Facility	1 mile
Feed lot / Dairy	1 mile
Green Waste and Recycling Operations	2 miles
Metal Smelting Plants	1 mile
Source: SMAQMD 2016	

Odor sources in the Planning Area would be expected to include cooking and food processing facilities; industrial sources such as the Western Regional Sanitary Landfill (WRSL), Materials Recovery Facility (MRF), City of Roseville Pleasant Grove Wastewater Treatment Plant (PGWWTP), the Rio Bravo Rocklin biomass power facility, Mallard Creek composting facility, Dry Creek Wastewater Treatment Plant; and dairy and chicken farms (dispersed throughout the region surrounding the western and northern boundaries of the Planning Area). The Planning Area is also surrounded by agricultural uses in each direction that can generate odors from a variety of processes, such as agricultural burning, livestock pens, fertilization, and composting, among others.

The northern boundary of the Planning Area is approximately 1.5 miles south of the WRSL and approximately 1.8 miles south of the MRF. While only a screening tool and not to be used as the sole factor to determine

significance, these facilities are located outside of the recommended buffer distance of 1 mile for a sanitary landfill. During the winter months, the wind direction is more typically from north to south, toward the Planning Area from these facilities.

The WRS� and MRF have had a history of odor complaints. In 2013, the PCAPCD received three complaints for odor. The complaints came from the Crocker Ranch, Whitney Ranch, and West Park residential developments all located south of the WRS� (City of Roseville 2016). In February 2015, the WRS� registered over 200 plus odor complaints. The PCAPCD monitors the WRS� odor complaints and, in February 2015, it issued the WRS� a notice of violation (NOV). Since the NOV was issued, PCAPCD receives real-time data from the WRS� regarding odor complaints made on the WRS� website (City of Roseville 2016). According to PCAPCD, in 2015, after the issuance of the NOV, the WRS� registered less than 30 odor complaints (City of Roseville 2016). Residential land uses are south of these facilities, along the norther border of the Planning Area. Given the complaint history of the facilities, it is likely that sensitive receptors would experience occasional odors from landfill and MRF operations.

The PGWWTP is in the western portion of the Planning Area, and is currently surrounded by open space with existing low-density residential development approximately 0.2 miles to the west, 0.3 miles to the south, and 0.5 miles to the west. The prevailing wind direction is south to north, but winds from north to south occur more often in the winter months. Proposed residential uses approximately 0.5 miles to the north would have the highest likelihood of exposure to intermittent odors from the PGWWTP. However, wastewater processing at PGWWTP incorporates odor control techniques, such as oxygenating the wastewater holding ditches so that non-anaerobic bacteria cannot produce gases. Considering the odor-controlling processes at PGWWTP, while the PGWWTP may occasionally emit odors that could be observed by residents within a half mile, it is unlikely that a substantial number of people would experience frequent odors as a result of the PGWWTP.

The Rio Bravo Rocklin biomass plant is located more than 1.5 miles northeast of the nearest residences within the Planning Area, along the northern border of the Planning Area surrounding Woodcreek Oaks Boulevard. There is no recommended screening distance in Table 4.4-6 for this type of facility, which burns wood to generate power, but could be compared to a green waste processing facility. The Mallard Creek composting facility is adjacent to the northern boundary of the Planning Area, approximately 0.3-mile east of the residential neighborhood at Woodcreek Oaks Boulevard. Both facilities are within less than the 2-mile screening distances identified in Table 4.4-6 from sensitive receptors. However, the prevailing winds are to the north, away from the Planning Area. In addition, based upon PCAPCD records as of 2018, PCAPCD received one odor complaint for the Rio Bravo Rocklin biomass power facility in 2011 (Placer County 2019).

The City of Roseville and PCAPCD work in cooperation with industrial facilities and agricultural producers to limit the odor emissions associated with manufacturing processes and agricultural burning. Other smaller and dispersed odor sources include residential and commercial dumpsters, which can be in proximity of sensitive receptors. However, with proper disposal containers and regular trash collection services, odors from residential and commercial dumpsters are typically minimized. PCAPCD Rule 205 provides that air contaminants emitted by any person shall not cause annoyances, and the PCAPCD provides an on-line complaint website and phone number if any resident experiences odor concerns.

The following proposed General Plan Update goal and policy related to odor-generating emissions are proposed for revision, with additions shown in **bold, underlined** text and deletions shown in ~~strikethrough~~ text:

Goal AQ1.1: ~~Improve Roseville's air quality by: a) Achieving and~~ **Reduce local air pollutant emissions to assist with meeting and** maintaining ambient air quality standards established by the U.S. Environmental Protection Agency and the California Air Resources Board; and, b) ~~and~~ minimizing public exposure to toxic or hazardous air pollutants and air pollutants that create a public nuisance through irritation to the senses (such as unpleasant odors).

- ▶ **Policy AQ1.22: Support improvements to diesel engines, limits on idling, and incorporation of technology and management practices that reduce harmful emissions at the Rail Yard.**

The proposed General Plan Update changes to Goal AQ1.1 and Policy AQ1.22, listed above, would reduce potential exposure to odor sources, and therefore these changes would not result in any adverse environmental impacts.

Conclusion

Construction-related activities would generate odors from the use of diesel-powered equipment and from paving and architectural coating activities. However, these odorous emissions would be temporary and disperse rapidly with distance from the source; therefore, construction-generated odors would not result in the frequent exposure of receptors to objectionable odor emissions. Furthermore, compliance with PCAPCD Rules 205 (Nuisance) 217 (Cutback and Emulsified Asphalt Paving Materials) and 218 (Architectural Coatings) is required, which would ensure that odors generated by short-term construction would not affect a substantial number of people.

Therefore, the impact from construction-related activities would be **less than significant**.

Long-term operations of future land uses developed with buildout of the General Plan could also generate other emissions, such as those leading to odors. All the City's Specific Plans included an odor evaluation and land uses were planned to adhere to recommended buffer distances, to the extent feasible. Revised proposed General Plan Update Goal AQ1.1 and Policy AQ1.22, listed above, would also reduce potential operational exposure to odor sources. It is not known at this time what specific development would be implemented and if any development would generate objectionable odors. However, future land uses could result in the operation of new land use that generates objectionable odors or the siting of sensitive receptors in proximity to existing odor-generating land uses within the Planning Area. In addition, proposed land use under the General Plan would include infill development adjacent to Interstate 80, a high-volume roadway, and near the Roseville Rail Yard. While an interstate or rail yard are not typically source of concern for substantial odor generation, these would present a source of diesel exhaust emissions. Because future development of the Planning Area could include the siting of new odor generating sources or could include the siting of future sensitive receptors in proximity to existing odor-generating sources (e.g. residential use within infill development areas) development under the General Plan could result in the exposure of receptors to objectionable odor emissions. The impact of potential odor-causing emissions from long-term operations is **significant**.

Mitigation Measures

Mitigation Measure 4.4-5 – *The proposed General Plan Update should be amended as follows:*

Implementation Measure

All new Specific Plans and proposed amendments to Specific Plans shall be evaluated for odor impacts using the SMAQMD-recommended screening distances for odor sources, or the most current adopted or recommended

version. If the minimum buffer distance is not feasible, as an alternative to these buffer distances, technology- and design-based measures shall be evaluated as part of the Specific Plan design guidelines to minimize, contain, or prevent the generation of odor-causing emissions and the dispersion of such emissions to nearby sensitive receptors. For example, in the case of siting odor-producing sources, activities could be maintained within an enclosed space and appropriate air filtration systems could be implemented to reduce odors expelled from the building. For developments that would host sensitive receptors, design would include air site layout, landscaping, indoor air filtration systems, or other appropriate measures to minimize exposure of proposed sensitive receptors to odors.

Significance after Mitigation

Development within the City shall comply with all applicable rules and regulations as listed above (e.g. PCAPCD Rule 205, 217, and 218). In addition, Compliance with General Plan Goal AQ1.3 would reduce local air pollutant emissions, including those leading to odors. Compliance with General Plan Policy AQ1.22 could reduce potential exposure by nearby sensitive receptors to odor emissions from the Roseville Rail Yard. Implementation of Mitigation Measure 4.4-3 to reduce indoor exposure to TACs, described in detail under Impact 4.4-3, would also result in a reduction in the intensity of offensive odors from surrounding odor sources. Implementation of Mitigation Measure 4.4-5 would reduce odor-producing emissions or reduce the potential that sensitive receptors would be exposed to such emissions, depending on the technology implemented for specific projects. However, because buffer distances and implementation of specific technology- and design-based measures cannot be known at this time, it is conservatively assumed that sensitive receptors could be exposed to substantial odor-generating emissions. There is no additional, feasible mitigation available. As a result, this impact is **significant and unavoidable**.

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