

3.3.1 INTRODUCTION

This section covers the topic of air quality, describing existing conditions at and surrounding the project site, summarizes relevant regulations and policies, and analyzes the anticipated impacts of implementing the Proposed Action.

Sources of information used in this analysis include:

- Sierra Vista Specific Plan EIR prepared by the City of Roseville (City of Roseville 2010); and
- Sierra Vista Specific Plan Air Quality/Greenhouse Gas Technical Report prepared by Rimpo and Associates (Rimpo and Associates 2009).

3.3.2 AFFECTED ENVIRONMENT

3.3.2.1 Regional Setting

The California Air Resources Board (CARB) has divided California into regional air basins according to topographic features. The proposed project is located in the City of Roseville, which is located in the Placer County portion of the Sacramento Valley Air Basin (the Air Basin). This portion of the Air Basin is under the jurisdiction of the Placer County Air Pollution Control District (Air District) for issues related to air quality planning. The Air District works in conjunction with the Sacramento Metropolitan Air Quality Management District (SMAQMD) and other air pollution control districts within the Air Basin to address air quality in the region.

The primary factors that determine air quality in any region are the locations of air pollutant sources, the amount of pollutants emitted, and meteorological and topographical conditions affecting their dispersion. Atmospheric conditions, including wind speed, wind direction, and air temperature gradients, interact with the physical features of the landscape to determine the movement and dispersal of air pollutants.

The Air Basin includes Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba Counties; the western urbanized portion of Placer County; and the eastern portion of Solano County. The Air Basin occupies 15,040 square miles and has a population of more than 2 million people. The Air Basin is bounded by the North Coast Ranges on the west and Northern Sierra Nevada Mountains on the east. The intervening terrain is flat and is often described as a bowl-shaped valley.

The Sacramento Valley Air Basin has a Mediterranean climate, characterized by hot, dry summers and mild, rainy winters. During the year, the temperature may range from 20 to 115 degrees Fahrenheit with summer highs usually in the 90s and winter lows occasionally below freezing. Average annual rainfall is about 20 inches with snowfall being very rare. The prevailing winds are moderate in strength and vary from moist breezes from the south to dry land flows from the north (SMAQMD 2009).

The mountains surrounding the Sacramento Valley create a barrier to airflow, which can trap air pollutants in the valley when meteorological conditions are right and a temperature inversion exists. The highest frequency of air stagnation events occur in the autumn and early winter when large high-

pressure cells lie over the valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in the air. The surface concentrations of pollutants are highest when these conditions are combined with smoke from agricultural burning or when temperature inversions trap cool air, fog, and pollutants near the ground.

The ozone season (May through October) in the Sacramento Valley is characterized by stagnant morning air or light winds with the Delta sea breeze arriving in the afternoon out of the southwest. Usually the evening breeze transports the airborne pollutants to the north out of the Sacramento Valley. During about half of the days from July to September; however, a phenomenon called the “Schultz Eddy” prevents this from occurring. Instead of allowing for the prevailing wind patterns to move north carrying the pollutants out of the valley, the Schultz Eddy causes the wind pattern and pollutants to circle back southward preventing dispersion and increasing the likelihood of federal and state air quality standards violations (SMAQMD 2009).

3.3.2.2 Ambient Air Quality Standards

Both the federal government and the State of California have established ambient air quality standards for several different pollutants. The US EPA sets National Ambient Air Quality Standards for the following seven pollutants: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), sulfur dioxide (SO₂), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and lead. These seven pollutants are commonly referred to as *criteria pollutants*. California Ambient Air Quality Standards have also been adopted for these pollutants, as well as for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. California standards are generally stricter than national standards. Each of the criteria pollutants that are relevant to the Proposed Action and that are of concern in the Air Basin are briefly described below. While reactive organic gases (ROGs) are not considered to be criteria air pollutants, they are widely emitted from land development projects and undergo photochemical reactions in the atmosphere to form O₃; therefore, ROGs are also relevant to the Proposed Action and are of concern in the area (USEPA n.d.c).

- **Ozone (O₃).** O₃ is a gas that is formed when ROGs and NO_x, both byproducts of internal combustion engine exhaust and other sources, undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.
- **Reactive Organic Gases (ROGs).** ROGs are compounds composed primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary air pollutants, including ozone. ROGs are also referred to as reactive organic compounds (ROCs) or volatile organic compounds (VOCs). ROGs themselves are not criteria pollutants; however, they contribute to formation of O₃.
- **Nitrogen Dioxide (NO₂).** NO₂ is a reddish-brown, highly reactive gas that is formed in the ambient air through the oxidation of nitric oxide (NO). NO₂ is also a byproduct of fuel combustion. The principal form of NO_x produced by combustion is NO, but NO reacts quickly

to form NO₂, creating the mixture of NO and NO₂ referred to as NO_x. NO₂ acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_x is only potentially irritating. NO₂ absorbs blue light, the result of which is a brownish-red cast to the atmosphere and reduced visibility.

- **Carbon Monoxide (CO).** CO is a colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest during winter mornings, with little to no wind, when surface-based inversions trap the pollutant at ground levels. CO is emitted directly from internal combustion engines. Motor vehicles operating at slow speeds are the primary source of CO in the basin. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.
- **Sulfur Dioxide (SO₂).** SO₂ is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high-sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When SO₂ oxidizes in the atmosphere, it forms sulfates (SO₄).
- **Respirable Particulate Matter (PM₁₀).** PM₁₀ consists of suspended particles or droplets 10 micrometers or smaller in diameter. Some sources of PM₁₀, like pollen and windstorms, are naturally occurring. However, in populated areas, most PM₁₀ is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities.
- **Fine Particulate Matter (PM_{2.5}).** PM_{2.5} is suspended particulate matter that is 2.5 micrometers or smaller in diameter. The sources of PM_{2.5} include fuel combustion from automobiles, power plants, wood burning, industrial processes, and diesel-powered vehicles such as buses and trucks. These fine particles are also formed in the atmosphere when gases such as sulfur dioxide, NO_x, and ROGs are transformed in the air by chemical reactions.

A summary of state and federal ambient air quality standards and the effects of the exceedance of these standards on health are shown in **Table 3.3-1, Ambient Air Quality Standards**. For some pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values, such as protection of crops, protection of materials, or avoidance of nuisance conditions.

**Table 3.3-1
Ambient Air Quality Standards**

Air Pollutant	Concentration/Averaging Time		Most Relevant Health Effects
	State Standard (California Ambient Air Quality Standards)	Federal Primary Standard (National Ambient Air Quality Standards)	
Ozone	0.09 ppm, 1-hr. avg. 0.070 ppm, 8-hr avg.	0.075 ppm, 8-hr avg. (three-year average of annual 4 th -highest daily maximum)	(a) Pulmonary function decrements and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage
Nitrogen Dioxide ¹	0.18 ppm, 1-hr avg. 0.030 ppm, annual arithmetic mean	0.100 ppm, 1-hr avg. (three-year avg. of the 98 th percentile of the daily maximum 1-hour avg.) 0.053 ppm, annual arithmetic mean	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extrapulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration
Carbon Monoxide	20 ppm, 1-hr avg. 9.0 ppm, 8-hr avg.	35 ppm, 1-hr avg. (not to be exceeded more than once per year) 9 ppm, 8-hr avg. (not to be exceeded more than once per year)	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses
Sulfur Dioxide ²	0.25 ppm, 1-hr. avg. 0.04 ppm, 24-hr avg.	0.075 ppm, 1-hr avg. (three-year avg. of the 99 th percentile)	Bronchoconstriction accompanied by symptoms, which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma
Respirable Particulate Matter (PM ₁₀)	50 µg/m ³ , 24-hr avg. 20 µg/m ³ , annual arithmetic mean	150 µg/m ³ , 24-hr avg. (not to be exceeded more than once per year on average over three years)	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; and (c) Increased risk of premature death from heart or lung diseases in the elderly
Fine Particulate Matter (PM _{2.5})	12 µg/m ³ , annual arithmetic mean	35 µg/m ³ , 24-hr avg. (three-year average of 98 th percentile) 15 µg/m ³ , annual arithmetic mean (three-year average)	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; and (c) Increased risk of premature death from heart or lung diseases in the elderly
Lead ³	1.5 µg/m ³ , 30-day avg.	1.5 µg/m ³ , calendar quarter 0.15 µg/m ³ , three-month rolling average	(a) Increased body burden; and (b) Impairment of blood formation and nerve conduction

Air Pollutant	Concentration/Averaging Time		Most Relevant Health Effects
	State Standard (California Ambient Air Quality Standards)	Federal Primary Standard (National Ambient Air Quality Standards)	
Visibility-Reducing Particles	Reduction of visual range to less than 10 miles at relative humidity less than 70%, 8-hour avg. (10 AM–6 PM)	None	Visibility impairment on days when relative humidity is less than 70%.
Sulfates	25 $\mu\text{g}/\text{m}^3$, 24-hr avg.	None	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and (f) Property damage
Hydrogen Sulfide	0.03 ppm, 1-hr avg.	None	Odor annoyance
Vinyl Chloride ³	0.01 ppm, 24-hr avg.	None	Known carcinogen

Source: South Coast Air Quality Management District, Final Program Environmental Impact Report for the 2007 Air Quality Management Plan, (2007) Table 3.1-1, p. 3.1-3.

$\mu\text{g}/\text{m}^3$ = microgram per cubic meter.

ppm = parts per million by volume.

¹ On January 25, 2010, the US EPA promulgated a new 1-hour NO_2 standard. The new 1-hour standard is 0.100 parts per million (188 micrograms per cubic meter [$\mu\text{g}/\text{m}^3$]) and became effective on April 12, 2010.

² On June 3, 2010, the US EPA issued a new 1-hour SO_2 standard. The new 1-hour standard is 0.075 parts per million (196 $\mu\text{g}/\text{m}^3$). The US EPA also revoked the existing 24-hour and annual standards citing a lack of evidence of specific health impacts from long-term exposures. The new 1-hour standard becomes effective 60 days after publication in the Federal Register.

³ CARB 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.

The US EPA and CARB designate air basins or portions of air basins and counties as being in “attainment” or “nonattainment” for each of the criteria pollutants. Nonattainment areas are ranked (marginal, moderate, serious, severe, or extreme) according to the degree of nonattainment. Areas that do not meet the standards shown in **Table 3.3-1** are classified as nonattainment areas. The National Ambient Air Quality Standards (other than O_3 , PM10, PM2.5, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The National Ambient Air Quality Standards for O_3 , PM10, and PM2.5 are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards are not to be exceeded during a three-year period. **Table 3.3-2, Placer County Attainment Status**, presents the status of the Placer County portion of Air Basin with respect to the attainment of federal and state standards.

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal

standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant.

**Table 3.3-2
Placer County Attainment Status (Western Portion of County)**

Pollutant	Federal Standards	State Standards
Ozone 1-hour	No federal standard	Nonattainment/Serious
Ozone 8-hour	Nonattainment/Severe-15 ¹	Nonattainment
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Carbon Monoxide	Unclassified/Attainment	Unclassified/Attainment
Sulfur Dioxide	Unclassified/Attainment	Attainment
PM10	Unclassified	Nonattainment
PM2.5	Nonattainment (Western Portion)	Unclassified/Attainment
Lead	Unclassified	Attainment
Hydrogen Sulfide	No federal standards	Unclassified
Sulfates	No federal standards	Attainment
Visibility-Reducing Particulates	No federal standards	Unclassified

Sources:

California Air Resources Board, "Area Designations Maps/State and National," <http://www.arb.ca.gov/degis/adm/adm.htm>. 2011.

US Environmental Protection Agency, "Air Quality Maps," <http://www.epa.gov/region9/air/maps/index.html>. 2011.

¹ A formal request for voluntary reclassification from "serious" to "severe" for the 8-hour ozone nonattainment area with an associated attainment deadline of June 15, 2019, was submitted by CARB to the US EPA on February 14, 2008. The US EPA approved the reclassification request on April 15, 2010.

3.3.2.3 Toxic Air Contaminants

In addition to criteria pollutants, CARB periodically assesses the health impacts and ambient levels of toxic air contaminants (TACs) in California. The US EPA assesses health impacts for hazardous air pollutants. A TAC is defined by California Health and Safety Code (Health and Safety Code Section 397655):

"Toxic air contaminant" means an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health. A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the federal act (42 USC. Sec. 7412(b)) is a toxic air contaminant.

As noted in the definition above, all US EPA hazardous air pollutants are considered to be TACs. CARB has assessed inhalation cancer risk for the state and has provided risk maps based on the Assessment System for Population Exposure Nationwide (ASPEN) dispersion model (USEPA n.d.a). The ASPEN model is used in the US EPA's National Air Toxics Assessment study (USEPA n.d.b). The risk maps depict inhalation cancer risk due to modeled outdoor toxic pollutant levels, and do not account for cancer risk due to other types of exposure (e.g., direct or ingestion). Based on CARB's assessment, the largest contributor to inhalation cancer risk is diesel emissions, which is consistent with the result of other

studies, such as the South Coast Air Quality Management District's Multiple Air Toxics Exposure Study III (South Coast Air Quality Management District 2008).

In 2004, CARB conducted a health risk assessment of airborne particulate matter emissions from diesel-fueled locomotives at the Union Pacific J.R. Davis Yard located in Roseville, California. The study found that the background cancer risk for the broader Sacramento region was 360 in 1 million for diesel particulate matter and 520 in 1 million for all toxic air contaminants (CARB 2004).

3.3.2.4 Ambient Air Monitoring

CARB has established and maintains a network of sampling stations in conjunction with local air pollution control districts (APCDs) and air quality management districts (AQMDs), private contractors, and the National Park Service. The monitoring station network provides air quality monitoring data, including real-time meteorological data and ambient pollutant levels, as well as historical data. The network in the Air Basin consists of 12 monitoring stations. The closest monitoring station to the project is located at 151 North Sunrise Boulevard in Roseville, located just over 5 miles east of the project site. This station monitors ambient pollutant concentrations of O₃, NO₂, PM₁₀, and PM_{2.5}. The nearest station to the project site that monitors CO and SO₂ is located at 7823 Blackfoot Way in North Highlands, approximately 6 miles to the south of the project site.

Table 3.3-3, Ambient Pollutant Concentrations Registered Nearest to the Project Site, at the end of this section, lists the measured ambient pollutant concentrations and the exceedances of state and federal standards that have occurred at the above mentioned monitoring stations from 2007 through 2009, the most recent years for which data are available. As shown, the monitoring station in Roseville has registered values above state and federal standards for O₃, the state standard for PM₁₀, and the federal standard for PM_{2.5}. The standards for CO, NO₂, SO₂, lead, and sulfate have not been exceeded anywhere within the basin for several years. Values for lead and sulfate are not presented in the table since ambient concentrations are well below the state standards. Hydrogen sulfide, vinyl chloride, and visibility reducing particles were not monitored by CARB or the SMAQMD in the Air Basin during the period from 2006 to 2008.

3.3.3 REGULATORY FRAMEWORK – APPLICABLE LAWS, REGULATIONS, PLANS, AND POLICIES

Air quality within Placer County is addressed through the efforts of various federal, state, regional, and local government agencies. The agencies primarily responsible for improving the air quality within the county include the US EPA, CARB, Air District, and the Sacramento Area Council of Governments (SACOG). The City of Roseville includes policies in its *General Plan Air Quality Element* of 2004 that are designed to improve air quality. These agencies, their laws, regulations, rules, plans, and policies as they pertain to air quality and the Proposed Action are discussed below.

3.3.3.1 Federal Regulations

Clean Air Act

The US EPA is responsible for enforcing the federal Clean Air Act (CAA) and the National Ambient Air Quality Standards. The US EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The US EPA also maintains jurisdiction over emission sources beyond state waters (outer continental shelf), and establishes various emissions standards for vehicles sold in states other than California. These standards identify acceptable levels of ambient concentrations for seven criteria pollutants: O₃, CO, NO₂, SO₂, PM₁₀, PM_{2.5}, and lead. The thresholds are considered to be the maximum concentrations of ambient (background) air pollutants determined safe to protect the public health and welfare with an adequate margin of safety.

As part of its enforcement responsibilities, the US EPA requires each state with areas that do not meet the federal standards to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the time frame identified in the SIP. The *Air Quality Attainment Plan* (AQAP), prepared by the Air District in conjunction with other air pollution control districts in the Air Basin, is the regulatory mechanism by which the Air District conforms to US EPA regulations. The Air District provides Triennial Progress Reports (TPRs) on air quality issues addressed by the AQAP, with the latest published in draft form in 2009.

The 1990 CAA Amendments were enacted to better protect the public's health and create more efficient methods for lowering pollutant emissions. The major areas of improvement addressed in the amendments include National Ambient Air Quality Standards, air basin designations, automobile/heavy-duty engine emissions, and hazardous air pollutants. The US EPA has designated air basins as being in attainment or nonattainment for each of the seven criteria pollutants. Nonattainment air basins for ozone are further ranked (marginal, moderate, serious, severe, or extreme) according to the degree of nonattainment. CARB is required to describe in its SIP how the state will achieve federal standards by specified dates for each air basin that has failed to attain a National Ambient Air Quality Standards for any criteria pollutant.

The extent of mitigation implementation of a given SIP depends on the severity of the air quality condition within the state or a specific air basin. Placer County is classified by the US EPA as in serious nonattainment for the O₃ standard and as attainment/unclassified for the other criteria pollutants, as summarized in **Table 3.3-2, Placer County Attainment Status**.

The 1990 CAA Amendments addressed tailpipe emissions from automobiles, heavy-duty engines, and diesel fuel engines. The amendments established more stringent standards for hydrocarbons, NO_x, and CO emissions in order to reduce the ozone and carbon monoxide levels in heavily populated areas. Under the 1990 CAA Amendments, new fuels were required to be less volatile, contain less sulfur

(regarding diesel fuel), and have higher levels of oxygenates (oxygen-containing substances to improve fuel combustion). Due to the lack of a substantial reduction in hazardous emissions under the 1977 CAA, the 1990 CAA Amendments listed 189 hazardous air pollutants (HAPs), which are carcinogenic, mutagenic, and/or reproductive toxicants, to be reduced. The 1990 CAA Amendments regulate major stationary sources and area emissions sources requiring use of Maximum Achievable Control Technology to reduce HAP emissions and their associated health impacts.

3.3.3.2 State Regulations

California Clean Air Act

The California Clean Air Act (CCAA) established a legal mandate for air basins to achieve the California Ambient Air Quality Standards by the earliest practical date. The California Ambient Air Quality Standards, established by CARB, apply to the same seven pollutants as the National Ambient Air Quality Standards, as well as to sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. California Ambient Air Quality Standards are more stringent than the National Ambient Air Quality Standards, and in the case of PM₁₀ and SO₂, far more stringent.

As a branch of the California Environmental Protection Agency, CARB oversees air quality monitoring, planning, and control throughout California. It is primarily responsible for implementing the CCAA, ensuring conformance with CAA requirements, and for regulating emissions from motor vehicles and consumer products within the state. In addition, CARB sets the California Ambient Air Quality Standards and control measures for TACs. CARB approves the regional air quality management/attainment plans for incorporation into the SIP and is responsible for preparing those portions of the SIP related to mobile source emissions. CARB establishes new standards for vehicles sold in California and for various types of commercially available equipment. It also sets fuel specifications to further reduce vehicular emissions.

CARB also makes area designations for O₃, CO, NO₂, SO₂, PM₁₀, PM_{2.5}, sulfates, lead, hydrogen sulfide, and visibility-reducing particles. Health and Safety Code Section 39607(e) requires CARB to establish and periodically review area designation criteria. These designation criteria provide the basis for CARB to designate areas of the state as attainment, nonattainment, or unclassified according to state standards. In addition, Health and Safety Code Section 39608 requires CARB to use the designation criteria to classify areas of the state and to annually review those area designations.

3.3.3.3 Local Plans, Policies, and Ordinances

Sacramento Area Council of Governments

The SACOG is an association of local governments in the Sacramento County region that provides transportation planning and funding for the region. Although SACOG is not an air quality management agency, it is responsible for several air quality planning issues. Specifically, as the designated Metropolitan Planning Organization for the Sacramento region, it is responsible, pursuant to Section 176(c) of the 1990 CAA Amendments, for providing current population, employment, travel, and congestion projections for regional air quality planning efforts.

Placer County Air Pollution Control District

The Air District has jurisdiction over most air quality matters within the Placer County portion of the Air Basin. The Air District regulates most stationary sources of air pollutants in Placer County, maintains ambient air quality monitoring stations at numerous locations, and collaborates in preparation of the air quality management/attainment plans for the area that are required under the CAA and CCAA. The Air District also prepares regular progress reports, the TPRs, which detail the results of efforts to improve air quality within Placer County and the Air Basin.

Sacramento Valley Air Basin Air Quality Plans

As shown in **Table 3.3-2**, Placer County is in nonattainment for the federal standards for ozone (8-hour). The County is also in nonattainment for the state standards of ozone (1-hour), ozone (8-hour), and PM10. Therefore, the Air District has assisted in preparing attainment plans for the area in order to demonstrate achievement of the state and federal ambient air quality standards for ozone, PM10, and PM2.5. The most recent plans include:

- Air Quality Attainment Plan
- Sacramento Regional Clean Air Plan for the 1-Hour National Ozone Standard
- Sacramento Region Clean Air Plan Update
- Sacramento Regional Nonattainment Area 8-Hour Ozone Rate-of-Progress Plan
- Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan

The Air District must continuously monitor its progress in implementing these attainment plans and must periodically report to CARB and the US EPA. It must also periodically revise its attainment plans to reflect new conditions and requirements in accordance with schedules mandated by the CAA and the CCAA. The following subsections provide an overview of these five plans.

Air Quality Attainment Plan

The CCAA requires nonattainment areas to achieve and maintain the state ambient air quality standards by the earliest practicable date and requires local air districts to develop plans for attaining the state ozone, CO, SO₂, and NO₂ standards. In compliance with the CCAA, the Air District collaborated with other air pollution control districts in the Air Basin to prepare and submit the 1991 Air Quality Attainment Plan.

The CCAA also requires triennial assessments to report the extent of air quality improvement and the amounts of emission reductions achieved from control measures for the preceding three year period. The Air District Board of Directors adopted the most recent Triennial Progress Report in 2006, with a draft version of the 2009 TPR published in 2010. The report identifies all feasible measures the Air District will study or adopt over the next three years. The report also describes historical trends in air quality, updates emissions inventories, and evaluates the Air District's implementation of air pollution control measures.

Sacramento Regional Clean Air Plan

The Clean Air Plan was adopted in 1994 in compliance with the 1990 Amendments to the Federal Clean Air Act, which was developed cooperatively with all the districts in the Sacramento Region (El Dorado Air Pollution Control District, Feather River Air Quality Management District, Air District, Sacramento Metropolitan Air Quality Management District, and Yolo-Solano Air Quality Management District). The region could not show that it would meet federal 1-hour ozone standard by 1999; therefore, the deadline was extended to 2005 and the region accepted a designation of severe nonattainment for the federal 1-hour ozone standard, with additional emission requirements on stationary sources. As a severe nonattainment area, the Sacramento Region is required to submit a rate-of-progress milestone evaluation report. The 1999 and 2002 Milestone Reports include compliance demonstrations that the milestone requirement has been met for the Sacramento nonattainment area.

The federal CAA requires the region's transportation plan to conform to the region's ozone standards. Regions with a SIP must analyze the emissions anticipated from transportation plans and transportation improvement programs and ensure that they remain within the SIP's emissions, which is called "demonstrating conformity" with the federal CAA. Regions with a SIP have a "motor vehicle emissions budget" tied to the SIP. Transportation planners must analyze the emissions anticipated from transportation plans and transportation improvement programs and ensure that they remain within the SIP's emissions budget (demonstrating conformity). A conformity lapse for the Sacramento region began October 4, 2004, and an expedited new Clean Air Plan was prepared. The following subsection describes the Clean Air Plan update and plans to meet the 8-hour ozone standard, which the US EPA promulgated in 1997.

Sacramento Region Clean Air Plan Update/Sacramento Regional Nonattainment Area 8-Hour Ozone Rate-of-Progress Plan

The *Sacramento Region Clean Air Plan Update/Sacramento Regional Nonattainment Area 8-Hour Ozone Rate-of-Progress Plan* (8-Hour Ozone Plan) updates the region's Clean Air Plan to address the conformity lapse through updates to the emission inventory and establish new motor vehicle emission budgets. In addition to updating the Clean Air Plan, this Plan also fulfills the federal 8-hour ozone requirements for the 2002–2008 Rate-of-Progress Plan for the Sacramento regional nonattainment area.

In July 1997, US EPA promulgated a new 8-hour standard for ozone. Key aspects of the 8-hour ozone rule are the new designations and nonattainment classifications and the revocation of the 1-hour ozone standard in June 2005. However, the new rule also addresses anti-backsliding provisions in the Clean Air Act, so 8-hour ozone nonattainment areas remain subject to control measure commitments that applied under the 1-hour ozone standard. The Sacramento region was designated as a serious nonattainment area for the federal 8-hour ozone standard with an attainment deadline of June 2013. The 8-Hour Ozone Plan addresses how the region will meet the federal 8-hour ozone standard by this attainment deadline.

Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan

The 2009 *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* was adopted on December 19, 2008. The Sacramento region was classified by the US EPA as a serious nonattainment area on June 15, 2004, for the federal 8-hour ozone standard with an attainment deadline of June 15, 2013. However, since the Sacramento region needs to rely on the longer term emission reduction strategies from state and federal mobile source control programs, the 2013 attainment date cannot be met. Consequently, on February 14, 2008, CARB, on behalf of the air districts in the Sacramento region, submitted a letter to US EPA requesting a voluntary reclassification (bump-up) of the Sacramento federal nonattainment area from a serious to a severe-15 8-hour ozone nonattainment area with an extended attainment deadline of June 15, 2019.¹ The US EPA approved the reclassification request on April 15, 2010. The 8-Hour Ozone Attainment Plan includes the information and analyses to fulfill the CAA requirements for demonstrating reasonable further progress and attainment of the 1997 8-hour ozone National Ambient Air Quality Standards for the Sacramento region. The Plan also contains a Reasonable Further Progress (RFP) demonstration. The RFP demonstration shows that existing local, state, and federal controls are sufficient for the Sacramento Metropolitan Area to achieve the required minimum 3 percent per year reduction in ozone-precursor emissions. This RFP also sets the new transportation conformity budget for the Sacramento metropolitan transportation plan area.

PCAPCD Rules and Regulations

The Air District's primary means of implementing its attainment plans is through its adopted rules and regulations. The Proposed Action would be subject to the following rules adopted by the Air District that are designed to reduce and control pollutant emissions throughout the Air Basin.

- **Rule 202 (Visible Emissions):** A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three (3) minutes in any one (1) hour which is:
 - As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or
 - Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Subsection (A) above.
- **Rule 205 (Nuisance):** A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause to have a natural tendency to cause injury or damage to business or property.
- **Rule 217 (Cutback and Emulsified Asphalt Paving Materials):** A person shall not manufacture for sale nor use for paving, road construction or road maintenance any: rapid cure cutback asphalt; slow cure cutback asphalt containing organic compounds which evaporate at 500°F or

¹ In order to attain by June 15th, the prior year's ozone season would need to be in attainment, making 2018 the attainment demonstration analysis year.

lower as determined by current American Society for Testing and Materials (ASTM) Method D402; medium cure cutback asphalt except as provided in Section 1.2.; or emulsified asphalt containing organic compounds which evaporate at 500°F or lower as determined by current ASTM Method D244, in excess of 3 percent by volume.

- **Rule 218 (Application of Architectural Coatings):** No person shall manufacture, blend, or repackage for sale within the Air District; supply, sell, or offer for sale within Air District; or solicit for application or apply within the Air District, any architectural coating with a volatile organic carbon (VOC) content in excess of the corresponding specified manufacturer's maximum recommendation.
- **Rule 225 (Wood Burning Appliances):** No person shall sell or supply new wood burning appliances unless it is a US EPA phase II Certified wood burning appliance, pellet-fueled wood burning heater, masonry heater, or determined to meet the US EPA standard for particulate matter emissions standards.
- **Rule 228 (Fugitive Dust):**
 - **Visible Emissions Not Allowed Beyond the Boundary Line:** A person shall not cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area (including disturbance as a result of the raising and/or keeping of animals or by vehicle use), such that the presence of such dust remains visible in the atmosphere beyond the boundary line of the emission source.
 - **Visible Emissions from Active Operations:** In addition to the requirements of Rule 202, Visible Emissions, a person shall not cause or allow fugitive dust generated by active operations, an open storage pile, or a disturbed surface area, such that the fugitive dust is of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke as dark or darker in shade as that designated as number 2 on the Ringelmann Chart, as published by the United States Bureau of Mines.
 - **Concentration Limit:** A person shall not cause or allow PM10 levels to exceed 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) (24-hour average) when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other US EPA-approved equivalent method for PM10 monitoring.
 - **Track-Out onto Paved Public Roadways:** Visible roadway dust as a result of active operations, spillage from transport trucks, and the track-out of bulk material onto public paved roadways shall be minimized and removed.
 - The track-out of bulk material onto public paved roadways as a result of operations, or erosion, shall be minimized by the use of track-out and erosion control, minimization, and preventative measures, and removed within 1 hour from adjacent streets such material anytime track-out extends for a cumulative distance of greater than 50 feet onto any paved public road during active operations.
 - All visible roadway dust tracked-out upon public paved roadways as a result of active operations shall be removed at the conclusion of each work day when active operations cease, or every 24 hours for continuous operations. Wet sweeping or a High Efficiency Particulate Air filter equipped vacuum device shall be used for roadway dust removal.

- Any material tracked-out, or carried by erosion, and clean-up water, shall be prevented from entering waterways or storm water inlets as required to comply water quality control requirements.
- **Minimum Dust Control Requirements:** The following dust mitigation measures are to be initiated at the start and maintained throughout the duration of the construction or grading activity, including any construction or grading for road construction or maintenance.
 - Unpaved areas subject to vehicle traffic must be stabilized by being kept wet, treated with a chemical dust suppressant, or covered.
 - The speed of any vehicles and equipment traveling across unpaved areas must be no more than 15 miles per hour unless the road surface and surrounding area is sufficiently stabilized to prevent vehicles and equipment traveling more than 15 miles per hour from emitting dust exceeding Ringelmann 2 or visible emissions from crossing the project boundary line.
 - Storage piles and disturbed areas not subject to vehicular traffic must be stabilized by being kept wet, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile.
 - Prior to any ground disturbance, including grading, excavating, and land clearing, sufficient water must be applied to the area to be disturbed to prevent emitting dust exceeding Ringelmann 2 and to minimize visible emissions from crossing the boundary line.
 - Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt, from being released or tracked off site.
 - When wind speeds are high enough to result in dust emissions crossing the boundary line, despite the application of dust mitigation measures, grading and earthmoving operations shall be suspended.
 - No trucks are allowed to transport excavated material off site unless the trucks are maintained such that no spillage can occur from holes or other openings in cargo compartments, and loads are either covered with tarps; or wetted and loaded such that the material does not touch the front, back, or sides of the cargo compartment at any point less than 6 inches from the top and that no point of the load extends above the top of the cargo compartment.
- **Wind-Driven Fugitive Dust Control:** A person shall take action(s), such as surface stabilization, establishment of a vegetative cover, or paving, to minimize wind-driven dust from inactive disturbed surface areas.
 - **Rule 501 (General Permit Requirement):** Any person operating an article, machine, equipment or other contrivance, the use of which may cause, eliminate, reduce, or control the issuance of air contaminants, shall first obtain a written permit from the Air Pollution Control Officer. Stationary sources subject to the requirements of Rule 507, Federal Operating Permit Program, must also obtain a Title V permit pursuant to the requirements and procedures of that rule.
 - **Rule 508 (General Conformity):** The conditions of the Code of Federal Regulations, Title 40, Chapter I, Subchapter C, Parts 6 and 51 in effect January 31, 1994, are made part of the Rules and Regulations of the Placer County Air Pollution Control District.

- **Rule 509 (Traffic Conformity):** The conditions of the Code of Federal Regulations, Title 40, Chapter I, Part 51, Subpart T, Sections 51.392 - 51.400, 51.404, 51.410 - 51.450, 51.460, and 51.462, in effect December 27, 1993, are made part of the Rules and Regulations of the Placer County Air Pollution Control District.

City of Roseville

The City of Roseville has included an Air Quality Element within its General Plan, with the following goals and policies:

- Goal 1:** Improve Roseville’s air quality by: a) Achieving and maintaining ambient air quality standards established by the US EPA and 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).
- Goal 2:** Integrate air quality planning with the land use and transportation planning process.
- 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.
- Goal 4:** Increase the capacity of the transportation system, including the roadway system and alternate modes of transportation.
- Goal 5:** Provide adequate pedestrian and bikeway facilities for present and future transportation needs.
- Goal 6:** Promote a well-designed and efficient light rail and transit system.
- 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.
- Policy 1:** Cooperate with other agencies to develop a consistent and effective approach to air pollution planning.
- Policy 2:** Work with the Air District to monitor all air pollutants of concern on a continuous basis.
- Policy 3:** Develop consistent and accurate procedures for evaluating the air quality impacts of new projects.
- Policy 4:** As part of the development review process, develop mitigation measures to minimize stationary and area source emissions.
- Policy 5:** Develop transportation systems that minimize vehicle delay and air pollution.
- Policy 6:** Develop consistent and accurate procedures for mitigating transportation emissions from new and existing projects.
- Policy 7:** Encourage alternative modes of transportation including pedestrian, bicycle, and transit.

- Policy 8:** Separate air pollution-sensitive land uses from sources of air pollution.
- Policy 9:** Encourage land use policies that maintain and improve air quality.
- Policy 10:** Conserve energy and reduce air emissions by encouraging energy efficient building designs and transportation systems.

3.3.4 SIGNIFICANCE THRESHOLDS AND ANALYSIS METHODOLOGY

3.3.4.1 Significance Thresholds

The Air District has adopted thresholds for determining significant impacts on air quality. In accordance with guidance from the Council on Environmental Quality (40 CFR 1506.2), the US Army Corps of Engineers (USACE) considers local standards when determining significance of the impacts of a proposed action. Therefore, the USACE has used the thresholds developed by the local Air District to evaluate the impacts of the Proposed Action and its alternatives on air quality.

These thresholds were developed in order to allow the Air District to meet its obligations under both the CAA and CEQA. If the emission rates of a particular pollutant associated with a proposed project are above these thresholds, the project is judged to potentially have a significant impact on air quality. The Air District thresholds presented below in **Table 3.3-4, Placer County CEQA Significance Thresholds**, are for both construction and operation.

**Table 3.3-4
Placer County Air District Significance Thresholds**

Pollutant	Threshold (lbs per day)
ROG	82
NOx	82
PM10	82
CO	550

Source: Placer County APCD, (2010).

3.3.4.2 Analysis Methodology

This analysis is based primarily on a technical study, the Sierra Vista Specific Plan Air Quality/Greenhouse Gas Technical Report prepared by Rimpo and Associates in support of the Sierra Vista Specific Plan EIR and is included in **Appendix 3.3**. The study was independently reviewed by the USACE, and was found to be accurate in its analytical approach and results. The methodology used in the technical study is summarized below.

The study used the URBEMIS2007 Environmental Management Software version 9.2.4 to estimate construction emissions and operational emissions from area and mobile sources associated with the

Proposed Action. Construction was assumed to occur over a period of 12 years, beginning in 2013 and completing by 2025. Specific assumptions about construction equipment and scheduling are provided in the technical study, and included in **Appendix 3.3**. Mobile emissions during operation were estimated using default URBEMIS2007 values and trip generation rates provided by a traffic study performed by DKS Associates. Emissions from area sources were also estimated using default URBEMIS2007 values. These emissions are primarily associated with combustion of natural gas, operation of landscape maintenance equipment, and evaporative emissions from architectural coatings and consumer products.

Localized CO concentration estimates were prepared using the CALINE4 model and methodologies as developed by California Department of Transportation (Caltrans) for use with CALINE (California Department of Transportation 1989). CO concentrations were modeled using traffic volumes and conditions from the original traffic study performed in 2009. Intersections with a level of service (LOS) of D, E, or F were arranged in order of traffic volume, with the top five chosen for analysis. Background CO concentrations for the area of the Proposed Action were included in the analysis, specifically 5.73 ppm for the 1-hour and 2.06 ppm for the 8-hour averaging periods.

Impacts due to exposure to TACs are generally assessed using a Health Risk Assessment (HRA), which quantifies the risk of chronic and acute health impacts including cancer. This process requires modeling with precise information regarding specific sources and TACs as well as receptor data. As this information is made available, an HRA may be performed for the Proposed Action or components of the action. However, this level of detail is not available to date, so an HRA was not conducted for the Proposed Action and the impacts from TACs were analyzed qualitatively. This was done by identifying sensitive receptors such as schools and residences and comparing their location with either existing or potential sources of TACs, taking into consideration wind patterns in the area. Sources considered include industrial sites, commercial zones, freeways, and other major roadways.

Potential odor impacts were also analyzed qualitatively, examining the relative positions of existing and potential odor sources with receptors in the context of prevailing wind patterns.

Construction and operation emissions for the alternatives were estimated using assumptions about the main sources of emissions. For construction, emissions were assumed to be proportional to acreage under development. Construction emissions for the Proposed Action were multiplied by the ratio of the footprint of each alternative to the Proposed Action. For operations, emissions were assumed to be proportional to the number of residences and the area of non-residential buildings. Operational emissions were multiplied by the ratio of the number of residences included in the alternative to the number under the Proposed Action, then also multiplied by the ratio of the area of non-residential buildings in the alternative to the area under the Proposed Action. These two values were then averaged to obtain a final estimate of emissions from operation of development under each alternative. This is a reasonable method to estimate emissions for the proposed alternatives as the URBEMIS2007 model estimates emissions based on the size of a project.

3.3.5 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

Impact AQ-1 Emissions Associated with Construction

Proposed Action Construction of the Proposed Action would generate emissions of ROG, NO_x, and PM₁₀ that would exceed significance thresholds and therefore are likely to result in a **significant** effect on air quality in the Air Basin. Mitigation would reduce emissions, but not to less than significant. A residual **significant** effect would remain after mitigation.

Construction-related emissions can be distinguished as either on site or off site. On-site emissions generated during construction principally consist of exhaust emissions (NO_x, SO_x, CO, VOC, PM₁₀, and PM_{2.5}) from the operation of heavy-duty construction equipment, fugitive dust (PM₁₀) from disturbed soil, and VOC emissions from asphaltic paving and painting. Off-site emissions during the construction phase normally consist of exhaust emissions and entrained paved road dust (PM₁₀ and PM_{2.5}) from worker commute trips, material delivery trips, and haul truck trips to and from the construction site.

Construction activities associated with the Proposed Action would occur over a number of years, with portions of the area being developed in phases. However, the exact timing and duration of these phases is not currently known as they will be determined by market conditions and other factors that are unpredictable over the course of development. The shortest period over which construction of the full Proposed Action would occur is 12 years, from 2013 to 2024. Depending on conditions, construction may be delayed or reduced so that the year of full buildout could be well past 2024. Since emissions rates for construction are evaluated on a maximum rate per day, any extension of the construction schedule would result in emissions that are the same or less than the shortest schedule. Consequently, the construction emissions of criteria pollutants shown in **Table 3.3-5, Estimated Unmitigated Construction Emissions – Proposed Action and Alternatives** are conservatively based on a construction schedule from 2013 to 2024. In the interest of brevity, only the maximum emissions in any construction year are shown in the table.

As construction emissions of ROG, NO_x, and PM₁₀ for the Proposed Action are above significance thresholds, the Proposed Action is likely to result in a **significant** effect on air quality in the Air Basin.

Implementation of **Mitigation Measure AQ-1** would reduce air quality effects due to construction. This measure is the same as Mitigation Measure 4.4-1 in the Sierra Vista Specific Plan EIR and was adopted by the City of Roseville at the time of project approval and will be enforced by the City. The estimated emissions from construction after mitigation are shown in **Table 3.3-6, Estimated Mitigated Construction Emissions – Proposed Action and Alternatives**. After mitigation, emissions of PM₁₀ and PM_{2.5} would be greatly reduced. NO_x would be reduced to just under the significance

threshold. However, emissions of ROG and PM10 would remain above the significance thresholds. Based on the analysis in this EIS, the USACE finds that a residual **significant** effect would remain after mitigation.

All Alts.

Construction of all of the alternatives would generate emissions of ROG and PM10 that would exceed significance thresholds. Only the construction of Alternative 4 would generate emissions of NOx that would exceed significance thresholds. These emissions therefore are likely to result in a **significant** effect on air quality in the Air Basin. Mitigation would reduce emissions, but not below the significance thresholds. A residual **significant** effect would remain after mitigation.

Construction emissions are roughly proportional to the land area to be graded as well as the total building area. Consequently, construction emissions for the alternatives were calculated as a ratio of the emissions for the Proposed Action. The estimated emissions rates are shown for each alternative in **Table 3.3-5**.

Construction emissions under all alternatives would exceed significance thresholds for ROG and PM10 by large margins. No alternatives would exceed significance thresholds for CO, and only Alternative 4 (including off-site infrastructure improvements) would exceed the significance threshold for NOx. This represents a **significant** effect on air quality in the Air Basin. Implementation of **Mitigation Measure AQ-1** would have similar results for all alternatives, as shown in **Table 3.3-6**. As noted above, this measure is the same as Mitigation Measure 4.4-1 in the Sierra Vista Specific Plan EIR and was adopted by the City of Roseville at the time of project approval and will be enforced by the City. The USACE assumes that the City of Roseville would impose the same mitigation measure on all of the on-site alternatives to address this effect, and that Placer County would impose a similar mitigation measure on Alternative 4. As with the Proposed Action, after mitigation, emissions of PM10 and PM2.5 would be greatly reduced. NOx would be reduced to under the significance threshold for all alternatives. However, emissions of ROG and PM10 would remain above significance thresholds. For these reasons, **Mitigation Measure AQ-1** would not reduce the effect to less than significant. The USACE finds that a residual **significant** effect would remain after mitigation.

The USACE acknowledges that it has no authority to require **Mitigation Measure AQ-1** and cannot guarantee that the County will impose this measure on Alternative 4.

**Table 3.3-5
Estimated Unmitigated Construction Emissions – Proposed Action and Alternatives**

Maximum Emissions in Any Construction Year	Emissions in Pounds per Day					
	ROG	NO _x	CO	SO _x	PM10	PM2.5
Proposed Action	1,748.7	84.0	133.8	0.3	690.3	155.6
Alternative 1	1,321.0	62.2	99.0	0.1	545.3	115.2
Alternative 2	1,500.0	62.2	99.0	0.2	545.3	115.2
Alternative 3	1,576.5	74.2	118.2	0.3	650.7	137.4
Alternative 4	1,770.1	83.3	132.7	0.3	684.6	154.3
No Action	1,129.1	53.1	84.6	0.2	466.1	98.4
Significance Threshold	82	82	550	--	82	--

Source: Rimpo and Associates 2009. Emissions calculations are provided in Appendix 3.3.

**Table 3.3-6
Estimated Mitigated Construction Emissions – Proposed Action and Alternatives**

Alternative	Maximum Emissions in Any Year, in Pounds per Day					
	ROG	NO _x	CO	SO _x	PM10	PM2.5
Proposed Action	1,606.9	79.9	133.8	0.3	169.0	37.1
Alternative 1	1,189.4	59.1	99.0	0.2	125.1	27.5
Alternative 2	1,350.6	67.2	112.5	0.3	142.0	31.2
Alternative 3	1,419.4	70.6	118.2	0.3	149.3	32.8
Alternative 4	1,593.7	79.2	132.7	0.3	167.6	36.8
No Action	1,016.6	50.5	84.6	0.2	106.9	23.5
Significance Threshold	82	82	550	--	82	--

Source: Impact Sciences, Inc. Emissions calculations are provided in Appendix 3.3.

Mitigation Measure AQ-1

Dust and Construction Control Measures

(Applicability – Proposed Action and All Alternatives)

In accordance with the Placer County Air Pollution Control District (PCAPCD), the Applicant shall comply with all applicable rules and regulations as listed above (e.g., Rule 202, 218 and 228). In addition, prior to the approval of a discretionary permit, the applicant(s) shall implement the following measures unless superseded by state or other more stringent standards:

The following mitigation measures shall be implemented to reduce short-term construction-related air quality impacts. In addition, dust control measures are required to be implemented by all projects in accordance with the City of Roseville Grading Ordinance, and the PCAPCD Fugitive Dust Rule 228.

- Applicant shall submit to PCAPCD a Construction Emission/Dust Control Plan within 30 days prior to groundbreaking. The applicant shall provide evidence that a plan was submitted to PCAPCD to the City. If the PCAPCD does not respond within 20 days, the plan shall be considered approved. The plan must address the minimum requirements found in section 300 and 400 of District Rule 228, Fugitive Dust (www.placer.ca.gov/airpollution/airpolut.htm). The applicant shall keep a hard or electronic copy of Rule 228, Fugitive Dust on site for reference.
- The Construction Emission/Dust Control Plan shall include a comprehensive inventory (i.e. make, model, year, emission rating) of all heavy-duty off-road equipment (50 horsepower (HP) or greater) that will be used an aggregate of 40 or more hours for the construction project. The project representative shall provide PCAPCD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman. The plan shall demonstrate that the heavy-duty (> 50 HP) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOX reduction and 45 percent particulate reduction compared to the most recent ARB fleet average. PCAPCD shall be contacted for average fleet emission data. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. Contractors can access the Sacramento Metropolitan Air Quality Management District's web site to determine if their off-road fleet meets the requirements listed in this measure. (http://www.airquality.org/ceqa/Construction_Mitigation_Calculator.xls)

The following measures are also included to reduce construction-related ROG, NOx, PM10 and PM2.5 emissions:

- All construction equipment shall be maintained in good operating condition. Contractor shall ensure that all construction equipment is being properly serviced and maintained as per the manufacturer's specifications. Maintenance records shall be available at the construction site for verification. This measure will reduce combustion emissions of all criteria air pollutants.
- Prior to the issuance of any grading permits, all applicants shall submit construction plans denoting the proposed schedule and projected equipment use. Construction contractors shall provide evidence that low emission mobile construction will be used, or that their use was investigated and found to be infeasible for the project. Low emission equipment is defined as meeting the California Air Resources Board's Tier III standards. Contractors shall also conform to any construction measures imposed by the PCAPCD as well as City Planning Staff. This measure will primarily reduce ROG, NOx, PM10, and PM2.5 exhaust emissions.
- Paints and coating shall be applied either by hand or by high volume, low-pressure spray. This measure will reduce evaporative ROG emissions.
- All construction shall comply with the following measures to reduce fugitive dust related emissions of PM10 and PM2.5:
 - Maintain a minimum 24-inch freeboard on soil haul trucks or cover payloads using tarps or other suitable means.
 - Suspend grading operations during high winds (greater than 15 mph).

- Sweep streets as necessary if silt is carried off site to adjacent public thoroughfares or occurs as a result of hauling.
- Dispose of surplus excavated material in accordance with local ordinances and use sound engineering practices.
- Schedule activities to minimize the amounts of exposed excavated soil during and after the end of work periods.
- Phase grading into smaller areas to prevent the susceptibility of larger areas to erosion over extended periods of time.
- Pave or apply gravel to any on-site haul roads.
- Reestablish ground cover on the construction site through seeding and water.
- Clean earth moving construction equipment with water or sweep clean, once per day, or as necessary (e.g., when moving on site), consistent with National Pollutant Discharge Elimination System Best Management Practices and the Roseville Grading Ordinance. Water shall be applied to control dust as needed to prevent dust impacts off site. Operational water truck(s), shall be on site, as required, to control fugitive dust. Construction vehicles leaving the site shall be cleaned, as needed, to prevent dust, silt, mud, and dirt from being released or tracked off site.
- Spread soil binders on unpaved roads and employee/equipment parking areas. Soil binders shall be non-toxic in accordance with state and local regulations. Apply approved chemical soil stabilizers, or vegetated mats, etc. according to manufacturers' specifications, to all-inactive construction areas (previously graded areas which remain inactive for 96 hours).
- Minimize diesel idling time to a maximum of 5 minutes.
- Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary diesel power generators, if feasible.
- An applicant representative, ARB-certified to perform Visible Emissions Evaluations (VEE), shall routinely (i.e., once per week) evaluate project related off-road and heavy-duty on-road equipment emissions for compliance with this requirement for projects grading more than 20 acres in size, regardless of how many acres are to be disturbed daily.
- Construction equipment exhaust emissions shall not exceed the PCAPCD Visible Emissions Rule 202. Fugitive dust is not to exceed 40 percent opacity and not go beyond property boundary at any time. Operators of vehicles and equipment found to exceed opacity limits are to be immediately notified and the equipment must be repaired within 72 hours.

The City of Roseville is currently working with the Placer County Pollution Control District to update the standard mitigation measures. The following measures will likely be required at the time specific development is proposed.

- 1a. Prior to approval of Grading/plans the applicant shall submit a Construction Emission/Dust Control Plan to the Placer County APCD. The plan must be submitted by certified mail, or receive a date stamp or other submittal proof. This plan must address the minimum Administrative Requirements found in section 300 and 400 of APCD Rule 228, Fugitive Dust. The applicant shall not break ground prior to receiving APCD approval of the Construction Emission/Dust Control Plan. If the applicant has submittal proof of submittal and no response is received from the District within 20 working days the plan shall be deemed complete, and construction may begin.

- 1b. *Include the following standard note on the Improvement/Grading Plan: The prime contractor shall submit to the District a comprehensive inventory (i.e. make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower or greater) that will be used an aggregate of 40 or more hours for the construction project. If any new equipment is added after submission of the inventory, the prime contractor shall contact the APCD prior to the new equipment being utilized. At least three business days prior to the use of subject heavy-duty off-road equipment, the project representative shall provide the District with the anticipated construction timeline including start date, and name and phone number of the property owner, project manager, and on-site foreman.*
- 1c. *Prior to approval of Grading/Improvement Plans, the applicant shall provide a plan to the Placer County APCD for approval by the District demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.*
2. *Include the following standard note on the Improvement/Grading Plan: If required by the Public Works Department, the contractor shall hold a preconstruction meeting prior to grading activities. The contractor shall invite the Placer County APCD to the pre-construction meeting in order to discuss the construction emission/dust control plan with employees and/or contractors.*
3. *Prior to building permit approval, the applicant shall show, on the plans submitted to the Building Department, that electrical outlets shall be installed on the exterior walls of both the front and back of all residences or all commercial buildings to promote the use of electric landscape maintenance equipment.*
4. *Prior to building permit approval, the applicant shall show, on the plans submitted to the Building Department, provisions for construction of new residences, and where natural gas is available, the installation of a gas outlet for use with outdoor cooking appliances, such as a gas barbecue or outdoor recreational fire pits.*
5. *Prior to building permit approval, in accordance with District Rule 225, only US EPA Phase II certified wood burning devices shall be allowed in single-family residences. The emission potential from each residence shall not exceed a cumulative total of 7.5 grams per hour for all devices. Masonry fireplaces shall have either an EPA certified Phase II wood burning device or shall be a U.L. Listed Decorative Gas Appliance. (Rule 225)*
6. *Wood burning or Pellet appliances shall not be permitted in multi-family developments. Only natural gas or propane fired fireplace appliances are permitted. These appliances shall be clearly delineated on the Floor Plans submitted in conjunction with the Building Permit application. (Rule 225/section 302.2)*
7. *Prior to the issuance of a Building Permit, the applicant shall show that all flat roofs with parapets shall include a white or silver cap sheet to reduce energy demands.*
8. *Diesel trucks shall be prohibited from idling more than 5 minutes. Prior to the issuance of a Building Permit, the applicant shall show that all truck loading and unloading docks shall be equipped with one 110/208 volt power outlet for every two dock doors. Diesel Trucks idling for more than 5 minutes shall be required to connect to the 110/208 volt power to run any auxiliary equipment. 2-foot x3-foot signage which indicates "Diesel engine Idling Limited to a Maximum of 5 Minutes" shall be shown on the building elevations and shall be submitted to the Placer County APCD prior to the issuance of Building Permits for the project.*

9. Prior to approval of Improvement Plans, an enforcement plan shall be established, and submitted to the APCD for review, in order to evaluate project-related on-and-off- road heavy-duty vehicle engine emission opacities on a weekly basis, using standards as defined in California Code of Regulations, Title 13, Sections 2180 - 2194. An Environmental Coordinator, hired by the prime contractor or property owner, and who is CARB-certified to perform Visible Emissions Evaluations (VEE), shall routinely evaluate project related off-road and heavy duty on-road equipment emissions for compliance with this requirement. Operators of vehicles and equipment found to exceed opacity limits will be notified by APCD and the equipment must be repaired within 72 hours. (California Code of Regulations, Title 13, Sections 2180 - 2194).

PCAPCD Rules (Existing District requirements to be added as construction notes or referenced in conditions of approval)

New Standard Condition of Approval (for all projects): The project shall comply with all applicable Placer County Air Pollution Control District rules and regulations, and shall obtain applicable permits and/or clearances from the District prior to the start of construction.

The following air quality notes shall be added to the grading and/or improvement plans:

- 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. (California Standards for Motor Vehicle Diesel Fuel, title 13, article 4.8, chapter 9, California Code of Regulations).
- Processes that discharge 2 pounds per day or more of air contaminants, as defined by Health and Safety Code Section 39013, to the atmosphere may require a permit. Permits are required for both construction and operation. Developers/contractors should contact the District prior to construction and obtain any necessary permits prior to the issuance of a Building Permit. (Rule 501)
- Pursuant to the Placer County Air Pollution Control District Rule 501, General Permit Requirements, the proposed project may need a permit from the District prior to construction. In general, any engine greater than 50 brake horsepower or any boiler with heat greater than 1,000,000 Btu per hour shall require a permit issued by the District. (Rule 501)
- All on-site stationary equipment which is classified as 50 hp or greater shall either obtain a state issued portable equipment permit or a Placer County APCD issued portable equipment permit. (California Portable Equipment Registration Program, Section 2452).
- The contractor shall utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary diesel power generators if feasible.
- During construction, the contractor shall minimize idling time to a maximum of 5 minutes for all diesel powered equipment.
- During construction, traffic speeds on all unpaved surfaces shall be limited to 15 miles per hour or less. (Rule 228/section 401.2)

Impact AQ-2 Criteria Pollutant Emissions Associated with Occupancy/Operation

Proposed Action As explained below, at project buildout operational emissions of criteria air pollutants other than SOx would be substantial, and in all cases well above significance thresholds recommended by the Air District. Emissions from operation of the Proposed Action would therefore likely have a **significant** effect on air quality. Mitigation would reduce

emissions, but not to less than significant. A residual **significant** effect would remain after mitigation.

Operational emissions would be generated by mobile and area sources as a result of normal day-to-day activity at the proposed development. Mobile source emissions would be generated by motor vehicles traveling to and from the area. Area emissions would be generated by the use of natural gas in space and water heating devices, the operation of landscape maintenance equipment, the use of consumer products, and the application of architectural coatings. URBEMIS2007 was used to quantify mobile source and area source emissions.

Table 3.3-7, Estimated Unmitigated Operational Emissions – Proposed Action and Alternatives, shows the future operational emissions at full buildout of the Proposed Action in 2025. The proposed site is currently designated agricultural land, and has minimal emissions; therefore, baseline emissions were assumed to be negligible. Emissions shown are peak summer time values.

**Table 3.3-7
Estimated Unmitigated Operational Emissions – Proposed Action**

Emissions Source	Emissions in Pounds Per Day					
	ROG	NO _x	CO	SO _x	PM10	PM2.5
Proposed Action						
Operational (Mobile) Sources	1,093.2	823.4	9,334.4	18.7	3,224.3	613.5
Area Sources	492.3	170.6	245.7	0.01	0.7	0.7
Emissions Total	1,585.5	993.9	9,580.1	18.7	3,225.0	614.2
Significance Threshold	82	82	550	--	82	--

Source: Rimpco and Associates 2009. Emissions calculations are provided in **Appendix 3.3**.

Totals in table may not appear to add exactly due to rounding in the computer model calculations.

Emissions of air pollutants other than SO_x would be significant, and in all cases well above significance thresholds recommended by the Air District. Emissions from operation of the Proposed Action would likely have a **significant** effect on air quality.

The proposed development would implement **Mitigation Measure AQ-2** to reduce vehicle traffic and energy use. This measure is the same as Mitigation Measure WMM 4.4-4 in the Sierra Vista Specific Plan EIR and was adopted by the City of Roseville at the time of project approval and will be enforced by the City. Based on the analysis in this EIS, the USACE finds that a residual **significant** effect would remain after mitigation.

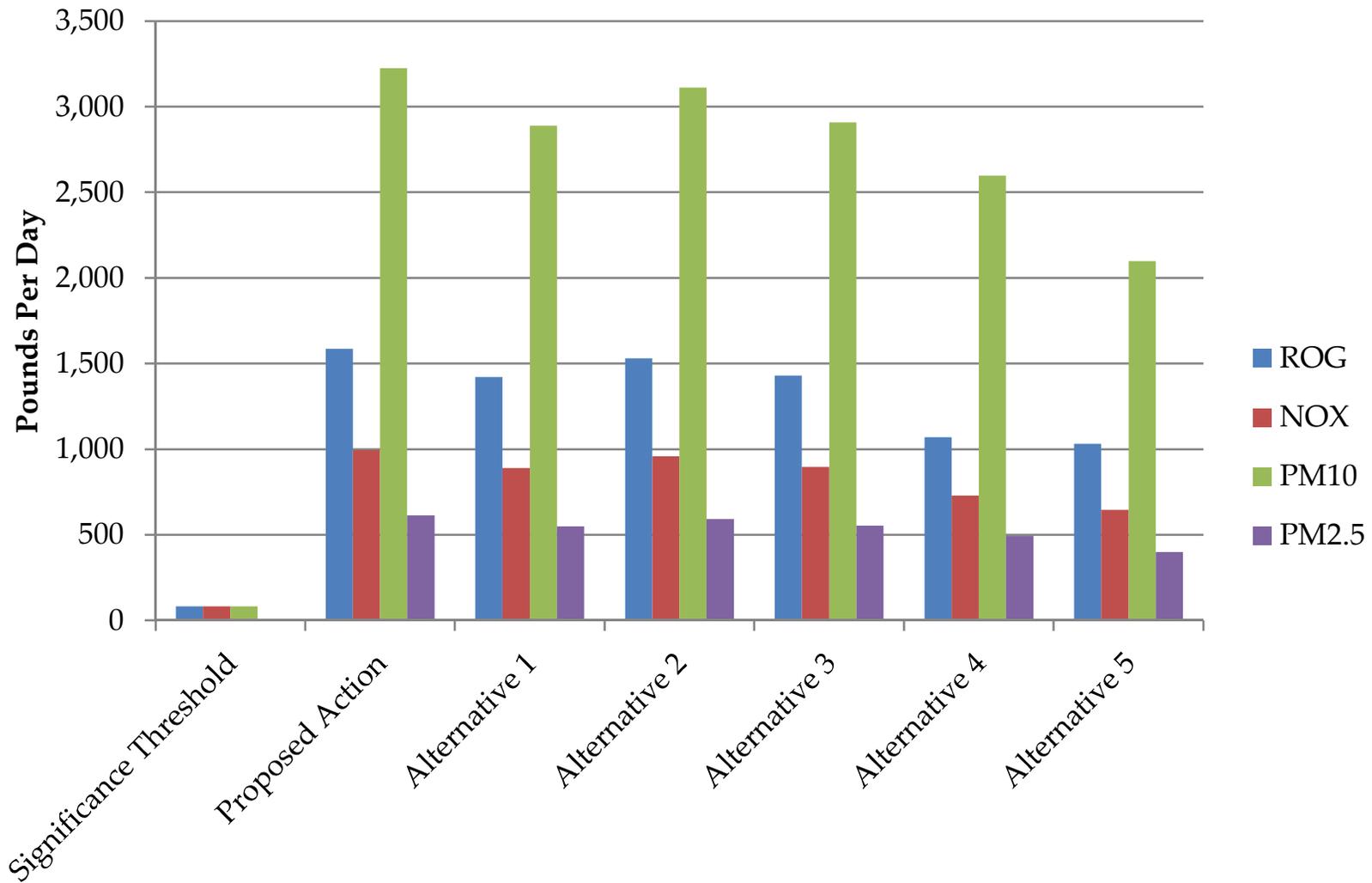
All Alts. Operational emissions of criteria air pollutants other than SO_x at buildout of these alternatives would be substantial, and in all cases well above significance thresholds recommended by the Air District. Emissions from operation of all of the alternatives would therefore likely have a **significant** effect on air quality. Mitigation would reduce emissions, but not to less than significant. A residual **significant** effect would remain after mitigation.

The alternatives vary in the amount of residential, public, commercial and other buildings that would be constructed. Emissions from both area and mobile sources are proportional to the amount of development, specifically the number of residential units constructed and the total amount of commercial or other space built on the site. Consequently, emissions from the various alternatives were estimated by modifying the emission rates calculated for the Proposed Action according to the number of residential units and acreage of commercial or other buildings proposed under each alternative. The results are shown in **Table 3.3-8, Estimated Unmitigated Operational Emissions – Proposed Action and Alternatives** at the end of this section, as well as in **Figure 3.3-1, Estimated Unmitigated Operational Emissions** and **Figure 3.3-2, Estimated Unmitigated Carbon Monoxide Emissions**.

Emissions for all alternatives are substantially over the Air District significance thresholds and would likely have a **significant** effect on air quality in the area.

The alternatives will implement **Mitigation Measure AQ-2** to reduce vehicle traffic and energy use. As noted above, this measure is the same as Mitigation Measure WMM 4.4-4 in the Sierra Vista Specific Plan EIR and was adopted by the City of Roseville at the time of project approval and will be enforced by the City. The USACE assumes that the City of Roseville would impose the same mitigation measure on all of the on-site alternatives to address this effect, and that Placer County would impose a similar mitigation measure on Alternative 4. While **Mitigation Measure AQ-2** is available, additional mitigation is not available to reduce operational emissions to levels that are below the thresholds. As a result, this mitigation measure would not reduce the effect to less than significant. The USACE finds that a residual **significant** effect would remain after mitigation.

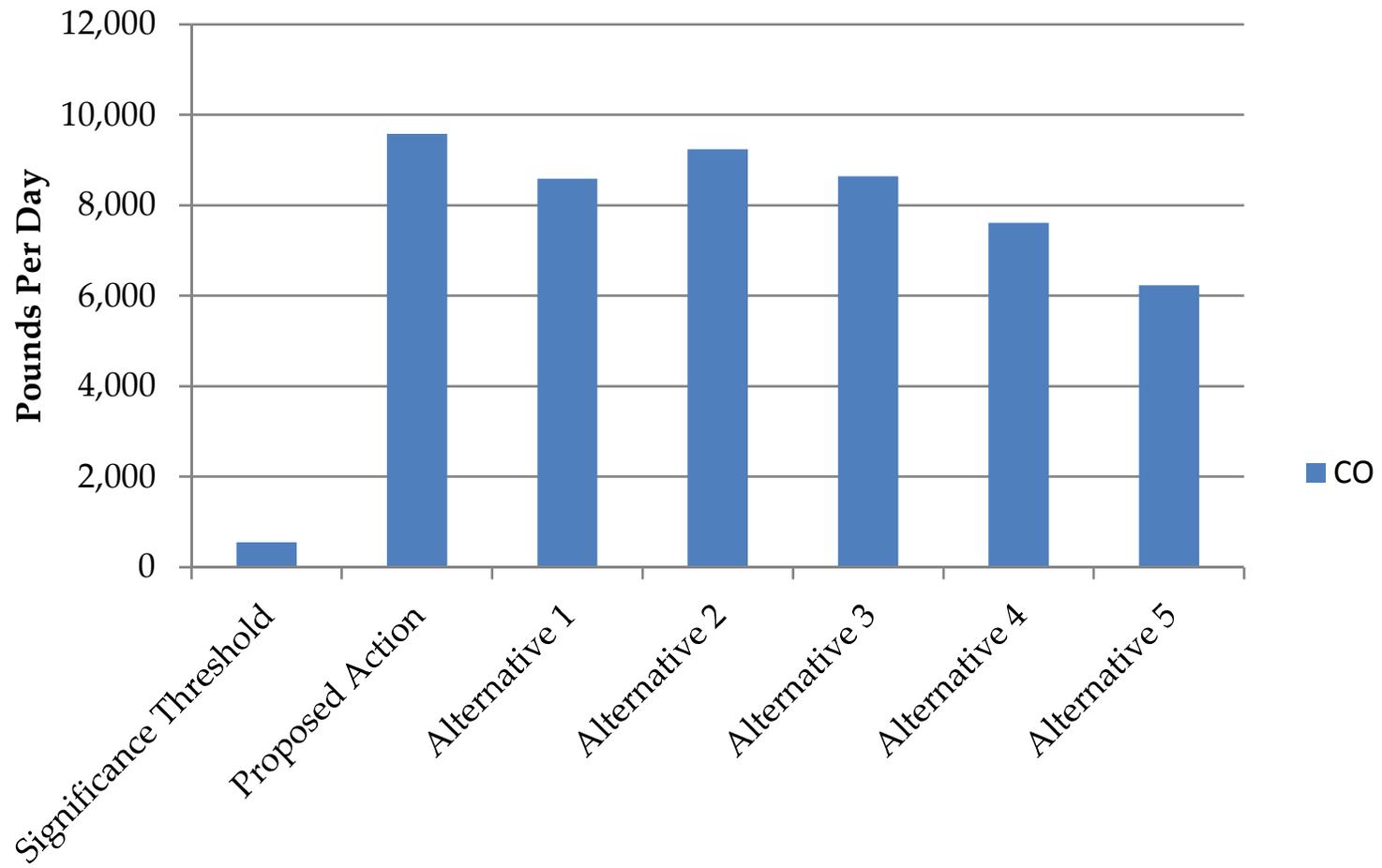
The USACE acknowledges that it has no authority to require **Mitigation Measure AQ-2** and cannot guarantee that the County will impose this measure.



SOURCE: Impact Sciences, June 2012

FIGURE 3.3-1

Estimated Unmitigated Operational Emissions



SOURCE: Impact Sciences, June 2012

FIGURE 3.3-2

Estimated Unmitigated Operational Carbon Monoxide Emissions

Mitigation Measure AQ-2**Project Measures to Reduce Operational Emissions
(Applicability – Proposed Action and All Alternatives)**

Following receipt of an application for a Tentative Maps (excluding the large lot subdivision map), Design Review Permit, conditional use permits and/or all discretionary permits, as found to be in compliance with the 30 percent reduction analysis applicable for individual projects with the Specific Plan, the City will forward an early consultation notice to the Placer County Air Pollution Control District (PCAPD). Where the PCAPD provides comments on a specific development proposal, the City shall consult with PCAPD and the developer to incorporate measures recommended by the PCAPD and agreed to by the City into the project. Where the PCAPD does not provide comment on a specific development proposal, the City shall incorporate measures that reduce vehicle emissions and operation emissions from the proposed development. This measure will be implemented through project design, conditions of approval, noticing and disclosure statements, or through the City's plan check and inspection processes. This process is intended to ensure that best available and practical approaches are used to reduce operational emissions in specific tentative map and design review permit applications. The following is a listing of measures that shall be implemented for the purpose of reducing vehicle and operational emissions.

- Provide tree plantings that meet or exceed the requirements of the City's Community Design Guidelines to provide shading of buildings and parking lots.
- Landscape with native drought-resistant plants (ground covers, shrubs and trees) with particular consideration of plantings that are not reliant on gas-powered landscape maintenance equipment.
- Require all flat roofs on non-residential structures to have a white or silver cap sheet to reduce energy demand.
- Provide conductive/inductive electric vehicle charging station and signage prohibiting parking for non-electric vehicles within designated spaces within non-residential developments.
- Provide vanpool parking only spaces and preferential parking for carpools to accommodate carpools and vanpools in employment areas (e.g. community commercial, business-professional uses)
- All truck loading and unloading docks shall be equipped with one 110/208 volt power outlet for every two-dock doors. Signs shall be posted stating "Diesel trucks are prohibited from idling more than 5 minutes and trucks requiring auxiliary power shall connect to the 110/208-vot outlets to run auxiliary equipment."
- Design streets to maximize pedestrian access to transit stops.
- Require site design to maximize access to transit lines, to accommodate bus travel, and to provide lighted shelters at transit access points.
- Develop the plan consistent with the higher residential densities (within approved residential density ranges of zone) provided around the village nodes and transit corridors.
- Include photovoltaic systems in project design and/or participate in Roseville Electric incentive programs for energy-efficient development where feasible.

Measures for Detached Single-Family Residences:

- Require electrical outlets be installed on the exterior walls of both the front and back of residences to promote the use of electric landscape maintenance equipment.
- Require installation of a gas outlet in the rear of residential buildings for use of outdoor cooking appliances, such as gas burning barbeques.

- Require installation of low nitrogen oxide (NO_x) hot water heaters (beyond District Rule 246 requirements)
- Provide notice to homebuyers of incentive and rebate programs available through Roseville Electric or other providers that encourage the purchase of electric landscape maintenance equipment.

Prior to approval of Tentative Maps provide notice to homebuyers through CC&Rs or other mechanisms to inform them that only gas fireplaces would be permitted. Where propane or natural gas service is not available, only EPA Phase II certified wood-burning devices shall be allowed in single-family residences. The emission potential from each residence shall not exceed 7.5 grams per hour. Woodburning or Pellet appliances shall not be permitted in multi-family developments.

Impact AQ-3 CO Hotspots

Proposed Action CO concentrations, which are a result of motor vehicle emissions, are estimated to remain below both state and federal standards for all intersections that would experience increases in traffic due to the Proposed Action. Consequently, the localized adverse effect on air quality associated with the Proposed Action would be **less than significant**. No mitigation is required.

Motor vehicles are a primary source of pollutants within the project vicinity. Traffic congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed state and/or federal standards are termed CO hotspots. Such hot spots are defined as locations where the ambient CO concentrations exceed the state or federal ambient air quality standards. Emissions of CO are produced in greatest quantities from vehicle combustion and are usually concentrated at or near ground level because CO does not readily disperse into the atmosphere. As a result, potential air quality effects to sensitive receptors are assessed through an analysis of localized CO concentrations. Areas of vehicle congestion have the potential to create CO hotspots that exceed the state ambient air quality 1-hour standard of 20 ppm or the 8-hour standard of 9.0 ppm. The federal levels are less stringent than the state standards and are based on 1- and 8-hour standards of 35 and 9 ppm, respectively. Thus, an exceedance condition would occur based on the state standards prior to exceedance of the federal standard.

The Proposed Action was evaluated utilizing the CALINE4 model developed by Caltrans to determine if it would cause or contribute to the formation of CO hotspots. This analysis is based on the technical study performed for the Proposed Action previously,² which assessed CO concentrations for the five intersections with the highest traffic volumes. Further details on the modeling process are available in that report. The results of the CO hotspots analysis are presented in **Table 3.3-9, Maximum 2025 Carbon**

² Rimpo and Associates, *Sierra Vista Specific Plan Air Quality/Greenhouse Gas Technical Report*, Sept 2009

Monoxide Concentrations – Cumulative Plus Proposed Action at the end of this section.

CO concentrations are estimated to remain below both state and federal standards for all intersections. Consequently the effect on air quality due to CO emissions associated with the Proposed Action would be **less than significant**. No mitigation is required.

All Alts. Traffic volumes for all alternatives are the same or lower than the traffic volumes predicted for the Proposed Action. Therefore, CO concentrations for the alternatives would be no greater than those estimated for the Proposed Action. The effect on air quality due to CO emissions is predicted for the alternatives to be **less than significant**. No mitigation is required.

Impact AQ-4 Exposure to Toxic Air Contaminants

Proposed Action Existing sources of TACs that could affect the Proposed Action are currently minimal. Furthermore, the Proposed Action is a mixed use residential community that will include only few sources of TACs, and any new sources would be subject to strict regulation. Effects related to on-site sources of TACs are **less than significant**, and mitigation is proposed to further reduce these effects. However, future off-site sources of TACs could expose sensitive populations to substantial TAC emissions. This effect is considered **significant**. However, mitigation is proposed to reduce the effect to **less than significant**.

Receptors are generally exposed to TACs through either (a) the construction of a source of TACs in proximity to a residence, workplace, school or care facility or (b) the siting of such facilities within proximity to sources of TACs. Typical sources of TACs that might be associated with the Proposed Action include freeways or other major roadways, certain commercial operations such as dry cleaners and auto repair, and construction and other heavy diesel equipment. The Proposed Action also includes sites with sensitive receptors such as schools and residences. Consequently there is the potential for sensitive receptors to be exposed to TACs through the construction and operation of the Proposed Action.

The Proposed Action has the potential to include new on-site sources of TACs in the commercial zones incorporated in the land use plan. These sources would generally be minor, for example dry cleaners, auto repair or parts shops, service stations, or paint booths. Regardless of size, any new source of TACs would be required to demonstrate that there would be no significant health risks associated with TAC emissions from the facility before commencing operation. This ensures that no on-site TAC sources would cause a significant effect on receptors in the area, whether on or off site. This effect is **less than significant**. **Mitigation Measure AQ-4a**, which is proposed to ensure that in the event that a new TAC source is constructed on site, it is evaluated for its potential health effects, would further reduce the effect from on-site TAC sources.

Receptors associated with the Proposed Action would not be located near any existing significant sources of TACs. The existing land uses surrounding the site are primarily residential and rangeland, with no industrial sites or other significant sources of TACs. CARB has also provided planning guidance that recommends not locating sensitive receptors within 500 feet of a freeway or roadways with greater than 100,000 annual average daily traffic (AADT). No portion of the project site would be within 500 feet of a freeway or roadway with AADT of 100,000. Baseline Road has the highest AADT of the roads adjacent to the site, with an AADT well below 100,000. Furthermore, the portion of the site that borders Baseline Road would include only commercial uses with no residences. All schools included in the Proposed Action are in the interior of the site, well away from any major arterial roadway.

The location of Placer Vineyards south and west of the project site could create the potential for TACs to be transported into the site of the Proposed Action, although this is unlikely. The only Placer Vineyards land use that represents a potential source of TAC exposure to sensitive receptors under the Proposed Action is the commercially designated land located at the southeast corner of Watt Avenue and Baseline Road. This Placer Vineyards land use, if approved, could potentially expose the residential land uses located on the northwest corner of the Watt Avenue/Baseline Road intersection, which would be approximately 100 feet from the nearest residence on the project site, to health risks depending on the commercial uses developed there. TACs can be emitted from a variety of common commercial sources, such as gasoline stations, automobiles, dry cleaners, and painting operations. This is a potentially **significant** effect. However, **Mitigation Measure AQ-4b** is proposed which would require that a screening health risk assessment be conducted if the approval or residential uses occurs subsequent to approval of the commercial area within the Placer Vineyard Specific Plan area.

Mitigation Measures AQ-4a and **AQ-4b** are the same as Mitigation Measures WMM 4.4-7(a) and 4.4-2 in the Sierra Vista Specific Plan EIR and were adopted by the City of Roseville at the time of project approval and will be enforced by the City. The Sierra Vista Specific Plan EIR determined that these mitigation measures would reduce the effect to less than significant (City of Roseville 2010). The USACE agrees with the conclusion in the Sierra Vista Specific Plan EIR and finds that this effect would be reduced to **less than significant** after mitigation.

**No Action,
Alts. 1, 2, 3
(On Site)**

The effects related to exposure to TACs under all of the on-site alternatives would be substantially the same as discussed above for the Proposed Action. As a result, the effect related to on-site sources of TACs would be **less than significant**, and **Mitigation Measure AQ-4a** is proposed to further reduce the effect. However, as with the Proposed Action, future off-site sources of TACs could expose sensitive populations to substantial TAC emissions. This effect is considered **significant** and **Mitigation Measure AQ-4b** is proposed to address this effect to **less than significant**.

As noted above, **Mitigation Measures AQ-4a** and **AQ-4b** are the same as Mitigation Measures WMM 4.4-7(a) and 4.4-2 in the Sierra Vista Specific Plan EIR. The USACE assumes that the City of Roseville or Placer County would impose the same mitigation measures on the on-site alternatives to address these effects. The USACE finds that these mitigation measures would reduce the effects to **less than significant**.

**Alt. 4
(Off Site)**

The effect related to exposure to on-site sources of TACs under the off-site alternative would be substantially the same as discussed above for the Proposed Action and would be **less than significant**. **Mitigation Measure AQ-4a** is proposed to further reduce this effect. However, future off-site sources of TACs would not expose sensitive populations on the Alternative 4 site to substantial TAC emissions as no commercial land uses are proposed for development near the Alternative 4 site. This effect is considered **less than significant**.

With respect to **Mitigation Measures AQ-4a**, the USACE assumes that the Placer County would impose such a mitigation measure on Alternative 4 to further reduce the less than significant effect. The USACE acknowledges that it has no authority to require **Mitigation Measures AQ-4a** and cannot guarantee that the County will impose this measure.

Mitigation Measure AQ-4a

Risk Assessment and Site Specific Measures

(Applicability – Proposed Action and All Alternatives)

Users that could generate toxic air contaminants will be required to submit a Permit to Operate to the PCAPCD. The District will review the use and if a proposed project would cause the combined emissions of TACs to exceed the risk standard of 10 in 1 million at residences or public uses (schools, parks, etc.), additional modeling and/or environmental review would be required to demonstrate emissions from that use or other uses would be reduced so that the standard is not exceeded. For example, an applicant could propose to retrofit an existing operation in order to lower the total TAC emissions in the SVSP area.

Mitigation Measure AQ-4b

Screening Health Risk Assessment

(Applicability – Proposed Action and On-Site Alternatives)

A screening health risk assessment shall be conducted if the approval or residential uses occurs subsequent to approval of the commercial area within the Placer Vineyard Specific Plan area and that commercial area allows for industrial land uses. If the screening analysis shows potential significant health risks, then a more detailed health risk assessment should be conducted. If significant acute, chronic, or carcinogenic health risks are predicted, then measures shall be identified that reduce all health risks to less than significant levels. Such analysis and mitigation may include:

- *Land use and site design requirements including building setbacks and building orientation.*
- *Consideration of the distance between industrial uses (emissions) and the location of potential sensitive receptors and implementation of setbacks to maximize distance.*
- *Application of scrubbers or other modifications to industrial uses to further reduce emissions.*

- *Limitations on outdoor use in non-residential areas used by sensitive receptors.*

Impact AQ-5 Exposure to Objectionable Odors

Proposed Action The Proposed Action would not expose new residents to objectionable odors. Neither does the Proposed Action include any significant sources of objectionable odors. Therefore, there would be **no effect** associated with odors. No mitigation is required.

Odor effects are generated when receptors are located downwind of or near sources of objectionable odors. Sources of these odors include facilities such as wastewater treatment plants, rendering plants, landfills, chemical plants, dairies, refineries, large agricultural operations, and composting.

The site of the Proposed Action is not located near any such sources. The Placer County landfill is located approximately 4.5 miles northeast of the project site and the regional wastewater treatment plant is located approximately 1 mile to the north. Any new facilities proposed for operation nearby the Proposed Action with the potential to produce objectionable odors would be required to demonstrate that would not have a significant effect on receptors in the area.

All Alts. The effects related to exposure to odors would be substantially the same as discussed above for the Proposed Action. Alternative 4, which is sited at a nearby location, would also not be near any significant sources of odors. Based on the significance criteria listed above and for the same reasons presented above for the Proposed Action, there would be **no effect** associated with odors. No mitigation is required.

3.3.6 GENERAL CONFORMITY

Under section 176(c)(1) of the federal CAA, federal agencies that "engage in, support in any way or provide financial assistance for, license or permit, or approve any activity" (42 USC. Section 7506(c)) must demonstrate that such actions do not interfere with state and local plans to bring an area into attainment with the National Ambient Air Quality Standards. Specifically, the Air Basin is designated as nonattainment with respect to the national standards for 8-hour ozone and PM_{2.5}. The program by which a federal agency determines that its action would not obstruct or conflict with air quality attainment plans is referred to as general conformity. The implementing regulations for general conformity are found in Title 40 CFR, Part 51, Subpart W and Part 93, Subpart B. In addition, the Air District has adopted the federal general conformity regulations under Regulation 5, Rule 508.

Under the general conformity regulations, both the direct and indirect emissions associated with a federal action must be evaluated. Subpart W defines direct emissions as:

[T]hose emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and occur at the same time and place as the action (40 CFR Section 51.852).

Indirect emissions are defined as:

[T]hose emissions of a criteria pollutant or its precursors that:

- (1) Are caused by the Federal action, but may occur later in time and/or may be farther removed in distance from the action itself but are still reasonably foreseeable; and
- (2) The Federal agency can practicably control and will maintain control over due to a continuing program responsibility of the Federal agency (40 CFR Section 51.852).

The USACE will not maintain control over those elements of the Proposed Action or alternatives associated with operation of facilities related to development under the Sierra Vista Specific Plan. Accordingly, this evaluation will only consider those emissions associated with the construction of the Proposed Action and alternatives.

A conformity determination is required for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a federal nonattainment or maintenance area would equal or exceed specified annual emission rates, referred to as *de minimis* thresholds, or would be regionally significant. A project's direct and indirect emissions are regionally significant if they exceed 10 percent or more of a nonattainment or maintenance area's emissions inventory for that pollutant. For ozone precursors, the *de minimis* thresholds depend on the severity of the nonattainment classification; for other pollutants, the threshold is set at 100 tons per year. The Air Basin was designated as serious nonattainment for ozone by the US EPA in June 2004. However, due to concerns with meeting emissions reductions targets, the member air districts of the Sacramento Federal Nonattainment Area requested a voluntary reclassification to severe, which was approved by the US EPA in June 2010. The relevant *de minimis* thresholds for the Air Basin are shown below in **Table 3.3-10**.

Table 3.3-10
General Conformity De Minimis Thresholds

Pollutant	Attainment Status	Annual Emissions (ton/yr)
NO _x	Nonattainment/Severe (Ozone)	25
VOC	Nonattainment/Severe (Ozone)	25
PM2.5 (direct)	Nonattainment	100
PM2.5 (NO _x) ¹	Nonattainment	100
PM2.5 (VOC and NH ₃) ²	Nonattainment	100
PM2.5 (SO _x)	Nonattainment	100

Notes:

¹ NO_x is included for PM2.5 unless determined not to be a significant precursor. However, the NO_x threshold based on its contribution to ozone is more stringent.

² VOC and ammonia (NH₃) are not included for PM2.5 unless determined to be a significant precursor. However, the VOC threshold based on their contribution to ozone is more stringent. Only very minor emissions of ammonia would be emitted to the atmosphere as a result of the Proposed Action or its alternatives.

Annual construction emissions were estimated by multiplying the modeled daily emissions by 260 days (assuming 52 weeks per year of construction, with 5 days per week of activity) and dividing the total by 2,000 to convert from pounds to tons. The values chosen were for the Proposed Action. Emissions totals

for the alternatives are less than those for the Proposed Action, so that if the Proposed Action is determined to meet the conformity criteria then the alternatives would as well. The resultant annual emissions for each nonattainment or maintenance pollutant in each construction year are shown in **Table 3.3-11**. The emission values in bold text are the years in which the *de minimis* threshold for that pollutant would be exceeded.

Table 3.3-11
Direct Annual Construction Emissions

Year	VOC (tons/yr)	NO _x (tons/yr)	SO _x (tons/yr)	PM2.5 (tons/yr)
2013	125.3	10.9	0.03	13.7
2014	153.0	10.1	0.03	13.6
2015	127.6	7.1	0.03	13.1
2016	89.5	8.4	0.01	11.9
2017	232.0	7.3	0.04	20.2
2018	190.4	5.5	0.03	18.5
2019	221.9	5.0	0.03	18.5
2020	193.2	7.4	0.03	19.0
2021	147.1	6.1	0.03	15.4
2022	151.5	4.7	0.03	15.4
2023	156.0	6.1	0.03	15.4
2024	147.4	6.1	0.03	16.5
Thresholds (tons/yr)	25	25	100	100
Exceeds Threshold?	YES	NO	NO	NO

Source: Impact Sciences, Inc. Emissions calculations are provided in **Appendix 3.3**.

As shown in **Table 3.3-11**, the annual direct emissions of VOC would exceed the *de minimis* threshold in every year. Thus, further conformity analysis is required for this pollutant. No further conformity analysis is required for NO_x, SO_x, or PM2.5 because their emissions would be less than the conformity thresholds.

For ozone and nitrogen dioxide (i.e., when VOC or NO_x exceed the *de minimis* threshold), a second test for conformity is whether the project's emissions are consistent with the emissions inventory (also referred to as the emissions budget) in the approved SIP. Specifically, for ozone this test is met if "[t]he total of direct and indirect emissions from the action (or portion thereof) is determined and documented by the State agency primarily responsible for the applicable SIP to result in a level of emissions which, together with all other emissions in the nonattainment (or maintenance) area, would not exceed the emissions budgets specified in the applicable SIP" (40 CFR Section 93.158(a)(5)(i)(A)) (emphasis added).

The applicable SIP is the most recent version of the plan that has been approved by the US EPA. For the Air Basin, the most recent plan is the 2008 Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2008 Ozone Plan). The 2008 Ozone Plan has been partially approved by the US EPA, specifically the motor vehicle emissions budget for use in traffic conformity determinations. The most recent regional ozone plan to be fully approved by the EPA is the 1994 SIP. However, the 1994 SIP was produced to respond to ozone standards that have since been revoked and replaced with more stringent ones. The 2008 Ozone Plan was produced to address the updated national standards for ozone, and would therefore be more stringent than the previous 1994 SIP, with lower emissions budgets. Consequently, while the 2008 Ozone Plan is still pending overall approval by the US EPA, it has been used as the most conservative basis for this conformity analysis. This conformity analysis involves a comparison of the maximum daily direct emissions of VOC (i.e., mobile source exhaust emissions and architectural coatings) to the daily emissions budgets from the 2008 Ozone Plan for the most relevant emission categories. Years provided in the 2008 Ozone Plan are 2014, 2017, and 2018. 2018 is the year of demonstration of attainment for the SVAB.

Table 3.3-12 shows a comparison of the maximum daily direct emissions of VOC to the daily emissions inventory from the 2008 Ozone Plan for the most relevant emission categories.

Table 3.3-12
Comparison of Direct Proposed Action Emissions with SIP VOC Emission Inventory

Construction Year	SIP Emissions Budget ¹ Arch. Coatings (tons/day)	SIP Emissions Budget ¹ Const. Equip (tons/day)	SIP Emissions Budget Combined (tons/day)	Direct Proposed Action Emissions (tons/day) ^{2,3}
2014	7.6	4.9	12.5	0.59
2017	8.0	3.9	11.9	0.89
2018	8.1	3.7	11.8	0.73

Source:

¹ Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan, SMAQMD, Dec 19, 2008.

² Total maximum daily VOC emissions are shown in **Table 3.3-11** and converted to tons/day.

³ These VOC emissions are primarily from off-road diesel equipment and architectural coatings but include small contributions from other construction-related sources such as worker vehicles, and are therefore likely overestimated.

As shown in **Table 3.3-12**, the direct Proposed Action emissions are well below the levels in the applicable SIP emissions budget for the Sacramento Valley Air Basin. The above information indicates that the Proposed Action direct (construction) emissions are accounted for in the SIP (i.e., these emissions are well within the emissions budgets for the applicable source categories) and that together with all other emissions in the nonattainment area would not be likely to exceed the emissions budgets specified in the applicable SIP. However, the Air District, as the agency responsible for the SIP, must make a formal determination in response to a request from the USACE in accordance with 40 CFR Section 51.858(a)(5)(i)(A) that the Proposed Action's direct and indirect emissions would not exceed the emissions

budgets specified in the applicable SIP. However, based on this preliminary analysis, a *detailed* conformity analysis by the USACE would not likely be required (40 CFR Section 51.858). In addition, the direct emissions associated with the Proposed Action would not conflict with or obstruct implementation of the applicable air quality plan (i.e., SIP for the Sacramento Valley Air Basin).

3.3.7 RESIDUAL SIGNIFICANT IMPACTS

A residual significant effect would remain under the Proposed Action and all alternatives for **Impacts AQ-1** and **AQ-2** after mitigation. All of the other effects would either have **no effect**, be **less than significant** or would be reduced to **less than significant** by the proposed mitigation.

3.3.8 REFERENCES

- California Air Resources Board. 2004. *Roseville Rail Yard Study*. 5.
- City of Roseville. 2010. *Sierra Vista Specific Plan Final Environmental Impact Report*.
- Rimpo and Associates. 2009. *Sierra Vista Specific Plan Air Quality/Greenhouse Gas Technical Report*.
- Sacramento Metropolitan Air Quality Management District (SMAQMD). 2009. *Guide to Air Quality Assessment in Sacramento County*.1-7 – 1-8.
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- US Environmental Protection Agency (USEPA). n.d.a. "The ASPEN Model." <http://www.epa.gov/ttn/atw/nata/asp.html>. n.d.
- US Environmental Protection Agency (USEPA). n.d.b. "National Air Toxics Assessments." <http://www.epa.gov/ttn/atw/natamain/>. n.d.
- US Environmental Protection Agency (USEPA). n.d.c. "Ground-level Ozone." <http://www.epa.gov/air/ozonepollution/>.

**Table 3.3-3
Ambient Pollutant Concentrations Registered Nearest to the Project Site**

Pollutant	Standards ¹	Year		
		2007	2008	2009
OZONE (O₃)				
Maximum 1-hour concentration monitored (ppm)		0.109	0.134	0.113
Maximum 8-hour concentration monitored (ppm)		0.101	0.107	0.101
Number of days exceeding state 1-hour standard	0.09 ppm	4	20	13
Number of days exceeding state 8-hour standard	0.070 ppm	20	38	32
Number of days exceeding federal 8-hour standard ²	0.075 ppm	8	22	19
CARBON MONOXIDE (CO)				
Maximum 8-hour concentration monitored (ppm)		1.73	1.90	1.66
Number of days exceeding state 8-hour standard	9.0 ppm	0	0	0
Number of days exceeding federal 8-hour standard	9 ppm	0	0	0
NITROGEN DIOXIDE (NO₂)				
Maximum 1-hour concentration monitored (ppm)		0.058	0.067	0.061
Annual average concentration monitored (ppm)		0.012	0.012	0.010
Number of days exceeding state 1-hour standard	0.18 ppm	0	0	0
Number of days exceeding state 1-hour standard ³	0.100 ppm	0	0	0
PARTICULATE MATTER (PM₁₀)				
Maximum 24-hour concentration monitored (µg/m ³)		45.0	74.2	33.5
Annual average concentration monitored (µg/m ³)		17.7	22.7	17.9
Number of samples exceeding state standard	50 µg/m ³	0	6	0
Number of samples exceeding federal standard	150 µg/m ³	0	0	0
PARTICULATE MATTER (PM_{2.5})				
Maximum 24-hour concentration monitored (µg/m ³)		30.0	60.0	22.6
Annual average concentration monitored (µg/m ³)		8.3	10.0	8.5
Number of samples exceeding federal standard	35 µg/m ³	0	6	0
SULFUR DIOXIDE (SO₂)				
Maximum 24-hour concentration monitored (ppm)		0.004	0.002	0.002
Number of samples exceeding 24-hour state standard	0.04 ppm	0	0	0
Number of samples exceeding federal 24-hour standard	0.14 ppm	0	0	0

Sources:

California Air Resource Board, "Air Quality Data Statistics," <http://www.arb.ca.gov/adam/welcome.html>.

US Environmental Protection Agency, "Air Data: Access to Air Pollution Data," <http://www.epa.gov/air/data/>.

— No air quality data received for this year.

¹ Parts by volume per million of air (ppm), micrograms per cubic meter of air (µg/m³), or annual arithmetic mean (aam).

² Federal 8-hour O₃ standard was revised to 0.075 ppm in March 2008. Statistics are based on the current standard.

³ The US EPA has promulgated a new 1-hour National Ambient Air Quality Standards for NO₂. The new 1-hour standard is 0.100 parts per million (188 micrograms per cubic meter) and became effective on April 12, 2010.

**Table 3.3-8
Estimated Unmitigated Operational Emissions – Proposed Action and Alternatives**

Emissions Source	Emissions in Pounds Per Day					
	ROG	NO _x	CO	SO _x	PM10	PM2.5
Proposed Action						
Operational (Mobile) Sources	1,093.2	823.4	9,334.4	18.7	3,224.3	613.5
Area Sources	492.3	170.6	245.7	0.01	0.7	0.7
Emissions Total	1,585.5	993.9	9,580.1	18.7	3,225.0	614.2
Alternative 1						
Operational (Mobile) Sources	440.9	152.8	220.1	0.0	0.6	0.6
Area Sources	979.2	737.5	8,360.7	16.7	2,888.0	549.5
Emissions Total	1,420.1	890.2	8,580.7	16.7	2,888.6	550.1
Alternative 2						
Operational (Mobile) Sources	474.9	164.6	237.0	0.0	0.7	0.7
Area Sources	1,054.5	794.3	9,004.1	18.0	3,110.2	591.8
Emissions Total	1,529.4	958.7	9,241.1	18.0	3,110.9	592.5
Alternative 3						
Operational (Mobile) Sources	444.0	153.9	221.6	0.0	0.6	0.6
Area Sources	986.0	742.7	8,419.2	16.9	2,908.2	553.3
Emissions Total	1,430.0	896.5	8,640.8	16.9	2,908.8	554.0
Alternative 4						
Operational (Mobile) Sources	396.4	137.4	197.8	0.0	0.6	0.6
Area Sources	880.2	663.0	7,515.6	15.1	2,596.1	494.0
Emissions Total	1,069.8	728.8	7,613.0	15.1	2,597.3	494.4
Alternative 5 – No Action						
Operational (Mobile) Sources	320.2	111.0	159.8	0.0	0.5	0.5
Area Sources	711.0	535.5	6,071.2	12.2	2,097.1	399.0
Emissions Total	1,031.2	646.4	6,231.0	12.2	2,097.6	399.5
Significance Threshold	82	82	550	--	82	--

Source: Impact Sciences, Inc. Emissions calculations are provided in *Appendix 3.3*.

**Table 3.3-9
Maximum 2025 Carbon Monoxide Concentrations – Cumulative Plus Proposed Action**

Intersection	Receptor	1-Hour¹	8-Hour²
1. Galleria and Roseville Parkway	1	12.9	6.4
	2	13.3	6.6
	3	12.9	6.4
	4	12.5	6.1
2. Pleasant Grove and Roseville Parkway	5	12.7	6.3
	6	13.2	6.6
	7	12.7	6.3
	8	13.7	6.9
3. Blue Oaks Boulevard and Foothills Boulevard	9	12.3	6.0
	10	13.2	6.6
	11	13.3	6.6
	12	12.0	5.8
4. Foothills Boulevard and Pleasant Grove Boulevard	13	11.8	5.7
	14	11.8	5.7
	15	11.9	5.8
	16	12.2	6.0
5. Elverta Road and Walerga Road	17	11.8	5.7
	18	11.2	5.4
	19	11.7	5.7
	20	11.5	5.5
Exceeds state 1-hour standard of 20 ppm?		NO	—
Exceeds federal 1-hour standard of 35 ppm?		NO	—
Exceeds state 8-hour standard of 9.0 ppm?		—	NO
Exceeds federal 8-hour standard of 9 ppm?		—	NO

Source: Rimpo and Associates 2009. Emissions calculations are provided in **Appendix 3.3**.

¹ State standard is 20 parts per million. Federal standard is 35 parts per million.

² State standard is 9.0 parts per million. Federal standard is 9 parts per million.