# 4.4 AIR QUALITY

## 4.4.1 INTRODUCTION

This section includes a description of existing air quality conditions, a summary of applicable regulations, and analyses of potential short-term and long-term air quality impacts of the proposed project. Referenced materials include:

- City of Roseville General Plan, 2004 as amended
- Proposed Sierra Vista Specific Plan, 2009
- Sacramento Area Regional Ozone Attainment Plan
- Rimpo Associates Air Quality/Greenhouse Gas Emission Technical Report, July 2009
- West Roseville Specific Plan, February 2004

The documents listed above are available for review during normal business hours at:

### **City of Roseville Permit Center**

311 Vernon Street Roseville, CA 95678

No comments regarding air quality were received in response to the Notice of Preparation.

### 4.4.2 ENVIRONMENTAL SETTING

The Project area is located in the western portion of Placer County, California (western Placer County), which is located within the Sacramento Valley Air Basin (SVAB). The SVAB also comprises all of Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo and Yuba counties along with the eastern portion of Solano County. Western Placer County is also part of the Sacramento Federal Ozone Non-attainment Area, which consists of Sacramento and Yolo Counties and parts of El Dorado, Solano, and Sutter Counties, all of which affect each other's air quality. The Placer County Air Pollution Control District (PCAPCD) works in conjunction with the other Air Pollution Control Districts and Air Quality Management Districts of these contiguous jurisdictions, to develop plans to bring the entire ozone non-attainment area into compliance. Ambient concentrations of air pollutants are determined by the amount of emissions released by pollutant sources and the atmosphere's ability to transport and dilute such emissions. Natural factors which affect transport and dilution include terrain, wind, atmospheric stability, and the presence of

sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources, each of which is discussed separately below.

### **Topography, Climate, and Meteorology**

The City of Roseville is located in southern Placer County within the Sacramento Valley Air Basin (SVAB). The SVAB is surrounded by the Coast Range to the west, the Cascade Range to the north, and Sierra Nevada mountains to the east. The winters are wet and cool and the summers are hot and dry. The high average summer temperature, combined with very low relative humidity, produces hot, dry summers that contribute to ozone buildup. Prevailing winds are from the southwest, with secondary winds from the northwest.

Surface or elevated temperature inversions are common in late summer and fall. Surface inversions are formed when the air close to the surface cools more rapidly than the warm layer of air above it. Elevated inversions occur when a layer of cool air is suspended between warm air layers above and below it. Both situations result in air stagnation. Air pollutants accumulate under and within inversions, subjecting people in the region to elevated pollution levels and health concerns.

Air pollution can be transported into the basin, but on smoggy days, air pollution emissions from within the basin are the most significant sources of pollution. The Project area receives air pollution inflow, transported from the Bay Area or San Joaquin Valley air basins. On many summer days, a "delta breeze" blows toward Sacramento from the ocean through the Carquinez Strait. The delta breeze moves Sacramento's air pollution up toward the north end of the Sacramento Valley and East into the Sierra Nevada foothills. On days when wind blows from the North, Sacramento air pollution can be transported to the south into the San Joaquin Air Basin.

### **Air Pollutants and Ambient Air Quality Standards**

Ambient air quality is affected by pollutants emitted from stationary and mobile sources.

Stationary sources are further divided into point sources and area sources. Point sources consist of one or more emission sources at a facility with an identified location and are usually associated with manufacturing and industrial processing plants. Area sources are widely distributed and

consist of many small emission sources. Area source examples include lawnmowers and other landscape maintenance equipment, natural gas fired water and space heaters, and consumer products such as paints, hairspray, deodorant, and similar products with evaporative emissions. Mobile sources refer to emissions from motor vehicles, including tailpipe, evaporative, and fugitive emissions.

Air pollutants emitted by stationary and mobile sources are regulated by federal and state law. Certain of these regulated pollutants are known as "criteria air pollutants", and are emitted as primary and secondary pollutants. The criteria pollutants are particulate matter (PM), ground-level ozone  $(O_3)$ , carbon monoxide (CO), nitrogen oxides (NOx), sulfur dioxide  $(SO_2)$ , and lead (Pb).

Primary criteria air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), nitrogen oxides (NOx), sulfur dioxide (SO<sub>2</sub>), and most forms of particulate matter (PM10 and PM2.5) are primary air pollutants. Secondary criteria air pollutants are those formed by chemical and photochemical reactions in the atmosphere. Ozone and nitrogen dioxide are the principal secondary pollutants.

The U.S. Environmental Protection Agency has developed National Ambient Air Quality Standards (NAAQS) for the criteria air pollutants. At the state level, the California Air Resources Board has developed California Ambient Air Quality Standards (CAAQS). Table 4.4-1 shows the NAAQS and CAAQS. Areas that do not meet the NAAQS and/or CAAQS are classified as non-attainment areas.

The SVAB is non-attainment of the federal and state ozone standards. The Placer County portion of the SVAB is in non-attainment of federal  $PM_{10}$  standards (Table 4.2-2). If attainment is not demonstrated by 2013, substantial financial penalties and/or stricter air quality standards could be imposed on all jurisdictions within the SVAB, including Placer County.

Placer County has been designated as a non-attainment area for state AAQS for ozone and PM10, and is unclassified for PM2.5 and CO (meaning there is not enough data to classify the region attainment or non-attainment for these pollutants). Placer County has been designated as an attainment area for all other criteria air pollutants.

**TABLE 4.4-1** 

CALIFORNIA AND NATIONAL AMBIENT AIR QUALITY STANDARDS <b>Pollutant</b>	Averaging Time	CAAQS <sup>a</sup>	NAAQS <sup>b</sup>
Ozone (O <sub>3</sub> )	1 hour	0.09 ppm	NA
	8 hours	0.070 ppm	0.075 ppm
Carbon monoxide (CO)	1 hour	20 ppm	35 ppm
	8 hours	9.0 ppm	9 ppm
Nitrogen dioxide (NO <sub>2</sub> )	1 hour	0.18 ppm	NA
	Annual	0.030 ppm	0.053 ppm
Sulfur dioxide (SO <sub>2</sub> )	1 hour	0.25 ppm	NA
	3 hours	NA	0.5 ppm
	24 hours	0.04 ppm	0.14 ppm
	Annual	NA	0.03 ppm
Inhalable particulate matter (PM10)	24 hours	50 μg/m³	150 μg/m³
	Annual	20 μg/m³	NA
Fine particulate matter (PM2.5)	24 hours	NA	35 μg/m³
	Annual	12 μg/m³	15 μg/m³
Sulfates	24 hours	25 μg/m³	NA
Lead (Pb)	30 days	1.5 μg/m³	NA
	Calendar quarter	NA	1.5 μg/m³
Hydrogen sulfide	1 hour	0.03 ppm	NA
Vinyl chloride	24 hours	0.010 ppm	NA

Source: California Air Resources Board 2008a.

Note: NA = not applicable, ppm = parts per million.

 $<sup>^{</sup>a}$ The CAAQS for ozone, CO, SO<sub>2</sub> (1- and 24-hour), NO<sub>2</sub> PM<sub>10</sub>, and PM<sub>2.5</sub> are values not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

<sup>&</sup>lt;sup>b</sup>The NAAQS, other than ozone and those based on annual averages, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.

Until 1998, the SVAB was classified as "non-attainment" with respect to the federal CO standards. Currently, the SVAB is considered a federal planning area for CO standards. A federal planning area is a basin that was in non-attainment and needs to demonstrate compliance with the federal standards for two consecutive years and to develop a maintenance plan demonstrating that emission levels will remain in compliance for at least ten years to achieve attainment again.

Placer County has been designated as a non-attainment area of state AAQS for ozone and  $PM_{10}$ , and is unclassified for  $PM_{2.5}$  and CO (meaning there is not enough data to classify the region attainment or non-attainment for these pollutants). Placer County has been designated as an attainment area for all other criteria air pollutants.

TABLE 4.4-2

SACRAMENTO VALLEY AIR BASIN

STATE AND NATIONAL AMBIENT AIR QUALITY ATTAINMENT STATUS

Air Pollutant	Attainment Status – SVAB
Ozone (O <sub>3</sub> )	Non-attainment for NAAQS 8-hour;
	Non-attainment for CAAQS 1-hour and 8-hour
Carbon monoxide (CO)	Attainment/maintenance for federal standards; Unclassified for state standards
Nitrogen dioxide (NO <sub>2</sub> )	Attainment
Sulfur dioxide (SO <sub>2</sub> )	Attainment
Suspended particulate matter ( PM <sub>10</sub> )	Attainment for NAAQS;
	Non-attainment for CAAQS
Particulate matter ( PM <sub>2.5</sub> )	Non-attainment for NAAQS;
	Non-attainment for CAAQS
Sulfates	Attainment
Lead (Pb)	Attainment
Hydrogen sulfide	Unclassified
Source: California Air Resources Board, 2009a.	

#### Ozone

Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Ozone is a severe eye, nose, and throat irritant. Ozone also attacks synthetic rubber, textiles, plants, and other materials; it causes extensive damage to plants, such as leaf discoloration and cell damage.

State standards for ozone have been set for a 1-hour averaging time. The state 1-hour ozone standard is 0.09 ppm, not to be exceeded. EPA recently replaced the 1-hour federal ozone standard with an 8-hour standard of 0.075 ppm, while ARB recently enacted a state 8-hour standard of 0.07 ppm.

Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone precursors, including reactive organic gases (ROGs) and oxides of nitrogen (NO $_x$ ), react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. ROG and NO $_x$  are emitted by mobile sources and stationary combustion equipment.

Table 4.4-3 shows monitoring results for the ozone monitoring station closest to the proposed project, which is located in the City of Roseville. This station shows several violations of the state and federal ozone standards during the most recent three years of monitoring.

TABLE 4.4-3
OZONE MONITORING RESULTS
NORTH SUNRISE MONITORING STATION

Ozone (O3)	2006	2007	2008			
Highest 1-hour average, ppm	0.121	0.109	0.134			
Highest 8-hour average, ppm	0.097	0.100	0.106			
Days > state 1-hour standard	16	4	20			
Days > state 8-hour standard	38	20	38			
Days > federal 8-hour standard	0	0	2			
Percent of year covered	99	96	99			
Sources: California Air Resources Board 2009b.						

### Carbon Monoxide

CO is inert to plants and materials but can significantly affect human health. CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. Effects on humans range from slight headaches and nausea to death.

State and federal CO standards have been set for both 1- and 8-hour averaging times. The state 1-hour standard is 20 ppm, and the federal 1-hour standard is 35 ppm. Both the state and federal standards for the 8-hour averaging period are 9 ppm.

Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when light winds combine with the formation of ground-level temperature inversions typically from evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures. Overall, CO emissions have been reduced in the last few years as a result of cleaner tailpipes in newer model cars, use of oxygenated fuel, and modifications to cleaner-burning fuel in fleet mixes.

No CO monitoring is currently conducted in Placer County. The closest CO monitoring station is located in Sacramento County. The results from the last three years of monitoring are shown in Table 4.4-4. No violations of either the state or federal CO standards were recorded at this monitoring station during the most three recent years.

TABLE 4.4-4

CARBON MONOXIDE MONITORING RESULTS

NORTH HIGHLANDS-BLACKFOOT WAY MONITORING STATION

Carbon Monoxide (CO)	2006	2007	2008		
Highest 1-hour average, ppm	2.70	1.73	1.90		
Highest 8-hour average, ppm	2.70	1.70	1.80		
Sources: California Air Resources Board 2009b.; US EPA 2009.					

### **Oxides of Nitrogen**

 $NO_x$  contributes to smog and can injure plants and animals and affect human health.  $NO_x$  also contributes to acidic deposition and reacts with ROG in the presence of sunlight to form photochemical smog.  $NO_x$  concentrations result in a brownish color because they absorb the bluegreen area of the visible spectrum, greatly affecting visibility.

 $NO_x$  is emitted primarily by combustion sources, including both mobile and stationary sources.  $NO_x$  also is emitted by a variety of area sources, ranging from wildfires and prescribed fires to water-heating and space-heating systems powered by fossil fuels.

The state  $NO_x$  standard is 0.18 ppm for the 1-hour average and 0.03 ppm for the annual average. The federal  $NO_x$  standard is 0.053 ppm on an annual average. No violations of the NOx standard were recorded in the SVAB during the three recent years of monitoring.

#### **Sulfur Dioxide**

 $SO_2$  is produced by such stationary sources as coal and oil combustion, steel mills, refineries, and pulp and paper mills. The major adverse health effects associated with  $SO_2$  exposure pertain to the upper respiratory tract.  $SO_2$  is a respiratory irritant with constriction of the bronchioles occurring with inhalation of  $SO_2$  at 5 ppm or more. On contact with the moist, mucous membranes,  $SO_2$  produces sulfurous acid, which is a direct irritant. Concentration rather than duration of the exposure is an important determinant of respiratory effects. Exposure to high  $SO_2$  concentrations may result in edema of the lungs or glottis and respiratory paralysis.

### **Particulate Matter**

#### PM<sub>10</sub> and PM<sub>2.5</sub>

Health concerns associated with suspended particulate matter (PM) focus on those particles small enough to reach the lungs when inhaled. PM can damage human health and retard plant growth, as well as reduce visibility, soil buildings and other structures, and corrode materials.  $PM_{10}$  consists of inhalable particles that are 10 microns in diameter or smaller;  $PM_{2.5}$  consists of inhalable particles that are 2.5 microns in diameter or smaller.

The state  $PM_{10}$  standards are 50  $\mu g/m^3$  as a 24-hour average and 20  $\mu g/m^3$  as an annual geometric mean. The federal  $PM_{10}$  standard is 150  $\mu g/m^3$  as a 24-hour average. The federal annual  $PM_{10}$  standard of 50  $\mu g/m^3$  was recently dropped.

The federal PM<sub>2.5</sub> standards are 35  $\mu$ g/m³ as a 24-hour average and 15  $\mu$ g/m³ as an annual average. The state PM<sub>2.5</sub> standard equals 12  $\mu$ g/m³ on an annual average.

 $PM_{10}$  and  $PM_{2.5}$  emissions are generated by a wide variety of sources, including agriculture, industrial activities, dust suspended by vehicle traffic, and secondary aerosols formed by reactions in the atmosphere.

Table 4.4-5 shows the past three years worth of  $PM_{10}$  and  $PM_{2.5}$  monitoring results for the Roseville North Sunrise monitoring station. Two violations of the state  $PM_{10}$  standards were recorded at this monitoring location. The Roseville North Sunrise monitoring station also recorded several violations of the federal 8 hour  $PM_{2.5}$  standard during the most recent three years.

TABLE 4.4-5

PARTICULATE MATTER MONITORING RESULTS

AT THE ROSEVILLE NORTH SUNRISE MONITORING STATION

Particulate Matter (PM10)	2006	2007	2008
Highest 24-hour average, μg/m³	55.0	<u>45.0</u>	73.9
Days > state standard <sup>a</sup>	1	0	1
Days > federal standarda	0	0	0
Percent of year covered	100	98	100
Particulate Matter (PM2.5)	2006	2007	2008
Highest 24-hour average, μg/m³	<u>54.7</u>	48.7	49.7
Days > federal standarda	11.5	0	6.5
Percent of year covered	100	96	92

Note: <u>Underlined values</u> represent those in excess of applicable NAAQS. **Bold values** represent those in excess of the applicable CAAQS.

Source: California Air Resources Board, 2009b.

<sup>a</sup>Days over state or federal standards are measured days, not estimated days.

#### **Sulfur Dioxide**

The major health concerns associated with inhalation of  $SO_2$  include effects on breathing, respiratory illness, alterations in pulmonary defenses, and aggravation of existing cardiovascular disease. Children, the elderly, and people with asthma, cardiovascular disease, or chronic lung diseases—such as bronchitis or emphysema—are most susceptible to adverse health effects from exposure to  $SO_2$ .  $SO_2$  is a precursor to sulfates, which are associated with acidification of lakes and streams, accelerated corrosion of buildings and monuments, reduced visibility, and other adverse health effects.

EPA's health-based NAAQS for  $SO_2$  is 0.03 ppm measured as an annual arithmetic mean concentration, 0.14 ppm measured over a 24-hour period, and 0.5 ppm measured over a 3-hour average period. California's  $SO_2$  standard is 0.04 ppm measured over a 24-hour average period and 0.25 ppm measured over 1-hour.

 $SO_2$  belongs to the family of gases called sulfur oxides ( $SO_x$ ). These gases are formed when fuel containing sulfur (mainly coal and oil) is burned, and also during metal smelting and other industrial processes.

#### Lead

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, as discussed in detail below, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the U.S. Environmental Protection Agency (EPA) set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. EPA banned the use of leaded gasoline in highway vehicles in December 1995 (EPA 2008a).

As a result of EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector have declined dramatically (95% between 1980 and 1999) and levels of lead in the air decreased by 94% between 1980 and 1999. Transportation sources, primarily airplanes, now contribute only 13% of lead emissions. A National Health and Nutrition Examination Survey reported a 78% decrease in the levels of lead in people's blood between 1976 and 1991. This dramatic decline can be attributed to the move from leaded to unleaded gasoline (EPA 2008a).

The decrease in lead emissions and ambient lead concentrations over the past 25 years is California's most dramatic success story with regard to air quality management. The rapid decrease in lead concentrations can be attributed primarily to phasing out the lead in gasoline. This phase-out began during the 1970s, and subsequent California Air Resources Board (ARB) regulations have virtually eliminated all lead from gasoline now sold in California. All areas of the state are currently designated as attainment for the state lead standard (EPA does not designate areas for the national lead standard). Although the ambient lead standards are no longer violated,

lead emissions from stationary sources still pose "hot spot" problems in some areas. As a result, ARB identified lead as a toxic air contaminant.

# **Toxic Air Contaminants (TAC)**

Concentrations of TACs, or in federal parlance, hazardous air pollutants (HAPs), are also used as indicators of ambient-air-quality conditions. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

According to the *California Almanac of Emissions and Air Quality* (ARB 2007a), the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being particulate matter exhaust emissions from diesel-fueled engines (diesel PM). Diesel PM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present.

Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, ARB has made preliminary concentration estimates based on a PM exposure method. This method uses the ARB emissions inventory's PM<sub>10</sub> database, ambient PM<sub>10</sub> monitoring data, and the results from several studies to estimate concentrations of diesel PM. In addition to diesel PM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, *para*-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene.

Diesel PM poses the greatest health risk among these 10 TACs. Based on receptor modeling techniques, ARB estimated the diesel PM health risk in the SVAB in 2000 to be 360 excess cancer cases per million people. Since 1990, the health risk of diesel PM in the SVAB has been reduced by 52%. Overall, levels of most TACs have gone down since 1990 except for para-dichlorobenzene, acetaldehyde and formaldehyde (ARB 2007a). As stated earlier, new research suggests that diesel PM, which is a component of PM<sub>2.5</sub>, is more toxic than previously estimated (ARB 2008i). Thus,

ARB's diesel PM reduction efforts and reductions in public exposure to diesel PM are of increased importance. ARB's Risk Reduction Plan to Reduce Particulate Matter Emission from Diesel-Fueled Engines and Vehicles (CARB, October 2000) ("Diesel Reduction Plan") calls for all new diesel-fueled vehicles and engines to use state-of-the-art catalyzed diesel particulate filters and very low-sulfur diesel fuel. The projected emission benefits associated with the full implementation of ARB's plan, including proposed federal measures, are reductions in diesel PM emissions and associated cancer risks of 75 percent by 2010 and 85 percent by 2020. (*Ibid*, p. 2.)

### **Emission Sources**

### Stationary

According to ARB Community Health Air Pollution Information System, there are no major existing stationary sources of TACs within two miles of the Plan area (ARB 2008e, 2008f). The closest stationary source of TACs to the Plan area is H.B. Fuller Co., which is approximately 3.5 miles to the northwest.

#### Mobile

On-Road Vehicle Traffic

Vehicles on area roadways, specifically Baseline Road and Fiddyment Road, are sources of diesel PM and other TACs associated with vehicle exhaust.

**Naturally Occurring Asbestos** 

Naturally occurring asbestos (NOA) may be found in at least 44 of California's 58 counties. Asbestos is the name for a group of naturally occurring silicate minerals. Exposure to asbestos may result in inhalation or ingestion of asbestos fibers, which over time may result in damage to the lungs or membranes that cover the lungs, leading to illness or even death.

Naturally occurring asbestos, often found in serpentine rock formations, is present in several foothill areas of Placer County. When material containing naturally occurring asbestos is disturbed, asbestos fibers may be released and become airborne, thereby creating a potential health hazard.

The California Geological Survey's map shows areas of higher probability for asbestos-containing rock within the broad zone of faults that follow the low foothills and lie in a southeast-to-northwest band. The Placer County communities of Auburn, Colfax, Meadow Vista, and Foresthill are among those that are within this fault band. Generally, there are no areas of high probability of occurrence of naturally occurring asbestos in areas of Placer County west of Folsom Lake or south of Wise Road. The communities of Roseville, Granite Bay, Rocklin, Lincoln, Loomis, Penryn, and Newcastle lie within geologic areas that have a lower probability for the presence of naturally occurring asbestos. There are some isolated areas of higher probability of presence of naturally occurring asbestos within the Tahoe National Forest.

According to Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County, California (Higgins and Clinkenbeard 2006) and A General Location Guide for Ultramafic Rocks in California—Areas More Likely to Contain Naturally Occurring Asbestos (Churchill and Hill 2000), the Plan area is located in an area that is least likely to contain NOA.

#### **Odors**

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet then

the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word strong to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Potential existing sources of odor in the vicinity of Downtown Roseville include industrial land uses (e.g., Placer County landfill, and City of Roseville Pleasant Grove Wastewater Treatment Plan.), which are located approximately of the Plan area.

# 4.4.3 REGULATORY SETTING

Air quality within the SVAB is regulated by EPA, ARB, PCAPCD. Each of these agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although EPA regulations may not be superseded, both state and local regulations may be more stringent.

#### **Criteria Air Pollutants**

### Federal Plans, Policies, Regulations, and Laws

At the federal level, EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the CAA, which was enacted in 1970. The most recent major amendments made by Congress were in 1990.

The CAA required EPA to establish NAAQS. As shown in Table 4.10-2, EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and lead. The primary standards protect the public health and the secondary standards protect public welfare. The CAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The federal Clean Air Act Amendments of 1990 (CAAA) added requirements for states with non-attainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest

emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA must review all state SIPs to determine whether they conform to the mandates of the CAA and the amendments thereof, and to determine whether implementing them will achieve air quality goals. If EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) that imposes additional control measures may be prepared for the non-attainment area. Failure to submit an approvable SIP or to implement the plan within the mandated time frame may cause sanctions to be applied to transportation funding and stationary air pollution sources in the air basin.

## State Plans, Policies, Regulations, and Laws

ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, required ARB to establish CAAQS (Table 4.10-2). ARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest practical date. The act specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources.

Among ARB's other responsibilities are overseeing local air district compliance with California and federal laws, approving local air quality plans, submitting SIPs to EPA, monitoring air quality, determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels. There are 15 non-attainment areas for the national ozone standard and two non-attainment areas for the PM<sub>2.5</sub> standard. The SIP identifies how each area will attain the federal standards. ARB and local air pollution control districts are currently developing plans for meeting new national air quality standards for ozone and PM<sub>2.5</sub>. ARB adopted its State Strategy for the 2007 SIP in September 2007.

ARB also provides land use guidance, as it relates to air quality, including criteria for siting schools and other sensitive land uses.

Title 13 of the California Code of Regulations, 2180-2194 require that all heavy duty vehicles powered by a diesel engine and operating on California highways, submit to a smoke emissions test. Vehicles with 1991 or newer model-year diesel engines cannot exceed an opacity level of more than 40%. Vehicles with 1990 or older model-year diesel engines cannot exceed an opacity level of 55%.

Title 13, article 4.8, Chapter 9 regulates diesel fleet emissions. The contractor shall use CARB ultra low sulfur diesel fuel for all diesel–powered equipment. In addition, low sulfur fuel shall be utilized for all stationary equipment. Targets for each year between 2011 to 2020 are mandated for particulate matter emissions. A large or medium fleet must meet its Diesel PM index that is less than or equal to the calculated target rates. Small fleets will be required to comply with Diesel PM averages starting in 20.

The California Portable Equipment Registration Program, Section 2452 regulates portable equipment and requires that such equipment be registered with the air district. Registered portable engines shall not exceed the following emission limits:

- o 550 pounds per day per engine of CO
- 150 pounds per day per engine of particulate matter less than 10 microns
- o For registered portable engines operating onshore, 10 tons for each pollutant per district per year per engine for Nox, Sox, VOC, PM10 and CO in non-attainment areas.

#### Local Plans, Policies, Regulations, and Laws

#### **Placer County Air Pollution Control District**

The PCAPCD attains and maintains air quality conditions in Placer County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of the PCAPCD includes the preparation of plans for the attainment of ambient air quality standards, adoption, and enforcement of rules and regulations concerning sources of air pollution, and issuance of

permits for stationary sources of air pollution. The PCAPCD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the CAA, CAAA, and the CCAA. Air quality plans applicable to the proposed project are discussed below.

The PCAPCD in coordination with the air quality management districts and air pollution control districts of El Dorado, Sacramento, Solano, Sutter, and Yolo counties prepared and submitted the 1991 Air Quality Attainment Plan (AQAP) in compliance with the requirements set forth in the CCAA, which specifically addressed the non-attainment status for ozone and to a lesser extent, CO and PM<sub>10</sub>. The CCAA also requires a triennial assessment of the extent of air quality improvements and emission reductions achieved through the use of control measures.

As a non-attainment area, the region is also required to submit rate-of-progress milestone evaluations in accordance with the CAAA. Milestone reports were prepared for 1996, 1999, 2002 and most recently in 2006. These milestone reports include compliance demonstrations that the requirements have been met for the Sacramento non-attainment area. The air quality attainment plans and reports present comprehensive strategies to reduce ROG, NO<sub>x</sub>, and PM<sub>10</sub> emissions from stationary, area, mobile, and indirect sources. Such strategies include the adoption of rules and regulations; enhancement of CEQA participation; implementation of a new and modified indirect source review program; adoption of local air quality plans; and stationary-, mobile-, and indirect-source control measures.

The Sacramento Regional 8-Hour Ozone Attainment Reasonable Further Progress Plan (December 2008) demonstrates how existing and new control strategies will provide the necessary future emission reductions to meet the federal Clean Air Act requirements for reasonable further progress and attainment of the 1997 8-hour ozone for the Sacramento region. In addition, this Plan includes an updated emission inventory, sets new motor vehicle emission budgets for transportation and general conformity purposes, provides photochemical modeling results, and documents the implementation of reasonably available control measures.

As mentioned above, the PCAPCD adopts rules and regulations. All projects are subject to PCAPCD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of the proposed project may include, but are not limited to:

**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 that three minutes in any one hour which is as dark or darker in shade as that designated as number 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.

**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. The provisions of Rule 205 do not apply to odors emanating from agriculture operations necessary for the growing of crops or raising of fowl or animals.

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 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% by volume.

**Rule 218-Application of Architectural Coatings.** No person shall manufacture, blend, or repackage for sale within PCAPCD; supply, sell, or offer for sale within PCAPCD; or solicit for application or apply within the PCAPCD, 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 U.S. EPA phase II Certified wood burning appliance, pellet-fueled wood burning heater, masonry heater, or determined to meet the U.S. 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  $PM_{10}$  levels to exceed 50 micrograms per cubic meter ( $\mu g/m^3$ ) (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 EPA-approved equivalent method for  $PM_{10}$  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 one 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 (HEPA) 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 offsite.
  - 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 six 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 (APCO). 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.

## City of Roseville

The following goals, objectives, and policies are included in the *City of Roseville General Plan Air Quality Element* (City of Roseville 2004).

#### Goals:

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

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

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

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

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

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

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

#### **Policies:**

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

**Air Quality Policy 2:** Work with PCAPCD to monitor all air pollutants of concern on a continuous basis.

**Air Quality Policy 3:** Develop consistent and accurate procedures for evaluating the air quality impacts of new projects.

**Air Quality Policy 4:** As part of the development review process, develop mitigation measures to minimize stationary and area source emissions.

**Air Quality Policy 5:** Develop transportation systems that minimize vehicle delay and air pollution.

**Air Quality Policy 6:** Develop consistent and accurate procedures for mitigating transportation emissions from new and existing projects.

**Air Quality Policy 7:** Encourage alternative modes of transportation including pedestrian, bicycle, and transit.

**Air Quality Policy 8:** Separate air pollution-sensitive land uses from sources of air pollution.

Air Quality Policy 9: Encourage land use policies that maintain and improve air quality.

**Air Quality Policy 10:** Conserve energy and reduce air emissions by encouraging energy efficient building designs and transportation systems.

# **City of Roseville Development Standards**

The city maintains policies and guidelines regarding grading, erosion control, inspection, and permitting. Section 16.20.040 of the Roseville Municipal Code regulates stockpiling and grading,

and addresses condition under which permits and grading plans are required. Section 16.20.070 identifies grading plan performance standards.

A grading plan shall comply with the following criteria:

- A. Fill or cut slopes with a height exceeding five feet shall not exceed a slope of 4:1.
- B. When grading around native oak trees:
  - 1. Cut or fill slopes exceeding two feet in height shall not be permitted within a distance of 1.5 times the radius of the tree's protected zone.
  - 2. The grade shall not be raised or lowered around more than 50 percent of the protected zone; and
  - 3. The grading shall not change the drainage pattern within a distance of 1.5 times the radius of the tree's protected zone.

Section 16.20.020 requires that all grading be performed in accordance with either City of Roseville Improvement Standards or Chapter 16 of the Zoning Ordinance, whichever, is more restrictive. The Public Works Department requires that a grading permit be obtained prior to grading activities. At that time the Applicant must submit, for review and approval, Improvement and/or Grading Plans along with a site-specific Stormwater Pollution Prevention Plan (SWPPP). Slopes or banks along creek channels must be designed with proper slope protection to prevent soil erosion and channel-bank undercutting. The City has also adopted standards that would apply to project s within public right-of-way or easements.

### SIERRA VISTA SPECIFIC PLAN

The SVSP includes the following features that would minimize the SVSP's operational emissions containing ROG, NOx,  $PM_{10}$ ,  $PM_{2.5}$  and CO. the following measures are required to reduce the generation of these operational emissions:

- Class I bikeway system to provide convenient pedestrian/bicycle connections throughout the plan area
- Class II and III on-street bikeway system
- Development of village nodes that provide services proximate to residential areas to reduce reliance on the automobile

- Design streets to maximize connectivity
- Provision of park and ride lots, and right of way for future bus rapid transit.

### 4.4.4 IMPACTS

Air quality impacts fall into two categories: short-term emissions due to construction and long-term impacts due to project operation. Impacts in each category can be classified as having effects on a regional or local scale.

A technical study prepared by Rimpo Associates, Appendix F to this Draft EIR, is the basis for the following analysis.

### **Thresholds of Significance**

For purposes of this analysis, the following thresholds of significance, as derived from Appendix G to the State CEQA Guidelines and as identified by PCAPCD, have been used to determine whether implementation of the proposed Project would result in significant air quality impacts.

Based on Appendix G of the State CEQA Guidelines, an air quality impact is considered significant if implementation of the proposed project would do any of the following:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the
  project region is non-attainment under an applicable NAAQS or CAAQS (including
  releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number or people.

As stated in Appendix G of the State CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. Thus, implementation of the proposed Project would result in significant air quality impacts if Project construction or operation would:

• Exceed the PCAPCD thresholds for regional emissions:

Reactive Organic Gases (ROG): 82 lbs/day

o Nitrogen Oxides (NO<sub>x</sub>): 82 lbs/day

o Particulate Matter (PM<sub>10</sub>): 82 lbs/day<sup>1</sup>

o Carbon Monoxide (CO): 550 lbs/day

 Generate localized concentrations of CO that exceed the 1-hour 20 parts per million (ppm) or the 8-hour 9 ppm air quality standards.

IMPACT 4.4-1	GENERATE SHORT-TERM CONSTRUCTION RELATED EMISSIONS				
Applicable Policies and Regulations	PCAPD Rules 205 and 207 City of Roseville Construction Standards, Section III				
	SVSP Urban Reserve				
Significance with Policies and Regulations	Significant Significant				
Mitigation Measures:	MM 4.4-1 Dust and Construction Control Measures  and WMM 4.4-2 Dust and Construction Control Policie and WMM 4.4-3 Reduction of Construction Emissions				
Significance after Mitigation:	Short-term Significant and Unavoidable	Short-term Significant and Unavoidable			

#### SIERRA VISTA SPECIFIC PLAN

Construction activities associated with development within the SVSP area would consist of clearing vegetation, excavation, trenching and grading. These activities would temporarily increase particulate dust emissions. In addition, construction vehicles traveling on unpaved surfaces would generate dust, as would wind blowing over exposed earth at active construction sites. These emissions could contribute to regional fugitive dust and  $PM_{10}$  air pollution. The

<sup>&</sup>lt;sup>1</sup> The PCAPCD has not established a threshold for PM<sub>2.5.</sub>

generation of dust during construction activities could adversely affect sensitive receptors and construction workers, and would exceed the PCAPCD thresholds. Dust caused by construction activities could exacerbate existing respiratory problems such as asthma. Dust can also adversely affect children and the elderly who are more susceptible to respiratory illnesses.

The SVSP project includes development of commercial, public, and utility land uses. URBEMIS2007 Version 9.2.4 was used to estimate emissions resulting from the construction of the SVSP project, beginning in 2013 with completion by 2025. The proposed project would be built in four phases. Emissions were estimated for each year of construction. A detailed list of the assumptions used to estimate construction emissions is included in Appendix F.

Construction-related emissions are described as "short-term" or temporary in duration and have the potential to represent a significant impact with respect to air quality. Construction-related activities associated with the proposed project would result in project-generated emissions of criteria air pollutants (PM<sub>10</sub> and PM<sub>2.5</sub>) and ozone precursors (ROG and NO<sub>x</sub>) from site preparation (e.g., excavation, grading, and clearing); off-road equipment, material transport, and worker commute exhaust emissions; vehicle travel on unpaved roads; paving; application of architectural coatings; and other miscellaneous activities.

Emissions of fugitive PM dust (e.g., PM<sub>10</sub> and PM<sub>2.5</sub>) are associated primarily with ground disturbance activities during site preparation (e.g., grading) and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and VMT on- and off-site. Exhaust emissions from diesel equipment and worker commute trips also contribute to short-term increases in total PM emissions, but to a much lesser extent. Emissions of ozone precursors are primarily associated with off-road (e.g., gas and diesel) construction equipment exhaust. Worker commute trips and other construction-related activities (e.g., application of architectural coatings) also contribute to short-term increases in such emissions.

Project-generated, construction-related emissions of criteria air pollutants and precursors were modeled in accordance with PCAPCD-recommended methodologies. Precise, project-specific data (e.g., construction equipment types and number requirements, and maximum daily acreage disturbed) are not available at the time of this analysis. Project-generated emissions were modeled based on general information provided in the project description and default URBEMIS settings

and parameters attributable to the construction period and site location. In order to estimate reasonable worst-case conditions, construction of the entire project at one time with construction conducted on multiple portions of the site at one time.

Table 4.4-6 summarizes the modeled emissions for the construction phases. Construction-related air quality effects were determined by comparing these modeling results with applicable PCAPCD significance thresholds. Refer to Appendix F for detailed modeling input parameters and results.

Based on the modeling conducted, construction-related activities would result in ROG, NOx, and  $PM_{10}$  emissions that exceed PCAPCD's significance threshold of 82 lb/day. Thus, project-generated construction-related emissions of criteria air pollutants and precursor emissions could violate or contribute substantially to an existing or projected air quality violation, and/or expose sensitive receptors to substantial pollutant concentrations. As a result, this impact would be **significant.** 

TABLE 4.4-6
2025 BUILDOUT CONSTRUCTION EMISSIONS BY PHASE
(UNMITIGATED POUNDS PER DAY)

	ROG	NO <sub>x</sub>	со	SO <sub>2</sub>	PM10	PM2.5	CO <sub>2</sub>
Phase A (2013-2	2016)						
2013	963.8	84.0	109.9	0.2	487.8	105.1	19,566.5
2014	1,177.2	77.9	103.8	0.2	486.0	104.4	18,141.4
2015	981.5	54.9	94.6	0.2	484.4	100.6	18,092.3
2016	688.2	64.9	65.8	0.1	425.3	91.2	13,289.9
Phase B (2017-2	2019)						
2017	1,784.7	56.4	133.8	0.3	736.7	155.6	29,310.9
2018	1,464.3	42.1	105.3	0.2	676.7	142.6	24,668.7
2019	1,707.1	38.4	99.6	0.2	676.4	142.4	24,960.7
Phase C (2020-2	2023)						
2020	1,486.1	56.8	101.3	0.2	690.3	146.1	27,432.6
2021	1,131.9	46.9	67.9	0.2	557.6	118.1	22,683.8
2022	1,165.1	35.9	61.2	0.2	557.6	118.1	22,683.8
2023	1,200.3	46.9	61.3	0.2	557.6	118.1	22,683.8
Phase D (2024)							
2024	1,134.1	46.8	69.8	0.2	600.0	127.0	24,324.2

Note: Emissions estimated with URBEMIS2007, version 9.2.4. Detailed description of modeling assumptions included in the Appendix.

Mitigation Measure 4.4-1 specifies dust and construction control measures that would reduce construction emissions. As shown in Table 4.4-7, levels of ROG, NOx,  $PM_{10}$  and  $PM_{2.5}$  will decrease somewhat with mitigation, but not to a level that is less than significant. Therefore, construction related emissions would remain a short-term **significant and unavoidable** impact.

TABLE 4.4-7
2025 BUILDOUT CONSTRUCTION EMISSIONS BY PHASE
(MITIGATED, POUND PER DAY)

							1
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM10	PM2.5	CO <sub>2</sub>
Phase A (2013-2	016)						
2013	868.2	79.9	109.9	0.2	113.0	26.0	19,566.5
2014	1,060.1	74.09	103.8	0.2	112.3	25.6	18,141.4
2015	883.9	54.4	94.6	0.2	111.8	25.9	18,092.3
2016	619.8	61.5	65.8	0.1	98.2	22.3	13,289.9
Phase B (2017-2	019)						
2017	1,606.9	56.4	133.8	0.3	169.0	37.1	29,310.9
2018	1,318.4	42.1	105.3	0.2	154.9	33.7	24,668.7
2019	1,536.9	38.4	99.6	0.2	154.7	33.5	24,960.7
Phase C (2020-2	023)						
2020	1,338.0	53.5	101.33	0.2	157.9	34.3	27,432.6
2021	1,019.0	44.0	67.9	0.2	127.5	27.7	22,683.8
2022	1,048.9	35.0	61.2	0.2	127.5	27.7	22,683.8
2023	1,080.6	43.9	61.3	0.2	127.5	27.7	22,683.8
Phase D (2024)							
2024	1,021.0	43.9	69.8	0.2	137.1	29.8	24,324.2
Note: Emissions estimated with LIRREMIS2007, version 9.2.4. Detailed description of modeling							

Note: Emissions estimated with URBEMIS2007, version 9.2.4. Detailed description of modeling assumptions included in the Appendix.

# **URBAN RESERVE**

As with the SVSP, future construction associated with development of the Urban Reserve area would generate PM<sub>10</sub>. It is expected that grading would generate in excess of 82 lbs per day. These emissions would vary by day, depending on the amount of grading, and if multiple projects were graded simultaneously within the Urban Reserve area. This would be a **significant impact**.

Previously adopted WMM 4.4-2, Dust Control Policies, identified in the WRSP EIR, would continue to apply to the Urban Reserve area and requires that dust control measures be implemented. Such measures would include covering all trucks transporting sand, soil or other loose material, prohibiting open burning of vegetation, and reducing traffic speeds on all unpaved roads. Previously adopted WMM 4.4-3, Reduction of Construction Emissions, require implementation of measures, to be developed in consultation with the PCAPCD, such as use of heavy-duty off-road equipment included in the inventory powered by CARB certified off-road engines or other measures to reduce particulate matter and nitrogen oxide emissions through the use of emulsified diesel fuel and/or particulate matter traps. Compliance with these mitigation measures, PCAPCD Rules 205 and 207, and City Construction Standards would reduce construction emission from future development in the Urban Reserve area. However, because the amount of grading on a single day would likely exceed PCAPCD thresholds, this is considered a short-term **Significant and Unavoidable** impact.

IMPACT 4.4-2	GENERATE LONG-TERM OPERATION RELATED (REGIONAL) EMISSIONS				
Applicable Policies and Regulations	None Applicable				
	SVSP Urban Reserve				
Significance with Policies and Regulations	Significant Significant				
Mitigation Measures:	WMM 4.4-4 Project Measures to Reduce Operational Emissions  Emissions  WMM 4.4-4 Project Measures to Reduce Operational Emissions  WMM 4.4-6 Operational Emissions Policies				
Significance after Mitigation:	Significant and Unavoidable	Significant and Unavoidable			

## SIERRA VISTA SPECIFIC PLAN

# **Area- and Mobile-Source Emissions**

Project-generated, regional area- and mobile-source emissions of ROG,  $NO_X$ , and  $PM_{10}$  were modeled using URBEMIS2007. URBEMIS allows land use selections that include project location

specifics and trip generation rates. URBEMIS accounts for area-source emissions from the usage of natural gas, landscape maintenance equipment, and consumer products; and mobile-source emissions associated with vehicle trip generation. Regional area- and mobile-source emissions were modeled based on proposed land uses types and sizes as described in Chapter 2, Project Description, and the trip generation data described in Section 4.4, Transportation and Circulation. The trip generation data includes data for internal and pass-by trips.

Buildout of the project will result in the generation of criteria pollutant emissions from mobile and area source emissions. Table 4.4-8 summarizes emissions associated with operation of the 2025 buildout. The estimates represent peak summer emissions. This is a **significant impact**. While WMM 4.4-4 (Project Measures to Reduce Operational Emissions) is available, no other feasible mitigation is available to reduce these emissions to levels that are less than the thresholds. Operational impacts would remain **significant and unavoidable**.

The project design, however, is consistent with SACOG's Blueprint planning principles and incorporates new urbanism design concepts that increase the walkability and accessibility of land uses. Implementation of the Blueprint and new urbanism planning principles results in land uses that are more proximate to one another and accessible to services and jobs. This type of community is more accessible by non-automotive transportation methods (i.e. walking, bicycling) which results in a project-wide reduction in vehicle miles traveled over more conventional suburban community design of the 1980s and 1990s.

TABLE 4.4-8
CRITERIA POLLUTANT EMISSIONS
AT BUILDOUT (2025) COMPARED TO THRESHOLDS
(POUNDS PER DAY)

	ROG	NOx	со	SO <sub>2</sub>	PM10	PM2.5	CO <sub>2</sub>
Buildout							
Area Sources	492	170.6	245.7	0.01	0.7	0.7	207,830.5
Transportation	1,093	823.4	9,334	18.7	3,224	614	1,920,726
Total	1,585	993.9	9,580	18.7	3,225.0	614.2	2,128,556
PCAPCD Significance Threshold	82	82	550	N/A	82	N/A	N/A
Exceed Threshold?	Yes	Yes	Yes	No	Yes	No	No

Notes: Transportation emissions based on VMT estimates provided for the traffic analysis and EMFAC2007 emission rates. Area source emissions estimated using the URBEMIS2007 model using the proposed land uses proposed for the SVSP proposed buildout and alternatives.

## **Stationary Source Emissions**

The proposed SVSP would likely include stationary sources of pollutants that would be required to obtain permits to operate under PCAPCD Rule 501-General Permit Requirements and Rule 507-Federal Operating Permit Program. These sources could include, but not be limited to, a dieselengine generator for emergency power generation; central heating boilers; kitchen equipment at restaurants; and dry cleaning equipment. The permit process would assure that these sources would be equipped with the required emission controls, and that individually, with compliance with permitting requirements. However, collectively, all of these stationary sources will be additive to the estimated area and mobile source emissions described above. This would result in a significant impact.

MM 4.4-4 Project Measures to Reduce Operational Emissions would reduce stationary source emissions. However, with mitigation the impact would still be **significant and unavoidable.** 

### **URBAN RESERVE**

Long-term air quality within the Urban Reserve area, as well as within the air basin, would be adversely affected by both mobile sources and area source emissions. It is expected that both vehicular and area source emissions for the Urban Reserve area, if developed, would exceed thresholds established by the PCAPCD, which would be a **significant impact**.

Previously adopted WMM 4.4-6, identified in the WRSP EIR, would continue to apply to the Urban Reserve area and requires that specific plans and/or development plans include emission-reducing measures such as transit and pedestrian-oriented facilities, bike paths, and the measures identified in WMM 4.4-4. These measures would reduce the generation of ROG, NOx and CO emissions due to future development of the Urban Reserve area. Nonetheless, operational emissions likely would exceed PCAPCD thresholds even with mitigation, resulting in a **significant** and unavoidable impact.

### **Stationary Source Emissions**

Future development of Urban Reserve is expected to be similar to the SVSP, and likely will include sources of pollutants that would be required to obtain permits to operate under PCAPCD Rule 501-General Permit Requirements and Rule 507-Federal Operating Permit Program. These sources could include, but not be limited to, a diesel-engine generator for emergency power generation; central heating boilers; kitchen equipment at restaurants; and dry cleaning equipment. The permit process would assure that these sources would be equipped with the required emission controls, and that individually, with compliance with permitting requirements. However, collectively, all of these stationary sources will be additive to the estimated area and mobile source emissions described above. This would result in a **significant and unavoidable** impact.

IMPACT 4.4-3	GENERATE CARBON MONOXIDE EMISSIONS AT LOCAL INTERSECTIONS			
Applicable Policies and Regulations	None Applicable			
	SVSP	Urban Reserve		
Significance with Policies and Regulations	Less Than Significant	Less Than Significant		
Mitigation Measures:	None Required	None Required		
Significance after Mitigation:	Less Than Significant	Less Than Significant		

### SIERRA VISTA SPECIFIC PLAN

Background CO concentrations in the Roseville area are low, and future roadside CO concentrations are expected to decrease from existing roadside CO concentrations despite anticipated increases in traffic volumes, due to improved fuel combustion efficiency.

CO concentrations were estimated for the five intersections projected to be most congested. A summary of the CO modeling results is included in Table 4.4-9. As Tables 4.4-9 shows, the maximum 1-hour and 8-hour concentrations for all intersections are substantially less than either the state or federal ambient air quality standards. Because these intersections represent worst case conditions, CO concentrations at all other intersections would also be less than federal or state standards.

The CO results demonstrate that the proposed SVSP would not cause or contribute to violations of the state or federal CO standards. Consequently, the project would not expose sensitive receptors to substantial concentrations of CO. This is a **less than significant** impact.

TABLE 4.4-9
2025 MODELED CARBON MONOXIDE LEVELS

		2025 Bu	ıildout¹
Intersection	Receptor	1-hour CO <sup>2</sup>	8-hour CO <sup>3</sup>
Galleria Blvd. & Roseville Pkwy	1	12.9	6.4
	2	13.3	6.6
	3	12.9	6.4
	4	12.5	6.1
Pleasant Grove Blvd. & Roseville	5	12.7	6.3
Pkwy	6	13.2	6.6
	7	12.7	6.3
	8	13.7	6.9
Blue Oaks Blvd & Foothills Blvd	9	12.3	6.0
	10	13.2	6.6
	11	13.3	6.6
	12	12.0	5.8
Foothills Blvd & Pleasant Grove Blvd	13	11.8	5.7
	14	11.8	5.7
	15	11.9	5.8
	16	12.2	6.0
Elverta Rd & Walerga Rd	17	11.8	5.7
	18	11.2	5.4
	19	11.7	5.7
	20	11.5	5.5

#### Notes:

 $<sup>^{1}</sup>$  Background concentrations of 5.73 ppm and 2.06 ppm were added to the modeling 1-hour and 8-hour results, respectively

<sup>&</sup>lt;sup>2</sup> The federal and state 1-hour standards are 35 and 20 ppm, respectively

<sup>&</sup>lt;sup>3</sup> The federal and state 8-hour standards are 9 and 9.0 ppm, respectively

### **URBAN RESERVE**

As described above, background CO concentrations in the Roseville area are low, and future roadside CO concentrations are expected to decrease from existing roadside CO concentrations despite anticipated increases in traffic volumes, due to improved fuel combustion efficiency. It is anticipated that future development proposed in the Urban Reserve would not generate substantial intersection concentrations of CO. Therefore impacts would be **less than significant**.

IMPACT 4.4-4	EXPOSURE TO TOXIC AIR CONTAMINANTS	
Applicable Policies and Regulations	Clean Air Act (NESHAPs Program)  AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987)  PCAPCD Rules and Regs,	
	SVSP	Urban Reserve
Significance with Policies and Regulations	Potentially Significant	Potentially Significant
Mitigation Measures:	WMM 4.4-7 (a) Risk Assessment and Site Specific Measures; MM 4.4-2 Screening Health Risks	WMM 4.4-7 (a) Risk Assessment and Site Specific Measures
Significance after Mitigation:	Less Than Significant	Less Than Significant

## SIERRA VISTA SPECIFIC PLAN

The proposed SVSP has the potential to expose sensitive receptors to concentrations of TACs in three ways: 1) exposure to construction activities, in particular particulate matter from diesel-fueled engines; 2) locating residences in proximity to sources of TACs, such as industrial uses or freeways, and 3) by locating sources of TAC, such as industrial uses, upwind of residences and other sensitive receptors. This analysis evaluates the location of sensitive receptors, which consist of schools, residences and with respect to potential sources of toxic air contaminants: construction equipment, industrial sources and freeways. This analysis also considers the predominant wind direction in the area.

Figure 2-4 (in Section 2, *Project Description*) shows that proposed school sites in the SVSP would be located near major arterials. ARB has developed recommendations against siting new sensitive land uses, such as schools, within 500 feet of freeways or arterials that have more than 100,000 AADT per day (California Air Resources Board Land Use Planning Handbook, 2005). Key recommendations in the Handbook include taking steps to avoid siting new, sensitive land uses:

- Within 500 feet of a freeway, urban roads with 100,000 vehicles / day or rural roads with 50,000 vehicles / day
- Within 1,000 feet of a major service and maintenance rail yard
- Immediately downwind of ports (in the most heavily impacted zones) and petroleum refineries
- Within 300 feet of any dry cleaning operation (for operations with two or more machines, provide 500 feet)
- Within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater).

The closest freeways are Interstate 80 and State Route 65, which are located several miles from the project. Arterials in the City of Roseville are sized to handle less than 100,000 AADT. AADT on SVSP arterials would be substantially less than 100,000 (approximately 40,000 ADT) through the year 2025. Consequently, the location of schools near arterials does not pose a substantial health risk for any of the SVSP proposed schools.

The location of any industrial uses south or southeast of the proposed SVSP area could potentially result in the location of residences downwind from industrial sources of TACs. Industrial sources can generate a wide variety of TACs, from fuel combustion, and from the use of hazardous chemicals that could become airborne. As discussed in subsection 4.4.2, above, ARB's Diesel Reduction Plan, over time, will further protect future residents from exposure to diesel emissions.

The location of Placer Vineyards south and west of the proposed project could create the potential for TACs to be transported into the project area, although this is unlikely. Figure 4.4-1 shows the western portion of Placer Vineyards in relation to the SVSP. The only Placer Vineyards land use that represents a potential source of TAC exposure to the SVSP receptors is the commercially designated land located at the southeast corner of Watt Avenue and Baseline Road. This Placer

Vineyards land use could potentially expose the SVSP 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 in the SVSP area, 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 impact**. The PCAPCD ensures that no new facility will exceed the stated and federal regulations and standards through permitting requirements, Toxic Emission Inventory Report updates, and inspections. Therefore, any new source of TACs in Placer Vineyards are not expected to exceed the health and risk standards.

While construction vehicles are expected to generate diesel exhaust, the impacts would be short-term in duration and are not expected to significantly impact existing residents adjacent to the Project area, or future uses within the project area.

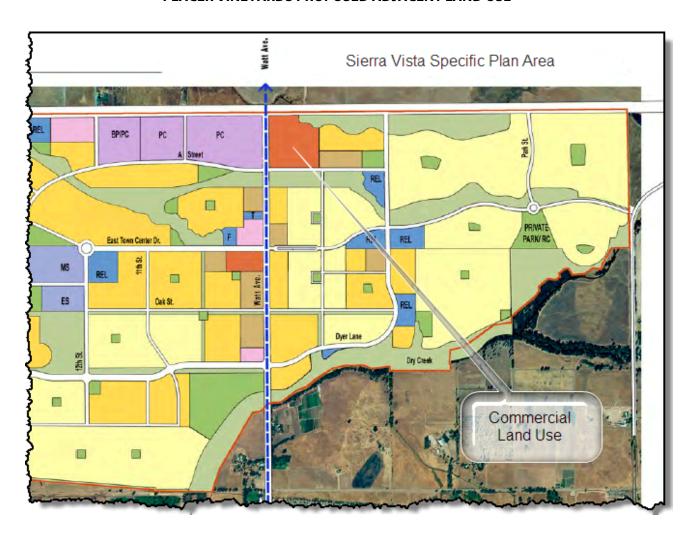
At the time subdivisions are planned for development within the SVSP, nearby and internal uses will be reviewed to determine the potential for exposure to TACs. Previously adopted WMM 4.4-7 (a), identified in the WRSP EIR, which continues to apply to the SVSP area, requires that proposed uses within the SVSP that could generate TACs demonstrate that the applicable health risk thresholds will not be exceeded by submitting an application for a Permit to Operate to the PCAPCD. The PCAPCD will review each use. If it is determined that there are potential risks, a risk assessment and menu of site specific measures that could lessen impacts associated with toxic air contaminants would be required. In addition, MM 4.4-2 requires screening health risk assessments prior to approval of new residential uses or schools after approval of commercial uses within the Placer Vineyards Specific Plan area within 350 feet of sensitive uses. With implementation of WMM 4.4-7 (a) and MM 4.4-2, impacts due to exposure to TACs would be reduced to a less than significant level.

## **URBAN RESERVE**

While no specific development is proposed at this time in the Urban Reserve area, it is likely that commercial uses would be proposed within the Urban Reserve in the future. The PCAPCD will review each such use. If it is determined that there are potential risks due to emissions of TACs, pursuant to previously adopted WMM 4.4-7 (a), a risk assessment and implementation of site

specific measures that could lessen impacts associated with toxic air contaminants would be required. With implementation of WMM 4.4-7 (a), impacts due to exposure to TACs would be reduced to a **less than significant level.** 

FIGURE 4.4-1
PLACER VINEYARDS PROPOSED ADJACENT LAND USE



IMPACT 4.4-5	EXPOSURE OF SENSITIVE RECEPTORS TO ODORS	
Applicable Policies and Regulations	PCAPCD Rule 205	
	SVSP	Urban Reserve
Significance with Policies and Regulations	Less Than Significant	Less Than Significant
Mitigation Measures:	None Required	None Required
Significance after Mitigation:	Less Than Significant	Less Than Significant

## SIERRA VISTA SPECIFIC PLAN

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptor. Although offensive odors rarely cause any physical harm, they still can be unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies.

The SVSP would result in diesel exhaust emissions from on-site construction equipment during project construction. The construction phase diesel exhaust emissions would be intermittent and temporary, and would dissipate rapidly from the source with an increase in distance. In addition, as discussed in subsection 4.4.2, above, ARB's Diesel Reduction Plan, over time, will further protect future residents from exposure to diesel emissions.

The SVSP would not involve the long-term operation of any new sources of odor. However, implementation of the SVSP would involve development of commercial land uses that may be minor odor sources (e.g., dry cleaners, diesel generators). These sources are typical of an urban environment. No unusual odor producing uses are proposed within the SVSP or the surrounding vicinity. Therefore, this impact is considered **less than significant.** 

### **URBAN RESERVE**

While no specific development in the Urban Reserve area is proposed at this time, the commercial uses that that may be proposed in the future could include restaurants, dry cleaning facilities and gasoline stations, which could produce odors. For the most part, odors associated with these commercial uses would not be significant since they are commonly founding in all urban environments and generally do not elicit complaints from the public. This is a **less than significant** impact.

IMPACT 4.4-6	Consistency with Plans and Policies	
Applicable Policies and Regulations	State Implementation Plan	
	SVSP	Urban Reserve
Significance with Policies and Regulations	Significant	Significant
Mitigation Measures:	WMM 4.4-4 Project Measures to Reduce Operational Emissions; MM 4.5-1 Reduction of operational Emissions	WMM 4.4-6 Operational Emissions Policies
Significance after Mitigation:	Significant and Unavoidable	Significant and Unavoidable

#### SIERRA VISTA SPECIFIC PLAN

Operational emissions associated with development of the SVSP area would exceed the PCAPCD thresholds for CO, ROG,  $NO_x$  and  $SO_2$ , and particulates. The SVSP is not currently included in the City of Roseville or Placer County General Plans. As a result, the emissions associated with the development of the SVSP area are not accounted for in the SIP. Therefore, growth associated with the annexation area would hinder the PCAPCD's ability to bring the region into attainment of federal and State ambient air quality standards. This is considered a **Significant Unavoidable** impact, because amending the SIP is not within the jurisdiction or control of the City of Roseville.

WMM 4.4-4 Project Measures to Reduce Operational Emissions would reduce air quality emissions, but not to a less than significant level and would not result in consistency with the SIP. If the

proposed SVSP is approved and included in the City's General Plan, it will eventually be included in the SIP when it is next updated. ARB is the lead agency for all purposes with regard to the SIP. Local air districts, and other state agencies such as the Bureau of Automotive Repair and the Department of Pesticide Regulation, prepare SIP elements and submit them to ARB for review and approval. ARB forwards SIP revisions to the U.S. Environmental Protection Agency (U.S. EPA) for approval and publication in the Federal Register. The Code of Federal Regulations Title 40, Chapter I, Part 52, Subpart F, Section 52.220 lists all of the items which are included in the California SIP. At any one time, several California submittals are pending U.S. EPA approval.

MM 4.5-1 Reduction of Operational Emissions would reduce air quality emissions, but not to a less than significant level for consistency with the SIP. If the project is approved and included in the City's General Plan it will eventually be included in the analysis when the SIP is updated and would be included in the SIP. State law makes ARB the lead agency for all purposes related to the SIP. Local air districts and other agencies, such as the Bureau of Automotive Repair and the Department of Pesticide Regulation, prepare SIP elements and submit them to ARB for review and approval. ARB forwards SIP revisions to the U.S. Environmental Protection Agency (U.S. EPA) for approval and publication in the Federal Register. The Code of Federal Regulations Title 40, Chapter I, Part 52, Subpart F, Section 52.220 lists all of the items which are included in the California SIP. At any one time, several California submittals are pending U.S. EPA approval.

# **URBAN RESERVE**

Operational emissions associated with development of the entire Project area, including future development of the Urban Reserve area, would exceed the PCAPCD thresholds for CO, ROG,  $NO_x$  and  $SO_2$ , and particulates. As with the SVSP portion of Project area, development of the Urban Reserve is not currently included in the City of Roseville or Placer County General Plans. As a result, the emissions associated with the development of the entire project area are not accounted for in the State Implementation Plan (SIP). Therefore, growth associated with the Urban Reserve area would hinder the PCAPCD's ability to bring the region into attainment of federal and State ambient air quality standards. This is considered a **Significant Unavoidable** impact, because amending the SIP is not within the jurisdiction or control of the City of Roseville.

Previously adopted WMM 4.4-6 Operational Emissions Policies, identified in the WRSP, would continue to apply to the Urban Reserve area and would reduce air quality emissions, but not to a level consistent with the current SIP. If future development of the Urban Reserve area is approved and included in the City's General Plan it will eventually be included in the SIP when it is next updated.

## 4.4.5 MITIGATION MEASURES

The Project area was included in the program-level analysis of the West Roseville Specific Plan Final EIR. Mitigation adopted by the City Council at time of approval in 2004 is still applicable in the SVSP area unless superseded by SVSP project-specific mitigation, and will continue to apply to the Urban Reserve area unless noted. This document denotes the previously adopted WRSP mitigation measures as "WMM", and will show strikeout for language that proposed to be eliminated from the previously adopted WMMs and underline for language that is proposed to be added to the previously adopted WMMs.

## WMM 4.4-2 Dust Control Policies Impact 4.4-1 UR

Specific Plans and/or other development proposals for the Remainder Area Urban Reserve shall require dust control measures that are adequate to reduce PM<sub>10</sub> emissions below PCAPCD thresholds. Such measures could include hydro seeding, covering trucks, reducing traffic speed, prohibiting open burning, or other effective measures.

## WMM 4.4-3 Reduction of Construction Emissions (Impact 4.5-1- Urban Reserve)

Specific plans and/or development proposals for the Remainder Area-Urban Reserve shall require emission control measures during construction. Such measures, which shall be developed in consultation with the PCAPCD, may include use of heavy-duty off-road equipment included in the inventory powered by CARB certified off-road engines, or other measures to reduce particulate matter and nitrogen oxide emissions through the use of emulsified diesel fuel and/or particulate matter traps.

## WMM 4.4-4 Project Measures to Reduce Operational Emissions (Impact 4.3-2 SVSP)

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% 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 five 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 font 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 (NOx) 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 singlefamily residences. The emission potential from each residence shall not exceed 7.5 grams per hour. Wood-burning or Pellet appliances shall not be permitted in multi-family developments.

# WMM 4.4-6 Operational Emissions Policies (Impact 4.4-2 Urban Reserve)

Specific plans and/or development proposals for the Urban Reserve shall include measures to reduce operational emissions. Such measures may include, but would not be limited to transit and pedestrian-oriented facilities (e. g., compact development, park and ride lots, bus stops), bike trails and facilities, energy saving measures in buildings, as well as measures described in WMM 4.4-4.

# WMM 4.4-7 (a) Risk Assessment and Site Specific Measures (Impact 4.4-4 SVSP and Urban Reserve)

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 ten in one 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.

# MM 4.4-1 Dust and Construction Control Measures (Impact 4.4-1 SVSP)

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) of 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% NOX reduction and 45% 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.x ls)

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 onsite), 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 offsite. 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 offsite.

- 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).
- o Minimize diesel idling time to a maximum of five minutes.
- Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary diesel power generators, if feasible.
- O 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% 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 of 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 pre-

construction 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 U.S. 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 five 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 five minutes shall be required to connect to the 110/208 volt power to run any auxiliary equipment. 2'x3' 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)

# MM 4.4-2 Screening Health Risks (Impact 4.34-4 SVSP)

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.