4.2 AIR QUALITY AND GREENHOUSE GASES

4.2.1 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 Roseville Hotel and Conference Center Project (proposed project).

Referenced materials include, in part, the following:

- *City of Roseville General Plan 2025*, as amended February 2013 (City of Roseville 2013)
- *North Central Roseville Specific Plan*, as amended December 2013 (City of Roseville 2013)
- *North Central Roseville Specific Plan Environmental Impact Report* (City of Roseville 1989)
- *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (PCAPCD 2008)
- *2012 Triennial Report* (PCAPCD 2013)
- *Roseville Hotel and Conference Center Air Quality Technical Report*, ESA 2014. (included in Appendix C)
- *Transportation Impact Study*, Fehr & Peers 2014 (included in Appendix G).

The documents listed above are available for review during normal business hours (Monday through Friday 8 a.m. to 5 p.m.) at the City of Roseville Permit Center, 311 Vernon Street, Roseville, California 95678.

One comment letter related to air quality was received in response to the NOP. The letter was submitted by the Placer County Air Pollution Control District (PCAPCD) and provided general recommendations on the methodology for analysis of the project's air quality impacts. No comments relative to odor generating activities were received in response to the NOP. See Appendix A for a copy of the NOP and comments received in response to the NOP.

4.2.2 Environmental Setting

The proposed project site is located in western Placer County, which falls within the Sacramento Valley Air Basin (SVAB) and is within the jurisdictional boundaries of the PCAPCD. The climate is characterized by hot, dry summers and cool, rainy winters.

Most precipitation in the SVAB results from air masses moving in from the Pacific Ocean during the winter months. Storms usually move through the area from the west or northwest. Over half the total annual precipitation falls during the winter rainy season (November through February),

while the average winter temperature is a moderate 49 degrees Fahrenheit (49°F). Winter weather in the SVAB typically includes periods of dense and persistent low-level fog, which are most prevalent between storms. From May to October, the region's intense heat and sunlight lead to high ozone concentrations. During the summer, daytime temperatures can exceed 100°F, while the average daytime temperatures from April through October are between 70°F and 90°F with extremely low humidity.

Prevailing winds are from the south and southwest, and as a result, air quality in the western Placer County is influenced by mobile and stationary air pollution sources located upwind in the Sacramento Metropolitan Area. The inland location and surrounding mountains shelter the valley from much of the ocean breeze that keeps the coastal regions moderate in temperature. The only breach in the mountain barrier is the Carquinez Strait, which exposes the midsection of the valley to the coastal air mass. Air flow into the SVAB through the Carquinez Strait also carries pollutants from the San Francisco Bay Area into the SVAB.

Air quality in Placer County is also affected by inversion layers, which occur when a layer of warm air traps a layer of cold air, preventing vertical dispersion of air contaminants. The presence of an inversion layer results in higher concentrations of pollutants near ground level. Summer inversions are strong and frequent, but are less troublesome than those that occur in the autumn. Autumn inversions, formed by warm air subsiding in a region of high pressure, have accompanying light winds that do not provide adequate dispersion of air pollutants.

Air quality in the project vicinity is influenced by both local and distant emission sources. Air pollutant sources in the immediate project vicinity include emissions from vehicle traffic on Interstate 80 (I-80) and other nearby roadways. Other air pollutant sources in the region include area sources such as activities associated with commercial and industrial land uses. As noted above, air quality in western Placer County is also influenced by pollutants transported to the area from the Sacramento Metropolitan Area and the San Francisco Bay Area.

Federal and State and Ambient Air Quality Standards and Air Pollutants

Both the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. The federal standards are divided into primary standards, which are designed to protect the public health, and secondary standards, which are designed to protect the public welfare. The federal and state standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health. Pollutants for which air quality standards have been established are called "criteria" pollutants. Table 4.2-1 identifies the major pollutants, characteristics, health effects, and typical sources.

Ambient air quality is affected by pollutants emitted from stationary and mobile sources. Stationary sources are often divided into point 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.

The U.S. EPA 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 4.2-2 shows the NAAQS and CAAQS. Areas that do not meet the NAAQS and/or CAAQS are classified as nonattainment areas. The federal and state ambient standards were developed independently, with differing purposes and methods. As a result, the federal and state standards differ in some cases. In general, the State of California standards are more stringent, particularly for ozone and particulate matter (PM_{10} and $PM_{2.5}$), than the federal standards.

The Placer County portion of the SVAB is nonattainment for the federal and state ozone standards, the state PM_{10} standards, and the federal $PM_{2.5}$ standards. The Placer County portion of the SVAB is in attainment for the state $PM_{2.5}$ standards, the federal PM_{10} standards, and the state and federal CO standards.

Table 4.2-1
Major Criteria Pollutants

Pollutant	Characteristics	Health Effects	Examples of Sources
Ozone	A strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. Ozone exists in the upper atmosphere ozone layer (stratospheric ozone) as well as at the Earth's surface in the troposphere (ground-level ozone). Ozone in the troposphere causes numerous adverse health effects, is a criteria air pollutant, and is a major component of smog.	Breathing difficulties Lung tissue damage Damage to rubber and some plastics Eye and skin irritation	Formed when ROG and NO_x react in the presence of sunlight. ROG and NO_x sources include any source that burns fuels (e.g., gasoline, natural gas, wood, oil), solvents, petroleum processing and storage, and pesticides.
Carbon monoxide	A colorless, odorless gas resulting from the incomplete combustion of hydrocarbon fuels. Over 80% of the CO emitted in urban areas is contributed by motor vehicles.	Chest pain in heart patients Headaches and nausea Reduced mental alertness High concentrations can result in death	Any source that burns fuel, such as automobiles, trucks, heavy construction equipment, farming equipment, and residential heating.
Nitrogen dioxide	Nitrogen dioxide is typically created during combustion processes, and is a major contributor to smog formation	Lung irritation and damage Reacts in the atmosphere to form ozone and acid rain	Any source that burns fuel, such as automobiles, trucks, heavy construction equipment, farming

Table 4.2-1
Major Criteria Pollutants

Pollutant	Characteristics	Health Effects	Examples of Sources
	and acid deposition.		equipment, and residential heating.
Sulfur dioxide	A strong smelling, colorless gas that is formed by the combustion of fossil fuels.	Increased lung disease and breathing problems for asthmatics Reacts in the atmosphere to form acid rain	Coal- or oil-burning power plants and industries, refineries, and diesel engines.
Particulate matter (PM_{10} and $PM_{2.5}$)	Any material, except pure water, that exists in the solid or liquid state in the atmosphere. The size of particulate matter can vary from coarse, wind-blown dust particles to fine-particle combustion products.	Increased respiratory disease Lung damage Premature death Reduced visibility	Fuel combustion in motor vehicles, equipment and industrial sources, and residential and agricultural burning. Particulate matter is also formed from reaction of other pollutants (acid rain, NO_x, sulfates (SO_x), organics).

Source: Appendix C.

Table 4.2-2
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary	*Secondary*
Ozone	1 hour	0.09 ppm	—	Same as primary
	8 hour	0.07 ppm	0.075 ppm	
Carbon monoxide	8 hour	9.0 ppm	9.0 ppm	—
	1 hour	20 ppm	35 ppm	
Nitrogen dioxide	Annual mean	0.03 ppm	0.053 ppm	Same as primary
	1 hour	0.18 ppm	0.100 ppm	
Sulfur dioxide	Annual mean	—	0.030 ppm	—
	24 hour	0.04 ppm	0.14 ppm	—
	3 hour	—	—	0.50 ppm
	1 hour	0.25 ppm	0.075 ppm	—
Respirable particulate patter (PM_{10})	Annual mean	20 $\mu g/m^3$	—	Same as primary
	24 hour	50 $\mu g/m^3$	150 $\mu g/m^3$	
Fine particulate matter ($PM_{2.5}$)	Annual mean	12 $\mu g/m^3$	12.0 $\mu g/m^3$	15.0 $\mu g/m^3$
	24 hour	—	35 $\mu g/m^3$	Same as primary
Lead	30-day average	1.5 $\mu g/m^3$	—	—
	Calendar quarter	—	1.5 $\mu g/m^3$	Same as primary
	Rolling 3-month average	—	0.15 $\mu g/m^3$	—

Notes: ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter
Source: Appendix C.

Ozone

Ozone is the most prevalent of a class of photochemical oxidants formed in the urban atmosphere. The creation of ozone is a result of a complex chemical reaction between reactive organic gases (ROG) and nitrogen oxide gases (NO_x) in the presence of sunshine. Unlike other pollutants, ozone is not released directly into the atmosphere from any sources. Factories, automobiles, and evaporation of solvents and fuels are the major sources of ozone precursors. The health effects of ozone are difficulty breathing, lung tissue damage, and eye irritation. 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, area sources, and stationary combustion equipment.

State standards for ozone have been set at 0.09 ppm for the 1-hour average and 0.070 ppm for the8 hour average. The federal standard for ozone is 0.075 ppm for the 8-hour average. Table 4.2-3 shows the federal and state ozone monitoring results for the most recent three years for which data are available.

Table 4.2-3
Ozone Monitoring Results

Ozone (O_3)	2010	2011	2012
Highest 8-hour average, ppm	**0.105**	**0094**	**0.092**
Days > state 8-hour standard	21	23	28
Days > federal 8-hour standard	15	15	13
Percent of year covered	94	100	96

Notes: Underlined values represent those in excess of applicable NAAQS. Bold values represent those in excess of the applicable CAAQS.
Source: Appendix C.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless, poisonous gas produced by incomplete burning of carbon-based fuels such as gasoline, oil, and wood. When CO enters the body, the CO combines with chemicals in the body, which prevents blood from carrying oxygen to cells, tissues, and organs. Symptoms of exposure to CO can include problems with vision, reduced alertness, and general reduction in mental and physical functions. Exposure to CO can result in chest pain, headaches, and reduced mental alertness, and at high concentrations can lead 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 the federal standard for the 8-hour averaging period is 9 ppm, while the state standard is 9.0 ppm.

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 4.2-4. No violations of either the state or federal CO standards were recorded at this monitoring station during the most three recent years for which data is available.

Table 4.2-4
Carbon Monoxide Monitoring Results

Carbon Monoxide (CO)	2010	2011	2012
Highest 1-hour average, ppm	3.1	2.3	2.1
Highest 8-hour average, ppm	1.2	1.9	1.7

Notes: Monitoring results for North Highlands Blackfoot Way Monitoring Station.
Source: Appendix C.

Nitrogen Oxide Gases

NO_x are produced from burning fuels, including gasoline and coal. NO_x react with ROG (found in paints and solvents) to form ozone, which can harm health, damage the environment, and cause poor visibility. Additionally, NO_x emissions are a major component of acid rain. Health effects related to NO_x include lung irritation and lung damage.

The state NO_2 standard is 0.18 ppm for the 1-hour average and 0.03 ppm for the annual average. The federal NO_2 standard is 0.053 ppm on an annual average and 0.100 ppm for the 1-hour average. No violations of the NO_2 standard were recorded in the SVAB during the three recent years of monitoring.

Sulfates

Sulfates (SO_x) are colorless gases and constitute a major element of pollution in the atmosphere. SO_x are commonly produced by fossil fuel combustion. In the atmosphere, SO_x are usually oxidized by ozone and hydrogen peroxide to form sulfur dioxide and trioxide. If SO_x are present during condensation, acid rain may occur. Exposure to high concentrations of SO_x for short periods can constrict the bronchi and increase mucus flow, making breathing difficult. Children, the elderly, those with chronic lung disease, and asthmatics are especially susceptible to these effects.

Sulfur dioxide (SO_2) belongs to the family of gases called sulfur oxides or 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. SOx emissions are typically not a concern for land use development projects such as the project.

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 and sulfuric acid, 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 0.030 ppm measured as an annual arithmetic mean concentration, 0.14 ppm measured over a 24-hour period, and 0.075 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.

Particulate Matter

Suspended particulate matter (airborne dust) consists of solid and liquid particles small enough to remain suspended in the air for long periods. "Respirable" particulate matter (PM) consists of particles less than 10 microns in diameter, and is defined as "suspended particulate matter" or PM_{10}. Particles between 2.5 and 10 microns in diameter arise primarily from natural processes, such as wind-blown dust or soil. Fine particles are less than 2.5 microns in diameter ($PM_{2.5}$). $PM_{2.5}$, by definition, is included in PM_{10}. Fine particles are produced mostly from combustion or burning activities. Fuel burned in cars and trucks, power plants, factories, fireplaces, and wood stoves produces fine particles.

Particulate matter is a complex mixture that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. The tiny particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials, such as metals, soot, soil, and dust. Particulate matter is divided into two classes, primary and secondary. Primary particles are released directly into the atmosphere while secondary particles are formed in the atmosphere as a result of reactions involving gases. Particles greater than 10 microns in diameter can cause irritation in the nose, throat, and bronchial tubes. While the human body naturally filters out many of these particles, smaller particles are able to pass through the body's natural defenses, including the mucous membranes of the upper respiratory tract, and enter the lungs. The particles can damage the alveoli, which are tiny air sacs responsible for gas exchange in the lungs. The particles may also carry carcinogens and other toxic compounds, which can enter the lungs.

The state PM_{10} standards are 50 micrograms per cubic meter ($\mu g/m^{3)}$ as a 24-hour average and 20 $\mu g/m^3$ as an annual arithmetic mean. The federal PM_{10} standard is 150 $\mu g/m^3$ as a 24-hour average.

The federal PM2.5 standards are 35 $\mu g/m^3$ as a 24-hour average and 12.0 $\mu g/m^3$ as an annual average. The state $PM_{2.5}$ standard equals 12 $\mu g/m^3$ 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 4.2-5 shows the most recent three years of available monitoring results for PM_{10} and $PM_{2.5}$. One violation of the state PM_{10} standard was recorded at the Roseville North Sunrise monitoring location. PM_{10} is monitored once every 6 days. Therefore, the number of days over the state and federal standards are estimated based on this intermittent monitoring. The Roseville North Sunrise monitoring station also recorded one violation of the federal 8-hour $PM_{2.5}$ standard during the most recent three years.

Table 4.2-5
Particulate Matter Monitoring Results

Particulate Matter (PM_{10})	2010	2011	2012
Highest 24-hour average, µg/m^3	36.3	**58.8**	43.2
Days > state standard[a]	0.0	6.1	0.0
Days > federal standard[a]	0.0	0.0	0.0
Percent of year covered	1--	98	96
Particulate Matter ($PM_{2.5}$)	**2010**	**2011**	**2012**
Highest 24-hour average, µg/m^3	27.3	<u>50.4</u>	28.0
Days > federal standard[a]	0.0	6.1	0.0
Percent of year covered	99	100	94

Note: Underlined values represent those in excess of applicable NAAQS. Bold values represent those in excess of the applicable CAAQS.
[a] Days over state or federal standards are estimated
Source: Appendix C.

Toxic Air Contaminants

In addition to the criteria pollutants presented in the tables and discussion above, toxic air contaminants (TACs) are also a category of environmental concern. Many types of TACs exist, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least 40 different TACs. In terms of health risks, the most volatile contaminants are diesel particulate matter, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. According to The California Almanac of Emissions and Air Quality (CARB 2009), the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being particulate matter 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. Public exposure to TACs can result from emissions from normal operations as well as from accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

Attainment Status and Regional Air Quality Plans

The federal Clean Air Act (CAA; 42 U.S.C. 7401 et seq.) and the California Clean Air Act (CCAA) require all areas of California to be classified as attainment, nonattainment, or unclassified (the term "unclassifiable" is used in the federal CAA) as to their status with regard to the NAAQS and CAAQS. The CAA and CCAA require that EPA or CARB designate portions of the state where the NAAQS or CAAQS are not met, based on air quality monitoring data, as "nonattainment areas." Because of the differences between the national and state standards, the designation of nonattainment areas may be different under the federal and state legislation. Both the CCAA and CAA require local air pollution control districts to prepare air quality attainment plans for pollutants for which the area is designated nonattainment. As presented in Table 4.2-6, western Placer County has been designated nonattainment for the state 1-hour ozone, state and federal 8-hour ozone, state PM_{10}, and federal 24-hour $PM_{2.5}$ standards. The county is designated attainment or unclassified for all other AAQS.

Table 4.2-6
Placer County Attainment Status Designations

Pollutant	Averaging Time	California Standards	Federal Standards
Ozone	1 hour	Nonattainment	—
	8 hour	Nonattainment	Nonattainment/Severe 15
Carbon monoxide	8 hour	Attainment	Attainment/maintenance
	1 hour		
Nitrogen dioxide	Annual mean	Attainment	Unclassifiable/Attainment
	1 hour		
Sulfur dioxide	Annual mean	Attainment	Unclassifiable
	24 hour	Attainment	Unclassifiable
	3 hour	—	Unclassifiable
	1 hour	Attainment	—
Respirable particulate matter (PM_{10})	Annual mean	Nonattainment	—
	24 hour	Nonattainment	Unclassified
Fine particulate matter ($PM_{2.5}$)	Annual mean	Attainment	Unclassified/Attainment
	24 hour	—	Nonattainment
Lead	30-day average	Attainment	—
	Calendar quarter	—	Unclassified/Attainment
	Rolling 3-month average	—	Unclassified/Attainment

Sources: Appendix C.

Under the CAA requirements, each nonattainment area throughout the state is required to develop a regional air quality management plan. Collectively, all regional air quality management plans throughout the state constitute the State Implementation Plan (SIP). As a part of the SVAB federal ozone nonattainment area, the PCAPCD worked with the other local air districts within the

Sacramento area to develop a regional air quality management plan to describe and demonstrate how Placer County, as well as the Sacramento nonattainment area, would attain the federal 8-hour ozone standard by the proposed attainment deadline. In accordance with the requirements of the CAA, the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (Ozone Attainment Plan) was prepared in December 2008. The PCAPCD adopted the Ozone Attainment Plan on February 19, 2009, and CARB determined that the plan meets CAA requirements and approved it on March 26, 2009, as a revision to the SIP. Accordingly, the Ozone Attainment Plan is the applicable air quality plan for the region.

Local Air Quality Monitoring

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered sensitive receptors include residences, schools, day care centers, playgrounds, and medical facilities.

The closest sensitive receptors to the proposed project are condominiums (Venu at Galleria) located to the southwest of the project site (301 Gibson Road). The closest building in this complex is approximately 875 feet from the property boundary and about 1,300 feet from the project's closest building (conference facility).

Greenhouse Gases and Climate Change

Greenhouse gas (GHG) emissions can be caused by several activities, including but not limited to combustion of fossil fuels (such as for electricity, heat, and transportation), use of products that contain GHGs, some chemical reactions (such as in industrial and manufacturing processes), agriculture (livestock), handling of solid waste and wastewater, and deforestation and other loss of vegetation due to changes in land use. In 2011, transportation generated 38% of California's GHG emissions, followed by the industrial sector (21%), electricity generation (19%), commercial and residential (10%), agriculture and forestry (7%), and other sources (5%) (CARB 2013). Emissions of CO_2 and N_2O are byproducts of fossil fuel combustion, among other sources. Methane, a highly potent GHG, results from off gassing associated with agricultural practices and landfills. Sinks of carbon dioxide include uptake by vegetation and dissolution into the ocean.

GHGs play a critical role in the Earth's radiation budget by trapping infrared radiation emitted from the Earth's surface, which could have otherwise escaped to space. This phenomenon, known as the "greenhouse effect", keeps the Earth's atmosphere near the surface warmer than it would be otherwise and allows for successful habitation by humans and other forms of life.

Prominent GHGs contributing to this process include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and certain refrigerants that include chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and hydrofluorocarbons (HFCs).

Global warming potential (GWP) is a measure of how much a given mass of a single GHG is estimated to contribute to global warming. It is a relative scale that compares the gas in question to that of the same mass of CO_2 (whose GWP is by definition 1). In this analysis, CH_4 is assumed to have a GWP of 21 and N_2O has a GWP of 310. Refrigerants have GWP's that range from 76 up to 12,240. Consequently, using each pollutant's GWP, emissions of CO_2, CH_4, N_2O, CFCs, HCFCs, and HFCs can be converted into CO_2 equivalence, also denoted as CO_{2e} (California Climate Action Registry 2009).

Fossil fuels contain carbon. Combustion of these fuels releases carbon that was previously stored underground into the active carbon cycle, thus increasing concentrations of GHGs in the atmosphere. Emissions of GHGs in excess of natural ambient concentrations enhance the greenhouse effect and contribute to what is termed "global warming", a trend of unnatural warming of the Earth's natural climate. Increases in these gases lead to more absorption of radiation and warm the lower atmosphere further, thereby increasing evaporation rates and temperatures near the surface. Further, this warming is leading to other substantial changes in global climate patterns and weather conditions. Climate change is a global problem, and GHGs are global pollutants, unlike criteria pollutants (such as ozone, carbon monoxide, and particulate matter) and TACs, which are pollutants of regional and local concern.

The Intergovernmental Panel on Climate Change (IPCC) was established by the World Meteorological Organization and United Nations Environment Programme. IPCC's mission is to assess scientific, technical, and socioeconomic information relevant to the understanding of climate change, including the potential impacts and options for adaptation and mitigation. IPCC predicts substantial increases in global temperatures of between 1.1 to 6.4 degrees Celsius, depending on the scenario (Intergovernmental Panel on Climate Change 2013).

Climate change could affect California's natural environment in the following ways (California Energy Commission 2012):

- Rising sea levels along the California coastline, particularly in San Francisco and the Sacramento-San Joaquin River Delta due to ocean expansion;
- Extreme heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;
- An increase in heat-related human deaths and infectious diseases and a higher risk of respiratory problems caused by deteriorating air quality;

- Reduced snow pack and stream flow in the Sierra Nevada mountains, affecting winter recreation and water supplies;
- Potential increase in the severity of winter storms, affecting peak stream flows and flooding;
- Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield; and
- Changes in distribution of plant and wildlife species due to changes in temperature, competition of colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

Similar changes as these noted above for California would also occur in other parts of the world.

These changes in California's climate and ecosystems could occur at a time when California's population is expected to increase from 34 million to 59 million by the year 2040 (California Energy Commission 2012). If actions are not taken to reduce GHG emissions, the anticipated increase in population would also lead to increases in the amount of anthropogenic GHG emissions and the number of people potentially affected by climate change.

4.2.3 Regulatory Setting

Air quality is monitored through the efforts of various international, federal, state, regional, and local government agencies. The agencies work jointly and individually to improve air quality through legislation, regulations, planning, policymaking, education, and a variety of programs. The agencies responsible for regulating and improving air quality in the City of Roseville area are discussed below.

Federal Regulations

Federal air quality laws regulate air pollutants, primarily through industry-specific standards and planning requirements. The primary legislation that governs federal air quality regulations is the CAA, including the CAA amendments of 1990. Federal air quality laws regulate criteria, toxic, and nuisance air pollutant emissions from industrial sources.

As mentioned earlier, criteria pollutants are substances for which the U.S. Environmental Protection Agency (EPA) has established the NAAQS. Non criteria air pollutants, also known as TACs, are airborne substances capable of causing adverse health effects as a result of short-term (acute) or long-term (chronic) exposure.

Nuisance pollutants are substances that can result in complaints from the population about adverse impacts on quality of life. The nuisance pollutants regulated by the federal air quality laws are odors and visible plumes (smoke).

Federal Clean Air Act

The CAA required the EPA to establish National AAQS (NAAQS) and set deadlines for attainment. The CAA also requires each state to prepare an air quality control plan, referred to as a SIP. The CAA amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The EPA has the responsibility to review all state SIPs to determine conformance to the mandates of the CAA and determine whether implementation would achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan may be prepared for the nonattainment area that imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated time frame may result in sanctions to transportation funding and stationary air pollution sources in the air basin.

State Regulations

California Air Resources Board

CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for the CCAA, adopted in 1988. CARB also has primary responsibility in California to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by the EPA. Collectively, all regional air pollution control plans or air quality management plans to achieve the NAAQS throughout the state constitute the SIP. As California's air quality management agency, CARB regulates mobile emission sources and oversees the activities of county air pollution control districts and regional air quality management districts. CARB regulates local air quality indirectly by using state standards and vehicle emission standards, conducting research activities, and carrying out planning and coordinating activities. As discussed above, California has adopted ambient standards that are in some cases more stringent than the federal standards for the criteria air pollutants. Areas have been designated as attainment or nonattainment with respect to state standards.

California Clean Air Act

The CCAA requires that air quality plans be prepared for areas of the state that have not met state air quality standards for ozone, CO, NO_2, and SO_2. Among other requirements of the CCAA, the plans must include a wide range of implementable control measures, which often include transportation control measures and performance standards. In order to implement the transportation-related provisions of the CCAA, local air pollution control districts have been granted explicit authority to adopt and implement transportation control measures. (For example,

the Spare the Air Program is transportation control measure that uses public outreach to encourage reductions in vehicular use and vehicle-miles-traveled on days when air quality is low.)

Senate Bill 656

In 2003, the State Legislature passed Senate Bill (SB) 656 to reduce public exposure to PM_{10} and $PM_{2.5}$. The legislation requires CARB, in consultation with local air pollution control and air quality management districts, to adopt a list of the most readily available, feasible, and cost-effective control measures that could be implemented by air districts to reduce PM_{10} and $PM_{2.5}$. The legislation establishes a process for achieving near-term reductions in PM throughout California ahead of federally required deadlines for $PM_{2.5}$, and provides new direction on PM reductions in those areas not subject to federal requirements for PM. Source categories addressed by SB 656 include measures to address the following sources: residential wood combustion and outdoor green-waste burning; fugitive dust sources such as paved and unpaved roads and construction; combustion sources such as boilers, heaters, and charbroiling; solvents and coatings; and product manufacturing. These measures include, but are not limited to, the following:

- Reduce or eliminate wood-burning devices allowed
- Prohibit residential open burning
- Permit and provide performance standards for controlled burns
- Require water or chemical stabilizers/dust suppressants during grading activities
- Limit visible dust emissions beyond the project boundary during construction
- Require paving/curbing of roadway shoulder areas
- Require street sweeping.

Assembly Bill 1807

State requirements specifically address air toxics issues through Assembly Bill (AB) 1807 (known as the Tanner Bill), which established the state air toxics program, and AB 2588, the Air Toxics Hot Spots Information and Assessment Act. The air quality regulations developed from these bills have been modified to incorporate the federal regulations associated with the CAA amendments of 1990.

The Air Toxics Hot Spots Information and Assessment Act (AB 2588, 1987, Connelly) (Hot Spots Act) was enacted in September 1987. Under this bill, stationary sources of emissions are required to report the types and quantities of certain substances that their facilities routinely release into the air.

2010 Green Building Code

On January 12, 2010, the California Building Standards Commission adopted the 2010 California Green Building Standards Code, otherwise known as CALGreen. The list below identifies the most significant CALGreen requirements. In addition, CALGreen encourages local governments to adopt more stringent voluntary provisions, known as Tier 1 and Tier 2 provisions, to further reduce air pollutant emissions, improve energy efficiency, and conserve natural resources. If a local government adopts one of the tiers, the provisions become mandates for all new construction within that jurisdiction. CALGreen includes the following provisions:

- A 20% mandatory reduction in indoor water use, with voluntary goal standards for 30%, 35%, and 40% reductions
- Separate indoor and outdoor water meters to measure nonresidential buildings' indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects
- Diversion of 50% of construction waste from landfills, increasing voluntarily to 65% and 75% for new homes and 80% for commercial projects
- Mandatory periodic inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies
- Mandatory use of low-pollutant-emitting interior finish materials such as paints, carpet, vinyl flooring, and particleboard.

Local Regulations

At the local level, air quality is managed by the PCAPCD and the City of Roseville.

Placer County Air Pollution Control District

The PCAPCD regulates many sources of air pollutants and is responsible for implementing certain programs and regulations for controlling air pollutant emissions to improve air quality and attain federal and state AAQS. Various development projects have the potential to generate air pollutants that would result in adverse environmental impacts. In order to evaluate air pollutant emissions from development projects, the PCAPCD recommends significance thresholds for emissions of ROG, NO_x, PM_{10}, and CO. The PCAPCD's advisory CEQA Air Quality Handbook includes the recommended significance thresholds as listed in Table 4.2-7, expressed in pounds per day (lbs/day), which serve as air quality standards that may be used in the evaluation of air quality impacts associated with development projects.

Table 4.2-7
PCAPCD-Recommended Thresholds of Significance

Pollutant	Construction/Operational Threshold (lbs/day)	Cumulative Threshold (lbs/day)
ROG	82	10
NO_X	82	10
PM_{10}	82	N/A
CO	550	N/A

N/A = not applicable
Source: Appendix C.

The City of Roseville, as CEQA lead agency, uses a cumulative analysis methodology similar to that adopted by the Sacramento Metropolitan Air Quality Management District (SMAQMD). SMAQMD guidance states that if a project would not result in a significant project-level criteria pollutant emissions for which the region is designated non-attainment (i.e., exceed the PCAPCD recommended project threshold of 82 pounds per day for ROG, NO_x, or PM_{10}), project emissions would not be considered to be cumulatively considerable and would result in a less-than-significant cumulative impact.

Ozone Attainment Plan

Placer County has been designated nonattainment for the federal 8-hour ozone standard. As discussed above, the Ozone Attainment Plan was prepared to describe and demonstrate how Placer County, as part of the Sacramento nonattainment area, would attain the required federal 8-hour ozone standard by the proposed attainment deadline. The Ozone Attainment Plan demonstrates how existing and new control strategies would provide the necessary future emission reductions to meet the CAA requirements and attain the NAAQS for ozone. The Ozone Attainment Plan is the currently adopted and applicable air quality plan for the region. Therefore, the PCAPCD, along with other local air districts in the Sacramento region, is required to comply with and implement the Ozone Attainment Plan.

Triennial Progress Report

To comply with the planning requirements of the CCAA, the PCAPCD has prepared several triennial progress reports that build upon the Air Quality Attainment Plan adopted in 1991. The 2012 Triennial Progress Report (PCAPCD 2013) is the most recent report. The triennial progress report, like the Ozone Attainment Plan, includes a current emission inventory and projected future inventories of ROG and NO_x emissions in Placer County. The future inventories reflect future growth rates of population, travel, employment, industrial/commercial activities, and energy use, as well as controls imposed through local, state, and federal emission reduction measures. The triennial report discusses rules that the PCAPCD has adopted during the previous 3 years, incentive programs that have been implemented, and other measures that would

supplement those in the Ozone Attainment Plan to achieve annual emission reductions required by the CAA.

PCAPCD Rules and Regulations

Appendices B and D of the PCAPCD CEQA Air Quality Handbook include an all-inclusive list of rules and regulations required and recommended for all projects. In addition, a complete listing of all PCAPCD rules can be found at http://www.placer.ca.gov/Departments/Air/Rules.aspx. Project proponents are responsible for compliance with the adopted PCAPCD rules. To facilitate Rule compliance, the City of Roseville includes applicable Rules as standard notes on improvement plans, grading plans, or design review permits.

A general summary of the key PCAPCD rules and regulations is presented below.

Rule 202 – Visible Emissions

Rule 202 limits the amount of time during which air pollutant emissions of a certain shade of darkness or degree of opacity may be discharged, specifically to no more than 3 minutes in any 1 hour.

Rule 217 – Cutback and Emulsified Asphalt Paving Materials

Rule 217 limits the volatile organic compounds (VOCs) content of asphalt paving materials used in the district.

Rule 218 – Architectural Coatings

Rule 218 requires that architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the PCAPCD area meet specified maximum VOC content levels.

Rule 225 – Wood-Burning Appliances

Rule 225 establishes limits on the rate of particulate matter emissions from operation of a wood-burning appliance.

Rule 228 – Fugitive Dust

Rule 228 is intended to reduce the amount of particulate matter entrained in the ambient air, or discharged into the ambient air, as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. The provisions of Rule

228 apply to any activity or man-made condition capable of generating fugitive dust within Placer County.

Rule 246 – Natural Gas-Fired Water Heaters

Rule 246 is intended to limit the emission of NO_x from natural-gas-fired water heaters.

Regulation 3 – Open Burning

Regulation 3 includes Rules 301 through 306 related to smoke management for various land uses, including agricultural uses, residential uses, and disposal sites. Regulation 3 is intended to reduce emissions of TACs from smoke from allowed outdoor burning.

Rule 501 – General Permit Requirements

Rule 501 provides an orderly procedure for the review of new sources of air pollution, and modification and operation of existing sources, through the issuance of permits.

City of Roseville General Plan

The City of Roseville General Plan (City of Roseville 2013) provides goals and policies adopted by the City Council to help guide the direction of city development. The following are applicable goals from the Air Quality and Climate Change Element of the City of Roseville General Plan.

Goal 1 Improve Roseville's Air Quality by: a) achieving and maintaining ambient air quality standards established by the U.S. Environmental Protection Agency and the California Air Resources Board; and b) minimizing public exposure to toxic or hazardous air pollutants and air pollutants that create a public nuisance through irritation to the senses (such as unpleasant odors).

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

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

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

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.

The following are applicable policies from the Air Quality and Climate Change Element of the City of Roseville General Plan:

General

Policy 2 Work with the Placer County Air Pollution Control District to monitor air pollutants of concern on a continuous basis.

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

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

Transportation- and Circulation-Related

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

Policy 7 Encourage alternative modes of transportation including pedestrian, bicycle, and transit usage.

Energy Conservation-Related

Policy 10 Conserve energy and reduce air emissions by encouraging energy-efficient building designs and transportation systems.

North Central Roseville Specific Plan

The following policies from the NCRSP are applicable to air quality and climate change by helping to reduce vehicle trips.

6.5.1 Air Quality Policies

1. The North Central Roseville Specific Plan shall be amended upon the completion and adoption of the revised City of Roseville Air Quality Plan, and shall be in conformance with the updated Sacramento Air Quality Plan as implemented by the City Plan.

2. The measures established by the City Rideshare Ordinance and any updates or revisions thereto shall be fully implemented and enforced in the Plan Area.
5. Pedestrian access connections to the Plan Area pathway systems shall be made from adjacent projects to facilitate pedestrian/bicycle travel in accordance with the policies of the Community Form and Design Element (Section 3).
6. Short term air quality impacts associated with construction activities shall be reduced through implementation of the following measures:
   - Spray water on exposed earth surfaces during clearing, grading, earth moving, and other site preparation activities.
   - Require construction contracts to include watering at a minimum in the late morning and at the end of the day.
   - Use tarpaulins or other effective covers for haul trucks which travel on public streets.
   - Institute measures to reduce wind erosion when site preparation is completed.

5.8.8 Transportation System Management Policies

1. Employers shall be required to participate in the Transportation System Management Program pursuant to the Rideshare Ordinance of the City of Roseville and any updates or amendment thereto. Projects within the Plan Area will need to acheve trip reduction levels as indicated in Table 5-3 in order to be consistent with the Plan Area EIR.
2. Bike racks, storage facilities, lockers, and showers may be provided by all non-residential uses in accordance with the City Rideshare Ordinance.

Climate Change and Greenhouse Gas Regulatory Setting

Several state-level actions have been taken to limit greenhouse gas (GHG) emissions implicated in global warming. Those actions are described below.

Executive Order S-3-05

On June 1, 2005, California Governor Arnold Schwarzenegger issued Executive Order S-3-05. It included the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80% below 1990 levels. To meet the targets, the governor directed several state agencies to cooperate in the development of a climate action plan. The secretary of Cal-EPA leads the

Climate Action Team (CAT), whose goal is to implement global warming emission reduction programs identified in the climate action plan and to report on the progress made toward meeting the emission reduction targets established in the executive order.

California Global Warming Solutions Act of 2006 (Assembly Bill 32)

In adopting the California Global Warming Solutions Act of 2006 (AB 32), the California state legislature established a cap on statewide GHG emissions and set forth a regulatory framework to achieve the corresponding reduction in statewide emission levels. AB 32 regulates the following GHGs: carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

AB 32 requires that CARB:

- adopt early action measures to reduce GHGs.;
- establish a statewide GHG emissions cap for 2020 based on 1990 emissions;
- adopt mandatory reporting rules for significant GHG sources;
- adopt and regularly update a scoping plan indicating how emission reductions will be achieved via regulations, market mechanisms, and other actions; and
- adopt regulations needed to achieve the maximum technologically feasible and cost-effective reductions in GHGs.

California's Scoping Plan and GHG Emissions Cap

In the adopted Climate Change Scoping Plan (2008), CARB lays out the GHG reductions that need to be achieved and the types of measures that will be used to reach them. The Plan predicts that under a "business as usual" (BAU) scenario, 2020 GHG emissions would equal 596 MMT CO_{2e}. Consequently, compared to the 1990 GHG emissions inventory, emissions would need to be reduced by 169 MMT CO_{2e} in 2020. This represents a 30 percent GHG reduction from the 1990 levels to be achieved by 2020. In 2011 CARB updated the projected GHG emissions to reflect the effects of the economic downturn, finding that a reduction of 21% from the projected BAU scenario would be necessary to achieve the statewide emission targets. This 21% reduction assumes that the BAU scenario does not account for the effect of additional GHG regulations that have been adopted. CARB found that if using a BAU scenario that accounts for those additional regulations, specifically the increased renewable energy standard (the Renewable Portfolio Standard, RPS) and vehicle emissions reductions (under a regulation referred to as Pavley I), a reduction from that BAU scenario of 16% would be needed to achieve the established targets.

The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program. The key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs, and building and appliance standards.
- Achieving a statewide renewables energy mix of 33%.
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions.
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard.
- Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

Senate Bill 375

SB 375 encourages housing and transportation planning on a regional scale, in a manner designed to reduce vehicle use and associated GHG emissions. As required under this law, CARB has assigned regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035. The targets apply to the regions in the State covered by the 18 Metropolitan Planning Organizations (MPOs), including the Sacramento Area Council of Governments (SACOG) in the Sacramento region. If MPOs do not meet the GHG reduction targets, transportation projects will not be eligible for funding programmed after January 1, 2012. CARB adopted regional reduction targets in 2010. For the SACOG area, the adopted reduction targets call for a 7% reduction by 2020 and a 16% reduction by 2025.

SB 375 also requires each MPO to include a Sustainable Communities Strategy (SCS) in its Regional Transportation Plan (or an Alternative Planning Strategy, if it was not feasible to adopt an SCS that met regional GHG reduction targets). The SCS must set forth a vision for growth for the region while taking into account transportation, housing, environmental, and economic needs. The SCS will be the blueprint by which the region will meet its GHG emissions

reductions target if there is a feasible way to do so. Discussion of the recently adopted SACOG SCS is provided below in the Local Regulations section.

Senate Bill X1 2

SB X1 2 expands the Renewable Portfolio Standard by establishing a goal of 20% of the total electricity sold to retail customers in California per year, by December 31, 2013, and 33% by December 31, 2020, and in subsequent years. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers covered by SB 107, SB X1 2 adds local publicly owned electric utilities to the Renewable Portfolio Standard. The California Public Utilities Commission (CPUC) has established the quantity of electricity products from eligible renewable energy resources to be procured by retail sellers in order to achieve targets of 20% by December 31, 2013; 25% by December 31, 2016; and 33% by December 31, 2020. The statute also requires that the governing boards for local publicly owned electric utilities establish the same targets, and the governing boards are responsible for ensuring compliance with these targets. The CPUC is responsible for enforcement of the Renewable Portfolio Standard for retail sellers, while the California Energy Commission and CARB will enforce the requirements for local publicly owned electric utilities.

Local Regulations

SACOG Sustainable Communities Strategy

In April 2012, SACOG, the designated Metropolitan Planning Organization for the Sacramento region, adopted a Metropolitan Transportation Plan/Sustainable Communities Strategy for 2035 (MTP/SCS) (SACOG 2012). Building on prior plans, including the Blueprint Growth Strategy discussed below and the 2008 MTP, the SCS accommodates future growth through a more compact land use pattern largely within the region's current development footprint, emphasizes operational improvements over new roadway capacity projects, and reflects other factors that have tended to reduce motor vehicle use. The SCS demonstrates that, if implemented, the region will achieve a 9% per capita GHG reduction in passenger vehicle emissions in 2020 and a 16% reduction in 2035. These reductions meet the GHG targets for SACOG as discussed above. In June 2012, CARB issued an Acceptance of GHG Quantification Determination for the SACOG SCS, indicating that CARB concurs with SACOG's quantification of GHG emission reductions from the final MTP/SCS and its determination that the SCS would achieve the 2020 and 2035 targets established by CARB.

Sacramento Region Blueprint

In 2004 SACOG adopted the Preferred Blueprint Scenario for 2050 (Blueprint). Although not a binding regulatory document,the Blueprint depicts a way for local agencies within the region to grow through 2050 in a manner consistent with the seven smart growth principles: (1) transportation choices; (2) mixed-use developments; (3) compact development; (4) housing choice and diversity; (5) use of existing assets; (6) quality design, and (7) natural resources conservation. The seven smart growth principles provide guidance for land use planners which, when implemented, would ultimately result in an overall reduction in vehicle miles traveled (VMT), emissions of criteria pollutants, and GHG emissions.

City of Roseville General Plan

The *City of Roseville General Plan 2025* (last updated in February 2013) provides goals and policies adopted by the City Council to help guide the direction of City development. The City has been advocating steps to reduce GHG emissions. The following are applicable goals from the Air Quality and Climate Change Element of the *City of Roseville General Plan 2025* that are relevant to the proposed project.

GHG-related policies that are actively being implemented by the City include the following:

<u>Land Use Element – Community Form Policies – Relationship to Transit, Pedestrian, Air Quality</u>

Policy 2 Allow for land use patterns and mixed-use development that integrate residential and nonresidential land uses, such that residents may easily walk or bike to shopping, services, employment and leisure activities.

Policy 3 Concentrate higher intensity uses and appropriate support uses within close proximity of transit and bikeway corridors as identified in the Bicycle Master Plan. In addition, some component of public use such as parks, plazas, public buildings, community centers and/or libraries should be located within the corridors.

Policy 5 Where feasible, improve existing development areas to create better pedestrian and transit accessibility.

<u>Land Use Element – Community Form Policies - Downtown, Neighborhoods</u>

Policy 5 Encourage infill development and rehabilitation that:

- Upgrades the quality and enhances the character of existing areas;
- Enhances public transit use and pedestrian access;

- Efficiently utilizes and does not overburden existing services and infrastructure; and
- Results in land use patterns and densities that provide the opportunity for the construction of household types affordable to all income groups.

Land Use Element – Community Form Policies – Relationship of New Development

Policy 1 Require that new development areas and associated community-wide facilities (open space resources, parks, libraries, etc.) be linked and oriented to existing developed areas of the community through road networks, public transit systems, open space systems, bike way and pedestrian systems, and other physical connections.

Land Use Element – Community Form Policies – Jobs/Housing and Economic Development

Policy 1 Strive for a land use mix and pattern of development that provides linkages between jobs and employment uses, will provide a reasonable jobs/housing balance, and will maintain the fiscal viability of the City.

Land Use Element – Community Design Policies

Policy 2 Continue to develop and apply design standards that result in efficient site and building designs, pedestrian friendly projects that stimulate the use of alternative modes of transportation, and the establishment of a functional relationship between adjacent developments.

Policy 3 Encourage designs that strike a balance between the incorporation of aesthetic and development requirements, and the economic considerations associated with development.

Circulation Element – Level of Service Policies

Policy 2 Strive to meet the level of service standards through a balanced transportation system that provides alternatives to the automobile.

Circulation Element –Transportation Systems Management Policies

Policy 1 Continue to enforce the City's TSM ordinance and monitor its effectiveness.

Circulation Element –Bikeway/Trails Policies

Policy 1 Develop a comprehensive and safe system of recreational and commuter bicycle routes and trails that provides connections between the City's major employment and housing areas and between its existing and planned bikeways.

Air Quality and Climate Change Element – Energy Conservation

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

Open Space and Conservation Element – Open Space System Policies

Policy 4 Require all new development to provide linkages to existing and planned open space systems. Where such access cannot be provided through the creation of open space connections, identify alternative linkages.

Public Facilities Element – Solid Waste, Source Reduction and Recycling Policies

Policy 2 Comply with the source reduction and recycling standards mandated by the State by reducing the projected quantity of solid waste disposed at the regional landfill by 50%, as well as any mandated future reductions.

Policy 5 Develop public education and recycling programs.

Public Facilities Element – Water and Energy Conservation Policies

Policy 1 Develop and implement water conservation standards.

Policy 2 Implement various water conservation plans developed by the Environmental Utilities Department.

Policy 5 Develop and adopt a landscape ordinance that provides standards for the use of drought tolerant, xeriscape, and water-conserving landscape practices for both public and private projects.

Policy 8 Develop and implement public education programs designed to increase public participation in energy, water conservation and recycled water use.

Policy 9 Enforce energy requirements and encourage development and construction standards that promote energy efficiency and conservation.

Policy 10 Continue and expand energy efficiency and conservation programs to serve all utility users.

North Central Roseville Specific Plan

The NCRSP was adopted prior to the requirement that projects address the contribution of greenhouse gases. However, the NCRSP does contain some policies designed to reduce energy consumption and to minimize air emissions associated with future development. Applicable policies are listed as follows:

7.12.11 Utilities

5. As a method of reducing solar gain, which may increase interior air conditioning requirements, trees shall be planted and maintained in all non-residential parking areas to ensure that, within fifteen (15) year of planting, at least fifty percent (50%) of the parking area is shaded at mid-day during the summer season.
6. All habitable structures shall be designed and oriented to maximize the potential for energy conservation wherever feasible. Such measures shall include, but are not limited to, utilization of both passive and active solar systems.
7. Throughout the Plan Area, deciduous trees, which aid in summer cooling and allow solar gain for winter heating, shall be appropriately sited.
8. All cost effective energy conservation and peak usage reduction measures shall be incorporated into development design, including those measures required by Title 24 and the City of Roseville Energy Office.

City of Roseville Greenhouse Gas Emissions Reduction Action Plan Analysis

The City of Roseville Greenhouse Gas Emissions Reduction Action Plan Analysis focuses on reducing emissions from city-controlled sources (Pierce, S. 2009). This Plan focuses on several alternatives that Roseville could pursue to reduce its emissions from 0% to 39% below 2000 levels by 2015. The Plan is ultimately not applicable to the project because the Plan was developed to reduce emissions from city-controlled sources existing at the time of Plan preparation.

City of Roseville Communitywide Sustainability Action Plan

The City of Roseville Communitywide Sustainability Action Plan sets forth a comprehensive strategy to reduce GHGs and air pollutant emissions with the community, and addresses both municipal and communitywide emissions (AECOM, 2010). The most relevant, applicable measures from this Plan that apply to the project include:

Measure LU-4.1 Facilitate green building design and construction standards in the community to reduce emissions. Applicable actions within this measure include: a) provide incentives (e.g., rebates, tax credits, expedited permit processing) for new projects with high energy efficiency and smaller environmental footprints and for green retrofits of existing commercial or residential properties in order to reduce overall community energy use, b) encourage use of recycled materials for at least 10% of construction materials within all new projects or substantial renovations of residential and commercial buildings. Encourage construction waste diversion. c) promote use of locally available construction materials sourced within a 500-mile radius.

Measures E-1.4 (a) Qualifying new commercial construction should strive to achieve ENERGY STAR performance criteria. This denotes that the building's estimated energy use is intended to be in the top 25% compared to similar buildings throughout the nation. Once the building is built and operating for at least one year, it may qualify to receive an ENERGY STAR plaque.

(b) For new commercial construction projects not qualifying for ENERGY STAR, building designs should strive for a 15% reduction in overall energy budge over California Title 24 performance standards.

4.2.4 Impacts

Air quality and climate change impacts fall into three categories: short-term impacts due to construction-generated emissions, long-term impacts due to project operation, and cumulative impacts. A technical study prepared by ESA, included in Appendix C to this Draft EIR, is the basis for the following analysis. This technical study reflects the City's independent judgment.

Methods of Analysis

The discussion below presents the methodologies used to conduct the air quality and climate change analysis, as well as to assess the significance of the impacts evaluated in this section.

Construction-Related and Operational Emissions

The proposed project's short-term construction-related emissions were estimated using the California Emissions Estimator Model (CalEEMod) software, a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions from land use projects. CalEEMod2013.2.2 was used to estimate emissions resulting from construction of the project, with construction estimated

to begin in 2015 and to be completed in 2016. Emissions were estimated for both years of construction. A detailed list of the assumptions used to estimate construction emissions is included in Appendix C.

Operational Emissions Methodology

Criteria Pollutant Emissions

The proposed project would generate operational emissions of the criteria pollutants, including ozone precursors (ROG and NO_x), CO, PM_{10}, $PM_{2.5}$, and SO_x. SO_x emissions are typically a concern only with certain types of stationary sources such as petroleum refineries. For land use projects, where motor vehicles are the primary emission source, SO_x emissions are not considered a concern. High sulfur levels reduce the efficiency of automotive emission control catalysts. Consequently, most of the sulfur content in gasoline is removed during the refining process. Since SO_x emissions are not a concern for land use project, such as the proposed project SO_x emissions are not discussed further in this analysis.

On-road vehicle emissions generated by the project were estimated using CalEEMod. Trip generation information was provided by the traffic consultant (Fehr and Peers 2014). CalEEMod was also used to estimate area source emissions, which include emissions associated with burning natural gas for space and water heating, gasoline combustion to operate landscape maintenance machinery, and evaporative emissions from the use of architectural coatings.

Toxic Air Contaminants

CARB has identified diesel particulate matter (DPM) as a TAC. DPM is generated during construction by on- and off-road construction vehicles. DPM is also generated in substantial quantities by high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic.

Health risks from TACs are a function of the concentration of emissions and the duration of exposure. The primary source of TACs during construction is DPM from construction equipment exhaust. The evaluation of TACs from construction is conducted qualitatively due to the short-term nature of construction and the distance of construction from the closest sensitive receptors.

Although the project would not generate substantial quantities of TACs during operation, there is the potential that the project's employees and customers could be exposed to TACs generated by traffic on SR 65. The TAC of most concern is DPM from on-road diesel vehicles. Since the project is located within 500 feet of SR 65, a health risk analysis was conducted to examine whether DPM emissions would constitute a significant health risk. DPM represents a chronic (annual) and carcinogenic health risk. For the project, hotel employees would face the

primary health risk from SR 65 traffic emissions. Therefore, a screening level HRA was conducted to assess the health risks to future hotel employees resulting from exposure to SR 65 vehicle emissions (see Appendix C).

DPM inhalation poses carcinogenic and chronic health risks. DPM exhaust is a complex mixture of thousands of gases and fine particles commonly known as soot. DPM emissions from traffic traveling on SR 65 were estimated using the California Air Resources Board's EMFAC2001 model. Exposure to DPM was evaluated by using the California Department of Transportation's CALINE4 model to estimate DPM concentrations at the future hotel and conference center resulting from traffic on SR 65. For the health risk evaluation, the maximum exposed individual (MEI) was assumed to be a hotel employee. For employees, chronic exposure is measured over a year and cancer exposure is measured over 25 years.

CALINE4 generates estimates of 1-hour maximum concentrations at each sensitive receptor. The highest 1-hour concentration was converted to an annual concentration by multiplying by 0.08, which is the California Office of Environmental Health Hazard Assessment's (OEHHA) recommended 1-hour to annual concentration conversion factor. Annual DPM concentrations were converted to chronic and carcinogenic health risks using the equations and assumptions recommended by OEHHA (OEHHA, 2003; OEHHA, 2012; OEHHA, 2013).

Odors

Odor analyses typically evaluate the potential for a proposed project to generate odors and for the proposed project to be affected by odors from nearby sources of odors. The project is not considered an odor source. Consequently, the focus of the odor analysis is on the potential for existing sources of odors to affect future hotel occupants.

Potential odor impacts were evaluated by examining the distances from existing and proposed odor sources (areas designated for industrial land uses) to the project. The analysis also considers prevailing wind direction and policies designed to minimize odor impacts. Odor sources typically include industrial land uses, such as fiberglass manufacturing, coating operations, foundries, refineries, sewage treatment plants, landfills, and recycling facilities.

Greenhouse Gas Emissions Methodology

Project-related GHG emissions were estimated using CalEEMod2013.2.2. The model estimates emissions for a variety of sources, including transportation, electricity use, natural gas use, and solid waste disposal. The model estimates GHG emissions of carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) and then converts them to carbon dioxide equivalents (CO_{2e}) using global warming potential of 21 for methane and 310 for N_2O.

To determine whether the project would result in a 21% reduction from projected 2020 business as usual (BAU) conditions, two separate CalEEMod runs were conducted. The first run represents Project emissions in 2020 under BAU conditions, which reflects the basic characteristics of the proposed project without incorporation of any measures or regulations imposed or adopted with the intent to reduce GHG emissions. The second run represents project 2020 emission under the proposed project. A comparison of BAU to actual CO_{2e} emissions was made to determine if the project will meet the 21% reduction.

Thresholds of Significance

Consistent with Appendix G of the CEQA Guidelines, the City's General Plan, and professional judgment, a project-specific 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 (i.e., the Ozone Attainment Plan);
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation (i.e., exceed 82 lbs/day of ROG, NO_x, or PM_{10} or 550 lbs/day of CO);
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable AAQS (including releasing emissions which exceed quantitative thresholds for ozone precursors of 82 lbs/day of ROG or NO_x);
- Expose sensitive receptors to substantial pollutant concentrations (e.g., generate localized concentrations of CO that exceed the 1-hour 20 ppm or the 8-hour 9 ppm AAQS or substantial concentrations of toxic air contaminants); or
- Create objectionable odors affecting a substantial number of people.

Cumulative Thresholds - Criteria Pollutants

According to the PCAPCD's advisory CEQA Air Quality Handbook, PCAPCD recommends a criteria pollutant cumulative threshold of significance for land use projects of 10 pounds per day for ROG and NO_x. PCAPCD's Handbook does not recommend cumulative thresholds of significance for PM_{10} or CO emissions. The City of Roseville, as lead agency, prefers to rely on a two-tier criteria pollutant cumulative analysis methodology similar to that adopted by the Sacramento Metropolitan Air Quality Management District (SMAQMD). SMAQMD's approach is outlined in its *Guide to Air Quality Assessment in Sacramento County* (SMAQMD, 2013). SMAQMD guidance states that if a project would not result in significant project-level criteria emissions for which the region is designated non-attainment (i.e., exceed the SMAQMD recommended project threshold of 82 lbs/day for ROG, NO_x, or PM_{10}), project emissions would

not be considered to be cumulatively considerable and would result in a less than significant cumulative impact.

Should a project exceed the thresholds, a Tier 2 evaluation is conducted to determine SIP consistency in accordance with CEQA Guidelines Section 15064(h) (3). Under the Tier 2 analysis, projects found consistent with the SIP and that would not conflict with the SIP emissions budget are considered less than cumulatively considerable. The City finds the methodology appropriate to Roseville projects considering that the City is located within the SVAB, the same air basin where the above methodology is used by numerous CEQA lead agencies with concurrence and support from SMAQMD.

Cumulative Thresholds - Greenhouse Gases

To date, although the PCAPCD has not identified significance thresholds for GHG emissions, agency has recommended that significance thresholds for GHG emissions be related to compliance with AB 32. Notably, this approach has been endorsed by the courts. (See, e.g., *Friends of Oroville v. City of Oroville* (2013) 219 Cal.App.4th 832, 841-843.) Consequently, the City of Roseville uses a significance threshold based on the California Air Resources Board's 2011 Functionally Equivalent Document (FED) to the Scoping Plan, which identifies that a statewide GHG emission reduction of 21% from projected BAU levels would be necessary to achieve the statewide GHG emission target for 2020.

Consistent with Appendix G of the CEQA Guidelines, the City's General Plan, and professional judgment, a greenhouse gas impact is considered significant if implementation of the proposed project would do any of the following:

- Generate greenhouse gas emissions, either directly or indirectly, that will have a significant impact on the environment (i.e., the proposed project would not achieve a minimum 21% emission reduction from 'Business as Usual'); or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Impact 4.2-1	Conflict with Applicable Air Quality Plan
Applicable Policies and Regulations	Ozone Attainment Plan PCAPCD Rules and Regulations
Significance with Policies and Regulations	Less than significant
Mitigation Measures	None required
Significance after Mitigation	Less than significant

The proposed project site is under the jurisdiction of the PCAPCD within the SVAB, which is designated nonattainment for both the federal and state ozone standards. Accordingly, the PCAPCD, along with other local air districts in the SVAB, is required to comply with and implement the SIP, and, along with the other air districts in the region, has prepared an Ozone Attainment Plan (PCAPCD 2008), adopted February 19, 2009. CARB determined that the Ozone Attainment Plan meets CAA requirements and approved the plan on March 26, 2009, as a revision to the SIP. The PCAPCD has also adopted triennial progress reports as required by the CCAA, the most recent of which is the *2012 Triennial Progress Report*. Accordingly, the Ozone Attainment Plan, for federal planning purposes, and the 2012 Triennial Progress Report, for state planning purposes, are the applicable air quality plans for the proposed project site.

The air quality plans demonstrate how existing and new control strategies would provide the necessary future emission reductions to meet federal and state air quality planning requirements. Adoption of all reasonably available control measures is required for attainment. Measures could include, but are not limited to, the following: regional mobile incentive programs, urban forest development programs, and local regulatory measures for emission reductions related to architectural coatings, automotive refinishing, natural gas production and processing, asphalt (paving), installing concrete, and various others.

A project would be considered to conflict with, or obstruct implementation of, an air quality plan if the project would be inconsistent with the emissions inventories contained in the plan and/or result in emissions that exceed the applicable thresholds of significance. The emission inventories for ROG and NO_x were developed based on projected increases in population growth and vehicle miles traveled within the region.

The proposed project does not involve a change in the land use designation for the site under the amended NCRSP. The project site is currently designated Business-Professional/ Commercial in the NCRSP. As such, the estimated vehicle trips generated by the proposed project would be consistent with and accommodated by roadway infrastructure within the vicinity of the site in the NCRSP EIR, according to traffic data prepared by the City's traffic consultants, Fehr & Peers (see Appendix G of this Draft EIR). According to the transportation impact study (see Section 4.6), the proposed project is estimated to generate 3,465 daily vehicle trips under a Scenario 1 event (a typical or average attendance at a major civic, family, business, or special event) and 5,508 under a Scenario 2 event (a major conference, event, or activity that would occur once or twice per year).

Emissions inventories included within the applicable air quality plans are based on allowed (or designated) land uses. The estimated operational emissions generated by the proposed project would be equivalent to the emissions inventories included in the regional Ozone Attainment Plan because the project's land use designation would not change from the amended NCRSP

designation. In addition, construction-related emissions associated with the proposed project would be consistent with what was included in emissions inventories for the site, as the project would result in similar assumptions for construction activities and area of disturbance. Therefore, the proposed project would result in similar emissions to those included in the applicable air quality plans for this site and therefore would not conflict with the emissions inventories of the regional Ozone Attainment Plan.

General conformity requirements of the Ozone Attainment Plan include whether a project would cause or contribute to new violations of any NAAQS, increase the frequency or severity of an existing violation of any NAAQS, or delay timely attainment of any NAAQS. As discussed in this analysis, the proposed project would not result in operational emissions that exceed the PCAPCD's thresholds of significance. Furthermore, construction emissions would be mitigated below recognized thresholds. Thus, the project would not cause or contribute to new violations of any NAAQS, increase the frequency or severity of an existing violation of any NAAQS, or delay timely attainment of any NAAQS. Consequently, the project would not obstruct implementation and would comply with the requirements of the Ozone Attainment Plan.

The proposed project would be consistent with the emissions inventories contained in the regional air quality plan and with required construction mitigation measures. Since the project would not result in emissions that exceed the City's recognized thresholds of significance and would not conflict with or obstruct implementation of the applicable air quality plan, the impacts would be considered **less than significant**.

Impact 4.2-2	Violate the City of Roseville's Significance Thresholds for Air Quality
Applicable Policies and Regulations	PCAPCD Rules 202, 217, 218, 225, 228, 246, and 501 and Regulation 3, NCRSP Air Quality policy 6.
Significance with Policies and Regulations	Significant (project construction)
Mitigation Measures	Mitigation Measure 4.2-2(a) through (e)
Significance after Mitigation	Less than significant

The City of Roseville, as lead agency, uses the PCAPCD's recommended project-specific thresholds to evaluate under CEQA the significance of air quality impacts associated with proposed development projects. Thus, if the proposed project's emissions exceed the PCAPCD's recommended thresholds of significance (listed above), the project could have a significant effect on regional air quality.

Construction and operation of the proposed project would contribute to increases of ROG, NO_x, PM_{10}, and CO emissions in the area, as discussed below.

Construction Emissions

Construction activities associated with the proposed project would generate pollutant emissions from the following construction activities: (1) grading, and excavation; (2) construction workers traveling to and from project site; (3) delivery and hauling of construction supplies to, and debris from, the project site; (4) fuel combustion by on-site construction equipment; (5) building construction; (6) application of architectural coatings; and (7) paving. These construction activities would temporarily create emissions of dust, fumes, equipment exhaust, and other air contaminants. The amount of emissions generated on a daily basis would vary, depending on the intensity and types of construction activities occurring simultaneously at the time. The project will be constructed during 2015 and 2016. The NCRSP includes Air Quality policies (NCRSP p. 6-21) that require short term air quality impacts associated with project construction be minimized through watering exposed soils during site clearing and grading activities a minimum of twice daily, covering haul trucks, and measures to reduce wind erosion when site preparation is complete. The PCAPCD has more stringent requirements that the project is required to comply with to minimize dust and other air pollutants during project construction, discussed in detail below.

The maximum daily construction emissions for the proposed project during each year of construction were estimated using the CalEEMod model, which is designed to model construction emissions for land use development projects based on building size, land use and type, and disturbed acreage, and allows for input of project-specific information. Project-generated emissions of criteria air pollutants were modeled based on project-specific information as well as model defaults. The modeled worst-case daily emissions of criteria air pollutants associated with the proposed project's construction activities are summarized in Table 4.2-9 (refer to Appendix C for a detailed summary of the CalEEMod modeling assumptions, inputs, and outputs). The construction emissions estimates shown in Table 4.2-9 assume full build out of the hotel and a 35,000 sf conference center.[1]

The project is required to comply with all PCAPCD rules and regulations for construction, including the following, which shall be noted on City-approved construction plans:

- Rule 202 related to visible emissions
- Rule 217 related to asphalt paving
- Rule 218 related to architectural coatings
- Rule 228 related to fugitive dust
- Regulation 3 related to open burning.

[1] A 20,000 sf conference center would be built during the first two years of construction. However, because the conference center would be eventually built out to 35,000 sf, the full build out scenario was modeled so as to represent worst-case construction emissions.

The PCAPCD project-specific threshold of significance for construction is 82 lbs/day for ROG, NO_x, and PM_{10} and 550 lbs/day for CO. Table 4.2-8 presents the estimated construction-related emissions of ROG, NO_x, PM_{10}, and CO resulting from the project. In accordance with PCAPCD rules and regulations, the project would use only low-VOC paints (required to be manually selected within the model).

Table 4.2-8
Maximum Daily Construction Emissions (Unmitigated)

Unmitigated	ROG (ppd)	NOx (ppd)	PM_{10} (ppd)
Maximum Daily – 2015	9.5	103.5	19.1
Maximum Daily – 2016	77.5	79.8	5.5
Construction Significance Threshold	82	82	82
Exceed Construction Threshold?	No	Yes, in 2015	No

Source: Appendix C.

Project construction would result in short-term emissions of DPM, which is a TAC. Off-road heavy-duty diesel equipment would emit DPM during site preparation (e.g., excavation and grading); paving; installation of utilities, materials transport and handling; building construction; and other miscellaneous activities. PCAPCD has not adopted a methodology for analyzing such impacts and has not recommended that health risk assessments be completed for construction-related emissions of TACs. Due to the intermittent nature of construction activities, the relatively short-term construction period, and the distance to sensitive receptors, the project would not result in significant construction-related health risks. This is a less than significant impact.

As shown in Table 4.2-8, the maximum daily construction emissions generated by the proposed project would exceed PCAPCD's significance thresholds for NO_x in 2015. Thus, air quality impacts from construction are considered a **significant impact.**

Operational Emissions

Implementation of the proposed project would result in long-term regional emissions of criteria air pollutants associated with area sources, such as natural gas consumption, and use of landscaping equipment, in addition to operational mobile emissions. Operational emissions associated with the project were modeled using CalEEMod and the results are presented in Table 4.2-9 **(**refer to Appendix C for a detailed summary of the CalEEMod modeling assumptions, inputs, and outputs).

As stated above, the project is required to comply with all PCAPCD rules and regulations, such as those listed previously for construction, as well as the following for operations:

- Rule 225 related to wood-burning appliances

- Rule 501 related to stationary sources or processes
- Rule 246 related to water heaters.

In addition, the project would use only low-VOC paints, in accordance with PCAPCD rules and regulations. As shown in Table 4.2-9, implementation of the proposed project would result in long-term regional emissions of criteria air pollutants and ozone precursors that are below PCAPCD's recommended regional significance thresholds. Therefore, the project's operational emissions would result in a **less-than-significant impact.**

Table 4.2-9
Daily Operational Emissions

Unmitigated	ROG (ppd)	NOx (ppd)	CO (ppd)	PM10 (ppd)
Operational: Maximum Event	26.5	42.5	168.4	22.8
Operational Significance Threshold	82	82	550	82
Exceed Operational Threshold?	No	No	No	No

Source: Appendix C.

As shown in the table, the project's operational emissions would be below the PCAPCD project-specific thresholds of significance. Thus, the proposed project would not substantially contribute to the region's nonattainment status for ozone, CO or PM. Accordingly, project operation would not violate any air quality standard or contribute substantially to an existing or projected air quality violation, and the project's operational impact would be less than significant.

The proposed project's operational emissions would be below the applicable project-specific thresholds of significance, as discussed above. The project would comply with all applicable PCAPCD rules and regulations. However, because the proposed project's construction-related NO_x emissions could violate an air quality standard or contribute to an existing or projected air quality violation, this impact would be considered **potentially significant**.

Impact 4.2-3	Expose Sensitive Receptors to Substantial Pollution Concentrations
Applicable Policies and Regulations	CARB Land Use Handbook
Significance with Policies and Regulations	Less than significant
Mitigation Measures	None required
Significance after Mitigation	Less than significant

The CARB *Air Quality and Land Use Handbook* is used to qualitatively evaluate the potential for adverse health effects. CARB has identified DPM from diesel-fueled engines as a TAC; thus, freeways and high-traffic roads, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from

DPM. Health risks from TACs are a function of both the concentration of emissions and the duration of exposure. Health-related risks associated with DPM in particular are primarily associated with long-term exposure and associated risk of contracting cancer.

The project does not involve long-term operation of any stationary diesel engines or other major on-site stationary source of TACs. The CARB *Air Quality and Land Use Handbook* includes distribution centers with associated diesel truck trips of more than 100 trucks per day as a source of substantial TAC emissions. Relatively very few vehicle trips associated with the proposed project uses would be expected to be composed of diesel-fueled vehicles, and the project would not involve diesel truck trips in excess of 100 per day. In addition, emissions of DPM resulting from construction-related equipment and vehicles are temporary, affecting a given receptor for a period of days or weeks.

Employees and individuals visiting the hotel or conference center could be exposed to TACs from the project's diesel-fueled backup generator and from traffic on SR 65. The project's backup generator would operate only during emergency electric power outages and periodically for testing. The generator could operate no more than 100 hours per year based on PCAPCD Rule 502, New Source Review. Due to the limits on the generator's annual operation, sensitive receptors would not be exposed to substantial long-term quantities of DPM emissions, and this generator would not pose a significant health risk.

The project would be located within 250 feet of SR 65. DPM emissions from SR 65 have the potential to cause health risks to individuals working or visiting the project site. However, because the primary health risks from DPM exposure are long-term, hotel and conference center patrons would not be exposed to long-term exposures. However, hotel employees could face long-term exposure. Consequently, an assessment was conducted to examine the health risk from long-term exposure to SR 65 DPM emissions (see Appendix C for more information).

Table 4.2-10 shows that the project would expose project employees to health risks that are less than the recommended thresholds. The estimate of 9.8 per million is based on extremely conservative modeling assumptions. For example, this risk estimate assumes that as a worst case, the same hotel employee would be exposed to emissions from SR 65 for 250 days per year for 25 years. In addition, the risk estimates assume diesel exhaust from SR 65 would remain constant over these 25 years. Actual diesel emissions are expected to decrease over time as newer, lower emitting vehicles replace older, higher emitting vehicles. Finally, the risk estimates assume that during the 25-year exposure period, the wind direction would always be from SR65 towards the project. The estimated risk is considered less than significant. Table 4.2-10 also shows that the project would have a chronic hazard index of 0.025, which is substantially less than the threshold of 1.0. These results indicate that future project employees

would face a less than significant health risk from exposure to emissions generated by SR 65 traffic. This is a **less-than-significant impact.**

Table 4.2-10
Operational Health Risks

	Cancer Risk	Chronic Hazard Index	Acute Hazard Index
Proposed Project	9.8 per million	0.025	N/A
Threshold	10 per million	1.0	N/A
Exceed Threshold?	No	No	N/A

Notes: Additional details in Appendix C. An acute Reference Exposure Level for diesel particulate matter has not been identified by the Office of Environmental Health Hazard Assessment.
Source: Appendix C.

Impact 4.2-4	Create Objectionable Odors Affecting a Substantial Number of People
Applicable Policies and Regulations	None applicable
Significance with Policies and Regulations	Less than significant
Mitigation Measures	None required
Significance after Mitigation	Less than significant

Typical odor sources include industrial or intensive agricultural uses. The project is not considered a source of objectionable odors. Diesel fumes from construction equipment and delivery trucks are often found to be objectionable; however, construction is temporary and diesel emissions would be short-term and would be located at a distance from sensitive receptors. Therefore, project construction would generate less than significant impacts related to odors.

During operation, the project would not generate objectionable odors. In addition, project employees and patrons would not be exposed to objectionable odors from nearby land uses. Land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. No significant generators of odor are located near the project. Thus, neither the project's employees nor patrons would be exposed to objectionable odors.

For the reasons noted above, construction and operation of the proposed project would not create objectionable odors, nor would the project site be affected by any existing objectionable odors; therefore, the impact would be **less than significant**.

4.2.5 Cumulative Impacts

A cumulative impact arises when two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

Cumulative impacts can result from individually minor but collectively significant impacts, meaning that the project's incremental effects must be viewed in connection with the effects of past, current, and probable future projects. As stated in the SMAQMD CEQA Guide, "[b]y its very nature, air pollution is largely a cumulative impact. Ambient air quality standards are violated or approach nonattainment levels due to past development that has formed the urban fabric, and attainment of standards can be jeopardized by increasing emissions-generating activity in the region. The nonattainment status of regional pollutants is a result of past and present development within the SVAB. Thus, this regional impact is a cumulative impact, and projects would contribute to this impact only on a cumulative basis. No single project would be sufficient in size, by itself, to result in nonattainment of the regional air quality standards. Instead, a project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects."

Also, because the proposed project would not have significant odor or health risk impacts, the cumulative impacts are also considered to be less than significant.

Impact 4.2-5	Result in a Cumulatively Considerable Net Increase in Criteria Pollutants
Applicable Policies and Regulations	None applicable
Significance with Policies and Regulations	Less than significant
Mitigation Measures	None required
Significance after Mitigation	Less than significant

The project site is located in an ozone nonattainment area. In order to improve air quality and attain the health-based standards, reductions in emissions are necessary within nonattainment areas. The project is part of a pattern of urbanization occurring in the greater Sacramento ozone nonattainment area. The growth and combined population, vehicle usage, and business activity within the nonattainment area from the project, in combination with other past, present, and reasonably foreseeable projects within the City of Roseville and surrounding areas, could either delay attainment of the standards or require the adoption of additional controls on existing and future air pollution sources to offset emission increases.

As described above under the cumulative criteria pollutant threshold discussion, the City of Roseville uses a two-tier methodology to evaluate cumulative impacts. Tier 1 involves determining whether the project's emissions would exceed the project specific significance thresholds. With mitigation, construction-related emissions would be less than the PCAPCD's significance thresholds. Operational emissions also would be less than PCAPCD's significance thresholds. Therefore, the project is consistent with the City's Tier 1 requirement.

Given this finding, a Tier 2 evaluation is not required. Nevertheless, a Tier 2 evaluation has been conducted for informational purposes to further support the less than significant cumulative impact finding. Tier 2 focuses on consistency with the Ozone Attainment Plan (also known as the ozone state implementation plan or SIP). According to CEQA Section 15064(h)(3), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project would comply with the requirements in a previously approved plan or mitigation program, such as an air quality attainment or maintenance plan, that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located. The project is located within the portion of Placer County that is classified as a severe non-attainment area for the federal ozone standards. The project is consistent with the Sacramento Regional 8-hour ozone attainment and reasonable further progress plan SIP because the land use for the proposed project is consistent with the land use originally anticipated for the site in the SIP. Since the land use is consistent, the emissions generated by the project are consistent with those assumed in the SIP. Therefore, the proposed project would result in emissions similar to those included in the SIP and, consequently, the project is consistent with the City's Tier 2 requirement. The project would result in a **less-than-significant cumulative criteria pollutant impact**.

Impact 4.2-6	Generate a Substantial Contribution to GHG Emissions that Conflicts with an Applicable Plan or Policy
Applicable Policies and Regulations	AB 32 City of Roseville General Plan Greenhouse Gas Policies
Significance with Policies and Regulations	Less than significant
Mitigation Measures	None required
Significance after Mitigation	Less than significant

Table 4.2-11 compares the project's 2020 GHG emissions to 2020 BAU levels. All GHG emissions were estimated using the CalEEMod model developed by the California Air Pollution Control Officers Association (CAPCOA, 2013). The 2020 BAU levels represent what the project's emissions would be in the absence of any GHG emission reductions that would result from plans, programs, and policies implemented as a result of CARB's AB 32 Scoping Plan. The project's 2020 emissions of 5,021 metric tons CO2e per year are 22% lower than 2020 BAU conditions. The project's 2020 emissions are lower than 2020 BAU emissions due to a combination of energy efficiency measures that have been implemented by the California Energy Commission and the California Air Resources Board. They include the Renewable Portfolio Standards, California Building Efficiency Standards [Title 24], Pavley Standards, and the Low Carbon Fuels Standard. These statewide energy measures reduce emissions by 20.8% as compared to BAU. In addition, the project's 2020 emissions account for project specific energy efficiency measures, including a high performance building envelope (increased insulation and high performance glass), occupancy controls of lighting and HVAC, heating hot water with a

high efficiency condensing boiler, and environmentally friendly building materials (i.e., materials having low VOCs) (see Chapter 2 for a comprehensive list of sustainability features). These project specific measures would reduce GHG emissions by an additional 1.1%. Combining the state-mandated and project-specific energy reduction measures results in project emissions that are 22% lower in 2020 as compared to the 2020 BAU condition.

Since the project's emissions would exceed the "21% less than BAU" percent reduction threshold, the project would have a **less-than-significant GHG impact.**

Table 4.2-11
Comparison of Project 2020 GHG Emissions to 2020 Business as Usual

Proposed Project Operational GHGs	2020 BAU CO_{2e} (metric tons/yr)	2020 Project CO_{2e} (metric tons/yr)	Percent Reduction
Total Operational GHGs	6,437	5,021	22%

Notes: Construction and operational GHGs estimated using CalEEMod2013.2.2 (See Appendix C)..
Source: Appendix C.

4.2.6 Mitigation Measures

To mitigate Impact 4.2-2, Mitigation Measure 4.2-2(a) would ensure emissions would be reduced to below the PCAPCD's thresholds, as shown in Table 4.2-12. NO_x emissions would be reduced by 25% and PM_{10} dust emissions would be reduced by 61%, which assumes watering of the project site during site preparation and grading, while PM_{10} exhaust emissions would be reduced by 45%. The mitigation measures included in the NCRSP refer to compliance with specific plan policies. The mitigation provided below is updated and is proposed to replace Mitigation Measures 3.8-1, 3.8-3 through 3.8-6 in the NCRSP EIR.

Table 4.2-12
Maximum Daily Construction Emissions (Mitigated)

Mitigated	ROG (ppd)	NOx (ppd)	PM_{10} (ppd)
Maximum Daily – 2015	9.5	77.6	8.1
Maximum Daily – 2016	77.5	60	2.8
Construction Significance Threshold	82	82	82
Exceed Construction Threshold?	No	Yes, in 2015	No

No mitigation specified for ROG. Consequently, ROG emissions shown are unmitigated. NOx emissions reduced by 25% compared to unmitigated. PM10 emissions assume 61% reduction in fugitive PM10 dust (associated with dust control measures) and a 45% reduction in exhaust PM10.
Source: Appendix C.

Implementation of Mitigation Measure 4.2-2(a) would reduce the proposed project's construction NO_x emissions (in 2015) from 103.5 to 77.6 pounds per day, which would be below

the applicable PCAPCD's project-specific threshold of 82 pounds per day and would reduce the impact to a **less-than-significant level.**

4.2-2(a) Prior to approval of Grading or Improvement Plans, (whichever occurs first), on project sites greater than one acre, the project applicant shall submit a Construction Emission / Dust Control Plan to the Placer County Air Pollution Control District. If the District does not respond within twenty (20) days of the plan being accepted as complete, the plan shall be considered approved. The applicant shall provide written evidence, provided by the District, to the local jurisdiction (city or county) that the plan has been submitted to the District. It is the responsibility of the applicant to deliver the approved plan to the local jurisdiction. The applicant shall not break ground prior to receiving District approval, of the Construction Emission / Dust Control Plan, and delivering that approval to the local jurisdiction issuing the permit.

The following shall be included in the Dust Control Plan:

(a) During construction, emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area, shall be controlled so that dust does not remain visible in the atmosphere beyond the boundary line of the emission source.

(b) When wind speeds result in dust emissions crossing the property line, and despite the application of dust control measures, grading and earthmoving operations shall be suspended and inactive disturbed surface areas shall be stabilized.

(c) Fugitive dust generated by active operations, open storage piles, or from a disturbed surface area shall not result in 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 No. 2 on the Ringlemann Chart (or 40% opacity).

(d) All exposed soils be watered a minimum of once every two hours of active operation or sufficiently often to keep the area adequately wetted. e) Any visible track-out on a paved road where vehicles enter and exit the work area must be removed at the end of the workday or at least on time per day. Removal shall be accomplished by using wet sweeping or a HEPA filter equipped vacuum device. Dirt from vehicles exiting shall be removed through the use of a gravel pad, a tire shaker, a wheel wash system, or a pavement extending for not less than 50 feet from the intersection with the paved public road.

4.2-2 (b) The following standard note shall be included on the Grading Plan or Improvement Plans, or as an attached form: The prime contractor shall submit to the District a comprehensive inventory (e.g., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower of greater) that will be used in 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 District 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, name, and phone number of the property owner, project manager, and on-site foreman.

4.2-2(c) Prior to approval of Grading or Improvement Plans, whichever occurs first, the project applicant shall provide a written calculation to the District for approval demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, shall achieve a project wide fleet-average of 25% of NO_x and 45% of diesel particulate matter reduction as compared to CARB statewide fleet average emissions. 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.

4.2-2(d) The following standard note shall be included on the Improvement/Grading Plan, or as an attached form:

- During construction the contractor shall utilize existing power sources (e.g., power poles) or clean fuel (e.g., gasoline, biodiesel, natural gas) generators rather than temporary diesel power generators.
- During construction, the contractor shall minimize idling time to a maximum of 5 minutes for all diesel-powered equipment.

4.2-2(e) Signs shall be posted in the designated queuing areas of the construction site to remind off-road equipment operators that idling is limited to a maximum of 5 minutes.

4.2.7 Sources

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