

CHAPTER 7 AIR QUALITY

7.1 INTRODUCTION

The proposed Fiddymment Ranch Specific Plan Amendment (SPA) 3 project would amend the existing West Roseville Specific Plan (WRSP) by changing the land use and zoning designations for some parcels and by changing development densities within the project area. The project would result in the development of 1,661 additional residential units and 7.3 additional acres of commercial land uses compared with the development evaluated in the WRSP EIR. Other changes proposed to the land uses within the Fiddymment Ranch project area include minor adjustments in acreage for parks, open space, public/quasi-public (elementary school), and roadway rights-of-way. While the air quality impacts of the overall WRSP were evaluated in the WRSP EIR, the additional development proposed as part of the Fiddymment Ranch Specific Plan Amendment 3 project would generate additional air quality impacts. This Recirculated Draft Subsequent EIR chapter evaluates the air quality impacts from all development within the Fiddymment Ranch SPA 3 project site – a total of 2,949 residential units and 7.3 acres of community commercial land uses, one elementary school, and parks and open space.

This chapter includes a description of existing air quality conditions, a summary of applicable regulations, and analyses of potential air quality impacts from construction and operation of the proposed project. Referenced materials include:

- ❖ *Air Quality Impact Analysis*, Shaw Environmental, 2011
- ❖ *Green Points Rating*, BuildItGreen, 2010
- ❖ *CalEEMod Modeling*, Dudek, 2013
- ❖ *City of Roseville General Plan 2025*, City of Roseville, February 2013
- ❖ Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (Placer County Air Pollution Control District (APCD) 2008)
- ❖ 2009 Triennial Report (Placer County APCD 2010)
- ❖ *West Roseville Specific Plan*, City of Roseville, 2004, as amended 2013
- ❖ *West Roseville Specific Plan FEIR*, City of Roseville, February 2004

The Air Quality Impact Analysis (Shaw 2011) was prepared for the Fiddymment Ranch SPA 3 project proposed in 2009. That analysis has been updated for the currently proposed project, as reflected in the CalEEMod modeling outputs (Dudek 2013) provided in Appendix D. The other documents listed above are available for review during normal business hours at:

City of Roseville Permit Center

311 Vernon Center
Roseville, California

The 2013 Notice of Preparation (NOP) for this EIR, the Initial Study, comments received in response to the NOP and comments received at the 2013 Public Scoping Meeting are provided in Appendix A. The Placer County APCD responded to the 2013 NOP, providing guidance on the impact analysis methodology and mitigation measures. As discussed in **CHAPTER 1 INTRODUCTION**, an NOP was circulated in 2010 and a Draft Subsequent EIR was circulated in

2011 for a previous Fiddymment Ranch SPA 3 proposal. The comments on the 2010 NOP and 2011 Draft Subsequent EIR are also included in Appendix A. One comment on the 2010 NOP requested that the EIR include analysis of the air quality impacts associated with the higher trip generation of the proposed project compared to the WRSP. One comment raised at the 2010 Public Scoping Meeting requested clarification on how air quality would be addressed in the EIR - noting that the NOP stated that the topics of odors and toxic air contaminants would not be addressed in the EIR. In comments on the 2011 Draft Subsequent EIR, the Placer County APCD provided recommendations for revisions to mitigation measures. These recommendations have been incorporated in this Recirculated Draft Subsequent EIR.

7.2 ENVIRONMENTAL SETTING

Ambient air quality is generally affected by climatological conditions, the topography of the air basin, the type and amounts of pollutants emitted, and, for some pollutants, sunlight. The Fiddymment Ranch SPA 3 project is proposed in a region that is subject to a combination of topographical and climatic factors that create the potential for high concentrations of regional and local air pollutants. This section describes relevant characteristics of the air basin, types of air pollutants, health effects, and existing air quality levels.

Climate and Topography

The project site is located within the Sacramento Valley Air Basin, within western Placer County. Weather patterns throughout the basin, including in the City of Roseville, are affected by geography. The Sacramento Valley Air Basin, which extends from south of Sacramento to north of Redding, is bounded by the Sierra Nevada on the east, the Coast Range on the west, and the Cascade Range on the north. The only westerly breach in this barrier is the Carquinez Strait, which exposes the midsection of the Valley to the Pacific Coast marine weather regime. Mountain ranges tend to buffer the basin from the marine weather systems that originate over the Pacific and are then drawn inland by the jet stream.

In particular, western Placer County is noticeably affected by this topographic-marine influence, which moderates climatic extremes and transports air pollutants into the area from distant sources, such as the San Francisco Bay Area as well as from the Sacramento metropolitan region. Temperature moderation is especially evident on summer evenings when cooling occurs as a result of the penetration of sea breezes.

Weather in Roseville is characterized by summers that are typically hot and dry, and winters that are mild and wet. The nearest meteorological monitoring station to the project site is the Rocklin station, located east of Roseville. Summer temperatures at this station range from an average low of 55.4 degrees Fahrenheit (°F) to an average high of 96°F. This high average summer temperature, combined with very low relative humidity, produces hot, dry summers that contribute to ozone buildup. The winter season is characterized by overcast days and lengthy periods of rain and drizzle. Winter temperatures measured at this station range from an average low of 33.3°F to an average high of 59.1°F, with occasional overnight freezing temperatures. During winter months, carbon monoxide accumulation is of concern. Annual precipitation averages 21.35 inches with less than 0.37 inches of rain between May and September and approximately 1.56 inches to 3.84 inches from October to December and January

to April. Prevailing winds are from the southwest, with a secondary concentration from the northwest.

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

Ambient Air Quality Standards

The U.S. Environmental Protection Agency (EPA) has developed National Ambient Air Quality Standards (NAAQS) for the criteria air pollutants. At the state level, the California Air Resources Board (CARB) has developed California Ambient Air Quality Standards (CAAQS). The specific AAQS are identified and discussed further in Section 7.3 Regulatory Framework. Areas that experience pollutant concentrations that exceed the NAAQS and/or CAAQS are classified as non-attainment areas. A summary of the attainment status for Placer County is provided in *Table 7.1*.

Table 7.1
Placer County Air Quality Attainment Status

Pollutant	Averaging Time	Attainment Status	
		California Standards	Federal Standards
Ozone	8 hour	Nonattainment	Nonattainment/Severe 15
	1 hour	Nonattainment	--
Carbon Monoxide	8 hour	Attainment	Attainment
	1 hour	Attainment	Attainment
Nitrogen Dioxide	Annual mean	Attainment	Unclassified/Attainment
	1 hour	Attainment	Unclassified/Attainment
Sulfur Dioxide	Annual mean	Attainment	Unclassified/Attainment
	24 hour	Attainment	Unclassified/Attainment
	3 hour	--	Unclassified/Attainment
	1 hour	Attainment	--
Respirable Particulate Matter (PM₁₀)	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: PCAPCD 2012; CARB 2013b.

The NAAQS 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 ambient air quality standards for each contaminant represent safe levels that avoid specific adverse health effects. Pollutants for which air quality standards have been established are called “criteria” pollutants. 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 (PM₁₀ and PM_{2.5}), than the federal standards.

As shown in *Table 7.1* above, the Sacramento Valley Air Basin is non-attainment of the federal and state ozone standards, the state PM₁₀ standards, and the federal 24-hour standard for PM_{2.5}. The basin is also designated unclassified (meaning there is not enough data to classify the region attainment or non-attainment) for the federal 24-hour standard for PM₁₀. Placer County has been designated as an attainment area for all other criteria air pollutants. Under the federal Clean Air Act 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 Sacramento Valley Air Basin federal ozone nonattainment area, the Placer County APCD 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 required federal 8-hour ozone standard by the proposed attainment deadline. In 2009, the Placer County APCD adopted the *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (Ozone Attainment Plan), and the CARB determined that the plan meets Clean Air Act requirements and approved it as a revision to the SIP. Accordingly, the Ozone Attainment Plan is the applicable air quality plan for the region.

Air Pollutants

Ambient air quality is affected by pollutants emitted from stationary and mobile sources. Stationary sources are further divided into point sources and area sources. Point sources consist of one or more emission sources at a facility with an identified location and are usually associated with manufacturing and industrial processing plants. Area sources are widely distributed and consist of many small emission sources. Area source examples include lawnmowers and other landscape maintenance equipment, natural gas fired water and space heaters, and consumer products such as cleaning supplies, paints, hairspray, deodorant, and similar products with evaporative emissions. Mobile sources refer to emissions from motor vehicles, including tailpipe, evaporative, and fugitive emissions. Air pollutants emitted by stationary and mobile sources are regulated by federal and state law. As noted above, Pollutants for which air quality standards have been established are called “criteria” pollutants. The criteria pollutants are particulate matter (PM), ground-level ozone, carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO₂), and lead. As the project area is in attainment for SO₂ and lead, and has consistently been in attainment for these pollutants for a long time, and the proposed project is not expected to generate substantial amount of these pollutants, SO₂ and lead are not evaluated further in this Recirculated Draft Subsequent EIR. *Table 7.2* identifies the characteristics, health effects, and sources of the criteria air pollutants, and the pollutants of concern in the project area are discussed in more detail below.

Table 7.2
Criteria Air 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 and acid deposition.	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 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 (PM₁₀ 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).

Data regarding local concentrations of air pollutants is collected at one location in the City of Roseville, located at 151 North Sunrise Avenue. *Table 7.3* summarizes data regarding the number of days that state and federal AAQS were exceeded for the for the 3-year period from 2009–2011.

As shown in the table, the state 1-hour AAQS, as well as the state and federal 8-hour AAQS, for ozone were exceeded. In addition, the state PM₁₀ and state and federal PM_{2.5} AAQS were exceeded. All other state and federal AAQS were met in the area.

Table 7.3
Air Quality Data Summary: Roseville–North Sunrise Boulevard Monitoring Site
(2009–2011)

Pollutant	Standard	Number of Days Standard was Exceeded		
		2009	2010	2011
Ozone	State 1 Hour	13	9	11
	Federal 1 Hour	0	0	0
	State 8 hour	32	21	23
	Federal 8 hour	19	15	15
PM₁₀	State 24 hour	0	0	7
	Federal 24 hour	0	0	0
PM_{2.5}	State annual mean	14	14	11
	Federal 24 hour	0	0	7
Nitrogen Dioxide	State 1 hour	0	0	0

Source: CARB 2013c

Particulate Matter

Particulate matter is generally composed of particles in the air such as dust, soot, aerosols, fumes, and mists. Of particular concern are inhalable particulates that have aerodynamic diameters of 10 micrometers (μm) or less (PM₁₀). A subgroup of these particulates is fine particulates (particles with aerodynamic diameters less than 2.5 μm (PM_{2.5}), which have very different characteristics, sources, and potential health effects than coarse particulates (particles with aerodynamic diameter between 2.5 to 10 μm). Coarse particulates are generated by sources such as windblown dust, agricultural fields, and dust from vehicular traffic on unpaved roads. PM_{2.5} is generally emitted from activities such as industrial combustion, vehicle exhaust, and residential wood-burning stoves and fireplaces. PM_{2.5} is also formed in the atmosphere when gases such as SO₂, NO_x, and volatile organic compounds emitted by combustion activities are transformed by chemical reactions in the air. PM₁₀ affects breathing and the respiratory system, and, in particular, can damage lung tissue and contribute to cancer and premature death. Separate standards for PM_{2.5} were established in 1997 because these smaller particles can penetrate deep into the respiratory tract and cause their own unique adverse health effects.

Measured concentrations at local monitoring stations have not exceeded federal PM₁₀ standards over the past three years. However, exceedances of the state PM₁₀ standards and the state and federal PM_{2.5} standards have occurred recently. These measured concentrations have contributed to the region being classified as non-attainment for the state PM₁₀ and PM_{2.5} standards and the federal PM_{2.5} standard.

Carbon Monoxide

CO is an odorless, colorless gas that can impair the transport of oxygen in the bloodstream, aggravate cardiovascular disease and cause fatigue, headache, confusion, and dizziness. CO

forms through incomplete combustion of fuels in vehicles, wood stoves, industrial operations, and fireplaces. In Placer County, vehicular exhaust is a major source of CO. CO tends to dissipate rapidly into the atmosphere and consequently is generally a concern at the local level, particularly at major road intersections.

CO concentrations at the monitoring stations have been below federal and state 1-hour and 8-hour average standards and the Sacramento Valley Air Basin is in attainment for CO standards.

Ozone

Ozone is a colorless gas that has a pungent odor and causes eye and lung irritation, visibility reduction, and crop damage. A primary constituent of smog, ozone is formed in the atmosphere in the presence of sunlight by a series of chemical reactions by ozone precursors, involving NO_x and ROG_s. Industrial fuel combustion and motor vehicles are primary sources of NO_x and ROG. The production of ozone is dependent upon photochemical reaction rates, in which air temperature and the availability as well as the intensity of ultraviolet light are the main factors. As a result, ozone is primarily associated with summer seasonal conditions. Additionally, because these reactions occur on a regional scale, ozone is considered a regional air pollutant. The Sacramento Valley Air Basin is currently designated as nonattainment for both state and federal ozone standards.

Nitrogen Dioxide

NO₂ is a brownish, highly reactive gas that can irritate the lungs, cause pneumonia, and lower the resistance to respiratory infections. NO_x, which includes NO₂, is a key precursor to ozone and acid rain. NO_x forms when fuel is burned at high temperatures, and principally comes from transportation sources and stationary fuel combustion sources such as electric utility and industrial boilers.

Table 7.3 shows that the state and federal NO₂ standards have not been exceeded during the last three years. The Sacramento Valley Air Basin is currently designated as attainment for both state and federal NO₂ standards.

Existing Emissions Sources

As discussed above, sources of emissions associated with human activity are generally divided into three types: stationary, area-wide, and mobile sources. The contributions of these source categories vary from region to region. CARB maintains an emissions inventory to determine the sources and quantities of air pollution generated within the state's counties and air basins.

Table 7.4 presents a summary of the estimated 2010 annual average pollutant emission data based on general source categories located in the Sacramento Valley Air Basin portion of Placer County. Emissions from mobile sources constitute the majority of ROG, CO, NO_x, and SO_x emissions in the area. Area-wide emissions contribute more than 75 percent of the PM₁₀ emissions in the county.

Table 7.4
Summary of 2008 Estimated Annual Average Emissions in Placer County (tons/day)

Source	ROG	CO	NO _x	PM ₁₀	PM _{2.5}
Stationary Sources					
<i>Fuel Combustion</i>	0.4	2.1	3.1	0.3	0.3
<i>Waste Disposal</i>	0.1	--	--	--	--
<i>Cleaning And Surface Coatings</i>	1.4	--	--	0	0
<i>Petroleum Production and Marketing</i>	0.6	--	--	--	--
<i>Industrial Processes</i>	1.7	0.3	0.1	1.6	0.9
Total Stationary Sources	4.3	2.4	3.2	1.9	1.2
Area Sources					
<i>Solvent Evaporation</i>	2.9	--	--	--	--
<i>Miscellaneous Processes</i>	2.0	33.0	0.8	14.1	5.0
Total Area Sources	4.9	33.0	0.8	14.1	5.0
Mobile Sources					
<i>On-Road Motor Vehicles</i>	3.7	35.8	7.8	0.4	0.3
<i>Other Mobile Sources</i>	4.6	34.2	6.2	0.5	0.4
Total Mobile Sources	8.4	70.0	14.0	0.9	0.7
Total All Sources	17.5	105.4	18.1	16.9	6.8

Source: CARB website (site accessed 9/2/13)

Toxic Air Contaminants

In addition to the criteria pollutants presented in the tables above, toxic air contaminants (TACs) also present environmental concerns. 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. 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.

Sensitive Receptors

Some types of receptors or land-uses are considered more sensitive to air pollutants than others. The reasons for greater than average sensitivity are generally related to health issues or proximity to a source. Sensitive receptors are usually defined as locations where human populations are found; where these populations include either a concentration or higher than average ratio of children, seniors or sick persons; and where there is a reasonable expectation of continuous human exposure. Commonly identified sensitive receptors are residences, schools, playgrounds, child care centers, retirement homes or convalescent homes, hospitals, and clinics.

7.3 REGULATORY SETTING

Federal Regulations

Clean Air Act

As discussed above, under the authority of the Federal Clean Air Act, the U.S. EPA established NAAQS for the six criteria air pollutants. These standards represent the levels of air quality necessary to protect the public health and welfare with an adequate margin of safety. The Federal Clean Air Act requires states to classify air basins (or portions thereof) as either attainment or non-attainment with respect to whether the NAAQS for each pollutant have been achieved. For areas designated as non-attainment, the Federal Clean Air Act requires states to prepare air quality plans containing emission reduction strategies. The NAAQS are listed in *Table 7.5* along with the air quality standards set by California (discussed in the State Regulations section below).

The U.S. EPA requires states to prepare State Implementation Plans (SIPs), which must demonstrate that attainment of the NAAQS will be achieved, and that air quality will be maintained. The SIP is periodically updated to reflect the latest emissions inventories, planning documents, and air district rules and regulations. Failure to submit an acceptable SIP or to implement the SIP within the mandated time frame may result in restrictions in transportation funding and sanctions on stationary air pollution sources in the air basin. The SIP is not a single document, but a compilation of new and previously submitted plans, programs, district rules, state regulations, and federal controls. In California, CARB is responsible for developing the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards the SIP revisions to EPA for approval and publication in the *Federal Register*.

As discussed above, the Sacramento Metro Area, which includes Sacramento and Yolo counties and parts of Placer (including the City of Roseville), El Dorado, Sutter, and Solano counties, is in severe non-attainment for federal ozone standards. The region was initially designated as “serious” non-attainment in 2004 based on the 8-hour ozone standard. The region was given a target attainment date of 2013. However, because the region must rely on longer-term emissions reduction strategies from state and federal programs, the region could not achieve attainment by 2013. In 2008, CARB submitted a letter to U.S. EPA requesting a voluntary reclassification of the area from “serious” to “severe” non-attainment and an extension of the target attainment date to 2019. In 2009, the air districts in the Sacramento Metro Area adopted the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan to help meet this deadline.

Table 7.5
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 ppm	9 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 matter (PM ₁₀)	Annual mean	20 µg/m ³	—	Same as primary
	24 hour	50 µg/m ³	150 µg/m ³	
Fine particulate matter (PM _{2.5})	Annual mean	12 µg/m ³	12.0 µg/m ³	15.0 µg/m ³
	24 hour	—	35 µg/m ³	Same as primary
Lead	30-day average	1.5 µg/m ³	—	—
	Calendar quarter	—	1.5 µg/m ³	Same as primary
	Rolling 3-month average	—	0.15 µg/m ³	—

Sources: PCAPCD 2012; CARB 2012; EPA 2012.
ppm = parts per million; µg/m³ = micrograms per cubic meter

Hazardous Air Pollutant Program

Under Title III of the Clean Air Act, U.S. EPA is required to promulgate national emissions standards for Hazardous Air Pollutants (HAP). These are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects. There are two categories of emissions standards - the first is technology-based standards which require implementation of Maximum Available Control Technologies to achieve the maximum feasible emission reductions. The second category is health-based standards which supplement the technology-based standards to avoid unacceptable health risks.

State Regulations

California Clean Air Act

The State of California has established its own ambient standards for the criteria pollutants, which are presented with the NAAQS in *Table 7.5*. The CAAQS are equal to or more stringent than their federal counterparts. CAAQS have also been established for certain pollutants not covered by the NAAQS, such as hydrogen sulfide and vinyl chloride. As shown in *Table 7.1*, the Sacramento Valley Air Basin has been designated as a non-attainment area for CAAQS for ozone and PM₁₀. Placer County has been designated as an attainment area for all other criteria air pollutants.

The California Clean Air Act requires that each area exceeding the CAAQS for ozone, CO, SO₂, and NO₂ must develop a plan aimed at achieving those standards (California Health and Safety Code 40911). California Health and Safety Code Section 40914 requires air districts to design a plan that achieves an annual reduction in district-wide emissions of five percent or more, averaged every consecutive three-year period. To satisfy this requirement, the Placer County APCD has developed an Air Quality Attainment Plan (AQAP) outlining strategies for achieving the CAAQS for ozone. The AQAP outlines both stationary and mobile emission source control measures and emphasizes Transportation Control Measures and Indirect Source Control Measures to reduce mobile source emissions. These measures are also incorporated into the SIP to satisfy federal requirements.

California Air Resources Board

The state legislature created CARB as a state regulatory agency directed towards ensuring high air quality across the state by coordinating and providing oversight of state and local air pollution control programs. To achieve this goal, CARB uses a variety of regulatory tools including motor vehicle and fuel standards, emission standards, air quality standards, control measures for toxic materials, and oversight of local air quality districts. CARB also conducts research and air quality monitoring, and assists individual businesses with meeting clean air standards. The 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.

Senate Bill 656

In 2003, the State Legislature passed Senate Bill (SB) 656 to reduce public exposure to PM₁₀ and PM_{2.5}. The legislation requires the 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 PM₁₀ 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 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
- ❖ 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.

2010 Green Building Code

On January 12, 2010, the California Building Standards Commission adopted the 2010 California Green Building Standards Code, otherwise known as the CALGreen Code. In addition to the new statewide mandates, 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. The most significant features of the 2010 CALGreen Code include the following:

- ❖ 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.

CalGreen goes beyond energy performance to encompass many issues related to sustainability including reduced construction waste, water conservation, non-toxic sealants, and renewable materials. By contrast the California energy standard (also known as Title 24, Part 6) is primarily on promoting more energy-efficient buildings, and only considers the fixed infrastructure: building envelope, heating and cooling, water heating, and lighting.

Local Regulations

Ozone Attainment Plan

Placer County has been designated nonattainment for the federal 8-hour ozone standard. Accordingly, the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (Ozone Attainment Plan) was prepared to describe and demonstrate how Placer County, as well as 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 federal Clean Air Act requirements, including the NAAQS. 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 concrete, and various others. The Ozone Attainment Plan is the currently adopted and applicable air quality plan for the region. Therefore, the Placer County APCD, 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 California Clean Air Act, the Placer County APCD has prepared several triennial progress reports that build upon the Air Quality Attainment Plan adopted in 1991. The 2009 Triennial Progress Report (Placer County APCD 2010) 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 control imposed through local, state, and federal emission reduction measures. The triennial report discusses rules that the Placer County APCD 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 the required 5% per year reduction required by the California Clean Air Act.

Placer County APCD CEQA Air Quality Handbook

Local air quality management agencies were established by the 1976 Lewis Air Quality Management Act. Significant authority for air quality control has been given to local APCDs or Air Quality Management Districts (AQMDs), which regulate stationary source emissions and develop local attainment plans. Placer County APCD has the authority to manage many air pollutant sources and is responsible for implementing certain programs and regulations for controlling air pollutant emissions to improve air quality in order to attain federal and state AAQS. Specifically, the Placer County APCD regulates air quality by establishing local air quality rules and regulations, permitting stationary sources, and planning activities related to air quality.

Various development projects have the potential to generate air pollutants that would result in adverse environmental impacts. Through its enhanced California Environmental Quality Act (CEQA) review process and its New Source Review Rule, Placer County APCD has developed significance thresholds for land use projects that generate air pollutants. These thresholds apply to both short- and long-term air pollutant emissions. Projects that generate emissions exceeding the thresholds would have a significant impact on air quality. If the project's impact exceeds any of the significance criteria, various mitigation measures are available depending on the nature of the air quality impact. The Placer County APCD's CEQA Air Quality Handbook includes the recommended significance thresholds as listed in Table 7.6, expressed in pounds per day (lbs/day), to evaluate air quality impacts associated with development projects.

**Table 7.6
Placer County APCD Recommended Significance Thresholds**

Pollutant	Operational or Construction Threshold (lb/day)	Cumulative Threshold (lb/day)
ROG	82	10
NO _x	82	10

Pollutant	Operational or Construction Threshold (lb/day)	Cumulative Threshold (lb/day)
Sulfur Oxides	82	n/a
PM ₁₀	82	n/a
CO	550	n/a

Appendices B and D of the Placer County APCD *CEQA Air Quality Handbook* present rules and regulations required for all projects. In addition, a complete listing of all Placer County APCD rules and regulations can be found at:

<http://www.placer.ca.gov/Departments/Air/Rules.aspx>

Each lead agency is responsible for compliance with the rules and regulations, whether requiring implementation through mitigation, conditions of approval, or standard notes on improvement plans, grading plans, or design review permits. The key Placer County APCD rules and regulations applicable to the proposed Fiddymont Ranch SPA 3 project are:

Rule 202 – Visible Emissions

Rule 202 restricts discharging into the atmosphere emissions of any single source of air contaminant for a period(s) of more than 3 minutes in any 1 hour that is a certain shade of darkness or is of such opacity as to obscure an observer's view to a certain degree.

Rule 217 – Cutback and Emulsified Asphalt Paving Materials

Rule 217 restricts discharging into the atmosphere volatile organic compounds (VOCs) caused by the use of manufacture of cutback or emulsified asphalts for paving, road construction, or road maintenance, unless such manufacture or use complies with the provisions of Rule 217.

Rule 218 – Architectural Coatings

Rule 218 is intended to limit the quantity of VOCs in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the PCAPCD area.

Rule 225 – Wood-Burning Appliances

Rule 225 is intended to limit emissions of particulate matter entering the atmosphere from the operation of a wood-burning appliance by establishing emission standards and requirements to provide educational information regarding the appropriate use of such devices and health effects from wood smoke.

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 establishes limits on emissions 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 updated Air Quality and Climate Change Element provides city-wide goals and policies aimed at improving air quality. Goals and policies in this element parallel those identified in state and federal plans. The Air Quality and Climate Change Element goals and policies applicable to the analysis of the proposed project's air quality impacts are:

Goals

- 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.

General Policies

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 Policies

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

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

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

Energy Conservation-Related Policies

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

7.4 IMPACTS

Significance Criteria

As evaluated in the Initial Study circulated with the NOP for this project (and provided in Appendix A), the project would have a less than significant impact with respect to the following significance criteria:

- ❖ Expose sensitive receptors to substantial pollutant concentrations
- ❖ Create objectionable odors affecting a substantial number of people

The analysis below evaluates potentially significant project impacts related to air quality based on the following significance criteria, consistent with Appendix G of the CEQA Guidelines. The project would result in a significant impact if it would:

- ❖ Conflict with or obstruct implementation of the applicable air quality plan, or
- ❖ Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Project Impacts

IMPACT 7.1:

Generate Construction Related Emissions That Conflict with the Air Quality Plan or Violate Air Quality Standards

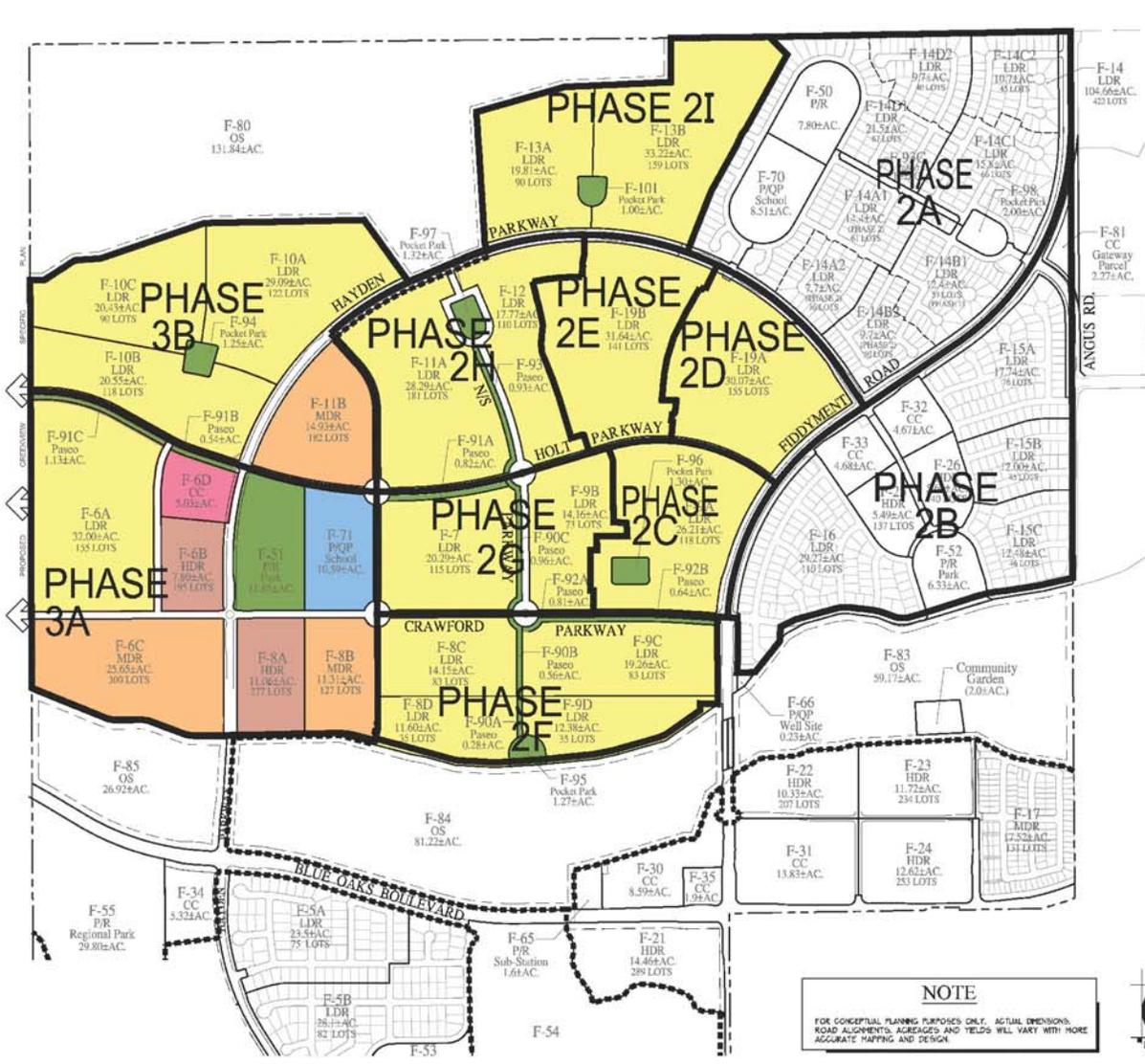
APPLICABLE POLICIES AND REGULATIONS:	City of Roseville General Plan West Roseville Specific Plan City of Roseville Zoning Ordinance
SIGNIFICANCE WITH POLICIES AND REGULATIONS:	Significant
MITIGATION MEASURES:	Mitigation Measures 7.1a through 7.1c
SIGNIFICANCE AFTER MITIGATION:	Significant and Unavoidable

Construction activities produce air pollutant emissions from various sources such as grubbing, site grading, operating utility engines, onsite heavy-duty construction vehicles, equipment hauling materials to and from the site, motor vehicles transporting the construction crew, and painting and paving. Exhaust and fugitive dust emissions from construction activities onsite would vary daily as construction activity levels change. The onsite construction activities would potentially result in localized air quality impacts and contribute to regional air pollutant concentrations.

The CalEEMod 2013.2.1 model was used to estimate emissions that would be produced through construction and buildout of the proposed Fiddymment Ranch SPA 3 project over a 12-year period, from 2014 to 2025. The actual buildout schedule will be dependent on market forces and could take more or less time. However, the 12-year construction schedule was used in modeling to provide a reasonable and likely estimate of annual construction emissions. In addition, while actual buildout may vary from the precise schedule used for the modeling, the modeling results are representative of the emissions that would be generated annually throughout project construction.

The proposed project would be constructed in phases as indicated on the proposed phasing plan, shown in *Figure 7-1*. While the phasing plan indicates the general progression of construction through the project site, the project applicant indicated that multiple phases may proceed at the same time and that phases 3A and 3B would be split into sub-phases, such that in general between 300 and 500 units would be constructed at one time. For this analysis, the proposed phases shown on *Figure 7-1* were grouped into the construction phases shown in *Table 7.7*.

FIDDYMENT RANCH-PHASE 2 & PHASE 3 (SPA #3)



LAND USE SUMMARY					
PHASE #	VILLAGE #	USE	ACRES	UNITS	DENSITY
PHASE 2C	F-9A	LDR	26.21	118	4.5
	F-9G	PARK	1.30	-	-
	SUBTOTAL		27.51	118	-
PHASE 2D	F-19A	LDR	30.07	155	5.2
PHASE 2E	F-19B	LDR	31.64	141	4.5
PHASE 2F	F-6C	LDR	14.15	83	5.9
	F-8D	LDR	11.60	35	3.0
	F-9C	LDR	19.26	83	4.3
	F-9D	LDR	12.38	40	3.2
	F-90A	OS(PASEO)	0.28	-	-
	F-90B	OS(PASEO)	0.56	-	-
	F-92A	OS(PASEO)	0.81	-	-
	F-92B	OS(PASEO)	0.64	-	-
	F-95	PARK	1.27	-	-
	SUBTOTAL		60.95	241	-
	PHASE 2G	F-7	LDR	20.29	115
F-9B		LDR	14.16	73	5.2
F-90C		OS(PASEO)	0.96	-	-
F-91A		OS(PASEO)	0.82	-	-
SUBTOTAL		36.23	188	-	
PHASE 2H	F-11A	LDR	28.29	181	6.4
	F-12	LDR	17.77	110	6.2
	F-93	OS(PASEO)	0.93	-	-
	F-97	PARK	1.32	-	-
SUBTOTAL		48.31	291	-	
PHASE 2I	F-13A	LDR	19.81	90	4.5
	F-13B	LDR	33.22	159	4.8
	F-101	PARK	1.00	-	-
	SUBTOTAL		54.03	249	-
PHASE 3A	F-6A	LDR	32.00	155	4.8
	F-6B	HDR	7.80	195	25.0
	F-6C	MDR	25.65	300	11.7
	F-6D	CC	5.03	-	-
	F-8A	HDR	11.06	277	25.0
	F-8B	MDR	11.31	127	11.2
	F-51	PARK	11.85	-	-
	F-71	P/QP	10.59	-	-
	F-91B	OS(PASEO)	0.54	-	-
	F-91C	OS(PASEO)	1.13	-	-
SUBTOTAL		116.96	1,054	-	
PHASE 3B	F-10A	LDR	29.09	122	4.2
	F-10B	LDR	20.55	118	5.7
	F-10C	LDR	20.43	90	4.4
	F-11B	MDR	14.93	182	12.2
	F-94	PARK	1.25	-	-
SUBTOTAL		86.25	512	-	
TOTAL		491.95 ACRES	2,949 DU	6.0	

NOTE
FOR CONCEPTUAL PLANNING PURPOSES ONLY. ACTUAL DIMENSIONS, ROAD ALIGNMENTS, ACREAGES AND YIELDS WILL VARY WITH MORE ACCURATE MAPPING AND DESIGN.



Path: Z:\Projects\1767701\MAP\DC\MAPS\IE\RF\Figure 7_1_PhasingPlan.mxd

DUDEK

7677-05

SOURCE: Wood Rodgers 2013

FIDDYMENT RANCH SPA 3 EIR

FIGURE 7-1
Phasing Plan

Table 7.7
Construction Phase Assumptions

Construction Phase	Parcels Included	Proposed Dwelling Units	Other Proposed Land Uses	Construction Years
2C/2D/2E	F-9A, F-96, F-19A and B	LDR: 414	Pocket park	2014 – 2015
2F+	F-8C and D, F-9C and D, F-90A and B, F-92A and B, F-95; and F-9B and F-91A (shown in Phasing Plan in Phase 2G)	LDR: 314	Pocket parks and paseos	2016 – 2017
2H+	F-11A, F-12, F-93, F-97; and F-7 and F-90C (shown in Phasing Plan Phase 2G)	LDR: 406	Park and paseo	2018-2019
2I	F-13A and B, F-101	LDR: 249	Pocket park	2020-2021
3A.1	F-6A, F-8B, and F-91C	LDR: 155 MDR: 127 Total: 282	paseo	2022-2023
3A.2	F-6B and C, F-8A F-51, and F-71	MDR: 300 HDR: 472 Total: 772	Park and elementary school	2023-2024
3B	F-10A, B and C, F-11B, F-91B, and F-94	LDR: 330 MDR: 182 Total: 512	Community commercial (including parking lots), Pocket park, paseo	2024-2025

In addition to construction of the land uses included in the proposed project, construction activities also consist of general construction area preparation (site grubbing, grading and excavation), development of new support infrastructure and utilities (e.g., sewer, water, and other underground pipelines), and improving existing intersections and roadways that provide access to the project area. Outside of the riparian area in the open space parcels along Pleasant Grove Creek, the site supports grassland vegetation and no trees. Infrastructure for public utilities is available at the boundaries of the project site, which limits the need for off-site improvements. All construction would occur within the ±805-acre project site.

Daily emissions generated during project construction would vary depending on the type and intensity of construction activity. The daily unmitigated construction emissions of ROG, NO_x, PM₁₀ and PM_{2.5} generated during each construction phase are presented in *Table 7.8*. There is only one period in which daily emissions would exceed the Placer County APCD thresholds. This occurs during painting of the community commercial buildings included in Phase 3B and assumed to be constructed in 2024. During this 15-day period, the project would generate maximum daily emissions of 524 pounds of ROG, which is substantially above the APCD threshold of 82 pounds per day and represents a significant impact of the proposed project.

Detailed emission estimates for each construction phase and each construction year are provided in the CalEEMod output files provided in Appendix D.

Table 7.8
Unmitigated Construction Emissions

Year	Phase	Construction Period	Pollutant Emissions (lbs/day)			
			ROG	NOx	PM ₁₀	PM _{2.5}
2014	2C/2D/2E	Grading	7.2	80.80	14.10	7.36
		Trenching	1.47	12.19	1.02	0.89
		Paving	7.66	27.07	1.68	1.45
		Building (alone)	7.29	24.69	3.0	1.63
		Building and Coatings	32.71	27.64	3.53	1.95
2015	2C/2D/2E	Building and Coatings	31.96	25.69	3.42	1.84
		Coating (alone)	25.32	2.72	0.51	0.30
2016	2F+	Grading	6.86	75.09	13.62	7.07
		Trenching	1.42	11.61	0.97	0.84
		Paving	6.52	22.44	1.39	1.19
		Building (alone)	13.86	45.25	6.98	3.75
		Building and Coatings	49.78	47.99	7.95	4.16
2017	2F+	Building and Coatings	48.33	44.10	3.43	3.87
		Coating (alone)	35.76	2.51	0.95	0.38
2018	2H+	Grading	5.61	59.75	12.82	6.34
		Trenching	0.68	5.44	0.45	0.37
		Paving	7.66	17.21	1.06	0.90
		Building (alone)	10.35	28.87	5.80	2.61
		Building and Coatings	45.65	31.17	6.73	2.97
2019	2H+	Building and Coatings	44.79	28.17	6.50	2.75
		Coating (alone)	35.20	2.10	0.91	0.34
2020	2I	Grading	4.84	48.56	11.5	5.63
		Trenching	0.99	8.26	0.64	0.54
		Paving	5.28	14.5	0.91	0.76
		Building (alone)	7.33	8.63	4.56	1.44
		Building and Coatings	42.44	10.56	5.45	1.76
2021	2I	Building and Coatings	41.92	9.37	5.38	1.7
		Coating (alone)	35.04	1.76	0.87	0.30
2022	3A.1	Grading	4.00	38.55	11.47	5.33
		Trenching	0.81	6.92	0.51	0.42
		Paving	4.58	11.39	0.71	0.57

Year	Phase	Construction Period	Pollutant Emissions (lbs/day)			
			ROG	NOx	PM ₁₀	PM _{2.5}
		Building (alone)	5.87	6.51	4.48	1.37
		Building and Coatings	41.05	8.10	5.34	1.66
2023	3A.1 and 3A.2	3A.1 Building and Coatings (January to March)	4.77	7.4	5.29	1.62
		3A.1 Building and Coatings, and 3A.2 Grading (March and April)	44.55	42.5	16.58	6.79
		3A.1 Building and Coatings, and 3A.2 Trenching (April and May)	41.55	13.92	5.75	1.99
		3A.2 Paving (alone, May and June)	6.38	10.46	0.65	0.52
		3A.2 Building Construction (alone, June and July)	6.34	6.28	0.28	0.18
		3A.2 Building and Coatings (July through December)	41.43	7.79	1.13	0.46
		2024	3A.2, 3B-Residential, and 3B-Commercial	3A.2 Building and Coatings (January to March)	41.14	7.44
3A.2 Building and Coatings, and 3B-R Grading (March and April)	44.74			39.75	15.92	6.45
3A.2 Building and Coatings, and 3B-R Trenching (April and May)	41.89			13.67	5.70	1.94
3B Paving (alone, May and June)	5.99			9.78	0.61	0.48
3B-R Building Construction and 3B-C Grading (early June)	8.62			27.87	44.31	22.42
3B-R Building Construction and 3B-C Trenching (late June)	6.70			10.80	4.80	1.61
3B-R Building Construction 3B-C Paving and 3B-C Building Construction (July)	13.80			15.20	9.14	2.82
3B-R and 3B-C	524.13			12.94	10.43	3.09

Year	Phase	Construction Period	Pollutant Emissions (lbs/day)			
			ROG	NOx	PM ₁₀	PM _{2.5}
		Building and Coatings (July through September)				
		3B-R Building and Coatings (October through December)	40.98	7.44	5.26	1.59
2025	3B	3B-R Building and Coatings (January through May)	40.74	7.09	5.23	1.56

As noted above, the Placer County APCD thresholds would be exceeded for ROG during the architectural coatings period in 2024. This is a significant impact of the proposed project. Other periods where ROG emissions are highest include each of the architectural coating phases, when ROG emissions are generally between 35 and 45 pounds per day.

NO_x emissions would not exceed the APCD thresholds. The highest period of NO_x emissions would occur during the first grading period (phase 2C/2D/2E), and would reach 80.80 pounds per day. This is less than the threshold of 82 pounds per day and therefore, the project would have a less than significant impact related to NO_x emissions during construction. Other periods where NO_x emissions are highest are the second grading period (phase 2F, emissions of 75.09 pounds per day) and the third grading period (phase 2H, emissions of 59.75 pounds per day).

PM₁₀ and PM_{2.5} emissions also would not exceed the APCD thresholds. The highest period of PM₁₀ emissions would occur during 2023 when construction of the phase 3B residences and grading for the phase 3B commercial land uses overlap. PM₁₀ emissions during this period would reach 44.31 pounds per day. This is well below the threshold of 82 pounds per day and therefore the project would have a less than significant impact related to PM emissions during construction. PM₁₀ emissions are generally highest during each grading phase, with emissions ranging between 10 and 17 pounds per day.

To ensure that the project's air pollutant emissions are reduced to the extent feasible, the control measures must be implemented. These include the Placer County APCD rules listed above in Section 7.3. Notes regarding these rules must be included on future tentative maps, grading plans, and improvement plans to ensure compliance with those rules. *Mitigation Measures 7.1a through 7.1c* identify additional control measures to be implemented. These measures would slightly reduce NO_x, PM₁₀ and PM_{2.5} emissions but would have no effect on ROG emissions. For example, during the first grading phase (phase 2C/2D/2E, 2014), unmitigated NO_x emission of 80.80 pounds per day would be reduced to 64.68 pounds per day with implementation of mitigation measures, PM₁₀ emissions of 14.10 pounds per day would be reduced to 8.57 pounds per day, and PM_{2.5} emissions of 7.36 pounds per day would be reduced to 5.30 pounds per day. Similarly, during the second grading phase (phase 2F, 2016), unmitigated NO_x emission of 75.09 pounds per day would be reduced to 60.12 pounds per day with implementation of mitigation measures, PM₁₀ emissions of 13.62 pounds per day would be reduced to 8.20 pounds per day, and PM_{2.5} emissions of 7.07 pounds per day would be reduced to 5.02 pounds per day.

To ensure that all construction air pollutant emissions are reduced to the extent feasible, *Mitigation Measures 7.1a through 7.1c* require construction contractors to implement emission reduction measures during all construction activities. However, as noted above, these measures would not reduce the maximum ROG emissions. ROG emissions would remain above the Placer County APCD construction thresholds, resulting in a significant and unavoidable impact with respect to the APCD thresholds and the potential to contribute to violations of air quality standards.

A portion of the construction emissions from the proposed project were previously evaluated under the WRSP EIR and development of the WRSP was included in the City of Roseville General Plan. These emissions were therefore accounted for in the regional Air Quality Attainment Plan and the SIP. However, the emissions associated with the increased level of development reflected in the proposed Fiddymment Ranch SPA 3 project were not previously accounted for in the Air Quality Attainment Plan and SIP. The project's construction emissions of ROG (which is an ozone precursor) represents a significant and unavoidable impact with respect to conflicts with these air quality plans.

IMPACT 7.2:

Generate Emissions During Project Operation That Conflict with the Air Quality Plan or Violate Air Quality Standards

APPLICABLE POLICIES AND REGULATIONS:	City of Roseville General Plan West Roseville Specific Plan City of Roseville Zoning Ordinance
SIGNIFICANCE WITH POLICIES AND REGULATIONS:	Significant
MITIGATION MEASURES:	Mitigation Measures 7.2a and 7.2b
SIGNIFICANCE AFTER MITIGATION:	Less than Significant

Implementation of the proposed Fiddymment Ranch SPA 3 project would increase operational emissions compared to existing conditions and compared to buildout of the WRSP as currently approved. Operational emissions are associated with mobile, area, and stationary sources. Mobile sources would include exhaust emissions from motor vehicles and re-entrained dust emissions from motor vehicle travel on paved roads. Area sources include items like residential water heaters, natural gas appliances, resurfacing and painting of homes on a periodic basis and consumer products (e.g., aerosols products). Typical stationary sources in the community commercial land use areas could include items like a diesel-engine generator for emergency power generation; kitchen equipment at restaurants; and dry cleaning equipment.

The primary source of operational emissions would be expected from a net increase in vehicle trips directly associated with buildout of the proposed project. Vehicle emission include ozone precursors (ROG and NOx), CO, PM₁₀, PM_{2.5} and SOx. Because the region has been in attainment with the SOx criterion for decades and current California fuel standards limit the amount of sulfur in transportation fuel, the project's SOx emissions is considered to have negligible air quality impacts and is not discussed further in this analysis.

Operational emissions were quantified using the CalEEMod model with project-specific data such as number of residential dwelling units, square footage for commercial type of development, elementary school, parks, and associated number of vehicle trips, and assuming full buildout and operation by the year 2020 (based on the phasing plan, full buildout would not occur until 2025, assuming a buildout year of 2020 provides for a more conservative analysis). Emissions were quantified to account for project-specific transportation and trip generation data, the assumed project build-out year, project internal and external trip rates, and model default parameters such as average winter and summer temperatures, and vehicle fleet mix specific for the Sacramento Valley Air Basin region.

Operational emissions from stationary sources were not included in the CalEEMod model, as no data is available regarding specific stationary sources that may be constructed within the Fiddyment Ranch project area. However, it is likely that some stationary sources would be constructed in the additional 7.3 acres of community commercial land uses included in the proposed project. Such sources would be required to obtain permits to operate under Placer County APCD Rule 501-General Permit Requirements and Rule 507-Federal Operating Permit Program. The permit process would assure that these sources would be equipped with required emission controls. However, collectively, all of these stationary sources would contribute to the operational impacts discussed below.

Unmitigated operational emissions as estimated by the CalEEMod model are presented in *Table 7.9*. As shown, daily unmitigated operational emissions would exceed the Placer County APCD operational thresholds for all criteria pollutants with the exception of SO_x, which as noted above is not evaluated in this analysis. Additionally, there is no adopted threshold for PM_{2.5}. Emissions of PM_{2.5} are presented for informational purposes. Only the summer emissions are presented as these are what the Placer County APCD uses in determination of impact significance and applicable mitigation measures. Additionally these emissions reflect the City's prohibition on woodburning stoves, appliances, and fireplaces in multi-family units, but use the default values for woodburning in single-family homes, to reflect the unmitigated condition.

Table 7.9
Unmitigated Operational Emissions (lbs/day)

Category	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
<i>Area (except consumer products)</i>	3,103.65	44.25	4,005.32	529.76	529.74
<i>Consumer Products</i>	100.27	0	0	0	0
<i>Energy</i>	1.47	12.55	5.49	1.01	1.01
<i>Mobile</i>	253.78	161.21	822.16	179.61	49.66
<i>Total</i>	3,959.17	218.01	4,832.97	710.38	580.41
<i>APCD Threshold</i>	82	82	550	82	No Threshold
<i>Exceed (Yes/No)?</i>	Yes	Yes	Yes	Yes	n/a

The emissions associated with use of consumer products were modified from the CalEEMod outputs. The values reported here assume no use of consumer products associated with the park site and parking lots.

Mitigated operational emissions were also calculated using CalEEMod. Some features of the project design are considered to be effective at reducing vehicular travel in the project region. Those have been incorporated in the CalEEMod analysis as mitigation measures that lower the project's emissions associated with mobile sources. As shown in *Figure 3-5 Conceptual Land Use Plan* and reflected in the CalEEMod modeling, these features include:

- ❖ Increase diversity of housing types, including integrating below market rate housing; and
- ❖ Improve walkability design, destination accessibility, and pedestrian network.

In addition, the project applicant contracted with BuildItGreen to complete a Green Point Ratings analysis for the Fiddymment Ranch SPA 3 development. The BuildItGreen program identifies a menu of options that builders can select in order to increase energy and water efficiency for their products. The following energy efficiency provisions identified in the project applicant's Green Point Ratings report are reflected in the CalEEMod outputs provided in Appendix D to this Recirculated Draft Subsequent EIR and are required to be implemented during project construction, as provided in *Mitigation Measure 7.2a*:

- ❖ Each residence shall include a natural gas heating systems
- ❖ No woodburning heating shall be provided in any residence; and
- ❖ Each residence shall exceed Title 24 energy efficiency requirements by a minimum of 10% above the requirements of the Title 24 requirements in effect in 2014).

Table 7.10 presents the mitigated operational emissions based on implementation of the above list of mitigation measures. Implementation of *Mitigation Measure 7.2a* would reduce operational emissions, but not to a level considered less than significant. Therefore the project applicant will be required to implement *Mitigation Measure 7.2b* which requires payment of fees into the Placer County APCD. Through payment of this in-lieu fee toward the funding of the Placer County APCD's programs, the proposed project's operational ROG and NO_x emissions would be reduced further from 384.02 and 157.89 pounds per day, respectively, to the Placer County APCD's threshold for cumulative impacts of 10 pounds per day. Payment of the fee required under *Mitigation Measure 7.2b* would offset the project's operational emissions of ROG and NO_x, ensuring that project impacts would be reduced to a less than significant level and that the project does not contribute to violations of air quality standards for ROG and NO_x.

However, the proposed project would generate emissions of PM₁₀ that exceed the APCD thresholds. There are no fee programs established to reduce PM₁₀ emissions and no other feasible mitigation measures are available to reduce, offset, or avoid these emissions. Therefore the project has a significant and unavoidable impact with respect to PM₁₀ emissions and the potential to contribute to violations of PM₁₀ air quality standards.

A portion of the operational emissions from the proposed project were previously evaluated under the WRSP EIR and development of the WRSP was included in the City of Roseville General Plan. This portion of the operational emissions was therefore accounted for in the regional Air Quality Attainment Plan and the SIP while the operational emissions associated with the increased level of development reflected in the proposed Fiddymment Ranch SPA 3

project were not previously accounted for in the Air Quality Attainment Plan and SIP. However, by paying the mitigation fee to offset project emissions, the project would provide for the project's emissions to be offset by other pollutant emission reductions in the region and therefore the project would have a less than significant impact with respect to conflicts with these air quality plans.

**Table 7.10
Mitigated Operational Emissions (lbs/day)**

Category	ROG	NOx	CO	PM ₁₀	PM _{2.5}
Area (except consumer products)	53.99	2.82	244.37	3.75	3.73
Consumer Products	100.27	0	0	0	0
Energy	1.13	9.68	4.22	0.78	0.78
Mobile	228.63	145.39	744.16	158.45	43.82
Total	384.02	157.89	992.75	162.98	48.33
Construction Threshold	82	82	550	82	No Threshold
Exceed (Yes/No)?	Yes	Yes	Yes	Yes	n/a

The emissions associated with use of consumer products were modified from the CalEEMod outputs because the CalEEMod outputs assume use of consumer products with all land uses included in the project. The values reported here assume no use of consumer products associated with the park site and parking lots included in the modeling.

IMPACT 7.3:

Generate Substantial Carbon Monoxide Concentrations at Local Intersections

APPLICABLE POLICIES AND REGULATIONS:

City of Roseville General Plan
West Roseville Specific Plan
City of Roseville Zoning Ordinance

SIGNIFICANCE WITH POLICIES AND REGULATIONS:

Less than Significant

MITIGATION MEASURES:

None

SIGNIFICANCE AFTER MITIGATION:

Less than Significant

The primary mobile source pollutant of local concern is CO. Concentrations of CO can build up at congested intersections because vehicles travelling at speeds lower than five miles per hour or idling have the highest CO emission rates. Typically, high CO concentrations are found near roadways with excessively high traffic volumes that exceed the roadway capacity and reduces the operating levels of service (LOS) to an unacceptable level (i.e., E or F). LOS E or F can be described as waiting through several signal cycles with long queues forming upstream from the intersection. If the traffic is highly congested, the CO levels can exceed the 20 ppm 1-hour standard or the 9 ppm 8-hour standard.

Under normal meteorological conditions, CO disperses rapidly as distance from the source increases. However, under certain extreme meteorological conditions, such as stagnant air, CO

concentrations proximate to a congested roadway or intersection may reach unhealthy levels affecting local sensitive receptors (i.e., residents, school children, the elderly, hospital patients). The intersections with the highest volume and/or worst LOS are modeled to determine the potential for CO hotspots. However, the project's Transportation Analysis (DKS 2011 and 2013) provides LOS for affected intersections and detailed traffic data such as vehicle volume, geometrics, and vehicle movement at intersections. Without detailed traffic data, a quantitative CO hotspots analysis through the use of an appropriate dispersion model is not achievable. Therefore, only a qualitative CO hotspots analysis was conducted using LOS provided in the traffic report. In addition, data and analysis provided in the Creekview Specific Plan EIR, which is available for review at the City's website, is hereby incorporated in this analysis by reference.

As reported in the *Fiddymment Ranch SPA 3 Revised Project Memorandum* Transportation Analysis (DKS 2013), 150 out of 158 existing signalized intersections in the City of Roseville would operate at LOS C or better during the p.m. peak hour with implementation of the proposed project. The proposed Fiddymment Ranch SPA 3 project would add two new signalized intersections to the City, both of which would operate at LOS C or better. There are two intersections for which LOS would decrease to LOS D or worse under Existing Plus Project conditions in the p.m. peak hour. However, with implementation of *Mitigation Measure 5.1a*, which requires development under the proposed Fiddymment Ranch SPA 3 project to pay fair share costs for the improvements to each of these intersections, the LOS at each affected intersection would be improved to LOS C or better. Because acceptable intersection LOS would be maintained, the project is not expected to cause or contribute substantially to intersection congestion and associated CO concentrations. In addition, future roadside CO concentrations are expected to decrease from existing roadside CO concentrations despite anticipated increases in traffic volumes, due to improved fuel combustion efficiency.

The Creekview Specific Plan EIR analysis found that existing CO concentrations in the Roseville area are substantially less than either the state or federal ambient air quality standards. Table 4.4-10 of the Creekview Specific Plan EIR identifies the maximum 1-hour and 8-hour CO concentrations for the five intersections projected by the Creekview Specific Plan EIR traffic modeling to have the worst congestion. Each intersection had a 1-hour CO concentration that was 5.9 ppm or less, compared to the federal 1-hour standard of 35 ppm and the state 1-hour standard of 20 ppm. The 8-hour CO concentration at each intersection was 2.5 or less, compared to the federal and state 8-hour standard of 9 ppm.

Based on the CO concentrations reported in the Creekview Specific Plan EIR and the findings of the traffic analysis for the Fiddymment Ranch SPA 3 project that the project would not contribute substantially to intersection congestion, the project is considered to have a less than significant impact with respect to creating CO hotspots.

7.5 MITIGATION MEASURES

Generate Construction Related Emissions that Conflict with the Air Quality Plan or Violate Air Quality Standards

Mitigation Measure 7.1a: Each prime contractor for future construction projects within the proposed Fiddymment Ranch Specific Plan Amendment 3 project shall prepare a

construction dust control plan for approval by the Placer County APCD prior to any ground disturbance. This plan shall address the minimum Administrative Requirements found in Section 400 of District Rule 228, Fugitive Dust (www.placer.ca.gov/airpollution/airpolut.htm). Specific required components of the dust control plan include the following:

- A. Control dust and prevent dirt from going offsite. Apply water to control dust as needed to prevent dust impacts off site. Operational water truck(s) shall be on site as required to control fugitive dust. Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt from being released or tracked offsite. This includes the use of tarpaulins for haul trucks which travel on public streets.
- B. Cover all trucks delivering or exporting soil, sand, or other loose materials or ensure that all trucks hauling such materials maintain at least two feet of freeboard.
- C. Suspend grading operations when wind is sufficient to generate visible dust clouds, generally when wind speeds are greater than 20 miles per hour (mph) average during an hour.
- D. Pave, use gravel cover, or spray a dust control agent on all haul roads.
- E. Install sandbags or other erosion control measures to prevent silt runoff onto public roadways.
- F. Provide graveled, paved or grass-covered areas for construction employee vehicle parking.
- G. Institute measures to reduce wind erosion when site preparation is completed.
- H. Control dust from inactive areas. Apply approved chemical soil stabilizers, vegetative mats, or other appropriate best management practices to manufacturer's specifications, to all-inactive construction areas (previously graded areas which remain inactive for 96 hours).
- I. Control dust on unpaved roads and adjacent public thoroughfares. Spread soil binders on unpaved roads and employee/equipment parking areas and wet broom or wash streets if silt is carried over to adjacent public thoroughfares. Reduce speeds on unpaved roads to 15 mph or lower (this speed must be posted).
- J. Immediately following any mass grading phase, the following dust control measures shall be implemented:
 - Apply soil stabilizers or commence reestablishing ground cover to construction areas within 96 hours of completing grading activities;
 - Develop and implement a wind erosion monitoring program for areas which will remain inactive for extended periods; this program should at a minimum provide for weekly monitoring of inactive sites to assess the effectiveness of wind erosion controls.

Mitigation Measure 7.1b: Each prime contractor for future construction projects within the proposed Fiddymment Ranch Specific Plan Amendment 3 project shall provide a list of construction equipment and anticipated construction timeline for approval by PCAPCD. The prime contractor for each construction project shall submit to the District a comprehensive inventory (i.e., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower or greater) that will be used an aggregate of 40 or more hours for the construction project. The construction timeline shall demonstrate that between May and October, the number of vehicles and equipment operating at the same time is minimized.

Each prime contractor for future construction projects within the proposed Fiddymment Ranch Specific Plan Amendment 3 project shall also provide a plan for approval by the District demonstrating that the heavy-duty (greater than 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NO_x reduction and 45 percent particulate reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.

Mitigation Measure 7.1c: Architectural coatings applied to newly constructed buildings shall be a low-VOC coating. Coating for residential interiors must have a maximum VOC content of 50 grams per liter (g/l) while coating for residential exteriors must have a maximum VOC content of 100 g/l.

Generate Emissions During Project Operation That Conflict with the Air Quality Plan or Violate Air Quality Standards

Mitigation Measure 7.2a: Conditions of approval shall be adopted for each tentative map processed within the Fiddymment Ranch Specific Plan Amendment 3 project area requiring the following features in all development within each tentative map:

- A. Install only natural gas hookups in all new fireplaces. Wood-burning or pellet appliances shall not be permitted in any new dwelling units. Natural gas or propane burning appliances shall be clearly delineated on floor plans submitted with a Building Permit application.
- B. Install a natural gas outlet in the backyard of all new residences for gas-burning barbecues.
- C. Install low-NO_x hot water heaters per Placer County APCD Rule 246.
- D. Use air conditioning units with an Ozone Destruction Catalyst.
- E. Provide natural gas lines or electrical outlets to all backyards to encourage use of natural gas or electric barbecues, as well as electric lawn equipment.
- F. Install Class I bicycle lockers along with bike racks in commercial sites.

- G. Include high-efficiency heating and other appliances, such as water heaters, cooking equipment, refrigerators, furnaces, and boiler units.
- H. Include energy-efficient window glazing, wall insulation, and efficient ventilation methods on all new residential units.

Mitigation Measure 7.2b: Prior to Improvement Plan approval, the project applicant shall implement one or more of the following mitigation strategies. The mitigation shall be sufficient to offset the amount of summertime project operation emissions of ROG and NO_x that exceed 10 pounds per day. The estimated amount that the mitigation must be sufficient to offset is 374.02 pounds per day of ROG and 147.89 pounds per day of NO_x, a total of 521.91 pounds per day for a 182-day period (summer days).

- A. Establish mitigation offsite within west Placer County by participating in an offsite mitigation program, coordinated through the Placer County Air Pollution Control District. Examples include, but are not limited to participation in a "Biomass" program that provides emissions benefits; retrofitting, repowering, or replacing heavy duty engines from mobile sources (i.e. busses, construction equipment, road haulers); or other program that the project proponent may propose to reduce emissions.
- B. Participate in the Placer County Air Pollution District Offsite Mitigation Program by paying the equivalent amount of money, which is equal to the project's contribution of pollutants (ROG and NO_x) in excess of the cumulative threshold of 10 pounds per day during summertime. The payment shall be based on the established fee of \$17,080 per ton and shall be calculated based on a single year of summertime emissions (182-days). The actual amount to be paid shall be determined, and satisfied per current California Air Resource Board guidelines, at the time of Improvement Plan approval.

Generate Substantial Carbon Monoxide Concentrations at Local Intersections

This impact is determined to be less than significant. No mitigation measures are necessary.