6.3 AIR QUALITY

6.3 AIR QUALITY

INTRODUCTION

This section assesses the potential air quality effects of the proposed project and recommends mitigation measures to reduce or eliminate significant impacts. First, the section summarizes the following pertinent baseline information: (1) the climate in the project area; (2) existing air quality conditions in the project area for both "criteria air pollutants" and "toxic air contaminants"; and (3) federal, state, and regional air quality standards. Secondly, the section analyzes the air quality effects caused by stationary, mobile, and area sources related to the proposed project.

One comment related to regional air quality and methods of mitigating impacts was received in response to the NOP.

ENVIRONMENTAL SETTING

Climate and Topography

Air quality is affected by the rate, amount, and location of pollutant emissions and the associated meteorological conditions that influence pollutant movement and dispersal. Atmospheric conditions including wind speed, wind direction, and air temperature, in combination with local surface topography (i.e., geographic features, such as mountains and valleys), determines the effects of air pollutant emissions on local air quality.

The proposed project is located in western Placer County, which lies within the Sacramento Valley Air Basin (SVAB). The climate of the SVAB is Mediterranean in character, with mild, rainy winter weather from November through March and warm to hot, dry weather from May through September. The physiographic features giving shape to the SVAB are the Coast Range to the west, the Sierra Nevada to the east, and the Trinity Range to the north. These ranges channel winds through the Sacramento Valley but also inhibit dispersion of pollutant emissions.

The predominant summer wind pattern is the Full Sea Breeze, commonly referred to as the Delta Breeze, when cool winds originate from the Pacific Ocean and flow through a sea-level gap in the Coast Range called the Carquinez Straits. In the winter season (December through February), northerly winds predominate.

The vertical and horizontal movement of air is important for the dispersion of air pollutants. When there is little air movement, air pollutants can collect and concentrate in a single area, increasing health hazards. For instance, in the winter months, the SVAB experiences a high percentage of calm atmospheric conditions. These calm conditions result in the stagnation of Valley air and increased air pollution. As a result, persistent inversions occur frequently in the SVAB, especially during late fall and early spring, and can restrict vertical dispersion of pollutants released near ground level.

Criteria Pollutants

Both the federal and State governments have established ambient air quality standards for outdoor concentrations of specific pollutants, referred to as "criteria pollutants," in order to protect public health. The national and state ambient air quality standards have been set at concentration levels to

protect the most sensitive persons from illness or discomfort with a margin of safety. Health effects associated with the criteria pollutants discussed in this chapter are shown in Table 6.3-1. Applicable ambient air quality standards are identified later in this EIR section. The PCAPCD is responsible for bringing Placer County into attainment of the national and state ambient air quality standards.

TABLE 6.3-1

HEALTH EFFECTS SUMMARY OF THE MAJOR CRITERIA AIR POLLUTANTS

Air Pollutant	Adverse Effects
Ozone	Breathing Difficulties Lung Tissue Damage
Carbon Monoxide	Chest Pain in Heart Patients Headaches Reduced Mental Alertness
Particulate Matter (PM_{10} and $PM_{2.5}$)	Increased Respiratory Disease Lung Damage Cancer Premature Death
Nitrogen Dioxide	Lung Irritation and Damage
Sulfur Dioxide	Increases Lung Disease and Breathing for Asthmatics

Source: Air Resources Board – ARB Fact Sheet: Air Pollution Sources, Effects and Control.
CARB website: www.arb.ca.gov/research/health/fs/fs2/fs2.htm. Accessed February 14, 2006.

The criteria pollutants for which national and State standards have been promulgated and that are most relevant to air quality planning and regulation in the SVAB are ozone, carbon monoxide (CO), and fine suspended particulate matter of 10 microns or less in diameter (PM_{10}) and particulate matter of 2.5 microns or less ($PM_{2.5}$). PM_{10} and $PM_{2.5}$ are collectively known as particulate matter or "PM". Each of the relevant criteria pollutants are briefly described below.[1]

- Ozone is a gas that is formed when reactive organic gases (ROG) and nitrogen oxides (NO_x), undergo slow photochemical reactions in the presence of sunlight. Both ROG and NO_x can be emitted by a wide variety of processes and activities. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.
- Carbon Monoxide (CO) is a colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest during the winter morning, with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike ozone, motor vehicles operating at slow speeds are the primary source of CO in the SVAB. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.
- Respirable Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$) consist of extremely small, suspended particles or droplets 10 microns and 2.5 microns or smaller in diameter. $PM_{2.5}$ is a subset of PM_{10}. Some sources of suspended particulate matter, like pollen and windstorms, occur naturally. However, in populated areas, most fine suspended particulate matter is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities. Generally, PM_{10} is generated by soil disturbance (which

1 CARB, ARB Factsheet: Air Pollution and Health, December 27, 2005. www.arb.ca.gov/research/health/fs/fs1/fs1.htm. Accessed February 14, 2006.

could include construction activity or wind generated); $PM_{2.5}$ is predominately a product of fuel combustion.

- Nitrogen Dioxide (NO_2) is generated by the burning of fuel and can produce lung damage in exposed individuals. NO_2 can also react in the atmosphere to form acid rain. NO_2 is one component of NO_x, which is an ozone precursor.
- Sulfur Dioxide (SO_2) can be produced by coal or oil burning power plants or industries, refineries, and diesel engines. SO_2 can increase lung disease and breathing problems in asthmatics, and can react in the atmosphere to form acid rain.

The attainment status of Placer County for each of these criteria pollutants is shown in Table 6.3-2. Federal and State regulatory agencies designate areas as "attainment" if they meet federal or State air quality standards, or "nonattainment" if they fail to meet these standards. An area can be both in attainment and nonattainment for various standards simultaneously.

TABLE 6.3-2

ATTAINMENT STATUS OF PLACER COUNTY FOR POLLUTANTS OF CONCERN

Pollutant	Primary Standard	Status
Federal Standards		
Ozone (O_3) – 8 hour	0.08 ppm	Nonattainment
Carbon Monoxide (CO) – 1 hour 8 hour	 35 ppm 9 ppm	 Attainment Attainment
Nitrogen Dioxide (NO_2) – Annual Arithmetic Mean	 0.053 ppm	 Attainment
Sulfur Dioxide (SO_2) – Annual Arithmetic Mean 24 Hour	 0.030 ppm 0.14 ppm	 Attainment Attainment
Inhalable Particulate (PM_{10}) Annual Arithmetic Mean 24 Hour	 50 µg/m^3 150 µg/m$_3$	 Attainment Attainment
Inhalable Particulate ($PM_{2.5}$) Annual Arithmetic Mean 24 Hour	 15 µg/m^3 35 µg/m^3	 Attainment Attainment
State Standards		
Pollutant	**Primary Standard**	**Status**
Ozone (O_3) – 1 hour 8 hour	 0.09 ppm 0.07 ppm	 Nonattainment Nonattainment
Carbon Monoxide (CO) – 1 hour 8 hour	 20 ppm 9 ppm	 Attainment Attainment
Nitrogen Dioxide (NO_2) – Annual Arithmetic Mean 1 hour	 0.30 ppm 0.18 ppm	 Attainment Attainment
Sulfur Dioxide (SO_2) – 24 Hour	 0.04 ppm	 Attainment
Inhalable Particulate (PM_{10}) Annual Arithmetic Mean 24 Hour	 20 µg/m^3 50 µg/m$_3$	 Nonttainment Nonttainment
Inhalable Particulate ($PM_{2.5}$) Annual Arithmetic Mean	 12 µg/m$_3$	 Nonattainment

Notes:
ppm = parts per million
µg/m^3 = micrograms per cubic meter
Source: CARB website – www.arb.ca.gov/desig/adm. Accessed October, 2005.

Toxic Air Contaminants

In addition to criteria air pollutants, another group of airborne substances called Toxic Air Contaminants (TACs) are known to be highly hazardous to health, even in small quantities. TACs are airborne substances capable of causing short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects (i.e., injury or illness). TACs can be emitted from a variety of common sources, including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. Farms, construction sites, and residential areas can also potentially contribute to toxic air emissions. The California Air Resources Board (CARB) has also recently identified diesel particulate matter as a toxic air contaminant.

Regulation of TACs is achieved through federal and state controls on individual sources. The 1990 federal Clean Air Act (CAA) Amendments offer a comprehensive plan for achieving significant reduction in both mobile and stationary source emissions of certain designated Hazardous Air Pollutants (HAP). All major stationary sources of designated HAP's are required to obtain and pay the required fees for an operating permit under Title V of the federal CAA Amendments.

TAC impacts are assessed using a standard Maximally Exposed Individual (MEI) health risk of 10 in 1 million. The CARB and the local air district have determined that any stationary source that poses a risk to the general population equal to or greater than 10 people out of 1 million contracting cancer is excessive. If the risk of such exposure levels meets or exceeds the threshold of 10 excess cancer cases per 1 million people, the CARB and local air district require the installation of best available control technology (BACT) or maximum available control technology (MACT) to reduce the risk threshold.

The CARB has conducted studies to determine the total cancer inhalation risk to individuals due to outdoor toxic pollutant levels. According to the CARB website, the project site has an existing estimated risk that is between 250 and 500 cancer cases per one million people.[2] This represents the lifetime risk that between 250 and 500 people in one million may contract cancer from inhalation of toxic compounds at current ambient concentrations. While TACs are produced by many different sources, the largest contributor to inhalation cancer risk in California is diesel particulates. Diesel particulate matter is emitted into the air via heavy-duty diesel trucks, construction equipment, and passenger cars. According to CARB's Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, the existing average Statewide potential cancer risk from diesel particulate matter is over 500 potential cancer cases per one million people.

Odors

Part of any air quality analysis includes an evaluation of whether odor impacts will occur due to the proposed project. The apparent presence of an odor in ambient air depends on the properties of the substance emitted, its concentration when it is emitted from a source, and the dilution of emission between the emission point and the receptor. Odors can be generated by a large variety of land uses, some of which are very common. Everyday sources of odors include land uses such as restaurants, dry cleaning facilities, wastewater treatment facilities, and animal holding facilities.

The proposed project site is located on land that is undeveloped and has historically been used for agricultural purposes. Consequently, there are no odor sources associated with urban development

2 CARB, Cancer Inhalation Risk: Local Trend Maps, August 20, 2004, http://www.arb.ca.gov/toxics/cti/hlthrisk/cncrinhl/rskmapvwtrend.htm. Accessed June 6, 2006.

that affect the area. Agricultural activity can create odors that some people can perceive as being objectionable. Agriculture would cease to be a land use on the property if the proposed project is approved and constructed. The land surrounding the proposed project site, however, may continue to be in agricultural production.

Sensitive Receptors

Some individuals are considered to be more "sensitive" than others to air pollution. The reasons for greater than average sensitivity may include health vulnerability, proximity to an emission source, or prolonged exposure to air pollutants. Land uses such as primary and secondary schools, as well as convalescent hospitals and age-restricted living facilities, are considered sensitive receptors because the very young, the old and the infirm are more susceptible to respiratory infections and other air quality related health problems than the general public. Residential uses are considered sensitive because people in residential areas are typically at home for extended periods of time, so they can be exposed to pollutants for long periods that may last for many years. The health effects of the criteria pollutants of primary concern are shown in Table 6.3-1.

The proposed project is located on land that has been in agricultural use. Surrounding land uses are also agricultural. Because of the undeveloped nature of the land, few sensitive receptors exist in the vicinity of the proposed project. Existing receptors include one rural residence adjacent to the northwestern border of the proposed project site, and one rural residence approximately one half mile to the south of the proposed project site. Since the proposed project is planned to be made up of multiple uses, including residences, schools, and age-restricted housing, new sensitive receptors would also be developed as part of the proposed project. In addition, more development in the surrounding area, including the West Roseville Specific Plan, is anticipated in the future. This future new development would add sensitive receptors that would be influenced by the proposed project, since residents and workers in the RUSP area (Plan Area) would most likely drive in and around these new developments.

Existing Emission Sources and Concentrations in Placer County

There are many types of air pollutant sources in Placer County. These sources can be divided into two categories: mobile and stationary/area sources. Mobile sources consist primarily of vehicles driven on and off roads, as well as watercraft and other special mobile sources such as locomotives. Stationary sources are typically fixed air stacks that emit air pollution on buildings such as power plants, cleaners, research facilities, manufacturing plants, etc. Area sources include all other non-stationary man-made emission sources, such as agricultural spraying and tilling, construction grading, and use of household sprays and paints.

The CARB maintains an emission inventory of air pollutants within the State's air basins and counties inside those air basins. Table 6.3-3 presents the latest emission inventory of reactive organic gases, nitrogen oxides, carbon monoxide, and particulate matter for Placer County. This inventory subdivides "stationary/area" and "mobile" sources into smaller, more specific categories. The "Miscellaneous Processes" category of the inventory is the primary source of reactive organic gases and PM_{10} in Placer County. "Miscellaneous Processes" includes sources such as cooking, farming operations, and construction and demolition activities. On-road motor vehicles, such as passenger cars, buses, and light, medium, and heavy-duty trucks, are responsible for most of the CO and ROG emitted in the County. The "Other Mobile Sources" category, which includes aircraft, trains, recreational boats and off-road vehicles and equipment, is the category that generates the most NO_x in the County.

TABLE 6.3-3

2004 ESTIMATED ANNUAL EMISSIONS SUMMARY FOR PLACER COUNTY (TONS/DAY)

Source Category	ROG	CO	NO_x	PM_{10}	$PM_{2.5}$
Stationary Sources					
Fuel Combustion	0.4	1.08	3.37	0.22	0.21
Waste Disposal	0.18	-	-	-	-
Cleaning and Surface Coatings	2.7	-	-	-	-
Petroleum Production and Marketing	1.1	-	-	-	-
Industrial Processes	1.5	0.13	0.25	1.47	0.7
Total Stationary Sources	5.88	1.21	3.62	1.69	0.91
Area-Wide Sources					
Solvent Evaporation	3.11	-	-	-	-
Miscellaneous Processes	3.56	47.26	1.15	22.02	8.37
Total Area-Wide Sources	6.68	47.26	1.15	22.02	8.37
Mobile Sources					
On-Road Vehicles	8.56	82.02	12.89	0.41	0.27
Other Mobile	6.37	44.25	13.86	0.8	0.69
Total Mobile Sources	14.93	126.27	26.75	1.22	0.97
Natural (Non-Anthropogenic) Sources					
Total Natural Sources	-	-	-	-	-
Total	**27.49**	**174.75**	**31.53**	**24.93**	**10.25**

Source: California Air Resources Board. Website accessed October 4, 2005.

Local Pollutant Concentrations

The CARB collects ambient air quality data through a network of air monitoring stations throughout the state. These data are summarized annually and are published in the CARB's California Air Quality Data Summaries. The closest monitoring station to the proposed project site is the Roseville/North-Sunrise Boulevard station located in the City of Roseville. Table 6.3-4 lists the ambient pollutant concentrations that have been measured at the Roseville/North-Sunrise Boulevard Monitoring Station through the period of 2002 to 2004. As shown, the national 8-hour ozone standard was exceeded on 17 days over these three years. The State 1-hour ozone standard was exceeded on 39 days over these three years. The State standard for PM_{10} was exceeded on 2 days in the three years. National and state standards for CO have not been exceeded at the monitoring station during this time. The federal $PM_{2.5}$ 24-hour standard was not exceeded at any time during 2002 - 2004.

Local TAC Concentrations

The CARB has produced a series of estimated inhalation cancer risk maps based on modeled levels of outdoor composite toxic pollutant levels. The year 2010 map indicates that the urbanized area in southern Placer County will be exposed to an estimated inhalation cancer risk of more than 250 persons per million near Roseville once adopted diesel risk reduction rules have been implemented.

The risk will be less than 250 persons per million in the other areas of the County.[3,4] These risk numbers represent the total cumulative risk to individuals from TACs in the area. Individual

3 CARB, Maps of Estimated Cancer Risk from Air Toxics, August 21, 2007, www.arb.ca.gov/toxics/cti/hlthrisk/hlthrisk.htm.

4 CARB, Cancer Inhalation Risk: Local Maps By Category, August 20, 2004, http://www.arb.ca.gov/toxics/cti/hlthrisk/cncrinhl/riskmapviewfull.htm, Accessed February 16, 2006.

TABLE 6.3-4

SUMMARY OF AIR POLLUTANT DATA FROM ROSEVILLE – N SUNRISE BLVD. STATION (COMPARED TO FEDERAL AND STATE STANDARDS)

Pollutant	2002	2003	2004
OZONE (1-hour)			
Highest 1-hour (ppm)	0.131	0.133	0.106
Days>0.125 ppm (Fed)	2	1	0
Days>0.09 ppm (Cal)	21	13	5
OZONE (8-hour)			
Highest 8-hour (ppm)	0.105	0.109	0.085
Days>0.08 (Fed)	11	5	1
CARBON MONOXIDE			
Highest 8-hour (ppm)	2.81	1.59	1.93
Days>=9.5 ppm (Fed)	0	0	0
Days>=9.1 ppm (Cal)	0	0	0
PARTICULATE MATTER (PM_{10})			
Highest 24-hour (ug/m^3)	58.0	58.0	43.0
Days>50 ug/m^3 (Cal)	1	1	0
Days>150 ug/m^3 (Fed)	0	0	0
PARTICULATE MATTER ($PM_{2.5}$)			
Highest 24-hour (ug/m^3)	53.0	30.0	32.0
Days>65 ug/m^3 (Fed and Cal)	0	0	0
NITROGEN DIOXIDE			
Highest 1-hour (ppm)	0.075	0.083	0.067
Days>.25 ppm (Cal)[1]	0	0	0

Notes:
1. There is no federal standard for nitrogen dioxide.
Source: California Air Resources Board. www.arb.ca.gov website accessed October 14, 2005.

stationary sources of TAC are regulated by applying a threshold of ten in one million excess cancer risks.

Sources of TAC close to the project site include Highway 65 to the east, Interstate 80 to the south, University Boulevard (proposed to run through the project site), and the future extension of Watt Avenue to the east. University Boulevard is a four lane arterial and Watt Avenue is a six lane arterial, both anticipated to accommodate heavy truck and other vehicle traffic. Truck traffic emits diesel particulate matter, which has been recognized as a TAC by the CARB. According to the CARB's Risk Reduction plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, diesel particulate is the largest contributor to inhalation cancer risk in California.[5] In addition to diesel particulate, the CARB's Air Quality and Land Use Handbook: A Community Health Perspective (April 2005) cites several recent studies linking concentrations of vehicle-related pollutants to distance from a roadway. These studies linking traffic emissions with health impacts further support pre-existing data on the adverse health effects of ambient air pollution, illuminating the key observation that close proximity to roadways increases both exposure and the potential for adverse health effects. The following is a list of key health findings from these studies.

5 CARB, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October 2000, page 1.

- Reduced lung function in children was associated with traffic density, especially trucks, within 1,000 feet. That association was strongest within 300 feet.
- Increased asthma hospitalizations were associated with living within 650 feet of heavy traffic and heavy truck volume.
- Asthma symptoms increased with proximity to roadways; the risk was greatest within 300 feet.
- Asthma and bronchitis symptoms in children were associated with proximity to high traffic in a San Francisco Bay Area community with good overall regional air quality.
- A San Diego study found increased medical visits in children living within 550 feet of heavy traffic.

As a result of these findings, the CARB recommends that new sensitive land uses not be cited within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day.[6]

REGULATORY SETTING

Air quality in the proposed project area is regulated by the U.S. Environmental Protection Agency (USEPA), the CARB, and the Placer County Air Pollution Control District (PCAPCD). These agencies develop rules or regulations to meet the goals or directives imposed on them through legislation. Although USEPA regulations may not be superseded, both state and local regulations may be more stringent than the federal standards. In general, air quality evaluations are based on air quality standards developed by the federal and state governments. Emissions limitations are then imposed upon individual stationary sources of air pollutants by the local air districts. Mobile sources of air pollutants are largely controlled through federal and state agencies, while most stationary sources are regulated by the local air pollution control or air quality management districts.

Federal Regulations

The USEPA is the federal agency responsible for setting and enforcing the federal ambient air quality standards for atmospheric pollutants. The USEPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives.

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs.

State Regulations

The CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and State air pollution control programs within California. In this capacity, the CARB conducts research, sets State ambient air quality standards, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The CARB establishes emissions standards for motor vehicles sold in California,

6 CARB, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005, page 8-10.

consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. The CARB also has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

The California Code of Regulations, Title 3, Division 6, regulates the application of aerial pesticides. The regulation requires the applicator of such pesticides to prevent substantial pesticide drift, and prohibits the application of pesticides when there is the reasonable possibility of contamination of persons or animals not involved in the application.[7]

TACs are regulated by the State through the provisions of the Air Toxics "Hot Spot" Information and Assessment Act (AB 2588). This Act requires facilities to report their TAC emissions. Health risk assessments are then conducted for higher risk facilities, and owners of significant-risk facilities are then required to reduce their risks below the level of significance.[8]

Local Regulations

The PCAPCD is the primary agency responsible for planning to meet federal and State ambient air quality standards in Placer County. While the District's jurisdiction covers only the County, it is also part of an area designated by the USEPA as the Sacramento Ozone Nonattainment Area. The USEPA has grouped several contiguous counties into this nonattainment area because these counties do not attain ozone standards, and it recognizes that these counties affect each other's ozone levels. In order to demonstrate the ability of the nonattainment area to eventually meet these standards, all the air districts in the nonattainment area contribute to the area's portion of the SIP for ozone, including the development and enforcement of air district rules and the regulation of emission sources in the respective counties. The combined efforts of the air districts in the nonattainment area work to implement the provisions of the SIP.

The SIP is a compilation of plans and regulations that govern how the region and state will comply with the federal CAA requirements to attain and maintain the federal ozone standard. The Sacramento Ozone Nonattainment Area's plan for meeting the standard is called the Sacramento Area Regional Ozone Attainment Plan, which was adopted in 1994. An effort to update this plan for the one-hour ozone standard was recently initiated, but later abandoned when the USEPA announced that it would revoke the one-hour standard after the eight-hour standard was implemented. The Sacramento region has been designated as a "serious" nonattainment area for this new eight-hour standard. To date, the region has not adopted an eight-hour attainment plan. Federal law requires the region to adopt a Rate of Progress plan (ROP) showing a strategy to achieve a 3 percent per year reduction in ozone precursors. The PCAPCD originally planned to adopt this ROP by August of 2005, but eventually adopted the plan in February of 2006. In addition to the ROP, the air districts in the Sacramento Region are required to adopt a complete attainment plan for attainment of the eight-hour ozone standard. The air districts of the region currently expect to have this plan approved by their respective governing boards in 2008.[9]

In addition to federal plans, the California Clean Air Act requires nonattainment areas to prepare an Air Quality Attainment Plan (AQAP), followed by a triennial assessment (every three years). The AQAP for the Sacramento nonattainment area was submitted in 1991. All air districts in the

7 California Code of Regulation, Title 3, Division 6.

8 CARB, Overview of the Toxics "Hot Spots" Information and Assessment Act, November 30, 2005, www.arb.ca.gov/ab2588/overview.htm. Accessed March 16, 2006.

9 Sacramento Metropolitan Air Quality Management District, Sacramento Regional Clean Air Plan Update, www.airquality.org/cleanairplan/index.shtml# milestone, accessed November 8, 2007.

nonattainment area take part in developing local rules to implement the AQAP. The air districts also enforce their respective rules. Since adoption of the AQAP, the nonattainment area has produced a 1994 triennial report, with subsequent triennial reports every three years. The last Triennial Report was adopted in April 2005.

PCAPCD Guidance

The PCAPCD has established thresholds of significance, which are presented under Standards of Significance.

Local Air District Rules

PCAPCD has several rules that relate to the proposed project and are defined below:

Rule 202 Visible Emissions

A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more that three (3) minutes in any one (1) hour which is:

a) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or

b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Subsection (a) above.

Rule 205 Nuisance

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause to have a natural tendency to cause injury or damage to business or property.

Rule 207 Particulate Matter

A person shall not release or discharge into the atmosphere from any source or single processing unit, exclusive of sources emitting combustion contaminants only, particulate matter in excess of 0.1 grains per cubic foot of gas at standard conditions.

Rule 217 Cutback and Emulsified Asphalt Paving Materials

A person shall not discharge into the atmosphere volatile organic compounds (VOCs) caused by the use or manufacture of Cutback or Emulsified asphalts for paving, road construction or road maintenance, unless such manufacture or use complies with the provisions of this rule.

Rule 218 Architectural Coatings

1. Except as provided in Subsections (D)(2) and (D)(5) a person shall not sell or offer for sale, apply or manufacture for sale any architectural coating which at the time of sale or manufacture:

   a) Contains more than 250 grams of VOC's per liter of coating excluding water and any colorant added to tint bases, or

   b) Is recommended for use as a bituminous pavement sealer unless it is an emulsion-type coating.

2. A person shall not sell, offer for sale, apply or manufacture for sale any non-flat architectural coating which at the time of sale or manufacture has a VOC content excluding water and colorant added to tint bases in excess of the following:

a) 380 grams of VOC per liter of coating if manufactured prior to September 1, 1989.

b) 250 grams of VOC per liter of coating if manufactured on or after September 1, 1989.

Rule 228 Fugitive Dust

301 VISIBLE EMISSIONS NOT ALLOWED BEYOND BOUNDARY LINE: A person shall not cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area (including disturbance as a result of the raising and/or keeping of animals or by vehicle use), such that the presence of such dust remains visible in the atmosphere beyond the boundary line of the emission source.

302 VISIBLE EMISSIONS FROM ACTIVE OPERATIONS: In addition to the requirements of Rule 202, Visible Emissions, a person shall not cause or allow fugitive dust generated by active operations, an open storage pile, or a disturbed surface area, such that the fugitive dust is of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke as dark or darker in shade as that designated as No. 2 on the Ringelmann Chart (i.e. 40% opacity), as published by the United States Bureau of Mines.

303 CONCENTRATION LIMIT: A person shall not cause or allow PM10 levels to exceed 50 micrograms per cubic meter, 24 hour average, when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other EPA-approved equivalent method for PM10 monitoring. Sampling shall be conducted in accordance with the procedures specified in Section 500.

304 TRACK-OUT ON TO PAVED PUBLIC ROADWAYS: Visible roadway dust as a result of active operations, spillage from transport trucks, and the track-out of bulk material onto public paved roadways shall be minimized and removed.

304.1 The track-out of bulk material onto public paved roadways as a result of operations, or erosion, shall be minimized by the use of track-out and erosion control, minimization, and preventative measures, and removed within one hour from adjacent streets such material anytime track-out extends for a cumulative distance of greater than 50 feet onto any paved public road during active operations.

304.2 All visible roadway dust tracked-out upon public paved roadways as a result of active operations shall be removed at the conclusion of each work day when active operations cease, or every twenty-four (24) hours for continuous operations. Wet sweeping or a HEPA filter equipped vacuum device shall be used for roadway dust removal.

304.3 Any material tracked-out, or carried by erosion, and clean-up water, shall be prevented from entering waterways or storm water inlets as required to comply water quality control requirements.

Rule 246 Natural Gas-Fired Water Heaters

301 NITROGEN OXIDES EMISSION LIMIT: A person shall not distribute, offer for sale, sell or install, any natural gas-fired water heater within the District, unless it meets either of the following standards:

301.1 A natural gas-fired water heater that emits less than or equal to 40 nanograms of nitrogen oxides [calculated as NO_2] per joule (93 pounds per billion BTU) of heat output; and is certified in accordance with Section 402.

301.2 A mobile home natural gas-fired water heater that emits less than or equal to 50 nanograms of nitrogen oxides [calculated as NO_2] per joule (116 pounds per billion BTU) of heat output; and is certified in accordance with Section 402.

Placer County General Plan

The Placer County General Plan also has several policies related to air quality. The following goals and policies from the Placer County General Plan are applicable to the proposed project:

6.F.2.

The County shall cooperate with other agencies to develop a consistent and effective approach to air quality planning and management.

6.F.4.

The County shall solicit and consider comments from local and regional agencies on proposed projects that may affect regional air quality.

6.F.5.

The County shall encourage project proponents to consult early in the planning process with the County regarding the applicability of Countywide indirect and areawide source programs and transportation control measures (TCM) programs. Project review shall also address energy-efficient building and site designs and proper storage, use, and disposal of hazardous materials.

6.F.6.

The County shall require project-level environmental review to include identification of potential air quality impacts and designation of design and other appropriate mitigation measures or offset fees to reduce impacts. The County shall dedicate staff to work with project proponents and other agencies in identifying, ensuring the implementation of, and monitoring the success of mitigation measures.

6.F.7.

The County shall encourage development to be located and designed to minimize direct and indirect air pollutants.

6.F.8.

The County shall submit development proposals to the PCAPCD for review and comment in compliance with CEQA prior to consideration by the appropriate decision-making body.

6.F.9.

In reviewing project applications, the County shall consider alternatives or amendments that reduce emissions of air pollutants.

6.F.10.

The County may require new development projects to submit an air quality analysis for review and approval. Based on this analysis, the County shall require appropriate mitigation measures consistent with the PCAPCD's 1991 Air Quality Attainment Plan (or updated edition).

6.F.11.

The County shall apply the buffer standards described in Part I of this Policy Document and meteorological analyses to provide separation between possible emission/nuisance sources (such as industrial and commercial uses) and residential uses.

6.G.1.

The County shall require new development to be planned to result in smooth flowing traffic conditions for major roadways. This includes traffic signals and traffic signal coordination, parallel roadways, and intra-and inter-neighborhood connections where significant reductions in overall emissions can be achieved.

6.G.3.

The County shall encourage the use of alternative modes of transportation by incorporating public transit, bicycle, and pedestrian modes in County transportation planning and by requiring new development to provide adequate pedestrian and bikeway facilities.

6.G.4

The County shall consider instituting disincentives for single-occupant vehicle trips, including limitations in parking supply in areas where alternative transportation modes are available and other measures identified by the Placer County Air Pollution Control District and incorporated into regional plans.

6.G.5

The County shall endeavor to secure adequate funding for transit services so that transit is a viable transportation alternative. New development shall pay its fair share of the cost of transit equipment and facilities required to serve new projects.

6.G.6.

The County shall require large new developments to dedicate land for and construct appropriate improvements for park-and-ride lots, if suitably located.

6.G.7.

The County shall require stationary-source projects that generate significant amounts of air pollutants to incorporate air quality mitigation in their design.

Placer County Right-to-Farm Ordinance

Placer County has also adopted a “Right-to-Farm” ordinance that seeks to limit the amount of agricultural land lost in the County. The provisions of the ordinance are shown below:

5.24.040 Right-to-farm.

A. It is the declared policy of the county of Placer to preserve, protect and encourage the development and improvement of its agricultural land for the production of food and other agricultural products. When nonagricultural land uses extend into the agricultural areas, agricultural operations often become the subject of nuisance suits. As a result, agricultural operations are sometimes forced to cease or are substantially curtailed. Others may be discourages from making investments in agricultural improvements. It is the purpose of this section to reduce the loss to the county of its commercial agricultural resources by limiting the circumstances under which agricultural operations may be deemed to constitute a nuisance.

B. No agricultural activity, operation, or facility, or appurtenances thereof, conducted or maintained for commercial purposes, and in a manner consistent with proper and accepted customs and standards, as established and followed by similar agricultural operations, shall be or become a nuisance, private or public, due to any changed condition in or about the locality, after the same has been in operation for more than one year if it was not a nuisance at the time it began.

C. For purpose of this section, the term "agricultural activity, operation, or facility, or appurtenances thereof" shall include, but not be limited to, the cultivation and tillage of soil, dairying, the production, cultivation, growing, and harvesting of any agricultural commodity including timber, Christmas trees, viticulture, apiculture, nursery stock, or horticulture, the raising of livestock, fur bearing animals, fish, or poultry, and game birds, and any practices performed by a farmer or on a farm as incident to or in conjunction with such farming operations, including preparation for market, delivery to storage, or to market, or to carriers for transportation to market.

D. For the purpose of this section, commercial "agriculture" means those agricultural lands in designated areas, or those lands that are within the California Land Conservation Act, or within

a timber preserve zone or those lands that produce a gross annual income of four thousand five hundred dollars ($4,500.00) from the sale of agricultural products.

E. Each prospective buyer of property in unincorporated Placer County shall be informed by the seller or his/her authorized agent of the right-to-farm ordinance. The seller or his/her authorized agent will keep on file a disclosure statement signed by the buyer with the escrow process.

F. Whenever a building designated for residential occupancy is to be located on property in the unincorporated area of Placer County, the owners of the property, or their authorized agent, shall acknowledge receipt of the right-to-farm ordinance. (Ord. 4983-B, 1999: prior code § 5.715).

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

The analysis in this section focuses on the nature and magnitude of the change in the air quality environment due to construction and operation of the proposed project. Air pollutant emissions associated with the project would result from construction activities, commercial activity, and increased traffic volumes. The net increase in emissions generated by these activities and other secondary sources have been estimated and compared to thresholds of significance established by the PCAPCD.

Construction Emissions

The project encompasses approximately 1,157.5 acres of undeveloped land. Clearing, grading, and building fabrication activities would all generate criteria pollutants. To analyze impacts from construction, emissions were calculated by estimating the equipment that would be used during the most intensive periods of clearing and grading, excavating, and constructing proposed structures. Peak daily construction emissions associated with these activities were estimated using emission factors from the URBEMIS 2002 version 8.7 emissions model developed for CARB and is provided by CARB to estimate emissions associated with land development projects in California.

Operational Emissions

Operational emissions refer to the emissions that would be generated during operation of the proposed project. In this case, the main source of operational emissions would be the vehicles that drive to and from the site, although emissions may also be generated by stationary sources associated with the commercial uses that would develop as part of the proposed project.

During the operational phase, ozone precursor emissions and carbon monoxide are the pollutants of primary concern. The PCAPCD specifies thresholds of significance for operational emissions of these pollutants.

The average daily emission factors for operational emissions of criteria pollutants were estimated using the URBEMIS 2002 version 8.7 emissions model. For mobile source emissions, the daily trip generation rates used in the traffic study (please see Appendix C) were input into the URBEMIS model.

Analysis of Placer Parkway Toxic Air Contaminants

The Placer County Transportation Planning Agency (PCTPA) is currently in the process of planning for Placer Parkway, a regional high-speed roadway that would connect SR 65 in Placer County (east of the Plan Area) with SR 99 in Sutter County (approximately 10.5 miles to the west). Goals and policies for Placer Parkway, as established by PCTPA, include a requirement to design the facility to be "free-flowing" (i.e., LOS C or better). A substantial amount of vehicles (approximately 40,000 – 70,000) are projected to traverse the Placer Parkway on a daily basis. These vehicles will include a substantial number of trucks.

Five potential alignments through western Placer County have been identified and are under consideration. A final alignment for this potential future road has not been selected. Two of the alignment alternatives would pass directly through the RSUP site, which, as discussed in Chapter 7, Alternatives, of this Draft EIR, would alter the RUSP in such a way as to result in the need for a substantial redesign of the RUSP land use plan. Therefore, these alternative alignments are not considered in this Draft EIR. The remaining three alignments being considered would be routed to the north of the project site, with two of those alignments within approximately 300 feet of the University portion of the Plan Area.

Because of the proximity of some of the alignments of the proposed Placer Parkway to the proposed RUSP, the California Environmental Protection Agency/CARB document *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005, was consulted to assess the potential impact of the proposed Placer Parkway on sensitive receptors within the RUSP. Table 1-1, Recommendations on Siting New Sensitive Land Uses Such As Residences, Schools, Daycare Centers, Playgrounds, or Medical Facilities, of the CARB document recommends that sensitive receptors be kept at least 500 feet away from roadways with daily vehicle traffic volumes exceeding 50,000. This recommendation is based on traffic-related studies on toxic air contaminants, mostly diesel particulate matter, wherein the additional non-cancer health risk attributable to proximity was seen within 1,000 feet, was strongest within 300 feet, and showed about a 70 percent drop off in particulate pollution levels at 500 feet. The *Draft Placer Parkway Corridor Preservation Tier 1 Environmental Impact Statement/ Program Environmental Impact Report* states "because Placer Parkway includes a 500- to 1,000-foot no-development buffer zone, residential or other sensitive uses will not be sited within the 500-foot guidance limit established by some agencies."[10]

Although the PCAPCD has not adopted a methodology for evaluating diesel particulate matter, the Sacramento Metropolitan Air Quality Management District (SMAQMD) developed *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways, Version 1.0*, January 2007. Because sensitive uses (residential and schools) could be located within 500 feet of the proposed Placer Parkway alignment, SMAQMD's protocol was applied for guidance on how to assess potential cancer risk of sensitive receptors exposed to diesel particulate matter from Placer Parkway. The Protocol defines a process, using the location of the project site relative to the roadway, the annual average general wind direction, and the traffic volumes on the roadway, to determine whether a site-specific Health Risk Assessment (HRA) is warranted.

10 Federal Highway Administration, California Department of Transportation, and South Placer Regional Transportation Authority; *Draft Placer Parkway Corridor Preservation Tier 1 Environmental Impact Statement/ Program Environmental Impact Report*, June 29, 2007, page 4.9-5.

Localized CO Concentrations

The CALINE4 dispersion model was used for predicting CO concentrations by estimating pollutant concentrations at sensitive receptors near congested roadways and intersections. For each intersection analyzed, the CALINE4 modeling process added roadway-specific CO emissions calculated from peak-hour turning volumes to the existing ambient CO air concentrations. CALINE4 is the model recommended by the California Department of Transportation to be used for transportation-project-related air quality studies. For this analysis, CO concentrations were calculated based on a simplified CALINE4 screening procedure developed by the Bay Area Air Quality Management District. The simplified model provided a screening analysis in order to identify a potential CO hotspot. This methodology assumed worst-case conditions and provided a screening of maximum, worst-case CO concentrations.

Standards of Significance

Under criteria based on the State CEQA Guidelines, for the purposes of this EIR, air quality impacts are considered significant if the proposed project would:

- Expose sensitive receptors to substantial pollutant concentrations in excess of adopted standards;
- Expose sensitive receptors to toxic air contaminant concentrations that would adversely impact their health and well being;
- Result in a cumulatively considerable increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard that would conflict with or obstruct implementation of the applicable air quality attainment plan; or
- Exceed thresholds of significance set by the local air district.

As the agency principally responsible for comprehensive air pollution control in Placer County, the PCAPCD recommends that projects should be evaluated in terms of air pollution control thresholds established by the PCAPCD. These thresholds were developed by the PCAPCD to provide a way to quantifiably evaluate project air quality impacts.[11] The following quantified thresholds are currently used by the PCAPCD and are used to determine significance of construction-related and operational air quality impacts associated with the proposed project. These thresholds apply to project-specific impacts (construction and operational). Based on PCAPCD guidance, cumulative impacts are only considered for operational air emissions. The PCAPCD thresholds are as follows:

- 82 pounds per day of ROG;
- 82 pounds per day of NO_x;
- 550 pounds per day of CO;
- 82 pounds per day of PM_{10}; and
- Cumulative operational emissions: 10 pounds per day for both ROG and NO_x.

11 Brent Backus, Associate Planner – PCAPCD, Personal Communication, January 4, 2006.

In keeping with CARB standards, the PCAPCD would also consider TAC concentrations from any one stationary source that would expose individuals to ten excess cancer cases per million to be significant.[12]

Project-Specific Impacts and Mitigation Measures

6.3-1 The proposed project could generate PM_{10} through land-clearing and other earth-moving activities during construction.

The proposed project would encompass 1,157.5 acres in unincorporated Placer County. This area has until now been used for agricultural purposes. Even though the proposed project would be developed in phases, all 1,157.5 acres would need to be disked and eventually graded. This activity would produce PM_{10}, especially on windy days when the fine soil on the graded site is blown up from the ground. The burning of fuel by construction equipment would also add to overall PM_{10} emissions. Assuming that no more than 50 acres would be graded on any one day, when calculated with the URBEMIS 2002 model, these earthmoving activities could generate a maximum of 531.94 pounds per day of $PM_{10.}$ This would be in excess of the PCAPCD PM_{10} threshold of 82 pounds per day. Consequently, this would be a *significant impact*.

Mitigation Measure

Many mitigation measures are available that can reduce the impact from land clearing activities. Some of these mitigation measures would provide a substantial reduction in PM_{10} emissions, while other measures would provide only slight PM_{10} reductions. Not all of the recommended measures can be quantified. Measures 6.3-1 (a) – (c) can be quantified in the URBEMIS program. Each of these measures provides a PM_{10} reduction of between 15 percent and 50 percent. With the implementation of Mitigation Measure 6.3-1, the maximum daily PM_{10} emissions impact from grading activities would be reduced to approximately 180 pounds per day. This is above PCAPCD thresholds of significance; therefore, this impact, though substantially lessened by the mitigation measure set forth below, would remain ***significant and unavoidable***.

6.3-1 a) *Water exposed surfaces, as required, to control fugitive dust;*

b) *Apply soil stabilizers to inactive areas;*

c) *Suspend grading operations when wind is sufficient to generate visible dust emissions crossing the boundary line of a project site, despite the application of dust mitigation measures;*

d) *Pave, use gravel cover, apply water three times daily, or spray a dust control agent on all unpaved haul roads;*

e) *In compliance with Rule 228, Fugitive Dust, all visible roadway dust tracked-out upon public paved roadways as a result of active operations shall be removed at the conclusion of each work day when active operations cease, or every twenty-four (24) hours for continuous operations. Wet sweeping or a HEPA filter equipped vacuum device shall be used for roadway dust removal;*

12 Sacramento Metropolitan Air Quality Management District – Guide to Air Quality Assessment in Sacramento County, July 2004, page 6-2.

f) *Cover all trucks hauling soil, sand and other loose materials or ensure that all trucks hauling such materials maintain at least two feet of freeboard space;*

g) *Install sandbags or other erosion control measures to prevent silt runoff onto public roadways;*

h) *Unpaved areas subject to vehicle traffic must be stabilized by being kept wet, treated with a chemical dust suppressant, or covered;*

i) *Prior to groundbreaking, the applicant shall submit a Construction Emission/Dust Control Plan to PCAPCD for its review and approval. This plan must address the minimum Administrative Requirements found in section 400 of District Rule 228, Fugitive Dust. The applicant shall keep a hard or electronic copy of Rule 228, Fugitive Dust, on-site for reference. In addition, the applicant shall have a pre-construction meeting for grading activities on 20 or more acres to discuss the Construction Emission/Dust Control Plan. The applicant shall invite PCAPCD to this meeting;*

j) *The applicant shall suspend all grading operations when fugitive dust exceeds District Rule 228, Fugitive Dust limitations. An applicant representative who is CARB-certified to perform Visible Emissions Evaluations (VEE), shall routinely evaluate compliance with Rule 228, Fugitive Dust. This requirement for a VEE applies to all projects grading 20 or more acres in size, regardless of how many acres are to be disturbed daily. Fugitive dust shall not exceed 40 percent opacity and shall not go beyond the Specific Plan boundary line at any time. If lime or other drying agents are utilized to dry out wet grading areas, they shall be controlled so as not to exceed District Rule 228, Fugitive Dust limitations; and*

k) *The speed of any vehicle or equipment traveling on unpaved areas must be no more than 15 miles per hour unless the road surface and surrounding area is sufficiently stabilized to prevent vehicles and equipment traveling more than 15 miles per hour from emitting dust exceeding Ringlemann 2 or visible emissions from crossing the project boundary line.*

6.3-2 The proposed project could generate emissions of ROG, NO_x, and CO during construction.

Use of heavy-duty equipment during the construction of the proposed project would generate emissions of ROG, NO_x, and CO. Summer and winter estimated construction emissions are listed in Table 6.3-5. Complete details of the construction schedule for the entire Plan Area are not known at this time. The timing of the construction of the University component of the proposed project would be dependent on the rate at which the residential component of the proposed project is built and sold, and the rate of residential development is in turn dependent on market conditions. Because it cannot be determined how much construction could occur on any one day, construction emissions cannot be accurately quantified. The available project information was input into URBEMIS 2002 in order to estimate maximum emissions during each phase of construction. As shown in Table 6.3-5, if the proposed project is constructed in a manner similar to other development projects in the region, it is almost certain that daily emissions of criteria pollutants would be in excess of PCAPCD thresholds of significance. Consequently, this would be a *significant impact*.

TABLE 6.3-5

SUMMER AND WINTER ESTIMATED CONSTRUCTION EMISSIONS - MITIGATED

Construction Year	ROG (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	SO_2 (lbs/day)	PM_{10} (lbs/day)
2006	468.63	3566.75	3470.21	0.02	309.93
2007	467.99	3410.16	3575.17	0.02	148.61
2008	467.31	3253.54	3675.68	0.01	134.82
2009	531.66	3457.01	4250.3	0.05	137.9

Note:
URBEMIS output sheet can be found in Appendix C.
Source: PBS&J, 2005.

Mitigation Measure

Mitigation measures are available to reduce the ROG, NO_x, PM, and CO impact of project construction and are listed below. These measures would substantially lessen the impact but would not allow the project to reduce its daily construction emissions below PCAPCD thresholds. Therefore, this would be a ***significant and unavoidable impact***.

6.3-2 *Contractors shall be required to reduce NO_x, ROG, and CO emissions by complying with the construction vehicle air pollutant control strategies developed by the PCAPCD. Contractors shall include in the construction contracts the following requirements or measures shown to be equally effective:*

a) *Construction equipment operators shall shut off equipment when not in use to avoid unnecessary idling. Generally, vehicle idling should be kept below 5 minutes.*

b) *Contractor's construction equipment shall be properly maintained and in good working condition.*

c) *Construction equipment exhaust shall not exceed PCAPCD Rule 202 Visible Emissions limitations. Operators of vehicles and equipment found to exceed opacity limits are to be immediately notified and the equipment must be repaired within 72 hours. An applicant representative, CARB-certified to perform Visible Emissions Evaluations (VEE), shall routinely evaluate project related off-road and heavy-duty on-road equipment emissions for compliance with this requirement for projects grading more than 20 acres in size regardless of how many acres are to be disturbed daily.*

d) *The prime contractor shall submit to the District a comprehensive inventory (i.e., make, model, year, emission rating) of all 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 project representative shall provide the District with the anticipated construction timeline including start date and name and phone number of the project manager and on-site foreman. The project shall provide a plan for approval by the District demonstrating that the heavy-duty (50 horsepower or greater) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project wide fleet average of 20 percent NO_x reduction and 45 percent particulate reduction compared to the most*

recent CARB fleet average. The District should be contacted for average fleet emission data. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. Contractors can access the Sacramento Metropolitan Air Quality Management District's web site to determine if their off-road fleet meets the requirements listed in this measure.

e) *Construction contractors shall be required to use low-VOC architectural coatings and asphalt in compliance with District Rules and Regulations. Contractors shall also be required to fuel stationary construction equipment with low-sulfur fuels, and use existing power sources (e.g., power poles) or clean fuel generators in place of temporary diesel power generators whenever feasible.*

6.3-3 The proposed project could generate $PM_{2.5}$ through the use of heavy-duty equipment during construction.

Whereas PM_{10} is mostly generated by earthmoving activity and disturbed soils, $PM_{2.5}$ is primarily a product of combustion. Use of heavy-duty equipment during the construction of the proposed project would generate emissions of $PM_{2.5}$. As diesel construction equipment operates, the burning of diesel fuel would contribute $PM_{2.5}$ as a byproduct. Unlike ozone, where impacts are experienced regionally, $PM_{2.5}$ is a directly emitted, localized pollutant. Consequently, any $PM_{2.5}$ impacts would be experienced in the vicinity of the actual construction activity associated with the proposed project.

The project area encompasses 1,157.5 acres plus additional off-site improvements. Construction of the proposed project would occur over approximately 912 acres of these 1,157.5 acres while approximately 245 acres would be preserved as open space and would not be actively graded or experience any other substantial construction activity. Off-site improvements could impact as many as 117 acres. The closest receptors to any project-related construction would be two rural residences in the vicinity of the proposed project site. One residence is to the south of the project site, approximately one-half mile from the site's property line. The second receptor is to the north of the project site, adjacent to the site's property line. Since the receptor to the south is at least one half mile from the project site, construction would not be expected to occur at less than approximately 50 yards from this receptor. While the receptor to the north is much closer to the property line of the project site, it is adjacent to a portion of the site that is proposed to be maintained as open space. Consequently, no construction activity would occur at this portion of the site. Construction along the borders of the project site that are not designated as open space would take place for only a small portion of the overall construction period. The vast majority of development associated with the proposed project would be at the interior of the site, at substantial distances from existing receptors.

Since the proposed project would be developed in phases, residential units built during one phase may be affected by construction activities occurring during a later phase at an adjacent parcel. The construction phase that would produce the most $PM_{2.5}$ would be the grading phase. It is expected that grading would occur over large portions of the project site prior to actual construction of residences. Consequently, it is likely that adjacent parcels would already be graded when new residents begin to occupy housing units, and so these residents would not be subject to $PM_{2.5}$ from grading activities. If grading were to occur at parcels adjacent to new residents, grading equipment would only need to work on a particular section of the parcel for a short period of time. Accordingly, the duration over which new residents could be in proximity to this equipment would be of very short duration.

PCAPCD requires a 45 percent particulate reduction compared to the most recent CARB fleet average. At the expected distances between receptors and construction activity, $PM_{2.5}$ concentrations from construction would not be expected to exceed existing 24-hour or annual standards. Placer County is in attainment for the existing federal 24-hour and annual $PM_{2.5}$ standard, but in non-attainment for the State $PM_{2.5}$ annual standard. In addition, the EPA has recently lowered the federal 24-hour $PM_{2.5}$ standard from 65 micrograms per cubic meter to 35 micrograms per cubic meter, which could affect the significance of future construction activities in the project area. Construction activity is not anticipated to substantially increase $PM_{2.5}$ concentrations at any location; however, due to an unknown construction schedule, this impact is considered *potentially significant*.

Mitigation Measure

The following mitigation measure would ensure that particulate matter emissions during construction would be minimized. However, since construction emissions of $PM_{2.5}$ can not be accurately quantified because there are currently few or no $PM_{2.5}$ emission factors for mechanical or combustion processes, the impact would remain ***significant and unavoidable***.

6.3-3 *Implement Mitigation Measure 6.3-2.*

6.3-4 The proposed project's long-term operational emissions could exceed PCAPCD thresholds of significance for PM_{10}, ROG, NO_x, and CO.

The URBEMIS 2002 emissions modeling program was used to estimate maximum daily operational emissions that would occur for buildout of the proposed project. While the proposed project would be constructed in phases, eventually buildout would occur and the entire project would be in operation. Operational emissions from the proposed project would include stationary, area, and mobile source emissions. Primary area and stationary sources present would include residential fireplaces, landscape maintenance equipment, and residential gas heaters. Mobile sources, which are the vehicle trips associated with the proposed project, would constitute the largest source of operational emissions.

Emissions calculated for the years 2005 and 2010 were compared to PCAPCD thresholds of significance. As shown in Table 6.3-6, emissions of PM_{10}, ROG, NO_x, and CO would all be in excess of PCAPCD thresholds of significance. Certain components are already incorporated into the proposed project that could reduce emissions of these criteria pollutants. For instance, the project would include a comprehensive pedestrian/bikeway network for the proposed project that would encourage the use of alternative, non-vehicular transportation modes. The proposed project includes 6.3 miles of multi-use trails and 3.4 miles of Class II bike paths in the Plan Area so that parks can be easily accessed via non-vehicular modes. However, these measures would not reduce emissions below PCAPCD thresholds of significance. Consequently, this would be a *significant impact*.

Mitigation Measures

The following mitigation measures could be implemented to further reduce operational emissions of criteria pollutants. However, while these measures would substantially lessen operational emissions, emissions would still exceed PCAPCD thresholds of significance. Mitigated daily emissions, which account only for the mitigation measures whose reductions can be quantified, are shown in Table 6.3-6. The biggest reductions would come during the wintertime as a result of

TABLE 6.3-6

ESTIMATED PEAK DAILY OPERATIONAL EMISSIONS

	2005 (lbs per day)				2010 (lbs per day)			
Emission Source	**ROG**	**NO_x**	**PM_{10}**	**CO**	**ROG**	**NO_x**	**PM_{10}**	**CO**
Summer								
Water and Space Heating	4.14	54.86	0.10	31.76	4.14	54.86	0.10	31.76
Fireplaces	-	-	-	-	-	-	-	-
Landscape Maintenance	5.62	0.20	0.14	36.43	5.62	0.20	0.14	36.43
Consumer Products	200.93	-	-	-	200.93	-	-	-
Architectural Coatings	108.39	-	-	-	108.39	-	-	-
Motor Vehicles	623.03	590.12	476.97	5,990.96	442.40	402.38	475.80	4,045.36
Total Emissions	942.12	645.17	477.21	6,059.16	761.48	457.44	476.04	4,113.56
Total Emissions (Mitigated)	**942.12**	**645.17**	**477.21**	**6,059.16**	**761.48**	**457.44**	**476.04**	**4,113.56**
Thresholds (pounds/day)	82	82	82	550	82	82	82	550
Significant Impact	**yes**	**yes**	**yes**	**yes**	**yes**	**yes**	**yes**	**yes**
Winter								
Water and Space Heating	4.14	54.86	0.10	31.76	4.14	54.86	0.10	31.76
Fireplaces	2,330.94	75.53	635.16	4,261.58	2,330.94	75.53	635.16	4,261.58
Landscape Maintenance	-	-	-	-	-	-	-	-
Consumer Products	200.93	-	-	-	200.93	-	-	-
Architectural Coatings	108.39	-	-	-	108.39	-	-	-
Motor Vehicles	567.55	891.72	476.97	6,919.99	380.22	603.54	475.80	4,638.81
Total Emissions	3,211.95	1,022.10	1,112.24	11,213.32	3,024.62	733.93	1,111.06	8,932.14
Total Emissions (Mitigated)	**881.01**	**946.57**	**477.08**	**6,951.74**	**693.68**	**658.40**	**476.44**	**4,670.56**
Thresholds (pounds/day)	82	82	82	550	82	82	82	550
Significant Impact	**yes**	**yes**	**yes**	**yes**	**yes**	**yes**	**yes**	**yes**

Notes:
URBEMIS output sheet can be found in Appendix C.
Source: PBS&J, 2007.

prohibiting wood-burning fireplaces and stoves. Since mitigated emissions would still be above PCAPCD thresholds of significance, this would be a ***significant and unavoidable impact***.

6.3-4 a) *The following guidelines shall be used by the County during review of future project specific submittals for development within the Specific Plan area in order to reduce generation of air pollutants with the intent that specified measures be required where feasible and appropriate. PCAPCD may replace or supplement air pollution measures for individual projects as new technology and feasible measures become available over the course of Plan Area buildout.*

- *Include in all new parking lots tree plantings designed to result in 50 percent shading of parking lot surface areas within 15 years. Incorporated by reference are the City of Sacramento Parking Lot Tree Shading Design and Maintenance Guidelines dated June 17, 2003.*

- *Prohibit wood-burning fireplaces, woodstoves, or similar wood-burning devices for the entire Specific Plan area. Only natural gas/propane-fired fireplace appliances are allowed.*
- *All new residences shall have low NO_x hot water heaters in compliance with PCAPCD Rule 246.*
- *HVAC units for residential units shall have the PremAir (or other manufacturer) ozone catalyst installed if available and economically feasible at the time building permits are issued. Installation of an ozone catalyst on the HVAC units is considered feasible if the additional cost is less than 10 percent of the base HVAC unit cost.*
- *Install two 110/208 volt power outlets for every two loading docks.*
- *Implement the following, or equivalent measures, as determined by the County in consultation with the APCD:*
  - *Establish building guidelines that require the use of high-albedo (low-absorptive) coatings/Energy Star roofing products on all roofs and other building surfaces, if available and economically feasible at the time building permits are issued.*
  - *Establish paving guidelines that, if feasible, require businesses to pave all privately-owned parking areas with a substance with reflective attributes (albedo = 0.30 or better) similar to cement concrete. The use of a paving substance with reflective attributes similar to concrete is considered feasible if the additional cost is less than 20% of the cost of applying a standard asphalt product.*

b) *In order to incorporate passive solar building design and landscaping conducive to passive solar energy use, the Regional University Specific Plan Design Guidelines shall include the following measures:*

- *Encourage the orientation of buildings to be in a south to southwest direction where feasible.*
- *Encourage the planting of deciduous trees on western and southern sides of structures.*
- *In all residences, include high-efficiency heating and other appliances, such as water heaters, cooking equipment, refrigerators, furnaces, and boiler units.*
- *In all residential units, include energy-efficient window glazings, wall insulation, and efficient ventilation.*
- *Landscaping plans shall prohibit the use of liquidambar and eucalyptus trees that produce smog-forming compounds (high emission factors for isoprenes).*

c) *In order to promote bicycle usage, a pedestrian/bikeway (P/B) Master Plan shall be developed for the entire Plan Area. This master plan shall be consistent with the guidelines established in the Placer County Regional Bikeway Plan and the Regional University Specific Plan Design Guidelines. The P/B Master Plan shall include the following measure:*

- *Non-residential development shall provide an additional 20 percent of bicycle lockers and/or racks over what is currently required in the applicable local code.*

d) *The project applicant shall implement an offsite mitigation program, coordinated through the PCAPCD, to offset the project's long-term ozone precursor emissions. The project offsite mitigation program must be approved by PCAPCD. The project's offsite mitigation program provides monetary incentives to sources of air pollutant emissions within the project's air basin that are not required by law to reduce their emissions. The emission reductions are real, quantifiable, and implement provisions of the 1994 State Implementation Plan. The offsite mitigation program reduces emissions within the air basin that would not otherwise be eliminated.*

In lieu of the applicant implementing their own offsite mitigation program, the applicant can choose to participate in the PCAPCD Offsite Mitigation Program by paying an equivalent amount of money into the District program. The PCAPCD, on behalf of Placer County, will determine air quality mitigation fees using calculation methodology established in practice and routinely applied to other, similar, contemporaneous land use development projects. The Offsite Mitigation Program, coordinated by PCAPCD, is designed to offset the project's long-term ozone precursor emissions. The actual amount of emission reductions needed through the Offsite Mitigation Program, and, thus, the project's air quality mitigation fees, would be calculated when the project's average daily emissions have been determined. Fees are to be paid at the time of final map recording for each phase of the project.

6.3-5 CO concentrations could exceed the CAAQS at any intersections as a result of the proposed project.

Buildout of the proposed project would create new roadways and would create traffic on both these new roadways and existing roadways in the vicinity of the proposed project. While the PCAPCD has a "mass emissions" threshold for CO, CO can also be of concern when conditions create high concentrations. Since CO emissions are partly the product of incomplete combustion of fossil fuel, high CO concentrations can sometimes occur at busy intersections that experience very congested conditions and low levels of service (LOS).

The traffic analysis presented in Section 6.11 examined 20 intersections that would be affected by the increased traffic associated with the proposed project. According to the traffic report, nine of these intersections would adjoin roadway segments where the LOS would be lowered to LOS "D" or worse as a result of the proposed project. LOS of "D" or worse would be unacceptable by County of Placer standards, unless the Board of Supervisors, under General Plan Policy 3.A.7, chooses to make an exception to its normal LOS policy because necessary mitigation is infeasible or otherwise unacceptable. Potential CO concentrations that could result at these intersections were modeled. The results of this modeling are shown in Table 6.3-7. As shown in Table 6.3-7, none of the modeled intersections show CO concentrations that would exceed 8-hour or 1-hour CO CAAQS during either the AM or PM peak hours. Because other intersections affected by the proposed project would operate at higher levels of service, these intersections would experience lower CO concentrations than the modeled intersections. Consequently, this would be a ***less-than-significant impact***.

Mitigation Measures

None required.

TABLE 6.3-7

LOCALIZED CARBON MONOXIDE CONCENTRATIONS (EXISTING PLUS PROJECT)

Intersection	CO Concentrations in Parts per Million[1]					
	25 Feet		50 Feet		100 Feet	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
Watt Ave./PFE Rd.	2.6	3.6	2.3	3.4	2.0	3.2
Woodcreek Oaks Blvd./Pleasant Grove Blvd.	2.3	3.4	2.1	3.3	1.9	3.2
Woodcreek Oaks Blvd./Base Line Rd.	2.5	3.5	2.2	3.3	2.0	3.2
Watt Ave./Elverta Rd.	2.9	3.8	2.6	3.6	2.3	3.4
Watt Ave./Antelope Rd.	3.0	3.8	2.7	3.6	2.3	3.4
SR 65 NB Ramp/Pleasant Grove	3.4	4.1	3.0	3.8	2.5	3.5
SR 65 SB Ramp/Pleasant Grove	3.4	4.1	2.9	3.8	2.5	3.5
SR 65 NB Ramp/Blue Oaks	2.5	3.5	2.2	3.4	2.0	3.2
SR 65 SB Ramp/Blue Oaks	3.7	4.2	3.2	3.9	2.7	3.6

Notes:
State 1-hour standard is 20 parts per million. State 8-hour standard is 9.0 parts per million.
Source: PBS&J, 2005. Calculation sheets are provided in Appendix C.

6.3-6 The proposed project could expose receptors to unhealthy levels of TAC.

Development of the non-University portion of the proposed project would include only residential and commercial development. The University portion of the proposed project could include sources such as research facilities. These types of sources could potentially generate TACs. The type or size of facilities that could emit TACs is not presently known. Nor is information currently available on the types of contaminants that could be emitted from potential sources. Therefore, a quantitative estimate of TACs is not possible, and potential effects would be analyzed qualitatively.

Aside from research facilities that would be associated with the University, TAC can also be produced by smaller everyday uses such as dry cleaners and gasoline stations. It is not known at this time whether any of these sources would develop as part of the proposed project, although it is likely. It can be said with certainty, however, that very large TAC-producing uses, such as industrial manufacturing facilities, would not be allowed under the zoning associated with the proposed project.

As previously stated in the Regulatory Setting, the PCAPCD regulates and permits all stationary sources, such as dry cleaners and gasoline stations, that emit toxic air contaminants pursuant to the Air Toxics Hot Spots Information and Assessment Act (Assembly Bill 2588; California Health and Safety Code sections 44000-44394). The review and permitting standards for these facilities are based on public safety levels, as well as federal regulatory requirements. Because these facilities would be required to comply with the PCAPCD rules and regulations, any TAC source would have to reduce its impact to a less than significant level. This would apply to both research facilities associated with the University, and also to smaller commercial sources that may develop as part of the proposed project.

In addition to stationary sources of TAC, mobile sources can also contribute TAC in the form of diesel particulate matter. Mobile sources can be divided into two categories: on-road vehicles and off-road engines and vehicles. On-road vehicles generally include light to heavy-duty trucks, school buses, urban buses, and passenger vehicles. There are approximately 700,000 on-road diesel-fueled vehicles currently in use in California. Off-road engines and vehicles are typically used for agricultural, construction, commercial, industrial, and landscaping applications. There are

approximately 550,000 off-road diesel-fueled engines and vehicles currently in use in California. District preconstruction and operating permit programs implement the local, state, and federal air pollution control requirements applicable to new or modified sources of air pollution. Sources located in a nonattainment area must apply the Lowest Achievable Emission Rate (LAER) control technology to minimize emissions, and they must "offset" the remaining emissions with reductions from other sources when appropriate. A source located in an attainment or unclassified area must apply the Best Available Control Technology (BACT) and meet additional requirements aimed at maintaining the region's clean air. In addition, "major sources" of air pollution must obtain federal Title V operating permits that govern continuing operation. Many Districts have also adopted, pursuant to the California Health and Safety Code, Reasonably Available Control Technology/Best Available Retrofit Control Technology requirements that apply to existing sources located in nonattainment, attainment, and unclassified areas. These requirements are also implemented through the district's permit program.[13]

As previously discussed, the CARB suggests siting sensitive receptors more than 500 feet from freeways, rural roads with 50,000 vehicles per day, and urban roads with 100,000 vehicles per day. Under the proposed design guidelines, sensitive receptors would be located at least 5 miles from Highway 65, over 10 miles from Interstate 80, but within 100 feet of University Boulevard and Watt Avenue. At project build-out, University Boulevard is anticipated to accommodate 23,000 vehicles per day while Watt Avenue is expected to accommodate 42,000 vehicles per day. These projected vehicle volumes are below both thresholds listed above. However, three of the potential alignments of the planned Placer Parkway, a regional high-speed roadway that would connect SR 65 in Placer County (east of the Plan Area) with SR 99 in Sutter County (approximately 10.5 miles to the west), would be routed to the north of the project site, the closest being approximately 300 feet from the University portion of the Plan Area. As described above in the Methods section, the SMAQMD *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways* was applied to the project to determine whether a site-specific HRA would be required. The Protocol uses factors such as peak hour trips, location of the project relative to the roadway, average annual wind direction. More than 24,000 peak hour trips would have to occur in order to trigger the requirement for an HRA at 300 feet because the project site is upwind of the average annual wind direction.[14] Therefore, based upon the Protocol, a site-specific HRA is not recommended for the project.

Major stationary sources of TACs are not expected to be developed as part of the proposed project. In addition, all TAC sources would be subject to current regulations that would effectively reduce their impacts. Since the proposed project would comply with all applicable regulations governing TAC emissions, this impact would be considered ***less than significant***.

Mitigation Measures

None required.

6.3-7 The proposed project could expose sensitive receptors to objectionable odors.

Unpleasant odors do not necessarily result in physical harm, but they can create annoyance or discomfort for exposed individuals. The PCAPCD has no guidance for CEQA air quality analyses,

13 CARB, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October 2000.

14 Sacramento Metropolitan Air Quality Management District, *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways,* January 2007, Table 1.

but refers to the SMAQMD Guide. The SMAQMD Guide states that odors can potentially create a "secondary air quality impact" if a project would either create a new objectionable odor that would affect sensitive receptors, or if it would place new receptors near existing odor sources.

Odor sources such as landfills, chemical plants, or refineries are not proposed to be developed as part of the proposed project. Odors generated in the Plan Area would be typical of mixed use development and would not be expected to be offensive. However, the proposed project could place new receptors, such as residences, in close proximity to existing agricultural odor sources. The project site is currently predominantly agricultural, and agricultural uses also surround the proposed project. Agricultural uses, especially those associated with produce and livestock would create odors that could be noticeable at nearby residential uses developed as part of the proposed project. There are no livestock facilities, such as dairies within a one-mile radius of the proposed project area. However, other smells associated with other agricultural activity, such as the odor of un-harvested produce, could potentially affect residents living in the Plan Area. These types of odors are typical of an agricultural area.

While most of the project area would not generate offensive odors, agricultural operations near the Plan Area may subject residents to unpleasant odors. The County's right-to-farm ordinance includes a requirement to provide disclosure to prospective residents of the possibility for experiencing unpleasant odors from agricultural activities. Consequently, the impact would be ***less than significant***.

Mitigation Measures

None required.

6.3-8 Future residents, employees, and students in the Plan Area could be exposed to pesticide spray drift from adjacent agricultural operations.

As discussed previously, agricultural uses would exist immediately adjacent to the Plan Area. It is likely that these off-site areas would be in agricultural production after part or all of Plan Area is occupied. The agricultural operations on these sites could require the aerial application of pesticides, which when broadly defined, can include herbicides, rodenticides, and fungicides.

Pesticides can be applied during the spring, summer, fall, and possibly even late winter. While pesticides do not necessarily have to be applied aerially, it is possible that they could be applied at adjacent agricultural areas in this way. Aerial application could be a cause of concern if the pesticides drift off-site and towards the Plan Area.

The application of aerial pesticides is regulated by Title 3, Division 6, of the California Code of Regulations (CCR) and is implemented by the County Agricultural Commissioner's Office. The CCR has specified guidelines governing application of individual pesticides. (See Cal. Code Regs., Tit. 3, Section 6450 et seq.) Pesticides can only be applied aerially during calm weather conditions with equipment that allows the pesticides to be dropped straight down. The Code also prohibits the application of pesticides when there is a reasonable possibility of contamination of persons not involved in the application process. The Placer County Agricultural Commissioner's Office is the entity responsible for enforcing and monitoring pesticide application. Local farmers are required to register the type and amount of pesticides they use for their crops with the Agricultural Commissioner's Office. Because the application of pesticides is regulated, the normal use of pesticides would not result in spray drift affecting residents or employees of the Plan Area, even

though aerial application could conceivably occur over agricultural land less than 100 feet to the north of portions of the Plan Area where residential development is proposed. Therefore, this would be a ***less-than-significant impact***.

Mitigation Measures

None required.

Cumulative Impacts and Mitigation Measures

For evaluation of cumulative impacts, the cumulative setting would depend on the pollutant being evaluated. For regional pollutants, the cumulative setting extends over the entire SVAB. For pollutants with localized impacts, the cumulative context would include other sources of the pollutant in the area in the immediate vicinity of the project site.

As discussed earlier, ozone is a regional pollutant. This means that ozone precursors generated in one location do not necessarily have ozone impacts in that area. Instead, precursors from across the region can combine in the upper atmosphere and be transported by winds to various portions of the air basin. Consequently, all ozone precursors generated throughout the air basin are part of the cumulative context for ozone.

PM_{10} and $PM_{2.5}$ generated during construction would include other construction, such as that associated with the West Roseville Specific Plan, Sierra Vista Specific Plan, Curry Creek Community Plan and Placer Vineyards development, and agricultural activity in the vicinity of project-related construction. PM is a problem regionally, but unlike ozone, PM is directly emitted. As such, it does not travel over very long distances. Since PM_{10} and $PM_{2.5}$ are localized pollutants, the cumulative context for these pollutants would not cover other areas of the County. PM_{10} and $PM_{2.5}$ generated in other parts of the County would not travel to the portion of the County containing the Plan Area. The localized nature of PM_{10} and $PM_{2.5}$ means that emissions generated by project-related activity would only affect the area in, and directly around, the Plan Area. Consequently, only PM_{10} and $PM_{2.5}$ emissions from non-project sources near the project site could conceivably combine with project-emitted PM_{10} and $PM_{2.5}$ emissions and create a cumulative impact. As stated above, the construction that could occur simultaneously with project construction would be construction related to the Curry Creek Community Plan and the Placer Vineyards development. These developments are large in size. Much of the construction activity would be too far from the Plan Area to create a cumulative effect. However, construction occurring near the borders of the properties, near the Plan Area, could have the potential to combine with Plan Area emissions to have a cumulative effect.

For CO, which is the product of fuel combustion, the cumulative context would be all existing and future traffic on local roads in the vicinity of the Plan Area. This existing and future traffic would include all the development currently contributing to traffic volumes on the local roads analyzed in the traffic study, as well as all reasonably foreseeable future development, including the Plan Area, that would contribute to traffic volumes on the local roads analyzed in the traffic study. This traffic is accounted for in the traffic study produced for the proposed project, and CO modeling at intersections uses the cumulative numbers in the traffic study.

6.3-9 Construction of the proposed project, in combination with other construction and agricultural activities in the vicinity of the Plan Area, could add to cumulative levels of PM_{10} during construction.

As discussed in Impact 6.3-1, the proposed project would generate PM_{10} during construction, especially the grading phase of construction. While mitigation exists to reduce this impact, the impact of the proposed project would still be significant by itself. The total impact would be compounded if other activities on adjoining land parcels create PM_{10} emissions at the same time. It is likely that grading during construction of the proposed project would coincide with agricultural operations on adjoining parcels that would generate PM_{10}, such as discing. This would create a cumulative impact. Of the activities in and around the Plan Area that would contribute PM_{10} their PM_{10} contribution is expected to be similar to that from project construction. Consequently, project construction would be one of the major sources of PM_{10} in the area, and thus one of the major PM_{10} sources in the cumulative context. Thus, the project, taken together with ongoing agricultural operations and other foreseeable development projects in the affected area, would create a *significant cumulative impact* with respect to PM_{10} emissions. The project's incremental contribution to this impact would itself be cumulatively considerable and thus a *significant* impact.

Mitigation Measure

Mitigation Measure 6.3-1 would substantially lessen the proposed project's incremental contribution to the significant cumulative PM_{10} impact, but the incremental contribution would remain ***significant and unavoidable***.

6.3-9 *Implement Mitigation Measure 6.3-1.*

6.3-10 Construction of the proposed project, in combination with other sources of criteria pollutants in the region, could temporarily add to criteria pollutant levels in the air basin.

As discussed in Impact 6.3-2, during construction of the proposed project, heavy-duty equipment would generate emissions of the ozone precursors ROG, and NO_x. While construction emissions would be temporary, during the construction period they would nevertheless be a part of overall ozone precursor emissions in the Sacramento Region. The Sacramento Ozone Nonattainment Area, of which Placer County is a part, is in nonattainment of State and federal ozone standards. During periods when ozone could be especially high, such as the summer months, the proposed project's construction emissions would add to the total amount of ozone precursors available for ozone production. The air quality history of the Sacramento Valley Air Basin shows that, at times during the year, ozone precursors generated throughout the Valley can combine to exceed State or federal standards. The cumulative development in the region would contribute to these emissions, creating a *significant cumulative impact*.

Table 6.3-3 illustrates that on any given day in Sacramento County, ozone precursors are generated by a large number of different sources. While some of these sources are small, many are also quite large. As stated in Impact 6.3-2, the construction emissions associated with the proposed project would be above PCAPCD thresholds of significance for construction. These thresholds have been set at a level that will help ensure that construction emissions do not hinder the PCAPCD in meeting its attainment goals for ozone. The fact that these thresholds would be exceeded by the proposed project indicate that the proposed project's construction would be substantial compared to other emissions sources in the Region, or even compared to other construction projects that would occur

at the same time. Consequently, the incremental contribution of the proposed project would be cumulatively considerable, resulting in a *significant impact*.

Mitigation Measures

The implementation of Mitigation Measure 6.3-2 would substantially lessen construction emissions from the proposed project, but even with implementation of this measure, the contribution of the proposed project to cumulative construction emissions would continue to be considerable, and therefore, this would be a ***significant and unavoidable cumulative impact***.

6.3-10 *Implement Mitigation Measure 6.3-2.*

6.3-11 The proposed project could contribute to cumulative levels of $PM_{2.5}$.

The EPA recently lowered the significance threshold for the federal 24-hour standard from the current level of 65 micrograms per cubic meter to 35 micrograms per cubic meter, based on an assessment of a significantly expanded body of scientific information that strengthened the association between long-term $PM_{2.5}$ exposure and serious health effects. Under this new standard, Placer County would be classified as a nonattainment area. Therefore ambient air concentrations of $PM_{2.5}$ would exceed the new standard, resulting in a *significant* impact. As discussed in Impact 6.3-3, the $PM_{2.5}$ impact for construction of the proposed project would be potentially significant. Project operation would also generate $PM_{2.5}$ emissions. Therefore, temporary and long-term project emissions of $PM_{2.5}$, would contribute to ambient air concentrations of $PM_{2.5}$ that exceed standards. This would be a *significant impact.*

Mitigation Measures

Implementation of Mitigation Measure 6.3-4 would lessen operational emissions of $PM_{2.5}$, but the proposed project's cumulative impact would be ***significant and unavoidable***.

6.3-11 *Implement Mitigation Measure 6.3-4.*

6.3-12 The proposed project's long-term operational emissions could add to the cumulative levels of criteria pollutant levels in the air basin.

As discussed in Impact 6.3-4, operation of the proposed project would create emissions of ozone precursors. These emissions would, when combined with precursor emissions from other sources, contribute to cumulative ozone levels in the Sacramento Ozone Nonattainment Area. Since the Sacramento Area consistently does not attain the federal or state ozone standards, the cumulative impact would be considered *significant*.

As shown in Table 6.3-6, emissions from operations of the proposed project would substantially exceed PCAPCD thresholds of significance for criteria air pollutants. Exceeding the thresholds does not necessarily mean that a project is significant in the cumulative context. However, the magnitude of the emissions indicates that as an emissions source, the proposed project would be one of the larger emissions sources in Placer County and the Sacramento Region. The proposed project's operational emissions, as calculated, would increase Placer County's NO_x inventory by approximately 1.5 percent, and the ROG inventory by approximately 1.9 percent. This is a substantial increase in ozone precursors in an area that is in nonattainment of ozone standards.

Consequently, the proposed project's incremental contribution to this impact would be cumulatively considerable, resulting in a *significant impact*.

Mitigation Measures

Implementation of Mitigation Measure 6.3-4 would substantially lessen operational emissions of ozone precursors, but the proposed project's cumulative impact would be ***significant and unavoidable***.

6.3-12 *Implement Mitigation Measure 6.3-4.*

6.3-13 CO emissions from operation of the proposed project could contribute to significant cumulative CO levels.

As discussed in Impact 6.3-5, the proposed project would create or increase traffic at new and existing intersections. While operations of the entire project would exceed PCAPCD's thresholds of significance for CO, cumulative CO impacts would only be significant if the CAAQS for CO were to be exceeded. If exceedances of the standard were to occur, they would most likely occur at the busiest intersections affected by the proposed project, since CO is a byproduct of fuel combustion, and there is the potential for CO levels to be high at very congested intersections. The traffic report prepared for the proposed project shows that ten of the intersections studied in the traffic report under cumulative conditions would adjoin roadway segments where LOS would be lowered to LOS "D" or worse as a result of the proposed project. The cumulative conditions in the traffic report take into account other future development in the vicinity of the proposed project. These intersections were modeled to estimate worst-case CO concentrations that could occur during peak hours. The results of the modeling are shown in Table 6.3-8. As shown, none of the intersections would experience CO levels in excess of the CAAQS for CO. Consequently, this would be a ***less-than-significant cumulative impact***.

Mitigation Measures

None required.

TABLE 6.3-8

LOCALIZED CARBON MONOXIDE CONCENTRATIONS (CUMULATIVE PLUS PROJECT)

Intersection	CO Concentrations in Parts per Million[1]					
	25 Feet		50 Feet		100 Feet	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
Watt Ave./PFE Rd.	2.5	3.5	2.3	3.4	2.0	3.2
Woodcreek Oaks Blvd./Pleasant Grove Blvd.	2.6	3.6	2.4	3.5	2.1	3.3
Woodcreek Oaks Blvd./Base Line Rd.	2.3	3.4	2.1	3.3	1.9	3.1
Woodcreek Oaks Blvd./Blue Oaks	2.5	3.5	2.3	3.4	2.0	3.2
Watt Ave./Elverta Rd.	4.2	4.5	3.7	4.2	3.0	3.8
Watt Ave./Antelope Rd.	2.6	3.6	2.3	3.4	2.0	3.2
SR 65 NB Ramp/Pleasant Grove	2.7	3.6	2.4	3.5	2.1	3.3
SR 65 SB Ramp/Pleasant Grove	5.6	5.4	4.6	4.8	3.7	4.2
SR 65 NB Ramp/Blue Oaks	2.4	3.5	2.2	3.3	1.9	3.2
SR 65 SB Ramp/Blue Oaks	3.0	3.8	2.7	3.6	2.3	3.4

Notes:
State 1-hour standard is 20 parts per million. State 8-hour standard is 9.1 parts per million.
Source: PBS&J, 2007. Calculation sheets are provided in Appendix C.