3.3 - Air Quality

3.3.1 - Introduction

This section describes the existing air quality setting and potential direct and indirect air quality effects from project implementation on the site and its surrounding area. Michael Brandman Associates performed air quality analysis for the proposed project, which included mobile-source emissions modeling using EMFAC2007 for the potential future development that could result from implementation of the SOIA. This analysis is augmented by stationary-source emissions modeling using the California Emissions Estimator Model (CalEEMod). Emissions modeling output is provided in Appendix C.

3.3.2 - Environmental Setting

This section discusses meteorological conditions, including temperature, precipitation, and wind. Meteorology is the study of weather and climate. Weather refers to the state of the atmosphere at a given time and place with regard to temperature, air pressure, humidity, cloudiness, and precipitation. The term weather refers to conditions over short periods; conditions over long periods, generally at least 30 to 50 years, are referred to as climate. Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, and consequently affect air quality.

Sacramento Valley Air Basin

The project is located within the Sacramento Valley Air Basin (SVAB), a large north–south-oriented valley in Northern California. The SVAB is generally shaped like a bowl. It is open in the south and surrounded by mountain ranges on all other sides. The Sierra Nevada form the eastern border of SVAB, and the Coastal Ranges are located along the western boundary of the SVAB.

The SVAB encompasses 11 counties, including Shasta, Tehama, Glenn, Colusa, Yolo, Butte, Yuba, Sutter, and Sacramento. The SVAB also includes the northeastern half of Solano County and the western portion of Placer County. The SVAB is further divided into two planning areas: the Broader Sacramento Area that consists of the southern (more populated) portion of the SVAB, and the Upper Sacramento Valley. The project site is located in the Broader Sacramento Area portion of the SVAB.

Transport

Transport is the term used to describe the flow of air pollutants from one geographic area to another. The project area is considered both a contributor and recipient of transported air pollutants. The air quality in the Broader Sacramento Area can be impacted by ozone precursors generated in the San Francisco Bay Area, and on occasion, by pollutants transported from the San Joaquin Valley.

However, local emissions dominate the inventory of air pollution on hot, stagnant summer days (ARB 2001).

Climate and Meteorology

The climate in the Sacramento Valley area is classified as Mediterranean, with mild, wet winters and warm, dry summers. The major climatic controls are the Pacific High Pressure System over the eastern Pacific Ocean and the local topography. The formation of a high-pressure area over the Great Basin Region to the east of the Sierra Nevada also affects the meteorology of the Sacramento area, primarily during the winter months.

The Pacific High Pressure System is a semi-permanent, subtropical, high-pressure system located on the Pacific Coast. The size and strength of the Pacific High Pressure System varies seasonally. By varying degrees, weather in the summer, spring, and fall is generally a result of the movement and intensity of the Pacific High Pressure System. During the summer, its size and strength is at a maximum and the regional climate is dominated by its influence. As a result, clear skies with intense solar heating occur over California's interior, forming a thermal trough of low pressure. This low-pressure trough intensifies the prevailing northwesterly flow over the area. Little precipitation occurs during the summer because the Pacific High Pressure System blocks migrating extra-tropical weather systems.

As the Pacific High Pressure System shifts southward during the fall, its dominance over the area diminishes. During the winter, three weather regimes generally prevail:

1. Storm periods characterized by cloudiness, precipitation, and shifting, gusty winds.
2. Clear weather associated with either a buildup of pressure over the interior of California or the influence of a well-developed Great Basin High Pressure system.
3. Persistent fog or stratus clouds and temperature inversions associated with a weak influence of the Great Basin High, trapping a layer of cool, moist air in the interior valleys.

Thus, sky cover, temperature, and humidity conditions are much more variable during the winter. Air movement is also variable, with stagnant conditions occurring more frequently than during the summer months.

The prevailing wind in this area is southerly all year. This is due to the north–south orientation of the valley and the deflecting effects of the towering Sierra Nevada on the prevailing oceanic wind that moves through the Carquinez Strait near the Delta, at the junction of the Sacramento and San Joaquin rivers. This phenomenon causes what is locally termed the "delta breeze." No other tidewater gap exists in the Coastal Mountains to admit significant marine air into the Sacramento or the San Joaquin valleys.

Occasionally, a strong north or northeasterly barometric pressure gradient develops, forcing air south or southwestward down the Siskiyou Mountains or the Sierra Nevada. This air is warmed by compression as it descends, reaching the valley floor as a hot, dry north wind. Heat waves in the summer are produced by these winds and fortunately, are usually followed within 2 or 3 days by the normally cool, southwest delta breezes, especially at night.

The vertical mixing of air pollutants is limited by the presence of persistent temperature inversions. A temperature inversion is a meteorological phenomenon where air temperature increases with height. Usually, within the lower atmosphere (the troposphere), the air near the surface of the earth is warmer than the air above it, largely because the atmosphere is heated from below by solar radiation absorbed at the surface. Sometimes the gradient is inverted, so that the air gets colder nearer to the surface of the earth: this is a temperature inversion.

Inversions may be either ground level or elevated. Ground-level inversions occur frequently during early fall and winter (i.e., October through January). High concentrations of primary pollutants, which are those emitted directly into the atmosphere (e.g., carbon monoxide), may be found at these times. Elevated inversions act as a lid over the SVAB and limit vertical mixing. Severe air stagnation occurs as a result of these inversions. Elevated inversions contribute to the occurrence of high levels of ozone during the summer months.

Summers are usually dry with warm to hot afternoons and mostly mild nights. The rainy season generally is from November through April. About 75 percent of the annual precipitation occurs then, but measurable rain falls only on an average of 9 days per month during that period. The shielding effect of mountains to the north, east, and west usually modifies winter storms.

Topographic effects, the north–south alignment of the valley, the coast range, and the Sierra Nevada strongly influence the wind flow in the project area. A sea-level gap in the Coast Range allows cool, oceanic air to flow occasionally into the valley during the summer season, with a marked lowering of temperature through the Sacramento-San Joaquin River Delta to the capital. In the spring and fall, a large north-to-south pressure gradient develops over the northern part of the state. Air flowing over the Siskiyou Mountains to the north warms and dries as it descends to the valley floor. Winter storms can bring strong, southerly winds.

Elk Grove's proximity to the Pacific Ocean and location within the Sacramento Valley are the greatest influences on temperature variability in the project area. The nearest weather station to the SOIA Area is the Sacramento Executive Airport, approximately 13 miles northwest. For the period of record (1947 to 2007) average daytime maximum temperatures in the summer (June, July, August) was 91 degrees Fahrenheit (°F), whereas the average wintertime (December, January, February) daytime maximum was only 56°F. Nighttime minimum temperatures in the summer are 57°F, and the nighttime minimum temperatures in the winter are 39°F. The summer months have an average of 52

days in which the maximum temperature is equal to or greater than 90°F. The winter months have an average of 16 days in which the minimum temperature is equal to or less than 32°F. Hot spells can occur from May to October, where temperatures may exceed 100°F, and are typically caused by airflow from subtropical, high-pressure areas that bring light to nearly calm winds and humidity below 20 percent (WRCC 2010).

Annual average rainfall is approximately 17 inches, with almost 89 percent of rain falling between the months of November and April. Rainfall during these months is primarily due to winter storms. Thunderstorms are few in number, usually mild in character, and occur mainly in the spring. An occasional thunderstorm may drift over the valley from the Sierra Nevada in the summer. Snow falls so rarely, and in such small amounts, that its occurrence may be disregarded as a climatic feature. Heavy fog occurs quite frequently in mid-winter, rarely in the summer months, and seldom in spring or fall. The fog may last several days if stagnant atmospheric conditions are present (WRCC 2010).

Winds in the impacted area are seasonally influenced. The prevailing wind is from the south primarily because of marine breezes through the Carquinez Strait, although during winter, the sea breezes diminish and winds from the north occur more frequently. Winter storms, however, can bring strong southerly winds. Between late spring and early fall, a layer of warm air often overlays a layer of cool air from the Delta and San Francisco Bay, resulting in an inversion. Typical winter inversions are formed when the sun heats the upper layers of air, trapping below them air that has been cooled by contact with the colder surface of the earth during the night. Although each inversion type predominates at certain times of the year, both types can occur at any time of the year. Local topography produces many variations that can affect the inversion base and thus influence local air quality.

Air Pollutants of Concern and Health Effects

The most problematic pollutants in the SOIA Area are ozone and particulate matter. The health effects and major sources of these pollutants are described below. Carbon monoxide in the SVAB no longer exceeds the ambient air quality standards, though it has in the past. Toxic air contaminants are a separate class of pollutants and are discussed later in this section.

Ozone

Ground-level ozone (O_3), commonly referred to as smog, is greatest on warm, windless, sunny days. O_3 is not emitted directly into the air, but is formed through a complex series of chemical reactions between reactive organic gases (ROG) and nitrogen oxides (NO_X). These reactions occur over time in the presence of sunlight. O_3 formation can occur in a matter of hours under ideal conditions. The time required for O_3 formation allows the reacting compounds to spread over a large area, producing a regional pollution concern. Once formed, O_3 can remain in the atmosphere for one or two days.

Ozone is also a public health concern because it is a respiratory irritant that increases susceptibility to respiratory infections and diseases, and because it can harm lung tissue at high concentrations. In

addition, O_3 can cause substantial damage to leaf tissues of crops and natural vegetation and can damage many natural and manmade materials by acting as a chemical oxidizing agent. The principal sources of the O_3 precursors (ROG and NO_X) are the combustion of fuels and the evaporation of solvents, paints, and fuels.

Particulate Matter

Particulate matter (PM) can be divided into several size fractions. Coarse particles (PM_{10}) are between 2.5 and 10 microns in diameter and arise primarily from natural processes, such as wind-blown dust or soil. Fine particles ($PM_{2.5}$) are less than 2.5 microns in diameter and are produced mostly from combustion or burning activities. Fuel burned in cars and trucks, power plants, factories, fireplaces, and woodstoves produces fine particles.

The level of $PM_{2.5}$ in the air is a public health concern because it can bypass the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. The health effects vary depending on a variety of factors, including the type and size of particles. Research has demonstrated a correlation between high PM concentrations and increased mortality rates. Elevated PM concentrations can also aggravate chronic respiratory illnesses such as bronchitis and asthma.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. Higher levels of CO generally occur in areas with heavy traffic congestion. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are sources of CO indoors. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

Motor vehicles are the dominant source of CO emissions in most areas. CO is described as having only a local influence because it dissipates quickly. High CO levels develop primarily during winter, when periods of light winds combine with the formation of ground-level temperature inversions

(typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Because CO is a product of incomplete combustion, motor vehicles exhibit increased CO emission rates at low air temperatures. High CO concentrations occur in areas of limited geographic size sometimes referred to as hot spots. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

Other Criteria Air Pollutants

The standards for nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead are being met within the region, and trends in historical data of ambient concentrations of these pollutants show no signs of violating state or federal standards in the future.

Toxic Air Contaminants

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different toxic air contaminants. The most important, in terms of health risk, are diesel particulate matter (DPM), benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to TACs can result from emissions from normal operations as well as accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

Toxic air contaminants are less pervasive in the urban atmosphere than criteria air pollutants, but they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of toxic air contaminants with varying degrees of toxicity. Sources of toxic air contaminants include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

Odors

The Sacramento Metropolitan Air Quality Management District (SMAQMD), the air quality control district for the Sacramento County portion of the SVAB, provides the following examples of sources of odor in its 2011 Guide to Air Quality Assessment: wastewater treatment plants, sanitary landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants. The SOIA Area primarily contains agricultural uses consisting of fallow/row crops/nursery, orchards, vineyard, and livestock operations. The SOIA Area does not contain substantial amounts of food processing, chemical plants, or composting facilities. In the context of land use planning, it is important to consider the distance between the odor source and receptors (also known as a buffer zone or setback).

The greater the distance between an odor source and receptor, the less concentrated the odor emission would be when it reaches the receptor. Because the area in question is quite rural, distance alone from odiferous sources can allow odors to disperse to lower, undetectable concentrations before reaching receptors.

Regional Air Quality

Background

An emissions inventory is an account of the amount of air pollution generated by various emissions sources. To estimate the sources and quantities of air pollution, the California Air Resources Board (ARB), in cooperation with local air districts and industry, maintains an inventory of California emission sources. Sources are subdivided into the four major emission categories: mobile, stationary, areawide, and natural sources.

Mobile sources include on-road sources and off-road mobile sources. The on-road emissions inventory, which includes automobiles, motorcycles, and trucks, is an estimation of population, activity, and emissions of the on-road motor vehicles used in California. The off-road emissions inventory is an estimate of the population, activity, and emissions of various off-road equipment, including recreational vehicles, farm and construction equipment, lawn and garden equipment, forklifts, locomotives, commercial marine ships, and marine pleasure craft. ARB staff estimates mobile source emissions with assistance from districts and other government agencies.

Stationary sources are large, fixed sources of air pollution, such as power plants, refineries, and manufacturing facilities. Stationary sources also include aggregated point sources. These include many small point sources, or facilities, that are not inventoried individually but are estimated as a group and reported as a single-source category. Examples include gas stations and dry cleaners. Each of the local air districts estimates the emissions for the majority of stationary sources within its jurisdiction. Stationary source emissions are based on estimates made by facility operators and local air districts. Emissions from specific facilities can be identified by name and location.

Areawide sources include source categories associated with human activity, and these emissions take place over a wide geographic area. Consumer products, fireplaces, farming operations (such as tilling), and unpaved road dust are examples of areawide sources. ARB and local air district staffs estimate areawide emissions. Emissions from areawide sources may be either from small, individual sources, such as residential fireplaces, or from widely distributed sources that cannot be tied to a single location, such as consumer products and dust from unpaved roads.

Natural, or non-anthropogenic, sources include source categories with naturally occurring emissions such as geogenic (e.g., petroleum seeps), wildfires, and biogenic emissions from plants. ARB staff and the air districts also estimate natural sources.

Sacramento County Emissions Inventory

The 2008 emissions inventory for Sacramento County is available in ARB's 2009 Almanac Emission Projection Data. Table 3.3-1 summarizes the estimated 2008 emissions for the main pollutants of concern in Sacramento County.

Table 3.3-1: 2008 Sacramento County Emissions Inventory

Emission Category	Tons per Day			
	ROG	NOx	PM10	PM2.5
Stationary Sources	8.07	3.90	1.50	0.90
Areawide Sources	17.27	3.10	39.38	10.12
Mobile Sources	35.63	68.98	3.55	2.79
Natural Sources	10.18	0.01	0.02	0.02
Total Sacramento County	71.15	75.99	44.45	13.83
Source: ARB 2009.				

ROG. Mobile sources contributed approximately 50 percent of the 2008 reactive organic gases (ROG) emissions, with on-road motor vehicle emissions constituting the majority of the mobile emissions. Areawide sources accounted for approximately 24 percent of the 2008 emissions inventory.

NO_x. Mobile sources generated the majority of oxides of nitrogen (NO_x) emissions in Sacramento County at approximately 91 percent of the total NO_x inventory.

PM_{10}. For particulate matter smaller than 10 microns in diameter (PM_{10}), areawide sources contributed more almost 90 percent of the 2008 inventory. The main PM_{10}-generating areawide sources include unpaved road dust, paved road dust, and construction and demolition.

$PM_{2.5}$. Areawide sources contributed more than 70 percent of the 2008 inventory of particulate matter smaller than 2.5 microns in diameter ($PM_{2.5}$), and mobile sources generated approximately 20 percent of the inventory. The main $PM_{2.5}$-generating areawide sources include residential fuel combustion and paved road dust.

Local Air Quality

The local air quality can be evaluated by reviewing relevant air pollution concentrations near the project area. The Sacramento Metropolitan Air Quality Management District (SMAQMD) and ARB operate monitoring stations throughout Sacramento County. Existing levels of ambient air quality and historical trends and projections of air quality in the project area are best documented from measurements made near the SOIA Area. The SMAQMD operates one air monitoring station in the

Elk Grove area. The Elk Grove/Bruceville Road Site is at 12490 Bruceville Road in Elk Grove. At the Elk Grove/Bruceville Road Site, the air monitoring station monitors ozone and $PM_{2.5}$, as well as NO_2. Table 3.3-2 summarizes 2007 to 2009 published monitoring data.

Table 3.3-2: Local Air Quality Monitoring (Elk Grove/Bruceville Road Station)

Air Pollutant, Averaging Time (Units)	2007	2008	2009
Ozone			
Max 1 Hour (ppm) Days > CAAQS (0.09 ppm)	0.102 1	0.111 5	0.102 2
Max State 8-Hour (ppm) Days > CAAQS (0.07 ppm) Days > NAAQS (0.08 ppm)	0.088 13 5	0.093 13 7	0.087 12 5
Fine particulate matter ($PM_{2.5}$)			
State Annual Average ($\mu g/m^3$) National Annual Average ($\mu g/m^3$)	* *	16.1 *	14.6 *
Max State 24-Hour ($\mu g/m^3$) Max National 24-Hour ($\mu g/m^3$) Estimated Days > NAAQS (65 $\mu g/m^3$)	57.7 * *	83.3 * *	41.0 * *

Abbreviations:
> = exceed ppm = parts per million $\mu g/m^3$ = micrograms per cubic meter
CAAQS = California Ambient Air Quality Standard
NAAQS = National Ambient Air Quality Standard Mean = Annual Arithmetic Mean
NA = Not applicable (standard not in effect)
[1] From the California measurement.
* No data was available for these dates.
Source: ARB 2010b.

Ambient Air Quality Attainment Status

Table 3.3-3shows the federal and state attainment status for the Sacramento County portion of the SVAB. The region is nonattainment for both federal and state ozone and PM_{10}, and $PM_{2.5}$ standards (ARB 2011).

Areas with air quality that exceed adopted air quality standards are designated as nonattainment areas for the relevant air pollutants. Areas that comply with air quality standards are designated as attainment areas for the relevant air pollutants. Unclassified areas are those with insufficient air quality monitoring data to support a designation of attainment or nonattainment, but are generally presumed to comply with the ambient air quality standard. State Implementation Plans (SIPs) must be prepared by states for areas designated as federal nonattainment areas to demonstrate how the area will come into attainment of the exceeded federal ambient air quality standard.

As detailed in the Regulatory Framework discussion below, both ARB and the US Environmental Protection Agency (EPA) have established air pollution standards in an effort to protect human health

and welfare. Geographic areas are designated attainment if these standards are met and nonattainment if they are not met.

Table 3.3-3: Federal and State Ambient Air Quality Attainment Status for Sacramento County

Parameter	California Standard	Federal Standard
Ozone	Nonattainment	Nonattainment
Respirable particulate matter (PM_{10})	Nonattainment	Nonattainment
Fine particulate matter ($PM_{2.5}$)	Nonattainment	Nonattainment
Carbon monoxide	Attainment	Attainment
Nitrogen dioxide	Attainment	Attainment
Sulfur dioxide	Attainment	Attainment
Lead	Attainment	Attainment
Visibility-reducing particles	Unclassified	No federal standard
Sulfates	Attainment	No federal standard
Hydrogen sulfide	Unclassified	No federal standard
Notes: Source: SMAQMD 2011.		

Sensitive Receptors

Certain populations, such as children, the elderly, and persons with preexisting respiratory or cardiovascular illness, are particularly sensitive to the health impacts of air pollution. Some individuals are more severely impacted by air pollution than others, usually because of pre-existing health problems, proximity to the emissions source, or duration of exposure to air pollutants.

Residential areas are considered sensitive to poor air quality because people are often at home for extended periods and their exposure can be high. Recreational land uses are moderately sensitive to air pollution, because vigorous exercise places a high demand on cardio-vascular function. People in industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, with most workers spending the majority of their time indoors.

The project contains existing rural residences throughout the SOIA Area. More information about existing land uses within the SOIA Area is provided in Section 3.10, Land Use and Planning.

Pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health.

For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions).

3.3.3 - Regulatory Framework

Air pollutants are regulated at the national, state, and air basin level; each agency has a different degree of control. The EPA regulates at the national level. ARB regulates at the state level. The SMAQMD regulates at the air basin level, maintaining ambient air monitoring sites, and regulating stationary sources and indirect sources.

Federal and State Regulatory Agencies

The EPA is responsible for global, international, national, and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Ambient Air Quality Standards (NAAQS), also known as federal standards. There are federal standards for six common air pollutants, called criteria air pollutants, which were identified from provisions of the Clean Air Act of 1970. The criteria pollutants are:

- Ozone
- Nitrogen dioxide
- Lead
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Carbon monoxide (CO)
- Sulfur dioxide

The federal standards were set to protect public health, including that of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health (ARB 2010b).

A State Implementation Plan is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal standards. The State Implementation Plan for the State of California is administered by ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's State Implementation Plan incorporates individual federal attainment plans for regional air districts. The air districts prepare their federal attainment plans, which are sent to ARB to be approved and incorporated into the California State Implementation Plan. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms.

ARB also administers California Ambient Air Quality Standards (CAAQS) (state standards) for the ten air pollutants designated in the California Clean Air Act (CCAA). The ten state air pollutants are the six federal standards listed above as well visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride.

The federal and state ambient air quality standards, relevant effects, properties, and sources of the pollutants are summarized in Table 3.3-4.

Table 3.3-4: Ambient Air Quality Standards

Air Pollutant	Averaging Time	California Standard	National Standard
Ozone (O_3)	1 hour	0.09 ppm	—
	8 hour	0.070 ppm	0.075 ppm
Particulate matter (PM_{10})	24 hour	50 µg/m^3	150 µg/m^3
	Mean	20 µg/m^3	—
Particulate matter ($PM_{2.5}$)	24 hour	—	35 µg/m^3
	Mean	12 µg/m^3	15.0 µg/m^3
Carbon monoxide (CO)	1 hour	20 ppm	35 ppm
	8 hour	9.0 ppm	9 ppm
Nitrogen dioxide (NO_2)	1 hour	0.18 ppm	0.100 ppm
	Mean	0.030 ppm	0.053 ppm
Sulfur dioxide (SO_2)	1 hour	0.25 ppm	0.075 ppm
	3 hour	—	0.5 ppm
	24 hour	0.04 ppm	—
Lead	30-day	1.5 µg/m^3	—
	Quarter	—	1.5 µg/m^3
	Rolling 3-month average	—	0.15 µg/m^3
Sulfates	24 hour	25 µg/m^3	—
Hydrogen sulfide	1 hour	0.03 ppm	—
Vinyl chloride	24 hour	0.01 ppm	—
Visibility-reducing particles	8 hour	Extinction coefficient of 0.23 per kilometer, visibility of 10 miles or more due to particles when relative humidity is less than 70 percent	—

Abbreviations: ppm = parts per million µg/m^3 = micrograms per cubic meter
Mean = Annual Arithmetic Mean 30-day = 30-day average Quarter = Calendar quarter
Source: ARB 2010a.

ARB's Land Use Handbook

ARB adopted the Air Quality and Land Use Handbook: A Community Health Perspective (Land Use Handbook) in 2005. The Land Use Handbook provides information and guidance on siting sensitive receptors in relation to sources of TACs. The sources of TACs identified in the Land Use Handbook

are high traffic freeways and roads, distribution centers, rail yards, ports, refineries, chrome plating facilities, dry cleaners, and large gas dispensing facilities. If the project involves siting a sensitive receptor or source of TAC discussed in the Land Use Handbook, siting mitigation may be added to avoid potential land use conflicts, thereby reducing the potential for health impacts to the sensitive receptors.

Air Quality Plans

Federal Plans

The 1994 Sacramento Regional Clean Air Plan (also called the State Implementation Plan, or SIP) was developed cooperatively with all the districts in the Sacramento region: El Dorado Air Pollution Control District (APCD), Feather River Air Quality Management District (AQMD), Placer County APCD, SMAQMD, and Yolo-Solano AQMD. The Clean Air Plan was adopted in 1994 in compliance with the 1990 Amendments to the federal Clean Air Act. At that time, the Sacramento region could not show that it would meet the federal 1-hour ozone standard by 1999. In exchange for moving the 1-hour deadline to 2005, the region accepted a designation of "severe nonattainment" for the federal 1-hour ozone standard, with additional emission requirements on stationary sources.

As a severe nonattainment area, the Sacramento region is required to submit a rate-of-progress milestone evaluations pursuant to Section 182(g) of the federal Clean Air Act. The Sacramento Regional 1999 Milestone Report was also developed cooperatively with the above-named districts and included a compliance demonstration that the milestone requirements were met. The 2002 Milestone Report also includes a compliance demonstration that the 2002 milestone requirement has been met for the Sacramento nonattainment area.

The Sacramento region has been designated as a serious nonattainment area for the federal 8-hour ozone standard with an attainment deadline of June 2013. The Sacramento region air districts adopted the 8-Hour Ozone Attainment and Reasonable Further Progress Plan in early 2009. This plan includes the information and analyses to fulfill the federal Clean Air Act requirements for demonstrating reasonable further progress and attainment of the 1997 8-hour ozone standard for the Sacramento region. In addition, the plan establishes an updated emissions inventory, provides photochemical modeling results, proposes the implementation of reasonably available control measures, and sets new motor vehicle emission budgets for transportation conformity purposes.

In 2002, the EPA officially determined that Sacramento County had attained the PM_{10} NAAQS by the attainment deadline. SMAQMD prepared the PM_{10} Implementation/Maintenance Plan and Redesignation Request for Sacramento County, last updated on October 28, 2010. As of this date, the EPA has not formally approved the plan or redesignation request. The purpose of the plan is to fulfill the requirements for EPA to redesignate Sacramento County to attainment.

On October 16, 2006, the EPA promulgated a new 24-hour standard for $PM_{2.5}$. This change lowered the daily standard from 65µg/m^3 to 35µg/m^3 to protect the general public from short-term exposure of fine particulate matter. As shown in Table 3.3-3 above, Sacramento County does not meet the new standards. An attainment plan must be submitted not later than 3 years after the effective date of the designation; however, at the time of this Recirculated Draft EIR, no such attainment plan for $PM_{2.5}$ has yet been adopted. The plan must include transportation conformity budgets and control measures.

State Plans

The CCAA requires nonattainment areas to achieve and maintain the state ambient air quality standards by the earliest practicable date and local air districts to develop plans for attaining the state standards. In compliance with the CCAA, the SMAQMD prepared and submitted the 1991 Air Quality Attainment Plan mainly to address Sacramento County's nonattainment status for ozone and carbon monoxide. The CCAA also requires that by the end of 1994 and once every 3 years thereafter, the districts are to assess their progress toward attaining the air quality standards. The triennial assessment is to report the extent of air quality improvement and the amounts of emission reductions achieved from control measures for the preceding 3-year period. The latest Triennial Report (2009) was submitted for approval by the SMAQMD Board of Directors on March 26, 2009. In addition, the SMAQMD is required to submit an annual progress report to ARB by December 31 of each year.

Local Regulatory Agencies

Sacramento Metropolitan Air Quality Management District

The specific air pollution control agency for the County of Sacramento is the SMAQMD, but various local, regional, state, and federal government agencies share the responsibility for air quality management in Sacramento County. The SMAQMD operates at the local level, with primary responsibility for attaining and maintaining the national and state ambient air quality standards in Sacramento County. The SMAQMD coordinates the work of government agencies, businesses, and private citizens to achieve and maintain healthy air quality for the Sacramento area. The SMAQMD develops market-based programs to reduce emissions associated with mobile sources, processes permits, ensures compliance with permit conditions and with SMAQMD rules and regulations, and conducts long-term planning related to air quality.

Other local agencies are responsible for the other counties in the larger nonattainment area. The air districts work jointly with the EPA, ARB, Sacramento Area Council of Governments (SACOG), county transportation and planning departments, cities, and counties, and various non-governmental organizations to improve air quality through a variety of programs. These programs include the adoption of regulations and policies, as well as implementation of extensive education and public outreach programs.

As a severe nonattainment area, the region is also required to submit rate-of-progress milestone evaluations in accordance with the Clean Air Act Amendments (CAAA). These milestone reports

include compliance demonstrations that the requirements have been met for the Sacramento nonattainment area. The air quality attainment plans and reports present comprehensive strategies to reduce ROG, NO_X, and PM_{10} emissions from stationary, area, mobile, and indirect sources. Such strategies include the adoption of rules and regulations, enhancement of CEQA participation, implementation of a new and modified indirect source review program, adoption of local air quality plans, and stationary-, mobile-, and indirect-source control measures.

Sacramento Area Regional Ozone Attainment Plan

As previously stated, the region is nonattainment for both federal and state ozone and PM standards. The federal 8-hour ozone regulations require that areas classified as serious or above submit a reasonable further progress (RFP) demonstration plan that shows a minimum of 18 percent volatile organic compound (and/or NO_x) emission reductions over the first 6 years following the 2002 baseline year and then an average of 3 percent reductions per year for each subsequent 3-year period out to the attainment year. The Sacramento Regional 8-Hour Ozone 2011 Reasonable Further Progress Plan includes the information and analyses to fulfill Clean Air Act requirements for demonstrating RFP toward attaining the 8-hour ozone NAAQS for the Sacramento region. In addition, this plan establishes an updated emissions inventory and maintains existing motor vehicle emission budgets for transportation conformity purposes. The plan indicates that despite meeting the 2011 progress target, the Sacramento region cannot meet the 2013 attainment date for serious nonattainment areas. Section 181(b)(3) of the CAA permits a state to request that the EPA reclassify or "bump up" a nonattainment area to a higher classification and extend the time allowed for attainment. This bump-up process is appropriate for areas that must rely on longer-term strategies to achieve the emission reductions needed for attainment. Therefore, the air districts in the Sacramento region submitted a letter to ARB in February 2008 to request a voluntary reclassification (bump-up) of the Sacramento federal nonattainment area from a serious to a severe 8-hour ozone nonattainment area with an extended attainment deadline of June 15, 2019. On May 5, 2010, the EPA approved the request effective June 4, 2010 (SMAQMD 2010a).

Sacramento Area Regional PM10 Attainment Plan

As previously stated, the region is nonattainment for both federal and state PM_{10} and $PM_{2.5}$ standards. In 2002, the EPA officially determined that Sacramento County had attained the PM_{10} NAAQS by the attainment deadline, and SMAQMD has prepared the PM_{10} Implementation/Maintenance Plan and Re-Designation Request for Sacramento County in compliance with the federal CAA requirements pertaining to PM_{10} nonattainment areas. The purpose of this plan is to fulfill the requirements for the EPA to redesignate the County from nonattainment to attainment of the PM_{10} NAAQS by preparing the following plan elements and tasks:

- Document the extent of the PM_{10} problem in Sacramento County.
- Determine the emission inventory sources contributing to the PM_{10} problem.
- Identify the appropriate control measures that achieved attainment of the PM_{10} NAAQS.

- Demonstrate maintenance of the PM_{10} NAAQS.
- Request formal redesignation to attainment of the PM_{10} NAAQS.

The SMAQMD has also adopted various rules and regulations pertaining to the control of emissions from area and stationary sources. No specific SMAQMD rules or regulations apply to the proposed project, as the project does not include any changes to land use or development proposals. However, some of the more pertinent regulatory requirements that are likely to apply to future development in the proposed SOIA Area are identified as follows (SMAQMD 2011b):

- *Rule 402: Nuisance*. The purpose of this rule is to limit emissions which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause or have natural tendency to cause injury or damage to business or property.
- *Rule 403: Fugitive Dust*. The purpose of this rule is to require that reasonable precautions be taken so as not to cause or allow the emissions of fugitive dust from non-combustion sources from being airborne beyond the property line from which the emission originates.

Regional

Metropolitan Transportation Plan/Sustainability Communities Strategy for 2035

Since adoption of SACOG's 2008 Metropolitan Transportation Plan (MTP), California enacted the Sustainable Communities and Climate Protection Act, also known as Senate Bill 375 (Stats. 2008, ch. 728) (SB 375), which requires metropolitan planning organizations (MPOs), such as SACOG, to include a Sustainable Communities Strategy (SCS) element in their MTP updates (SACOG is required by federal law to update the MTP at least every four years). SCSs are intended to integrate smart land use planning principles with an efficient and diverse transportation network. The SACOG Board adopted the Metropolitan Transportation Plan/Sustainable Communities Strategy for 2035 (MTP/SCS) at its April 19, 2012 meeting. The MTP/SCS is a long-range plan for transportation in the region.

SACOG made the following determination regarding the MTP/SCS's conformity with the Federal Clean Air Act:

- Carbon Monoxide: The Analysis determined that the implementation of the 2011/14 MTIP Amendment #14 and the MTP/SCS would result in less total regional on-road vehicle-related emissions than the approved emissions budget established in the *2004 Revision to the California State Implementation Plan for Carbon Monoxide*.
- Ozone: The Analysis determined that the implementation of the 2011/14 MTIP Amendment #14 and the MTP/SCS would result in less total regional on-road vehicle-related emissions

(ROG and NOx) than the approved emissions budget established in the *2009 Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan.*

- PM10: The Analysis determined that the implementation of the 2011/14 MTIP Amendment #14 and the MTP/SCS would result in less total regional on-road vehicle-related emissions than the approved emissions budget established in the *2010 PM10 Implementation/Maintenance Plan and Redesignation Request for Sacramento County.*
- PM2.5: The Analysis determined that the total regional on-road vehicle-related emissions associated with implementation of the 2011/14 MTIP Amendment #14 and the MTP/SCS for the analysis years are projected to be less than or equal to the emissions for the No- Build scenario, satisfying the test established in *Interim Transportation Conformity Guidance for 2006 PM2.5 NAAQS Nonattainment Areas* in both the Sacramento and Yuba City-Marysville areas.
- TCMs: The implementation of the 2011/14 MTIP Amendment #14 and the MTP/SCS will not impede the timely implementation of the TCMs identified in the *2009 8-Hour Ozone Attainment and Reasonable Further Progress Plan.*
- Consultation for this analysis was conducted in accordance with SACOG's Public Participation Plan.
- Both the amended MTIP and MTP/SCS have been financially constrained consistent with 40 CFR 93.108 and with 23 CFR Part 450.

The purpose of the MTP/SCS is to provide a strategy to approach the many challenges faced by the Sacramento region as the population grows and the region expands over the next few decades. The MTP/SCS seeks to guide the Sacramento region toward a more sustainable future through better integration of smart land use decisions with a well-managed transportation system.

Local

City of Elk Grove

Approval by LAFCo of this SOIA does not authorize any change in land use or governance. However, the proposed project would adjust the City of Elk Grove's SOI and allow the City the opportunity to file an annexation request with LAFCo to annex lands within the SOIA Area. The City of Elk Grove General Plan establishes goals and policies to guide both present and future development within the City's jurisdiction. The City of Elk Grove's General Plan policies related directly or indirectly to air quality that may apply to potential future development in the SOIA Area are provided below.

- **Policy CAQ-26:** It is the policy of the City of Elk Grove to minimize air pollutant emissions from all City facilities and operations to the extent feasible and consistent with the City's need to provide a high level of public service.

- **CAQ-26-Action 1:** The City shall encourage all its employees to use transportation alternatives such as public transit, bicycling, walking, and carpooling for commute and other work-related trips. The City shall provide information on these and other applicable programs to all employees.
- **CAQ-26-Action 2:** All City facilities shall incorporate energy-conserving design and construction techniques.
- **CAQ-26-Action 3:** The City shall encourage City contractors and vendors to reduce emissions from their operations (such as by using low emission vehicles), and shall consider including a preference for low emission contractors and vendors in City requests for proposals where appropriate.
- **Policy CAQ-27:** The City shall promote energy conservation measures in new development to reduce on-site emissions and power plant emissions. The City shall seek to reduce the energy impacts from new residential and commercial projects through investigation and implementation of energy efficiency measures during all phases of design and development.
- **CAQ-27-Action 1:** Provide information to the public and builders on available energy conservation techniques and products.
- **CAQ-27-Action 2:** Encourage the use of trees planted in locations that will maximize energy conservation and air quality benefits. Encourage the use of landscaping materials which produce lower levels of hydrocarbon emissions.
- **CAQ-27-Action 3:** During project review, City staff shall consider energy conservation and, where appropriate, suggest additional energy conservation techniques.
- **CAQ-27-Action 4:** During project review, ensure that "Best Available Control Technology" is properly used and implemented.
- **CAQ-27-Action 5:** Encourage new commercial uses to limit delivery hours to nonpeak hours.
- **Policy CAQ-28:** The City shall emphasize "demand management" strategies which seek to reduce single-occupant vehicle use in order to achieve state and federal air quality plan objectives.
- **CAQ-28-Action 1:** Implement the requirements for designated carpool and vanpool parking for all new office developments.
- **CAQ-28 Action 2:** All City facilities shall include designated carpool and vanpool spaces, and all City staff shall be encouraged to take part in ridesharing.
- **Policy CAQ-29:** The City shall seek to ensure that public transit is a viable and attractive alternative to the use of private motor vehicles.
- **CAQ-29-Action 1:** Consider implementation of a development impact fee to provide funding for the development of new public transit facilities in Elk Grove.
- **CAQ-29-Action 2:** The City shall review all options for providing public transit to the residents and businesses of Elk Grove and seek to implement the option which provides the most effective and cost-efficient service.

- **Policy CAQ-30:** All new development projects which have the potential to result in substantial air quality impacts shall incorporate design, construction, and/or operational features to result in a reduction in emissions equal to 15 percent compared to an "unmitigated baseline" project. An "unmitigated baseline project" is a development project which is built and/or operated without the implementation of trip-reduction, energy conservation, or similar features, including any such features which may be required by the Zoning Code or other applicable codes.
- **CAQ-30-Action 1:** The City shall develop and implement "Emission Reduction Measures" to achieve the reduction required by this policy. These Emission Reduction Measures should consider the following:
  - Cost-effectiveness
  - A maximum cost for measures, and consideration of a waiver from full compliance if this maximum cost would be exceeded.
  - Credits for emission reductions already in place (e.g., for buildings in the latter phases of a multi-phased project which included emission reduction measures in its design) or which are required to mitigate other impacts.
- **Policy CAQ-31:** The City shall support intergovernmental efforts directed at stringent tailpipe emission standards and inspection and maintenance programs for all feasible vehicle classes and revisions to the Air Quality Attainment Plan to accelerate and strengthen market-based strategies consistent with the General Plan.
- **CAQ-31-Action 1:** The City shall ensure that all City vehicles conform with applicable emission standards and the time of purchase and continuing throughout their use by the City. The City shall consider pollutant emissions as one criterion for vehicle purchasing decisions, seeking to purchase lower-emitting vehicles.
- **CAQ-31-Action 2:** The City shall participate in intergovernmental groups seeking to improve local and regional air quality.
- **CAQ-31-Action 3:** In conjunction with Sacramento Metropolitan Air Quality Management District, support and participate in a public education and outreach program dealing with air quality issues, with a goal of attaining a solid foundation of public support for needed air quality measures.
- **CAQ-31-Action 4:** The City shall consider the adoption of an ordinance to discourage excessive idling of diesel-powered and other heavy vehicles to reduce air pollutant emissions.
- **Policy CAQ-32:** As part of the environmental review of projects, the City shall identify the air quality impacts of development proposals to avoid significant adverse impacts and require appropriate mitigation measures, potentially including—in the case of projects which may conflict with applicable air quality plans—emission reductions in addition to those required by Policy CAQ-30.

- **CAQ-32-Action 1:** Coordinate with the Sacramento Metropolitan Air Quality Management District on the review of proposed development projects, specifically including projects that could conflict with any applicable air quality plans and/or the State Implementation Plan.
- **Policy CAQ-33:** The City shall require that public and private development projects use low emission vehicles and equipment as part of project construction and operation, unless determined to be infeasible.
- **Policy SA-10:** Industries which store and process hazardous or toxic materials shall provide a buffer zone between the installation and the property boundaries sufficient to protect public safety. The adequacy of the buffer zone shall be determined by the City of Elk Grove.
- **Policy CI-4:** Specific Plans, Special Planning Areas, and development projects shall be designed to promote pedestrian movement through direct, safe, and pleasant routes that connect destinations inside and outside the plan or project area.
- **Policy CI-8:** The City shall encourage the extension of bus rapid transit and/or light rail service to the planned office and retail areas north of Kammerer Road and west of Hwy 99.
- **Policy CI-13:** The City shall require that all roadways and intersections in Elk Grove operate at a minimum Level of Service "D" at all times.
- **Policy CI-15:** Development projects shall be required to provide funding or to construct roadway/intersection improvements to implement the City's Circulation Master Plan. The payment of established traffic impact or similar fees shall be considered to provide compliance with the requirements of this policy with regard to those facilities included in the fee program, provided that the City finds that the fee adequately funds all required roadway and intersection improvements. If payment of established fees is used to provide compliance with this policy, the City may also require the payment of additional fees if necessary to cover the fair share cost of facilities not included in the fee program.

3.3.4 - Methodology

Methodology for Analysis

Approval of the SOIA would allow the City of Elk Grove to file annexation requests for lands within the SOIA Area, which could indirectly lead to urbanization of the area. The impacts related to air quality from implementation of the 2003 Elk Grove General Plan were evaluated in the General Plan Environmental Impact Report (EIR). All mitigation measures identified for impacts in the Elk Grove General Plan EIR and adopted by the City continue to remain the responsibility of the City as part of implementation of the General Plan. Consequently, upon approval of any future annexation request for the SOIA Area, those General Plan policies and EIR mitigation measures are assumed to apply to development within the SOIA Area.

The SMAQMD updated its CEQA Guide to Air Quality Assessment in 2009, with additional revisions in April and June of 2011, and the analysis utilizes this guidance to the extent feasible and

examines the project in relationship to Appendix G, Environmental Checklist, of the CEQA Guidelines air quality impact questions.

Operational on-road mobile emissions for the potential future development of the project, based on the land use assumptions provided in Section 2, Project Description, were modeled using EMFAC2007, ARB's mobile emissions model. Specifically, the trip generation and mobile trip parameters were entered into EMFAC2007 to generate mobile emissions. In addition, operational stationary-source emissions were modeled using the California Emissions Estimator Model (CalEEMod). CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Emissions modeling output is provided in Appendix C.

3.3.5 - Thresholds of Significance

The impact analysis provided below is based on the application of the following CEQA Guidelines Appendix G environmental checklist. An air quality impact is considered significant if implementation of the project will:

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

Specific SMAQMD-recommended thresholds are provided in the impact discussions below, where appropriate and applicable.

3.3.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Air Quality Plan

Impact AIR-1:	**The project may conflict with or obstruct implementation of the applicable air quality plan.**

Impact Analysis

As previously stated, the SOIA Area is located in a nonattainment area, and therefore the region is required to submit rate-of-progress milestone evaluations in accordance with the Clean Air Act

Amendments. These milestone reports, prepared by the SMAQMD, include compliance demonstrations that the requirements have been met for the Sacramento nonattainment area. The air quality attainment plans and reports present comprehensive strategies to reduce ROG, NO_X, and PM_{10} emissions from stationary, area, mobile, and indirect sources. Such strategies include the adoption of rules and regulations, enhancement of CEQA participation, implementation of a new and modified indirect source review program, adoption of local air quality plans, and stationary-, mobile-, and indirect-source control measures. Applicable air quality plans include the Sacramento Area Regional PM_{10} Attainment Plan and the Sacramento Area Regional Ozone Attainment Plan.

Proposed project consistency with the Sacramento Area Regional PM_{10} Attainment Plan and Sacramento Area Regional Ozone Attainment Plan includes project consistency with the population growth projections and vehicle miles traveled (VMT) projections of the air quality plans as well as project implementation of applicable air quality plan transportation control measures.

The project does not include direct changes to land use, or general plan goals and policies. In addition, no specific land use entitlements, development proposals, or land development activity are proposed at this time, or in conjunction with the proposed SOIA. The policies and provisions of the County's General Plan, zoning code, and other land use regulations would continue to be in effect; no land use designations, redesignations or prezoning, or any other modifications or extensions of existing General Plans or area plans is proposed. Therefore, the project would not directly result in air quality impacts. It is important to note, however, that the City may begin comprehensive planning for the area after approval of the SOIA, though it is currently unknown when such planning would be undertaken by the City. As a result, the proposed project does have the potential to indirectly affect consistency with applicable air quality plans through the potential for future urbanization of the SOIA Area.

Nonetheless, as stated in Section 2, Project Description, land use assumptions were developed for this analysis with the intent to provide a general concept of growth that may result from future development in the SOIA Area, and allow LAFCo to understand probable future and potential environmental effects that may result from future anticipated growth. As shown in Section 2 (Table 2-6), the land use projections under the proposed SOIA include approximately 4,542 acres of residential land uses, 2,340 acres of nonresidential land uses (e.g., commercial, office, industrial, etc.), and 987 acres of open space. The Transportation Impact Study prepared by Fehr & Peers calculated that full buildout of the SOIA Area under the assumed conceptual land uses provided in Section 2 would result in approximately 218,000 trips per day and 1,389,072 daily vehicle miles traveled (VMT). All calculations are based on the conceptual land uses.

A comparison of the existing land uses for the project area, primarily agricultural, and the conceptual growth that may result from future development under the proposed SOIA, primarily urban in nature (see Table 2-6 in Section 2, Project Description), demonstrates a substantial increased potential for

population growth and increased VMT projections. This potential increase in population and VMT was not accounted for in either of the applicable air quality plans, resulting in potential conflicts between the proposed SOIA and the air quality plans.

It is important to note that SACOG recently approved the 2035 MTP/SCS, which provides a strategy to approach the many challenges faced by the Sacramento region as the population grows and the region expands over the next few decades. The MTP/SCS seeks to guide the Sacramento region, including the City of Elk Grove, toward a more sustainable future through better integration of smart land use decisions with a well-managed transportation system. The intent of the MTP/SCS is to accommodate the expected population growth of an additional 900,000 people to the Sacramento region by 2035 and the accompanying demand for transportation in the region through a multimodal approach. As previously noted, SACOG has determined that the MTP/SCS conforms to the Federal Clean Air Act. It is anticipated that the policies and strategies of the MTP/SCS, which seek to address the increase of 900,000 people to the Sacramento region and the subsequent effect on the transportation network, would assist with the accommodation of an efficient transportation system within and around the SOIA Area. However, it is acknowledged that growth in the SOIA Area was identified in the MTP/SCS.

The project does not include direct changes to land use or to General Plan goals and policies. In addition, no specific land use entitlements, development proposals, or land development activities are proposed at this time or in conjunction with the proposed SOIA. Therefore, additional environmental review would be required for any future discretionary actions that may be proposed within the SOIA Area. As stated in Section 2, state planning law provides that a city may comprehensively plan for lands outside of its jurisdiction and as stated above, the City of Elk Grove would conduct comprehensive planning for the area at an unknown future date. A comparison of the existing land uses for the project area, primarily agricultural, and the conceptual growth that may result from future development under the proposed SOIA, primarily urban in nature, demonstrates a substantial increased potential for population growth and VMT under the proposed project.

Although the proposed SOIA would amend the City's Sphere of Influence boundaries, property within the amended SOIA Area would not be within the City's jurisdiction until future requests for annexation of property are approved by LAFCo. Upon approval of those future requests for annexation, the newly annexed property would be within the City's jurisdiction and subject to applicable City General Plan policies and regulations. The City General Plan contains several policy provisions that assist in reducing this potential impact. For example, CAQ-32-Action 1 requires consultation with the SMAQMD on the review of proposed development projects, specifically including projects that could conflict with any applicable air quality plans and/or the State Implementation Plan. In addition, City General Plan Policy CAQ-32 mandates that as part of the environmental review of projects, the City shall identify the air quality impacts of development proposals to avoid significant adverse impacts and require appropriate mitigation measures,

potentially including—in the case of projects which may conflict with applicable air quality plans—emission reductions in addition to those required by Policy CAQ-30. Policy CAQ-30 requires that all new development projects that have the potential to result in substantial air quality impacts incorporate design, construction, and/or operational features to result in a reduction in emissions equal to 15 percent compared to an "unmitigated baseline" project. An unmitigated baseline project is a development project that is built and/or operated without the implementation of trip reduction, energy conservation, or similar features, including any such features that may be required by the Zoning Code or other applicable codes.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AIR-1 Prior to the submission of any application to annex territory within the Sphere of Influence Amendment (SOIA) Area, the City of Elk Grove will require that all discretionary projects prepare an Air Quality Plan for the SOIA Area. The Air Quality Plan must incorporate policies and other measures at least as stringent as those found in City General Plan Policies CAQ-27 through CAQ-33 and associated actions. The total effectiveness of the Air Quality Plan adopted for the SOIA Area will match those recently adopted for other developing areas within Sacramento County, such as North Natomas. In the case of North Natomas, the emissions will be reduced by 35 percent from the potential emissions that could occur without the adopted air quality policies being implemented.

Level of Significance After Mitigation

Mitigation measure MM AIR-1 would assist in reducing impacts to the applicable air quality plans; however, this impact remains significant and unavoidable as the potential for population growth and increased VMT associated with the conceptual growth that may result from future development under the proposed SOIA demonstrates a substantial increase compared with existing conditions, and has not been accounted for in Air Quality Attainment and Improvement Plans for the region and Air Basin. No feasible mitigation is available to completely mitigate this impact.

Significant and unavoidable impact.

Air Quality Standards – Construction Emissions

Impact AIR-2: The project may violate an air quality standard or contribute substantially to an existing or projected air quality violation.

Impact Analysis

The project does not include direct changes to land use or City General Plan goals and policies. In addition, no specific land use entitlements, development proposals, or land development activities are proposed at this time in conjunction with the proposed SOIA. Therefore, additional environmental

review would be required for any future discretionary actions that may be proposed within the SOIA Area. However, land use assumptions were developed for this analysis with the intent to provide a general concept of growth that may result from future development in the SOIA Area, and allow LAFCo to understand probable future and potential environmental effects that may result from future anticipated growth.

Short-term increases in emissions would occur during construction. Construction-generated emissions are temporary, lasting only as long as construction activities occur. Even though they are temporary, they have the potential to represent a significant air quality impact. Short-term construction emissions would result in increased emissions of ozone-precursor pollutants (i.e., ROG and NO_X) and emissions of particulate matter. Emissions of ozone precursors would result from the operation of on- and off-road motorized vehicles and equipment. Emissions of airborne PM are largely associated with ground-disturbing activities, such as those occurring during site preparation. Localized concentrations of construction-generated emissions, including emissions of PM, can adversely impact nearby sensitive land uses.

Future projects and associated construction schedules located within the SOIA Area have not yet been adequately defined to allow for an estimation of construction-generated emissions. However, based on the conceptual land use assumptions, the proposed project may generate construction emissions that could surpass SMAQMD significance thresholds and impact air quality. Therefore, construction-related air quality impacts generated by implementation of the proposed project are considered potentially significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AIR-2 At the time of submittal to annex land within the Sphere of Influence Amendment (SOIA) Area from agricultural uses to urban uses, the City of Elk Grove will require all discretionary projects to comply with all recommended SMAQMD measures to address construction emissions. This will include emission reduction requirements for construction equipment and development of an inspection and enforcement plan associated with construction equipment emissions. In addition, compliance with SMAQMD Rules 402 and 403 will be demonstrated.

Level of Significance After Mitigation

Implementation of the above measures would substantially reduce construction-related emissions. Furthermore, the above measures would reduce air quality construction impacts for potential future development in accordance with SMAQMD regulations by requiring individual project construction activities to utilize lower-emission construction equipment. The above mitigation measures will also require construction activities for each future individual project proposed to comply with SMAQMD

Rules 402 and 403. With implementation of the above mitigation measures, construction-related air quality impacts would be considered less than significant. This mitigation measure will be applied to future discretionary projects that will be subject to environmental review under CEQA.

Less than significant impact.

Air Quality Standards – Operational Emissions

Impact AIR-3:	The project may violate an air quality standard or contribute substantially to an existing or projected air quality violation.

Impact Analysis

As previously stated, the project does not include direct changes to land use. In addition, no specific land use entitlements, development proposals, or land development activity are proposed at this time or in conjunction with the proposed SOIA. Therefore, environmental review would be required for any future discretionary actions that may be proposed within the SOIA Area. However, land use assumptions were developed for this analysis with the intent to provide a general concept of growth that may result from future development in the SOIA Area, and allow LAFCo to understand probable future and potential environmental effects that may result from future anticipated growth. Buildout of the conceptual land use assumptions would result in long-term operational emissions of criteria air pollutants and ozone precursors (i.e., ROG and NOx). Project-generated increases in emissions would be predominantly associated with motor vehicle use. (The Transportation Impact Study prepared by Fehr & Peers calculated that full buildout of the SOIA Area under the assumed conceptual land uses would result in approximately 218,000 trips per day and 1,389,072 daily VMT. All calculations are based on the conceptual land uses.) To a lesser extent, area sources, such as the use of natural-gas-fired appliances, landscape maintenance equipment, architectural coatings, and hearth fuel combustion, would also contribute to overall increases in emissions.

Long-term operational emissions attributable to the proposed project's conceptual land use assumptions are summarized in Table 3.3-5. At buildout, the project may result in a net increase of approximately 5.15 tons per day of ROG, 11.63 tons per day of NOx, 4.48 tons per day of PM_{10}, and 2.65 tons per day of $PM_{2.5}$. It is important to note that these emissions estimates reflect combined emissions from all proposed land uses and do not reflect emissions attributable to individual projects. Project-level analyses of air quality impacts, in accordance with CEQA requirements, would be conducted at the project level, as future development within the SOIA Area would be considered.

Table 3.3-5: Long-Term Operational Emissions (Year 2035)

Source	Emissions (tons/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
SOIA Area Conceptual Land Uses				
Area Source & Energy Use	2.72	2.46	3.81	0.22
Mobile Source	2.43	9.17	0.67	2.43
Total	5.15	11.63	4.48	2.65
Notes: Area Source and Energy Use emissions based on emissions modeling conducted using the CalEEMod computer program. Conceptual land uses based on Table 2-6 of Section 2, Project Description, and assumes greatest possible density in order to provide a conservative analysis. Mobile source emissions based on emission modeling conducted using Emfac2007.				

Mobile emissions would decrease over time primarily due to the implementation of state and federal regulations. In addition to the identification of long-term operational emissions attributable to the proposed project's conceptual land use assumptions in Table 3.3-5, EMFAC2007, BURDEN, was used to calculate future ROG, NO_x, and PM_{10} emissions that would occur if full urbanization of the SOIA Area is realized for years 2020, 2030, and 2035. EMFAC output is provided as Appendix C to this EIR. As shown in Table 3.3-6, buildout of the SOIA Area under the assumed conceptual land uses would result in approximately 2.43 tons per day (tpd) of ROG, 9.17 tpd NO_x, and 0.67 tpd of PM_{10} in 2035. As show in Table 3.3-6, mobile emissions would decrease over time, primarily due to implementation of state and federal regulations.

Table 3.3-6: Indirect Mobile Emissions

Year of Analysis	Tons per Day		
	ROG	NO_X	PM_{10}
2020	5.28	14.45	0.94
2025	3.61	11.71	0.77
2035	2.43	9.17	0.67
Source: Michael Brandman Associates, 2011. Appendix C.			

Although the proposed SOIA would amend the City's SOI boundaries, property within the amended SOI Area would not be within the City's jurisdiction until future requests for annexation of property are approved by LAFCo. Upon approval of those future requests for annexation, the newly annexed property would be within the City's jurisdiction and subject to applicable City General Plan policies and regulations. The Elk Grove General Plan contains several policy provision that assist in reducing this potential impact. For example, City General Plan Policy CAQ-32 mandates that as part of the environmental review of projects, the City shall identify the air quality impacts of development proposals to avoid significant adverse impacts and require appropriate mitigation measures. City

General Plan Policy CAQ-30 requires that all new development projects that have the potential to result in substantial air quality impacts incorporate design, construction, and/or operational features to result in a reduction in emissions equal to 15 percent compared to an "unmitigated baseline" project.

An unmitigated baseline project is a development project that is built and/or operated without the implementation of trip reduction, energy conservation, or similar features, including any such features that may be required by the Zoning Code or other applicable codes. In addition, CAQ-27-Action 3 states that during project review, City staff must consider energy conservation and, where appropriate, suggest additional energy conservation techniques. The City is required to emphasize "demand management" strategies that seek to reduce single-occupant vehicle use in order to achieve state and federal air quality plan objectives as mandated by Policy CAQ-28. Policy CAQ-29 ensures that the City will seek public transit as a viable and attractive alternative to the use of private motor vehicles.

As previously indicated, no specific land use entitlements, development proposals, or land development activities are proposed at this time or in conjunction with the proposed SOIA. However, land use assumptions were developed for this analysis with the intent to provide a general concept of growth that may result from future development in the SOIA Area, and allow LAFCo to understand probable future and potential environmental effects that may result from future anticipated growth. The project would allow future incorporation and development of the SOIA Area that could result in a substantial increase in nonattainment pollutants; specifically, ozone precursors.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure AIR-1.

Level of Significance After Mitigation

Mitigation measure MM AIR-1 would assist in reducing operational air quality impacts; however, this impact remains significant and unavoidable. Although no specific development proposals or land use changes are proposed as part of this project, the SOIA would allow future annexation and development of the SOIA Area that could result in a substantial increase in nonattainment pollutants as shown in Table 3.3-5.

Significant and unavoidable impact.

Criteria Pollutants in Nonattainment Area

Impact AIR-4:	**The project may result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).**

Impact Analysis

The Sacramento County portion of the SVAB is classified a severe nonattainment area for state and federal ozone and PM standards. In order to improve air quality and attain the health-based standards, reductions in emissions are necessary within the nonattainment area. The growth in population, vehicle usage, and business activity within the nonattainment area, when considered with growth proposed under the Elk Grove General Plan and throughout Sacramento County, would contribute to cumulative regional air quality impacts. Implementation of the proposed project, along with other growth in the area, may either delay attainment of the standards or require the adoption of additional controls on existing and future air pollution sources to offset project-related emission increases.

The Elk Grove City Council adopted a Statement of Overriding Considerations for significant and unavoidable cumulative air quality impacts anticipated with implementation of the Elk Grove General Plan. While the proposed project does not include the actual construction of dwellings, the conceptual land use development assumptions, along with development anticipated under cumulative conditions, would have a significant adverse effect on the region's ability to attain state and federal air quality standards for ROG, NOx, PM_{10}, and $PM_{2.5}$ and would be considered cumulatively considerable.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measures AIR-1and AIR-2.

Level of Significance After Mitigation

Implementation of mitigation would reduce the air pollution emissions associated with the conceptual land use assumptions of the proposed project. Nevertheless, the proposed project would have a significant adverse incremental effect on the region's ability to attain state and federal air quality standards. In addition, as described under Impact AIR-1, the project may conflict with the applicable air quality plans, which is indicative of a significant cumulative air quality impact. The project would have a cumulatively considerable contribution to significant and unavoidable cumulative air quality impacts.

Significant and unavoidable cumulative impact.

Contribution to Local Mobile Source CO Concentrations

Impact AIR-5:	**The project may contribute to localized concentrations of CO that would exceed applicable ambient air quality standards.**

Impact Analysis

Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of carbon monoxide is extremely limited because CO disperses rapidly with distance from the source under normal meteorological conditions. However, under specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels.

Project emissions may be considered significant if a CO hotspot intersection analysis determines that project-generated emissions cause a localized violation of the state CO 1-hour standard of 20 ppm, state CO 8-hour standard of 9 ppm, federal CO 1-hour standard of 35 ppm, or federal CO 8-hour standard of 9 ppm.

Because increased CO concentrations are usually associated with roadways that are congested and with heavy traffic volume, the SMAQMD has established that preliminary screening can be used to determine with fair certainty that the effect a project has on any given intersection would not cause a potential CO hotspot. Therefore, the SMAQMD has established that if all project-affected intersections are negative for both of the following criteria, then the project can be said to have no potential to create a violation of the CO standard:

- Traffic generated by the proposed project would not result in the deterioration of intersection level of service (LOS) to LOS E or F; or
- The project would not contribute additional traffic to an intersection that already operates at LOS of E or F.

If either of the criteria can be associated with any intersection affected by the project, a CO Protocol Analysis must be prepared to determine significance. The Transportation Impact Study prepared by Fehr & Peers contains two analysis scenarios—existing plus project (year 2010), and cumulative conditions (year 2035)—utilizing the land use assumptions provided in Section 2, Project Description. The Transportation Impact Study reviewed impacts to roadway segments, but did not include impact analysis of intersections. As stated in the Transportation Impact Study:

> Due to the general nature of the land use development assumptions for buildout of the proposed project, the transportation analysis is not, and cannot, be as detailed as subsequent future project specific annexation and development proposals that will ultimately be required.

Therefore, there is no intersection LOS data to conduct a CO hotspot analysis, and the ability to forecast the level of detail required to conduct a CO hotspot is not feasible.

As discussed above, the project does not include direct changes to land use or General Plan goals and policies. In addition, no specific land use entitlements, development proposals, or land development activities are proposed at this time or in conjunction with the proposed SOIA. Therefore, environmental review would be required for any future discretionary actions that may be proposed within the SOIA Area. However, land use assumptions were developed for this analysis with the intent to provide a general concept of growth that may result from future development in the SOIA Area, and allow LAFCo to understand probable future and potential environmental effects that may result from future anticipated growth. Although land use assumptions are conceptual only, the project has the potential to result in a significant indirect impact through allowing future urbanization of the project area. Implementation of Mitigation Measure AIR-5 would reduce the potential to less than significant by requiring future development to implement the SMAQMD's recommended CO hotspot screening and analysis procedures, and requiring project-specific mitigation to reduce identified potentially significant impacts.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AIR-5 At the time of submittal of any application to annex territory within the Sphere of Influence Amendment (SOIA) Area, the City of Elk Grove will require all discretionary projects to demonstrate that the Sacramento Metropolitan Air Quality Management District's (SMAQMD) 2009 Guide to Air Quality Assessment in Sacramento County, as updated in June 2011, or most current guidance on the screening and assessment of CO, PM_{10}, and $PM_{2.5}$ hotspots will be implemented for all development proposals within the SOIA Area. The City will provide proof of consultation with the SMAQMD to demonstrate compliance with this measure to the Sacramento Local Agency Formation Commission at the time of any application to annex territory within the SOIA Area. In addition, the City of Elk Grove shall demonstrate that sufficient mitigation will be required of all identified potentially significant CO, PM_{10}, and $PM_{2.5}$ hotspots to reduce the impact to less than significant.

Level of Significance After Mitigation

Implementation of the above measure would require future development to implement the SMAQMD's recommended CO hotspot screening and analysis procedures as well as project-specific mitigation to reduce any identified potentially significant impacts. Given current and future improvements to vehicle emissions, future CO hot spots are not expected. This impact is less than significant.

Less than significant impact.

Sensitive Receptors

Impact AIR-6: The project may expose sensitive receptors to substantial pollutant concentrations.

Impact Analysis

This impact is related to site-specific, or localized, impacts. The potential for impacts on sensitive receptors is dependent on project-level details, such as the intensity, location, duration, and components of development. However, the proposed project may result in an indirect effect because it would allow future urbanization of the SOIA Area. Therefore, the project may indirectly result in sensitive receptors being located within close proximity of pollution sources, such as high-volume roadways, industrial uses, point sources (such as fuel stations), or other potential source of substantial pollution concentrations. Future specific development proposal must be evaluated for potential air quality impacts. As such, analysis of sensitive receptor impacts would be conducted when development is proposed. A sensitive receptor is a location where human populations, especially children, seniors, and sick persons, are present and where there is a reasonable expectation of continuous human exposure to pollutants. The term "sensitive receptors" refers to specific population groups, as well as the land uses where they would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses are residences, schools, playgrounds, childcare centers, retirement homes or convalescent homes, hospitals, and clinics. The conceptual land use assumptions of the project include sensitive land uses such as residences and schools.

As stated in the Regulatory Framework, ARB has published the Land Use Handbook, which contains advisory recommendations on siting new sensitive receptors near sources of toxic air contaminants (TACs). The Land Use Handbook's siting recommendations are shown in Table 3.3-7.

Table 3.3-7: Land Use Handbook Guidance on Siting New Sensitive Receptors

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.

Table 3.3-7 (cont.): Land Use Handbook Guidance on Siting New Sensitive Receptors

Source Category	Advisory Recommendations
Refineries	Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.
Notes: The Land Use Handbook states: These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues. Source: ARB 2005.	

As shown in Exhibit 3.15-1 and Exhibit 3.15-4 (see Section 3.15, Transportation/Traffic), State Route 99 and Interstate 5 would not meet or exceed the 100,000 vehicles per day criteria used in the Land Use Handbook's guidance in the existing conditions or the cumulative plus project conditions. In addition, the main roads through the SOIA Area would not meet or exceed the 50,000 vehicles per day criteria used in the handbook's guidance in the existing conditions or the cumulative plus project conditions. Potential stationary sources that may be proposed at a future date within the SOIA Area would be required to comply with SMAQMD New Source Review requirements and potentially permitting requirements, which would include a comprehensive review and analysis of potential TAC generation and, if required by SMAQMD regulation and guidance, measures to reduce potential TAC impacts.

However, because the project may indirectly result in future urbanization of the SOIA Area, mitigation is proposed to provide a comprehensive plan for avoiding impacts to existing as well as future sensitive receptors on the project site. Implementation of Mitigation Measure AIR-6 would reduce this impact to less than significant by avoiding placement of sensitive receptors near sources of substantial TACs.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AIR-6 At the time of submittal of any application to annex territory within the Sphere of Influence Amendment (SOIA) Area, the City of Elk Grove will require all discretionary projects to review existing sources of toxic air contaminants in and around the project site. Discretionary projects will be required to develop mitigation to address sensitive land use (e.g. residential, schools, hospitals) exposure to toxic air contaminants. Methods may include buffers with appropriate landscaping, building design with additional air filtration, and emission source controls. The plan must meet the standards current in use by the Sacramento Metropolitan Air Quality Management District in connection with such toxic air contaminants. In addition, the City will provide proof of consultation with the SMAQMD to demonstrate compliance with this measure to the Sacramento Local Agency Formation Commission.

Level of Significance After Mitigation

The above mitigation would ensure that sensitive receptors are protected from TAC sources.

Less than significant impact.

Odors

Impact AIR-7:	**The project may create objectionable odors affecting a substantial number of people.**

Impact Analysis

As previously indicated, the project would not directly result in any changes to existing land use patterns or to the current baseline conditions with regard to existing sources of odors. Existing odor sources are located throughout the project area, including confined animal feeding operations within and adjacent to the western portion of the SOIA Area. It is unknown if these existing uses would continue to operate in the future or if additional sources of odor would be proposed as part of potential urbanization within the SOIA Area. Existing and future sources of odors would be required to comply with SMAQMD Rule 402, which regulates nuisance exposure, including nuisances due to odorous emissions. However, because the project may indirectly result in future urbanization of the project area, the project may indirectly result in receptors being located within close proximity of odor sources. Therefore, mitigation is proposed to avoid impacts potential odor impacts.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AIR-7 At the time of submittal of any application to annex territory within the Sphere of Influence Amendment (SOIA) Area, the City of Elk Grove will require all discretionary projects to review existing sources of odor in and around the project

site, including (but not limited to) any land use referenced in Sacramento Metropolitan Air Quality Management District's (SMAQMD) CEQA Guidance document as an odor-generating land use. Discretionary projects will be required to develop mitigation to address odor impacts that will protect sensitive land use (e.g. residential, schools, hospitals) in consultation with SMAQMD. Methods to address odor impacts may include buffers and emission source controls. In addition, the City will provide proof of consultation with the SMAQMD to demonstrate compliance with this measure to LAFCo.

Level of Significance After Mitigation

The above mitigation would ensure that sensitive receptors are protected from odor sources.

Less than significant impact.