

10.0
AIR QUALITY

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This section of the Draft EIR (“Draft EIR”; “DEIR”) describes relevant characteristics of the air basin that affect pollutant dispersion in the Project region and discusses types of air pollutants, health effects, and existing air quality levels. This section also examines air quality in Placer County, the Granite Bay Community Plan area and its environs, and includes a summary of applicable air quality regulations, and analyzes potential impacts associated with the proposed Project. Mitigation measures are recommended, as necessary, to reduce significant air quality impacts.

10.1 EXISTING SETTING

10.1.1 Air Basin Characteristics

The California Air Resources Board (ARB) divides the state into air basins that share similar meteorological and topographical features. The Project site is located within the Placer County Air Pollution Control District (PCAPCD), which is part of the eleven-county Sacramento Valley Air Basin (SVAB). The SVAB includes all of Sacramento, Yolo, Yuba, Sutter, Colusa, Butte, Glenn, Tehama, and Shasta counties and eastern Solano and western Placer counties. Central Placer County is located in the Mountain Counties Air Basin while eastern Placer County is located the Lake Tahoe Air Basin.

The area’s modified Mediterranean climate is characterized by hot, dry summers and mild, rainy winters. During the year, the temperature may range from 20 to 115 degrees Fahrenheit, with summer highs usually in the 90s and winter lows occasionally below freezing (32°F). Prevailing winds are moderate in strength and vary from dry land flows from the north to moist ocean breezes from the south. The mountains surrounding the Sacramento Valley create a barrier to airflow which, under the right meteorological conditions, can trap pollutants in the valley (Raney Planning & Management, 2006, pg. 4.8-1).

10.1.2 Air Pollutants of Concern and Health Effects

Ambient air quality in the Placer County is similar to that of the larger Sacramento Valley Air Basin. Because of the unique geography and meteorology, Placer County has air pollution issues for several pollutants that the federal government regulates. In particular, there are six pollutants with health-based standards that identify pollutant levels of air quality which are considered the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety, to protect public health and welfare. These six “criteria pollutants” include ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter 10 microns in size and smaller (PM₁₀), and lead.

Ozone

Ground-level ozone (O₃), commonly referred to as smog, is greatest on warm, windless, sunny days. Ozone is not emitted directly into the air from point sources (e.g., mobile or stationary); rather, it 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.

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

addition, ozone can cause substantial damage to leaf tissues of crops and natural vegetation, and can damage many natural and man-made materials by acting as a chemical oxidizing agent.

The principal sources of the ozone precursors (ROG and NO_x) are the combustion of fuels and the evaporation of solvents, paints, and fuels.

Particulate Matter

Airborne particulate matter (PM) consists of many different substances suspended in air in the form of particles (solids or liquid droplets) that vary widely in size. The particle mix in most U.S. cities is dominated by fine particles (less than 2.5 micrometers in diameter) generated by combustion sources, with smaller amounts of coarse dust (between 2.5 and 10 micrometers in diameter). Particles less than 10 micrometers in diameter include both fine and coarse dust particles. These particles pose the greatest health concern because they can pass through the nose and throat and get into the lungs. 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.

Particles larger than 10 micrometers in diameter that are suspended in the air are referred to as total suspended particulates (TSP). These larger particles can cause irritation to the eyes, nose, and throat in some people, but they are not likely to cause more serious problems since they do not get down into the lungs.

Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless gas that is formed by the incomplete combustion of fuels. Motor vehicle emissions are the dominant source of CO in the Placer County area. At high concentrations, CO reduces the oxygen-carrying capacity of the blood and can cause dizziness, headaches, unconsciousness, and even death. CO can also aggravate cardiovascular disease. Relatively low concentrations of CO can significantly affect the amount of oxygen in the bloodstream because CO binds to hemoglobin 220–245 times more strongly than oxygen.

CO emissions and ambient concentrations have decreased significantly in recent years. These improvements are due largely to the introduction of cleaner burning motor vehicles and motor vehicle fuels.

Nitrogen Oxides

Nitrogen oxides (NO_x) refer to a family of nitrogen-based compounds, including nitric oxide, nitrogen dioxide (NO₂), and other oxides of nitrogen. NO oxides are produced from burning fuels, including gasoline, diesel, and coal. Nitrogen oxides react with volatile organic compounds to form ozone. Nitrogen oxides are also major components of acid rain.

Sulfur Oxides

Sulfur oxides (SO_x) are composed mainly of sulfur dioxide (SO₂) and sulfates. Sulfur oxides are pungent, colorless gases (sulfates are solids) formed primarily by combustion of sulfur-containing fossil fuels, especially coal and oil. Some industrial processes, such as production of paper and smelting of metals, produce sulfur dioxide. Sulfur dioxide is closely related to sulfuric acid and plays an important role in the production of acid rain.

In addition to the criteria pollutants discussed above, there are other pollutants for which there are no explicit criteria that are often air pollution issues of concern for communities. These include toxic air contaminants, odors, and wood smoke, which can produce localized health risks or nuisances for sensitive nearby land uses, also known as “sensitive receptors.”

Sensitive receptors include facilities that house or attract children, the elderly, and people with illnesses or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors. The proximity of sensitive receptors to existing or potential sources of localized air pollution can result in land use conflicts that expose people to unhealthful air quality.

Lead

Lead (Pb) is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used until the mid 1970s to increase the octane rating in auto fuel. Since gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels and the use of leaded fuel has been mostly phased out, the ambient concentrations of lead have dropped dramatically.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. Unlike criteria pollutants, no safe levels of exposure to TACs have been established. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. Two types of risk are usually assessed: chronic non-cancer risk and acute non-cancer risk. There are many different types of TACs, with varying degrees of toxicity.

Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations, such as gasoline stations and dry cleaners, and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage and death.

It is important to understand that TACs are not considered criteria air pollutants and thus are not specifically addressed through the setting of ambient air quality standards. Instead, USEPA and ARB regulate hazardous air pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology (MACT and BACT) to limit emissions.

Based on data from the Air Toxics “Hot Spots” Information and Assessment Act, there are five stationary sources within 5 miles of the proposed Project site that have the potential to emit TACs, as illustrated in **Table 10-1**.

**TABLE 10-1
FACILITY EMISSIONS AND TOXIC PLUS RISK DATA**

| Facility ID | Facility Name | ROG (tons/year) | CO (tons/year) | NOx (tons/year) | SOx (tons/year) | Total PM (tons/year) | PM ₁₀ (tons/year) | Approx. Distance from Project (miles) |
|-------------|--------------------------------|-----------------|----------------|-----------------|-----------------|----------------------|------------------------------|---------------------------------------|
| 64 | Capital Drum Inc. | 34.3 | 0.3 | 1.9 | 0.2 | 5.6 | 5.6 | 3.2 |
| 43 | Lausmann Lumber & Moulding Co. | 0 | 0 | 0.1 | 0 | 4.6 | 1.8 | 4.8 |
| 70 | Pacific MDF Products Inc. | 14.6 | 0.2 | 1.1 | 0 | 2.8 | 1.2 | 2.1 |
| 34 | SFPP, LP | 5 | 0 | 0 | 0 | 0 | 0 | 2.1 |
| 28 | Sierrapine, Ltd. | 8.3 | 49.5 | 118.2 | 0.9 | 19.4 | 12.3 | 2.0 |

Source: ARB, 2009

Diesel exhaust is a TAC of growing concern in California. In 1998, ARB identified diesel engine particulate matter as a TAC. The exhaust from diesel engines contains hundreds of different gaseous and particulate components, many of which are toxic, but are not considered to have acute non-cancer risks.

Mobile sources, such as trucks, buses, automobiles, trains, ships, and farm equipment, are by far the largest source of diesel emissions. Studies show that diesel particulate matter concentrations are much higher near heavily traveled highways and intersections. Land uses where individuals could be exposed to high levels of diesel exhaust include:

- Warehouses
- Schools with high volume of bus traffic
- High volume highways
- High volume arterials and local roadways with high level of diesel traffic

The State has begun a program of identifying and reducing risks associated with particulate matter emissions from diesel-fueled vehicles. In September 2000, the Air Resources Board approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled engines and vehicles. The goal of the plan is to reduce diesel PM emissions and the associated health risk by 75 percent in 2010 and 85 percent by 2020. The plan consists of new regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles, new retrofit requirements for existing on-road, off-road, and stationary diesel-fueled engines and vehicles, and new diesel fuel regulations to reduce the sulfur content of diesel fuel as required by advanced diesel emission control systems.

Odors

Odors are typically regarded as an annoyance rather than a health hazard. However, manifestations of a person’s reaction to foul odors can range from psychological (e.g., irritation,

anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word “strong” to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

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

Pesticides

Most pesticides are designed to harm or kill pests, and because some pests have systems similar to the human system, some pesticides also can harm or kill humans (USEPA, 2009). The hazards associated with pesticides depend on the toxicity of the pesticide and the exposure a human will receive in any situation.

The effects, or symptoms, of pesticide poisoning can be defined as either topical or systemic. Topical effects generally develop at the site of pesticide contact and are a result of either the pesticide’s irritant properties or an allergic response by the victim. Dermatitis, or inflammation of the skin, is the most commonly reported topical effect associated with pesticide exposure. Symptoms of dermatitis range from reddening of the skin to rashes and/or blisters. Other symptoms include coughing, wheezing, and sneezing when exposed to pesticide sprays (Penn State, 2007).

Systemic effects often occur away from the original point of contact as a result of the pesticide being absorbed into and distributed throughout the body. Systemic effects often include nausea, vomiting, fatigue, headache, and intestinal disorders. In advanced poisoning cases, the individual may experience changes in heart rate, difficulty breathing, convulsions, and coma, which could lead to death (Penn State, 2007).

Common locations for pesticide use are agricultural land uses, where they are often used to prevent insect damage to crops. Because of this, the proximity of sensitive receptors to agricultural land uses could expose people to the hazards listed above.

Wood Smoke

Wood smoke has long been identified as a significant source of pollutants in urban and suburban areas. Wood smoke contributes to particulate matter and carbon monoxide concentrations, reduces visibility, and contains numerous toxic air contaminants. Present controls on this source include the adoption of emission standards for woodstoves and fireplace inserts. Interest in wood smoke is likely to increase with the recent adoption of a national standard for PM_{2.5} (particulate matter less than 2.5 microns in diameter).

Sensitive Receptors

Sensitive receptors are facilities where sensitive receptor population groups (children, the elderly, the acutely ill, and the chronically ill) are likely to be located. These land uses include schools, retirement homes, convalescent homes, hospitals, medical clinics, and churches or houses of worship. The major existing sensitive receptors in the Project area are the residences surrounding the site, as well as Sierra College, 0.9 miles north of the proposed Project.

10.1.3 AMBIENT AIR QUALITY STANDARDS

Both the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (ARB) have established ambient air quality standards for common pollutants. The national ambient air quality standards (“NAAQS,” or “federal standards”) and California ambient air quality standards (“CAAQS,” or “state standards”) for important pollutants are summarized in **Table 10-2**. These ambient air quality standards are levels of contaminants that represent levels that protect public health and welfare, and avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called “criteria” pollutants because the health and other effects of each pollutant are described in criteria documents. USEPA and ARB have focused on the following air pollutants as indicators of ambient air quality: ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM), and lead. The federal and state ambient standards were developed independently with differing purposes and methods, although both processes attempted to avoid health related effects. As a result, the federal and state standards differ in some cases. In general, the California standards are more stringent. This is particularly true for ozone and PM₁₀.

The federal standard for ozone ground-level ozone is 0.075 ppm, measured over an 8-hour averaging period. This standard replaces the previous 1-hour ozone standard that USEPA had enforced for decades. National standards for fine particulate matter (diameter 2.5 microns or less) have also been established for 24-hour and annual averaging periods. The current PM₁₀ standards were retained, but the method and form for determining compliance with the standards were revised. Implementation of the new ozone and particulate matter standards was delayed by a lawsuit. On February 27, 2001 the U.S. Supreme Court unanimously ruled in favor of the USEPA, clearing the way for implementation of the new standards.

**TABLE 10-2
AMBIENT AIR QUALITY STANDARDS**

| Pollutant | Averaging Time | California Standards ^(a, c) | National Standards ^(b, c) | |
|--|-------------------------|--|--------------------------------------|------------------------------------|
| | | | Primary ^(d) | Secondary ^(e) |
| Ozone (O ₃) | 1-hour | 0.09 ppm (180 µg/m ³) | – | Same as Primary |
| | 8-hour | 0.070 ppm (137 µg/m ³) | 0.075 ppm ^(g) | |
| Particulate Matter (PM ₁₀) | AAM | 20 µg/m ³ | (Revoked) ^(f) | |
| | 24-hour | 50 µg/m ³ | 150 µg/m ³ | |
| Fine Particulate Matter (PM _{2.5}) | AAM | 12 µg/m ³ | 15 µg/m ³ | |
| | 24-hour | No Separate Standard | 35 µg/m ³ ^(f) | |
| Carbon Monoxide (CO) | 1-hour | 20 ppm (23 mg/m ³) | 35 ppm (40 mg/m ³) | None |
| | 8-hour | 9 ppm (10 mg/m ³) | 9 ppm (10 mg/m ³) | |
| Nitrogen Dioxide (NO ₂) | AAM | – | 0.053 ppm (100 µg/m ³) | Same as Primary |
| | 1-hour | 0.18 ppm (339 µg/m ³) | 0.100 ppm (188 µg/m ³) | |
| Sulfur Dioxide (SO ₂) | AAM | – | 0.03 ppm (80 µg/m ³) | – |
| | 24-hour | 0.04 ppm (105 µg/m ³) | n/a | – |
| | 3-hour | – | 0.5 ppm ((133 µg/m ³) | 0.5 ppm (1,300 µg/m ³) |
| | 1-hour | 0.25 ppm (655 µg/m ³) | 0.075 ppm (196 µg/m ³) | – |
| Lead | Rolling 3-Month Average | – | 0.15 µg/m ³ | Same as Primary |
| | 30-day Average | 1.5 µg/m ³ | – | – |
| | Quarterly Average | – | 1.5 µg/m ³ | Same as Primary |
| Sulfates | 24-hour | 25 µg/m ³ | No Federal Standards | |
| Hydrogen Sulfide | 1-hour | 0.03 ppm (42 µg/m ³) | | |
| Vinyl Chloride | 24-hour | 0.01 ppm (26 µg/m ³) | | |
| Visibility-Reducing Particle Matter | 8-hour | Extinction coefficient of 0.23 per kilometer — visibility of 10 miles or more (0.07—30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%. | | |

a California standards for O₃, CO (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, PM (PM₁₀ and PM_{2.5}), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equalled or exceeded.

b National standards (other than O₃, PM, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The O₃ standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24-hour standard is attained when 98 percent of daily concentrations, averaged over three years, are equal to or less than the standard.

c Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25 EC and a reference pressure of 760 torr.

d The levels of air quality necessary to protect the public health.

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e The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

f Based on revised particulate standards adopted by the US EPA on September 21, 2006. Due to lack of evidence linking health problems to long-term exposure to coarse particulate pollution, the USEPA has revoked the annual PM₁₀ standard.

g The federal primary ozone standard, as averaged over an 8-hour period, was revised in 2008 to 0.075 ppm.

AAM = Annual Arithmetic Mean

Source: ARB, 2008b; USEPA, 2011

10.1.4 AMBIENT AIR QUALITY

ARB maintains several air quality monitoring sites in and around the Sacramento region. The three years of data provided in **Table 10-3** show the number of days standards were exceeded for each year, as well as the concentration of pollutants in the given area. The nearest air quality monitoring site in relation to the Project for ozone, nitrogen dioxide, inhalable particulates (PM₁₀), and ultra-fine particulates (PM_{2.5}) is the Roseville Sunrise monitoring station approximately 6 miles southwest of the Project site. The North Highlands Blackfoot Way monitoring station, which is approximately 13 miles southwest of the Project site, is the nearest for carbon monoxide and sulfur dioxide.

**TABLE 10-3
AIR MONITORING STATION ANNUAL SUMMARY**

| Pollutant/Standard | 2006 | 2007 | 2008 |
|---|-------|-------|-------|
| O₃ (8-hour)¹ | | | |
| Maximum Concentration (ppm) | 0.098 | 0.101 | 0.107 |
| Days > CAAQS (0.070 ppm) | 38 | 20 | 38 |
| Days > NAAQS (0.08 ppm) | 25 | 8 | 22 |
| O₃ (1-hour)¹ | | | |
| Maximum Concentration (ppm) | 0.121 | 0.109 | 0.134 |
| Days > CAAQS (0.070 ppm) | 16 | 4 | 20 |
| Days > NAAQS (0.08 ppm) | 0 | 0 | 2 |
| PM_{2.5} (24-hour)¹ | | | |
| Maximum Concentration (µg/m ³) | 54.7 | 48.7 | 149.7 |
| Days > NAAQS (65 µg/m ³) | 11.5 | 0 | 6.5 |
| PM₁₀ (24-hour)¹ | | | |
| Maximum Concentration (µg/m ³) | 55 | 45 | 74.2 |
| Days > CAAQS (50 µg/m ³) | 5.8 | 0 | 6.1 |
| Days > NAAQS (150 µg/m ³) | 0 | 0 | 0 |
| CO (8-hour)² | | | |
| Maximum Concentration (ppm) | 2.70 | 1.73 | 1.90 |
| Days > CAAQS (9.0 ppm) | 0 | 0 | 0 |
| Days > NAAQS (9.0 ppm) | 0 | 0 | 0 |

| Pollutant/Standard | 2006 | 2007 | 2008 |
|--|-------|-------|-------|
| SO ₂ (24-hour) ² | | | |
| Maximum Concentration (ppm) | 0.003 | 0.004 | 0.002 |
| Days > CAAQS (0.04 ppm) | N/A | N/A | N/A |
| Days > NAAQS (0.14 ppm) | N/A | N/A | N/A |
| NO ₂ (1-hour) ¹ | | | |
| Maximum Concentration (ppm) | 0.063 | 0.058 | 0.067 |
| Days > CAAQS (0.25 ppm) | 0 | 0 | 0 |

¹ Data provided by the Roseville Sunrise air monitoring station.

² Data provided by the North Highlands-Blackfoot Way air monitoring station.

Source: ARB, 2008a

As shown in **Table 10-3**, the following criteria pollutants have exceeded state or federal standards between the years 2006 and 2008: PM₁₀, PM_{2.5}, and O₃.

A geographical area identified to have air quality as good as, or better than, the national or California ambient air quality standard is referred to as being in attainment of these standards. An area may be an attainment area for one pollutant and a nonattainment area for others.

Based on these monitoring data, **Table 10-4** shows the federal and state attainment status for the Sacramento Valley Air Basin. An “attainment” designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A “nonattainment” designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. A pollutant is designated unclassified if data is incomplete and does not support a designation of attainment or nonattainment. The region is nonattainment for the federal ozone and PM_{2.5} standards and the state ozone and PM₁₀ standards.

**TABLE 10-4
FEDERAL AND STATE ATTAINMENT STATUS FOR PLACER COUNTY**

| Pollutants | Federal Classification | State Classification |
|-------------------|-------------------------|----------------------|
| Ozone | Nonattainment | Nonattainment |
| PM _{2.5} | Nonattainment | Attainment |
| PM ₁₀ | Unclassified | Nonattainment |
| CO | Unclassified/Attainment | Attainment |
| NO ₂ | Unclassified/Attainment | Attainment |
| SO ₂ | Unclassified | Attainment |

Source: ARB, 2011

Notes: CO = carbon monoxide; NO₂ = nitrogen dioxide; SO₂ = sulfur dioxide; PM_{2.5} = particulate matter less than 2.5 micrograms in diameter
PM₁₀ = particulate matter less than 10 micrograms in diameter.

Unclassified = ARB designates an area as unclassified for a pollutant if it finds that the data do not support a designation of attainment or nonattainment.

10.2 REGULATORY FRAMEWORK

Air quality in the Sacramento Valley Air Basin is regulated through the efforts of federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies primarily responsible for improving the air quality in Placer County are discussed below, along with their individual responsibilities.

10.2.1 FEDERAL

United States Environmental Protection Agency

The U.S. Environmental Protection Agency is responsible for enforcing the 1990 amendments to the federal Clean Air Act (CAA) and the national ambient air quality standards (federal standards) that it establishes. These standards identify levels of air quality for six criteria pollutants, which are considered the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety, to protect public health and welfare.

The CAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The federal Clean Air Act Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. USEPA has responsibility to review all SIPs to determine conformation to the mandates of the CAA, and the amendments thereof, and determine if implementation will achieve air quality goals. If USEPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated time frame may result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin.

Western Placer County is included in the Greater Sacramento ozone nonattainment area as delineated by the U.S. Environmental Protection Agency. The CAAA set deadlines for attaining the ozone standard. In 1994, the California Air Resources Board, in cooperation with the air districts of the Sacramento nonattainment area, which includes the Placer County Air Pollution Control District, prepared the 1994 Sacramento Area Regional Ozone Attainment Plan. The plan identified a detailed comprehensive strategy for reducing emissions to the level needed for attainment and showed how the region would make expeditious progress toward meeting this goal.

On April 15, 2004, USEPA designated the Sacramento region as a “serious” nonattainment area for the federal 8-hour ozone standard. The 8-hour ozone standard, 0.075 parts per million, averaged over eight hours, replaces the 1-hour standard that has been in place since 1979. The region had been given an attainment date of June 2013.

However, since the Sacramento region needs to rely on the longer-term emission reduction strategies from state and federal mobile source control programs, the 2013 attainment date cannot be met. Consequently, on February 14, 2008, ARB, on behalf of the air districts in the Sacramento region, submitted a letter to USEPA requesting 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. The air districts of the

Sacramento nonattainment area have since prepared the 2009 Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan to help meet this deadline.

Federal Hazardous Air Pollutant Program

Title III of the CAA requires USEPA to promulgate national emissions standards for HAPs (NESHAP). The NESHAP may differ for major sources than for area sources of HAPs (major sources are defined as stationary sources with potential to emit more than 10 tons per year [TPY] of any HAP or more than 25 TPY of any combination of HAPs; all other sources are considered area sources). The emissions standards are to be promulgated in two phases. In the first phase (1992–2000), USEPA developed technology-based emission standards designed to produce the maximum emission reduction achievable. These standards are generally referred to as requiring MACT. For area sources, the standards may be different, based on generally available control technology. In the second phase (2001–2008), USEPA was required to promulgate health risk-based emissions standards where deemed necessary to address risks remaining after implementation of the technology-based NESHAP standards.

The CAAA required USEPA to promulgate vehicle or fuel standards containing reasonable requirements that control toxic emissions, at a minimum to benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1, 3-butadiene. In addition, Section 219 required the use of reformulated gasoline in selected U.S. cities (those with the most severe ozone nonattainment conditions) to further reduce mobile-source emissions.

10.2.2 STATE

CO Protocol

The *Transportation Project-Level Carbon Monoxide Protocol (CO Protocol)* (UC Davis, 1997) deals with project-level air quality analysis needed for federal conformity determinations, NEPA, and CEQA. In 1997, USEPA approved the CO Protocol for use as an alternative hot spot analysis method in California. The CO Protocol provides a screening procedure for determining when a project may be of concern for CO violations and a standardized method of using the CALINE4 dispersion model for detailed analysis if necessary. The CO Protocol is the standard method for project-level CO analysis by Caltrans, replacing the *Air Quality Technical Analysis Notes* (Caltrans, 2009).

California Air Resources Board

The California Air Resources Board, a department of the California Environmental Protection Agency (CalEPA), oversees air quality planning and control throughout California. It is primarily responsible for ensuring implementation of the 1989 amendments to the California Clean Air Act (CCAA), responding to the federal CAA requirements, and regulating emissions from motor vehicles and consumer products within the state. ARB has established emission standards for vehicles sold in California and for various types of equipment available commercially. It also sets fuel specifications to further reduce vehicular emissions.

The amendments to the CCAA establish ambient air quality standards for the state (state standards) and a legal mandate to achieve these standards by the earliest practical date. These standards apply to the same six criteria pollutants as the federal CAA and also include sulfate,

visibility, hydrogen sulfide, and vinyl chloride. They are more stringent than the federal standards and, in the case of PM₁₀ and SO₂, far more stringent.

Tanner Air Toxics Act

California regulates TACs primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB can designate a substance as a TAC. To date, ARB has identified more than 21 TACs and has adopted USEPA's list of HAPs as TACs. Most recently, diesel PM was added to the ARB list of toxic air contaminants.

Once a TAC is identified, ARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate BACT to minimize emissions.

The AB 2588 requires that existing facilities that emit toxic substances above a specified level prepare a toxic-emission inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures. ARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators). In February 2000, ARB adopted a new public-transit bus-fleet rule and emission standards for new urban buses. These rules and standards provide for (1) more stringent emission standards for some new urban bus engines, beginning with 2002 model year engines; (2) zero-emission bus demonstration and purchase requirements applicable to transit agencies; and (3) reporting requirements under which transit agencies must demonstrate compliance with the urban transit bus fleet rule. Current and upcoming milestones include the low-sulfur diesel-fuel requirement, and tighter emission standards for heavy-duty diesel trucks and off-road diesel equipment (2011) nationwide.

Air Quality and Land Use Handbook

As part of its Community Health Program, ARB has developed an Air Quality and Land Use Handbook (ARB, 2005), which is intended to serve as a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. ARB is also developing related information and technical evaluation tools for addressing cumulative air pollution impacts in a community. Any recommendations or considerations contained in the handbook are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts.

The primary goal in developing this document was to provide information that will help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution. Recent air pollution studies have shown an association between respiratory and other non-cancer health effects and proximity to high traffic roadways. Other studies have shown that diesel exhaust and other cancer-causing chemicals emitted from cars and trucks are responsible for much of the overall cancer risk from airborne toxics in California.

ARB community health risk assessments and regulatory programs have produced important air quality information about certain types of facilities that should be considered when siting new residences, schools, day-care centers, playgrounds, and medical facilities (i.e., sensitive land

uses). Sensitive land uses deserve special attention because children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the non-cancer effects of air pollution. There is also substantial evidence that children are more sensitive to cancer-causing chemicals.

The handbook identifies ARB's recommendations regarding the siting of new sensitive land uses near freeways, distribution centers, rail yards, ports, refineries, chrome plating facilities, dry cleaners, and gasoline dispensing facilities. This list consists of the air pollution sources that have been evaluated from the standpoint of the proximity issue. It is based on available information and reflects ARB's primary areas of jurisdiction — mobile sources and toxic air contaminants.

10.2.3 Local

Placer County Air Pollution Control District

At the county level, air quality is managed through land use and development planning practices which are implemented by Placer County and through permitted source controls which are implemented by the Placer County Air Pollution Control District. PCAPCD is also the agency responsible for enforcing many federal and state air quality requirements and for establishing air quality rules and regulations. PCAPCD attains and maintains air quality conditions in Placer County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of PCAPCD includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. PCAPCD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the federal Clean Air Act, the Clean Air Act Amendments of 1990, and the California Clean Air Act (Cheng, 2009).

Air Quality Plans

The CCAA requires nonattainment areas to develop plans aimed at achieving state ambient standards. PCAPCD, in coordination with the air quality management districts and air pollution control districts of El Dorado, Sacramento, Solano, Sutter, and Yolo counties, prepared and submitted the 1991 Air Quality Attainment Plan (AQAP) in compliance with the requirements set forth in the CCAA, which specifically addressed the nonattainment status for ozone and to a lesser extent PM_{10} . The CCAA also requires a triennial assessment of the extent of air quality improvements and emission reductions achieved through the use of control measures. As part of the assessment, the attainment plan must be reviewed and, if necessary, revised to correct for deficiencies in progress and to incorporate new data or projections. The requirement of the CCAA for a first triennial progress report and revision of the 1991 AQAP was fulfilled with the preparation and adoption of the 1994 Ozone Attainment Plan. Additional triennial reports were also prepared in 1997, 2000, and 2003 in compliance with the CCAA that act as incremental updates.

The AQAP has since become part of the SIP described above within the federal regulatory framework discussion, in accordance with the requirements of the CAAA. As discussed above, federal clean air laws require areas with unhealthy levels of ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and inhalable particulate matter to develop plans describing how they will attain national ambient air quality standards. SIPs are not single documents but rather a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls.

The most updated SIP affecting Placer County, which includes the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan as well as the 1991 Air Quality Attainment Plan and subsequent progress reports, contains 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 NAAQS for the Sacramento region. In addition, this 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.

All projects are subject to rules and regulations adopted by PCAPCD in effect at the time of Project approvals. Specific rules applicable to future construction resulting from the implementation of the proposed Project may include, but are not limited to:

- **Rule 202–Visible Emissions.** A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated as number 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.
- **Rule 207–Particulate Matter.** For the Sacramento Valley Air Basin and the Mountain Counties Air Basin portions of the Placer County Air Pollution Control District a person shall not release or discharge into the atmosphere from any source or single processing unit, exclusive of sources emitting combustion contaminants only, particulate matter emissions in excess of: 0.1 grains per cubic foot of gas at District standard conditions.
- **Rule 205–Nuisances.** A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause to have a natural tendency to cause injury or damage to business or property.
- **Rule 217–Cutback and Emulsified Asphalt Paving Materials.** A person shall not manufacture for sale nor use for paving, road construction, or road maintenance any rapid cure cutback asphalt; slow cure cutback asphalt containing organic compounds which evaporate at 500°F or lower as determined by current American Society for Testing and Materials (ASTM) Method D402; medium cure cutback asphalt except as provided in Section 1.2.; or emulsified asphalt containing organic compounds which evaporate at 500°F or lower as determined by current ASTM Method D244, in excess of 3 percent by volume.
- **Rule 218–Application of Architectural Coatings.** No person shall manufacture, blend, or repackage for sale within PCAPCD; supply, sell, or offer for sale within PCAPCD; or solicit for application or apply within the PCAPCD, any architectural coating with a volatile organic carbon (VOC) content in excess of the corresponding specified manufacturer’s maximum recommendation.

■ Rule 228–Fugitive Dust

- Visible Emissions Not Allowed Beyond the Boundary Line: A person shall not cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area (including disturbance as a result of the raising and/or keeping of animals or by vehicle use), such that the presence of such dust remains visible in the atmosphere beyond the boundary line of the emission source.
- Visible Emissions from Active Operations: In addition to the requirements of Rule 202, Visible Emissions, a person shall not cause or allow fugitive dust generated by active operations, an open storage pile, or a disturbed surface area, such that the fugitive dust is of such opacity as to obscure an observer’s view to a degree equal to or greater than does smoke as dark or darker in shade as that designated as number 2 on the Ringelmann Chart, as published by the United States Bureau of Mines.
- Concentration Limit: A person shall not cause or allow PM₁₀ levels to exceed 50 micrograms per cubic meter (µg/m³) (24-hour average) when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA approved equivalent method for PM₁₀ monitoring.
- Track-Out onto Paved Public Roadways: Visible roadway dust as a result of active operations, spillage from transport trucks, and the track-out of bulk material onto public paved roadways shall be minimized and removed.
 - The track-out of bulk material onto public paved roadways as a result of operations, or erosion, shall be minimized by the use of track-out and erosion control, minimization, and preventative measures, and removed within one hour from adjacent streets such material anytime track-out extends for a cumulative distance of greater than 50 feet onto any paved public road during active operations.
 - All visible roadway dust tracked out upon public paved roadways as a result of active operations shall be removed at the conclusion of each work day when active operations cease, or every 24 hours for continuous operations. Wet sweeping or a High Efficiency Particulate Air (HEPA) filter-equipped vacuum device shall be used for roadway dust removal.
 - Any material tracked out, or carried by erosion, and cleanup water shall be prevented from entering waterways or stormwater inlets as required to comply with water quality control requirements.
- Minimum Dust Control Requirements: The following dust mitigation measures are to be initiated at the start and maintained throughout the duration of any construction or grading activity, including any construction or grading for road construction or maintenance.
 - Unpaved areas subject to vehicle traffic must be stabilized by being kept wet, treated with a chemical dust suppressant, or covered.

- The speed of any vehicles and equipment traveling across unpaved areas must be no more than 15 miles per hour unless the road surface and surrounding area is sufficiently stabilized to prevent vehicles and equipment traveling more than 15 miles per hour from emitting dust exceeding Ringelmann 2 or visible emissions from crossing the project boundary line.
 - Storage piles and disturbed areas not subject to vehicular traffic must be stabilized by being kept wet, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile.
 - Prior to any ground disturbance, including grading, excavating, and land clearing, sufficient water must be applied to the area to be disturbed to prevent emitting dust exceeding Ringelmann 2 and to minimize visible emissions from crossing the boundary line.
 - Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt, from being released or tracked offsite.
 - When wind speeds are high enough to result in dust emissions crossing the boundary line, despite the application of dust mitigation measures, grading and earthmoving operations shall be suspended.
 - No trucks are allowed to transport excavated material off-site unless the trucks are maintained such that no spillage can occur from holes or other openings in cargo compartments, and loads are either covered with tarps; or wetted and loaded such that the material does not touch the front, back, or sides of the cargo compartment at any point less than six inches from the top and that no point of the load extends above the top of the cargo compartment.
- *Wind-Driven Fugitive Dust Control:* A person shall take action(s), such as surface stabilization, establishment of a vegetative cover, or paving, to minimize wind-driven dust from inactive disturbed surface areas.
- **Rule 501–General Permit Requirements.** Any person operating an article, machine, equipment, or other contrivance, the use of which may cause, eliminate, reduce, or control the issuance of air contaminants, shall first obtain a written permit from the Air Pollution Control Officer (APCO). Stationary sources subject to the requirements of Rule 507, Federal Operating Permit Program, must also obtain a Title V permit pursuant to the requirements and procedures of that rule.

Placer County General Plan

The Placer County General Plan Policy Document was adopted by the Placer County Board of Supervisors in 1994. **Table 10-5** lists the General Plan policies that relate to air quality and the proposed Project and provides an analysis of the Project's consistency with these goals and policies. While this Draft EIR analyzes the Project's consistency with the Placer County General Plan pursuant to State CEQA Guidelines Section 15125(d), the determination of the Project's consistency with this General Plan rests with the Placer County Board of Supervisors. Environmental impacts associated with any inconsistency with General Plan policies are addressed under the impact discussions of this EIR.

**TABLE 10-5
GENERAL PLAN CONSISTENCY ANALYSIS – AIR QUALITY**

| General Plan Policies | Consistency Determination | Analysis |
|---|-----------------------------|--|
| Policy 6.F.5. The County shall encourage project proponents to consult early in the planning process with the County regarding the applicability of Countywide indirect and areawide source programs and transportation control measures (TCM) programs. Project review shall also address energy efficient building and site designs and proper storage, use, and disposal of hazardous materials. | Consistent | The applicant will collaborate with the County to ensure that all areawide source programs and transportation control measures (TCM) programs are met. See Section 15.0, Hazardous Materials and Hazards, of this EIR for a discussion of storage, use, and disposal of hazardous materials. |
| Policy 6.F.6. The County shall require project-level environmental review to include identification of potential air quality impacts and designation of design and other appropriate mitigation measures or offset fees to reduce impacts. The County shall dedicate staff to work with project proponents and other agencies in identifying, ensuring the implementation of, and monitoring the success of mitigation measures. | Consistent | Potential air quality impacts and appropriate mitigation measures are discussed below in the impact analysis. The Project will comply with all required fees to reduce air quality impacts. |
| Policy 6.F.7. The County shall encourage development to be located and designed to minimize direct and indirect air pollutants. | Consistent, with Mitigation | With the incorporation of mitigation measures 10-1a and 10-1b to lessen dust impacts, all non-cumulative air quality impacts are considered less than significant. |
| Policy 6.F.10. The County may require new development projects to submit an air quality analysis for review and approval. Based on this analysis, the County shall require appropriate mitigation measures consistent with the PCAPCD's 1991 Air Quality Attainment Plan (or updated edition). | Consistent | This EIR provides the air quality analyses required by the County, and the Project applicant will be required to implement all mitigation measures. |
| Policy 6.G.7. The County shall require stationary-source projects that generate significant amounts of air pollutants to incorporate air quality mitigation in their design. | Consistent | The proposed Project incorporates mitigation measures 10-1a and 10-1b to control dust pollution. No other aspects of the Project were found to require further air quality mitigation. |

Granite Bay Community Plan

Table 10-6 lists the Community Plan goals and policies that relate to air quality and the proposed Project and provides an analysis of the Project's consistency with these goals and policies. While this EIR analyzes the Project's consistency with the Community Plan pursuant to State CEQA Guidelines Section 15125(d), the Placer County Board of Supervisors ultimately determines consistency with the General Plan.

**TABLE 10-6
COMMUNITY PLAN CONSISTENCY ANALYSIS – AIR QUALITY**

| Community Plan Policies | Consistency Determination | Analysis |
|--|---------------------------|--|
| Policy 29. Developers shall be required to comply with additional mitigation measures that may be required by the Air Quality Plan Update. | Consistent | The proposed Project will comply with all required mitigation measures required by the Air Quality Plan Update. |
| Policy 30. Developers shall be required to submit a CALINE4 CO hotspot computer analysis for all new projects and provide additional mitigation, if required by the Air Pollution Control District. | Consistent | As discussed below, the levels of service (LOS) for intersections and roadway segments are not expected to exceed a LOS E after mitigation is applied. As such, substantial traffic volumes and/or congestion that are needed to create the density of CO emissions associated with hotspots are not expected. In addition, engine certification standards over time will result in lower CO emissions from motor vehicles. Therefore, the conditions for producing a CO hotspot are not expected to occur as a result of the Project. |

10.3 IMPACTS

10.3.1 Standards of Significance

The Air Quality Section of Appendix G of the CEQA Guidelines contains a list of effects that may be deemed potentially significant. These are:

- 1) Conflict with or obstruct implementation of the applicable air quality plan.
- 2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- 3) Result in a cumulatively considerable net increase of any criteria pollutant for which the project is non-attainment under applicable federal or state ambient air quality standards.
- 4) Expose sensitive receptors to substantial pollutant concentrations.
- 5) Create objectionable odors affecting a substantial number of people.

The PCAPCD adopted its own emissions thresholds for evaluating the construction and operational impacts of proposed projects in Placer County (PCAPCD, 2009):

- 82 pounds per day (lbs/day) of ROG
- 82 lbs/day of NOx
- 82 lbs/day of PM₁₀
- 550 lbs/day of CO

10.3.2 Methodology

The URBEMIS 2007 computer model (version 9.2.4) was used to estimate short-term emissions related to the grading and construction phases of the proposed Project. The URBEMIS 2007 model was used to estimate long-term emissions associated with Project operations, including emissions from motor vehicles that access the Project site. For the motor vehicle emission analysis, traffic count information provided by the traffic study for the Project was used. Stationary area source emissions associated with energy use were also calculated using the URBEMIS model. The results of these URBEMIS model runs are provided in **Appendix 10.0**.

10.3.3 Project-Level Impacts and Mitigation Measures

The Project will be built in two phases, each of which will have a different scope of air quality impacts for both short-term construction and long-term operations impacts.

IMPACT 10.1: Increases in Short-Term Construction Emissions

The proposed Project would be constructed in two phases. Each phase of construction would not occur simultaneously and therefore a totaling of the construction emissions would not be the true indication of short-term emissions.

Table 10-7 presents the Project's unmitigated short-term emissions. Short-term unmitigated emissions associated with the construction of the proposed Project would be less than the PCAPCD significance threshold level for each criteria pollutant, with the exception of PM₁₀ during the first phase of the Project, which would exceed the 82 pound per day threshold with emissions of almost 87 pounds per day.

Table 10-7 below indicates that the proposed Project would generate 70 pounds of ROG per day during Phase I construction and 80 pounds during Phase II construction, both of which would be below the PCAPCD's daily threshold of 82 pounds per day. Similarly, the Project's daily emissions of NO_x would be 43 pounds for Phase I and 13 pounds for Phase II, compared to the acceptable 82 pounds, and daily emissions of CO would be 19.5 pounds for Phase I and 12 pounds for Phase II versus the PCAPCD's allowed threshold of 550 pounds. Though the Project would exceed the PCAPCD's thresholds of 82 pounds of PM₁₀ emissions during construction of Phase I, it will generate only 38 pounds of PM₁₀ emissions during construction of Phase II. Though the PCAPCD does not have significance criteria for PM_{2.5}, the proposed Project is anticipated to generate only 19.5 pounds of PM_{2.5} during Phase I and 8 pounds of PM_{2.5} during Phase II construction.

Therefore, as can be seen in **Table 10-7**, only during construction of Phase I would the proposed Project exceed the PCAPCD's recommended daily thresholds of 82 pounds of PM₁₀ emissions per day. However, no other PCAPCD daily threshold would be exceeded. Construction activities for the proposed Project would result in short-term increases in air pollutant emissions. These emissions would be generated in the form of fugitive dust emissions (PM₁₀) and exhaust emissions (NO_x, SO_x, CO, ROG, and PM₁₀) from construction equipment and vehicles. Air pollutant emissions to be generated during Project construction phases were estimated using the URBEMIS 2007 model. URBEMIS estimates maximum daily emissions in pounds per day for summer and winter seasons, and annual emissions in tons per year. This impact is therefore considered **potentially significant**.

**TABLE 10-7
PHASE I AND PHASE II SHORT-TERM UNMITIGATED PROJECT EMISSIONS**

| CONSTRUCTION PHASE | POUNDS PER DAY (LBS/DAY) | | | | |
|---|--------------------------|-----------------|------------|------------------|-------------------|
| | ROG | NO _x | CO | PM ₁₀ | PM _{2.5} |
| PCAPCD SIGNIFICANCE CRITERIA (LBS/DAY) | 82 | 82 | 550 | 82 | N/A |
| PHASE I | 70.23 | 43.35 | 19.53 | 86.99 | 19.50 |
| <i>PHASE I SIGNIFICANCE POTENTIAL?</i> | <i>NO</i> | <i>NO</i> | <i>NO</i> | <i>YES</i> | <i>NO</i> |
| PHASE II | 80.35 | 13.44 | 12.07 | 38.01 | 8.37 |
| <i>PHASE II SIGNIFICANCE POTENTIAL?</i> | <i>NO</i> | <i>NO</i> | <i>NO</i> | <i>NO</i> | <i>NO</i> |

Source: URBEMIS 2007 v. 9.2.4 Outputs. N/A = No PCAPCD Significance Criteria. See Appendix 10.0 for modeling assumptions. 40,000 cubic yards of fill to be exported in Phase I. Assumes 5,9 20-mile round trips per day during Phase I. Phase I includes mass grading of entire 17- acre area proposed for development.

The first phase of the Project includes site preparation (grading and associated removal of 40,000 cubic yards of fill) of 17 acres, along with the construction of a house of worship facility and ministry offices. This phase was assumed to occur between July 2012 and August 2013. As shown in **Table 10-7**, PM₁₀ emissions would exceed the PCAPCD threshold during Phase I. This impact is considered **potentially significant**.

The second phase of the Project includes construction of an additional house of worship building. Phase II is planned to be constructed once it is anticipated that the congregation will exceed Phase I capacity. This phase was assumed to occur between July 2018 and August 2019. As shown in **Table 10-8**, no criteria pollutants exceed the PCAPCD threshold during construction since no earthmoving activities would occur. This impact is considered **less than significant**.

The following mitigation is required due to exceedences of PCAPCD thresholds for pounds per day of PM₁₀.

Mitigation Measure 10-1a Mitigate for On-Site Active Dust Control

The proposed Project shall comply with PCAPCD Rule 228, which addresses fugitive dust emissions. Rule 228 provides standards for dust control, as well as recommends mitigation for vehicle track-out. Below are on-site active fugitive dust mitigation measures which are required to ensure that the Project will not violate Rule 228. In addition, mitigation which would lower ROG emissions is provided below.

- Prior to the approval of Improvement Plans, the applicant shall submit a Construction Emission/Dust Control Plan to the Placer County APCD. This plan must address the minimum Administrative Requirements found in section 300 and 400 of APCD Rule 228, Fugitive Dust (www.placer.ca.gov/airpollution/airpolut.htm). The applicant shall not break ground prior to receiving APCD approval of the Construction Emission/Dust Control Plan.
- The applicant shall submit the following as a standard note on the Improvement/Grading Plan: During construction, no open burning of removed vegetation shall be allowed. All removed vegetative material shall be either chipped on-site or taken to an appropriate disposal site.

- The applicant shall submit the following as a standard note on the Improvement/Grading Plan: The contractor shall apply water to control dust, as required by PCAPCD Rule 228, Fugitive Dust, to prevent dust impacts off-site. Operational water truck(s) shall be on-site, at all times, to control fugitive dust. Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt from being released or tracked off-site. The applicant shall submit the following as a standard note on the Improvement/Grading Plan: The prime contractor shall suspend all grading operations when wind speeds (including instantaneous gusts) exceed 25 miles per hour and dust is impacting adjacent properties.
- The applicant shall submit the following as a standard note on the Improvement/Grading Plan: Construction equipment exhaust emissions shall not exceed District Rule 202, Visible Emissions. Operators of vehicles and equipment found to exceed opacity limits are to be immediately notified to cease operations and the equipment must be repaired within 72 hours. Additional information regarding Rule 202 can be found at: <http://www.placer.ca.gov/Departments/Air/Rules.aspx>.
- The applicant shall submit the following as a standard note on the Improvement/Grading Plan: The contractor shall suspend all grading operations when fugitive dust exceeds Placer County APCD Rule 228 (Fugitive Dust) limitations. The prime contractor shall be responsible for having an individual who is ARB-certified to perform Visible Emissions Evaluations (VEE). This individual shall evaluate compliance with Rule 228 on a weekly basis. It is to be noted that fugitive dust is not to exceed 40 percent opacity and not go beyond property boundaries at any time. If lime or other drying agents are utilized to dry out wet grading areas, they shall be controlled so as to not exceed Placer County APCD Rule 228 fugitive dust limitations.
- Prior to the approval of Improvement Plans, the applicant shall submit an Enforcement Plan to the Placer County APCD for review. This plan shall evaluate Project-related on- and-off-road heavy-duty vehicle engine emission opacities on a weekly basis. This plan shall use standards as defined in California Code of Regulations, Title 13, Sections 2180–2194. An Environmental Coordinator, ARB-certified to perform Visible Emissions Evaluations (VEE), shall routinely evaluate Project-related off-road and heavy-duty on-road equipment emissions for compliance with this requirement. Operators of vehicles and equipment found to exceed opacity limits will be notified and the equipment must be repaired within 72 hours.
- The applicant shall submit the following as a standard note on the Improvement/Grading Plan: During construction, the contractor shall minimize idling time to a maximum of 5 minutes for all diesel-powered equipment. The applicant shall submit the following as a standard note on the Improvement/Grading Plan: The contractor shall use ARB ultra low diesel fuel for all diesel-powered equipment. In addition, low sulfur fuel shall be utilized for all stationary equipment. The applicant shall submit the following as a standard note on the Improvement/Grading Plan: The contractor shall utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.

Mitigation Measure 10-1b Mitigate for On-Site Inactive Dust Control

As mentioned above, the proposed Project shall comply with PCAPCD Rule 228, which addresses fugitive dust emissions. Provided below are on-site inactive fugitive dust mitigation measures which would lower ROG emissions and which are required to ensure that the Project will not violate Rule 228:

- The applicant shall submit the following as a standard note on the Improvement/Grading Plan: All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.
- The applicant shall submit the following as a standard note on the Improvement/Grading Plan: The prime contractor shall submit to the Placer County Air Pollution Control District a comprehensive inventory (i.e., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower or greater) that will be used an aggregate of 40 or more hours for the construction Project. The inventory shall be updated, beginning 30 days after any initial work on-site has begun, and shall be submitted on a monthly basis throughout the duration of the Project, except that an inventory shall not be required for a 30-day period in which no construction activity occurs. At least three business days prior to the use of subject heavy-duty off-road equipment, the Project representative shall provide the Placer County Air Pollution Control District with the anticipated construction timeline including start date and name and phone number of the property owner/applicant, Project manager, and on-site foreman.
- Prior to the approval of Improvement Plans, the applicant shall submit a plan to the Placer County Air Pollution Control District for approval, demonstrating that the heavy-duty (greater than 50 horsepower) off-road vehicles to be used in the construction Project, including owned, leased, and subcontractor vehicles, will achieve a Project-wide fleet-average 20 percent NO_x reduction and 45 percent particulate reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions may include use of late model treatment products and/or other options as they become available.
- The applicant shall submit the following as a standard note on the Improvement/Grading Plan: All on-site stationary equipment which is classified as 50 horsepower or greater shall either obtain a state-issued portable equipment permit or a Placer County APCD issued portable equipment permit.
- The applicant shall submit the following as a standard note on the Improvement/Grading Plan: Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
- The applicant shall submit the following as a standard note on the Improvement/Grading Plan: During construction, traffic speeds on all unpaved surfaces shall be limited to 15 miles per hour or less. The applicant shall submit the following as a standard note on the Improvement/Grading Plan: The prime contractor shall be responsible for keeping adjacent public thoroughfares clean of silt, dirt, mud, and debris, and shall “wet broom” if silt, dirt, mud, or debris is carried over to adjacent public thoroughfares. Dry mechanical sweeping is prohibited.

Table 10-8 depicts emissions generated during both phases of construction with the implementation of mitigation measures **10-1a** and **10-1b**. As shown in the table, short-term mitigated emissions associated with the construction of the proposed Project would be less than the PCAPCD significance threshold level for each criteria pollutant. In particular, Phase I PM₁₀ emissions, which were estimated at 87 pounds per day as shown in **Table 10-7**, would be reduced to 50 pounds per day with mitigation, which is below the PCAPCD significance threshold of 82 pounds per day.

**TABLE 10-8
PHASE I AND PHASE II SHORT-TERM MITIGATED PROJECT EMISSIONS**

| Construction Phase | Pounds per Day (lbs/day) | | | | |
|---|--------------------------|-----------------|-------|------------------|-------------------|
| | ROG | NO _x | CO | PM ₁₀ | PM _{2.5} |
| PCAPCD Significance Criteria (lbs/day) | 82 | 82 | 550 | 82 | N/A |
| Phase I | 70.23 | 43.35 | 19.53 | 50.06 | 11.79 |
| <i>Phase I significance potential?</i> | NO | NO | NO | NO | NO |
| Phase II | 80.34 | 13.44 | 12.07 | 21.76 | 4.97 |
| <i>Phase II significance potential?</i> | NO | NO | NO | NO | NO |

Source: URBEMIS 2007 v. 9.2.4 Outputs. N/A = No PCAPCD Significance Criteria. See Appendix 10.0 for modeling assumptions. Assumes 40,000 cubic yards of fill to be exported in Phase I. Assumes 5,9 20-mile round trips per day during Phase I. Phase I includes mass grading of entire 17-acre site of proposed development.

SIGNIFICANCE AFTER MITIGATION

After implementation of mitigation measures **10-1a** and **10-1b**, PM₁₀ emissions would be reduced below PCAPCD thresholds. All other emissions associated with the construction would still be less than the PCAPCD significance threshold level. Therefore, short-term emissions for the proposed Project are considered **less than significant** and no further mitigation is required.

IMPACT 10.2: Contribute Substantially to an Existing Air Quality Violation

Any short-term construction impacts would not contribute significantly to existing air quality issues. Long-term operation of the proposed Project would increase emissions of both attainment pollutants (i.e., carbon monoxide) and non-attainment pollutants (i.e., PM₁₀, ozone precursors ROG and NO_x) in the region from mobile sources (i.e., motor vehicles) and stationary sources (e.g., heating and cooling). This could contribute to new exceedances of attainment pollutants or continued exceedances of ozone and PM₁₀ standards.

Tables 10-9 through **10-10** summarize estimated operational emissions associated with the Project.

Stationary Sources

The Project would include stationary sources, such as heaters, boilers, and other equipment needed to power, cool, and heat on-site buildings and facilities. There are other minor area source emissions that can be quantified based on projected floor area for the proposed Project. These emissions are summarized in **Table 10-9**.

Mobile Sources

The majority of Project-related emissions would be generated by on-road mobile sources, such as light-duty passenger cars. Traffic information used to generate the vehicle emissions was gathered from the Traffic Impact Analysis (TIA) for the Project as well as supplemental information provided by KD Anderson & Associates. The Project is estimated to generate 3,700 average daily trips (ADT) during an average Saturday after Phase I and Phase II (KD Anderson & Associates, 2010). The typical worship activities are planned for Saturdays for single service between 9:30 a.m. and 12:00 p.m., and growth of the congregation may eventually support two

services on Saturdays that would be 9:00 a.m. to 11:00 a.m. and 11:30 a.m. to 12:30 p.m. Mobile source emissions associated with activities are summarized in **Table 10-9**. The Project is estimated to generate an average of 379 trips daily on every other day. These unmitigated emissions are summarized in **Table 10-10**.

**TABLE 10-9
TOTAL LONG-TERM AREA SOURCE UNMITIGATED EMISSIONS
(MOBILE SOURCE – SATURDAYS)**

| Scenario | Daily Emissions (Lbs/Day) | | | | |
|--|---------------------------|-----------------|---------------|------------------|-------------------|
| | ROG | NO _x | CO | PM ₁₀ | PM _{2.5} |
| Project Buildout (Completion of Phase I and Phase II) | | | | | |
| PCAPCD Significance Criteria (lbs/day) | 82 | 82 | 550 | 82 | N/A |
| Area Sources | 1.49 | 2.03 | 3.23 | 0.01 | 0.01 |
| Mobile Sources (Saturday) | 24.09 | 36.85 | 279.76 | 47.18 | 9.12 |
| Total | 25.58 | 38.88 | 282.99 | 47.19 | 9.13 |
| Significance Potential? | NO | NO | NO | NO | NO |

Source: URBEMIS 2007 v. 9.2.4 Outputs. N/A = No PCAPCD Significance Criteria. See Appendix 10.0 for modeling assumptions. Area source emissions include emission associated with natural gas use, landscape maintenance, architectural coatings, and consumer products. Emissions represent an average of both summer emissions and winter emissions.

As shown in **Table 10-9**, the Project’s unmitigated Saturday operational emissions would all be below the applicable PCAPCD significance thresholds. The Project would emit approximately 25.58 pounds of ROG, 39 pounds of NO_x, and 47 pounds of PM₁₀ per day on Saturdays, which would each be below the PCAPCD threshold of 82 pounds per day. Similarly, the Project would emit approximately 283 pounds of CO per day on Saturdays, which would be below the threshold of 550 pounds per day. The Project would emit approximately 9 pounds of PM_{2.5} per day on Saturdays, which would not be considered substantial; the PCAPCD has not adopted a specific threshold for this pollutant.

**TABLE 10-10
TOTAL LONG-TERM AREA SOURCE UNMITIGATED EMISSIONS
(MOBILE SOURCE – NON-SATURDAYS)**

| Scenario | Daily Emissions (Lbs/Day) | | | | |
|--|---------------------------|-----------------|--------------|------------------|-------------------|
| | ROG | NO _x | CO | PM ₁₀ | PM _{2.5} |
| Project Buildout (Completion of Phase I and Phase II) | | | | | |
| PCAPCD Significance Criteria (lbs/day) | 82 | 82 | 550 | 82 | N/A |
| Area Sources | 1.49 | 2.03 | 3.23 | 0.01 | 0.01 |
| Mobile Sources (Non-Saturdays) | 2.47 | 3.77 | 28.66 | 4.83 | 0.93 |
| Total | 3.96 | 5.80 | 31.89 | 4.84 | 0.94 |
| Significance Potential? | NO | NO | NO | NO | NO |

Source: URBEMIS 2007 v. 9.2.4 Outputs. N/A = No PCAPCD Significance Criteria. See Appendix 10.0 for modeling assumptions. Area source emissions include emission associated with natural gas use, landscape maintenance, architectural coatings, and consumer products. Emissions represent an average of both summer emissions and winter emissions.

As shown in **Table 10-10**, the Project's unmitigated non-Saturday operational emissions would all be below the applicable PCAPCD significance thresholds. The Project would emit approximately 4 pounds of ROG, 5.8 pounds of NO_x, and 4.8 pounds of PM₁₀ per day Sunday through Friday, which would each be below the PCAPCD threshold of 82 pounds per day. Similarly, the Project would emit approximately 32 pounds of CO per day Sunday through Friday, which would be below the threshold of 550 pounds per day. The Project would also emit approximately 1 pound of PM_{2.5} per day Sunday through Friday, which would not be considered substantial; the PCAPCD has not adopted a specific threshold for this pollutant.

As shown in **Tables 10-9** and **10-10**, long-term operations of the facility after both phases of the Project have been completed would not result in ROG, NO_x, CO, or PM₁₀ emissions that exceed PCAPCD thresholds.

Long-term emissions associated with the proposed Project would be less than the PCAPCD thresholds for NO_x, ROG, CO, and PM₁₀. Impact 10.2 would be **less than significant** and no further mitigation is required.

IMPACT 10.3: Violate Any Air Quality Standard or Contribute Substantially to a Projected Air Quality Violation

Any short-term construction impacts would not contribute significantly to existing air quality issues. Long-term operation of the proposed Project would result in indirect emissions of carbon monoxide (CO) from motor vehicles that could increase CO concentrations near local roadways.

Local mobile-source carbon monoxide emissions near roadway intersections are a function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. Under specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels. These concentrations are also impacted by vehicle delay associated with roadways or intersections. As vehicles speeds slow to level of service (LOS) E or F, or worsen from an existing LOS F, CO concentrations are increased, creating a scenario in which localized CO could possibly cause a hotspot.

According to the traffic study, there are three intersections which may operate at a deficient LOS (KD Anderson & Associates, 2010) with the addition of Project traffic but before mitigation:

- Sierra College Boulevard at Rocklin Road
- Sierra College Boulevard at Nightwatch Drive
- Sierra College Boulevard Project Access

However, only the intersection of Sierra College Boulevard and Rocklin Road would operate at a level of service before mitigation (LOS E in this case) that may result in a CO hotspot. The other listed intersections would operated at LOS D or better (before mitigation), which would not result in a CO hotspot.

In accordance with the Caltrans CO Protocol (Caltrans, 1997), CO hotspots are evaluated when:

- The level of service (LOS) of an intersection or roadway decreases to a LOS E or worse;
- Signalization and/or channelization is added to an intersection; and
- Sensitive receptors such as residences, commercial developments, schools, hospitals, etc., are located in the vicinity of the affected intersection or roadway segment.

After mitigation identified in Section 9.0, Traffic and Circulation, the LOS at the intersection of Sierra College Boulevard and Rocklin Road is expected to improve to LOS C. As such, substantial traffic volumes and/or congestion that are needed to create the density of CO emissions associated with hotspots are not expected. In addition, engine certification standards over time will result in lower CO emissions from motor vehicles. Furthermore, the City of Rocklin General Plan Update Draft EIR identifies that the intersection of Sierra College Boulevard and Rocklin Road would have CO concentrations below state and federal standards under Year 2030 conditions (City of Rocklin General Plan Update Draft EIR Table 4.2-8). Therefore, the conditions for producing a CO hotspot are not expected to occur as a result of the Project. This impact is **less than significant** and no further mitigation is required.

IMPACT 10.4: Expose Sensitive Receptors to Toxic Air Contaminants

The proposed Project would introduce diesel PM emissions from off-road equipment during construction and from diesel-fueled trucks and motor vehicles accessing the site during long-term operations, and could potentially expose nearby existing residential land uses to sources of temporary TACs. The residents and future workers at the Project site could be exposed to unhealthful levels of TACs resulting from the uses mentioned above. On-site sources of TACs would be diesel trucks accessing the Project. Implementation of the proposed Project would increase mobile source emissions of TACs from motor vehicles, as well as from diesel-fueled equipment during both construction and long-term operations. This would increase TAC concentrations at nearby sensitive receptors. However, ARB has prepared guidance documents addressing the compatibility of sensitive land uses to the siting of major sources of diesel PM emissions such as ports, rail yards, and distribution centers. Based on ARB guidance documents, the proposed Project does not meet the definition of a major source of diesel PM and would not be subject to the siting criteria. Regardless, the proposed Project would result in indirect emissions of diesel particulates that would negligibly increase TAC concentrations along local roadways.

As shown in **Table 10-1**, there are five toxic facilities within 5 miles of the Project site. However, ARB has passed a number of ATCMs to reduce the public's exposure to emissions of diesel PM, including measures to limit idling of diesel-powered delivery trucks. However, given the limited number of diesel-powered trucks trips to the Project site during operation of the proposed Project (seven trucks per day, six carrier delivery/pickup type trucks, and one or two semi trucks per week) and ATCMs to reduce public exposure to diesel PM emission, sensitive receptors' exposure from diesel TACs would be limited. Given the construction schedule of two years, the proposed Project would not result in a long-term (i.e., 70 years) substantial source of TAC emissions and would therefore be considered a **less than significant** impact. No further mitigation is required.

IMPACT 10.5: Conflict With or Obstruct Implementation the Air Quality Attainment Plan

The proposed Project will not directly add any additional residents to Placer County. Instead, the house of worship will accommodate a growing congregation that is already based in Placer County, with an existing Amazing Facts worship facility located in Roseville and a recently formed Granite Bay membership of about 300 families currently meeting at the Shepherd of the Sierra in the Town of Loomis. As such, the Project will not exceed future population forecasts for future ozone attainment plans. This impact would be considered **less than significant** and no mitigation is required.

IMPACT 10.6: Create Objectionable Odors

The proposed Project would locate commercial land uses adjacent to a mix of residential uses and vacant land. Short-term construction and long-term operations of the Project are expected to produce minimal levels of reactive organic gases or other emissions that could create objectionable odors for existing or future sensitive receptors.

Two circumstances have the potential to cause odor impacts:

- A source of odors is proposed to be located near existing or planned sensitive receptors, or
- A sensitive receptor land use is proposed near an existing or planned source of odor.

Potential sources that emit odors during construction activities that may some individuals may consider offensive include the use of architectural coatings, exhaust odors from diesel emissions, and emissions associated with asphalt paving. Construction-related odors associated with diesel fumes and road paving would be temporary and would disperse rapidly with distance from the source and would not result in the frequent exposure of receptors to objectionable odor emissions.

The proposed Project is not expected to produce long-term odor issues for two key reasons. First, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed Project does not include any such uses. Second, the PCAPCD has a Nuisance Rule (Rule 205) that governs the discharge from any source, such as quantities of air contaminants, which causes a nuisance or annoyance to any considerable number of persons or to the public. As a result, this impact is considered **less than significant** and no mitigation is required.

