

## **CHAPTER 9 AIR QUALITY**

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### **9.1 EXISTING SETTING**

Development of the Alpine Sierra Subdivision (proposed project) is expected to generate air pollutant emissions during construction activities and occupancy of the proposed residences. Placer County is in a federal non-attainment area for ozone, and is in a state designated non-attainment area for ozone and particulate matter standards. This chapter addresses project impacts on air quality by analyzing the type and quantity of emissions that would be generated by the proposed project. Air pollutant emissions estimates were prepared using the California Emissions Estimator Model (CalEEMod) program developed for the California Air Resources Board (CARB). The resulting technical support materials are provided in Appendix G to this Draft Environmental Impact Report (EIR).

Air quality in California is regulated and monitored by CARB. The state is divided into 15 air basins, in which local authority is given to Air Pollution Control Districts (APCDs) and Air Quality Management Districts. Air basin boundaries were developed in recognition of geographic features and existing political boundaries (i.e., county limits), and air district boundaries are typically coterminous with political boundaries. Air districts are charged with enforcing the air quality standards established by the state and federal governments while providing local expertise and knowledge of local conditions. In general, local districts are responsible for control of stationary sources of emissions, and state and federal entities are responsible for control of mobile source emissions.

The proposed project site is located in eastern Placer County and lies within the Mountain Counties Air Basin (MCAB). Air quality in the project vicinity is influenced by both local and distant emissions sources. Air pollutant sources in the immediate project vicinity include emissions from vehicle traffic on State Route 89 (approximately 2.7 miles to the west), area sources such as landscape maintenance, and stationary sources such as residential woodstoves and barbeques.

Distant emissions sources that influence air quality in Placer County include vehicle traffic, agricultural activities, and various commercial and industrial activities in the Sacramento metropolitan area and beyond.

#### **9.1.1 Climate**

Local meteorological conditions are recorded at the Truckee Ranger Station. The annual average precipitation is approximately 31.5 inches, which primarily occurs from October through April. Average temperatures range from a minimum of 19°F in January to a maximum of 77.9°F in July

(Intellicast 2016). The annual predominant wind direction is from the south-southwest at 12 miles per hour (El Dorado County Air Pollution Control District 2002).

In winter, large amounts of precipitation from Pacific storms fall mainly as snow, accompanied by below-freezing temperatures, winds, cloudiness, and lake and valley fog. Winter days can be cool and brilliantly clear between storms. Thermal inversions are a dominant feature of winter weather within the MCAB. In summer, days are often mild and sunny, with high temperatures in the upper 70s and low 80s (degrees Fahrenheit); southern flows of moisture bring an occasional thunderstorm (El Dorado County Air Pollution Control District 2002).

Due to the topographical features and meteorological conditions of the region, the MCAB is more sensitive to negative impacts on air quality than most other areas of the state. Cold temperatures and mild winds often result in temperature inversions in which upper layers of warmer air trap colder air near the land surface. Local pollutant sources within the area are trapped by frequent inversions, which limits the volume of air into which they can be mixed and results in elevated pollutant concentrations. The most frequent episodes of high pollution occur during local basin inversions, when emissions from local sources such as motor vehicles, chimney smoke, and forest burning are trapped in the basin. Local air basin inversions in the project area are a result of the cold temperatures of Lake Tahoe, which contribute to the occurrence of subsidence and radiation inversions throughout the year. The nighttime cooling effects of the lake result in down-slope nocturnal winds, which transport local pollutants from developed areas around the lake out onto the lake and contribute to increased pollutant deposition into the lake. This is the most common meteorological condition contributing to air quality degradation in the project area (El Dorado County Air Pollution Control District 2002).

### **Air Contaminants and Associated Public Health Concerns**

Ozone and particulate matter are pollutants of particular concern in Placer County. Under the air quality standards mandated by the California Clean Air Act, the Placer County portion of the MCAB is currently in non-attainment for state and federal particulate matter standards and state and federal ozone standards.

#### **Ozone**

Naturally occurring ozone present in the Earth's stratosphere, approximately 10 to 30 miles above the Earth's surface, helps block ultraviolet radiation from entering Earth's atmosphere. However, when ozone occurs at ground level, it can cause damage to human health and the health of local vegetation. Ground-level ozone is not a direct emission from pollution sources; it is formed from chemical reactions between two pollutants that are emitted from a variety of sources: nitrogen oxides (NO<sub>x</sub>) and reactive organic compounds (also referred to as reactive organic gas [ROG]). These pollutants are also emitted from motor vehicles and released into the

air in the process of evaporation of various organic compounds (e.g., fuels and solvents). The chemical reaction that forms ozone requires warm temperatures and sunlight (EPA 2013). For this reason, ozone is often thought of as a summertime pollutant.

Wind carries ozone and the pollutants that form it hundreds of miles away from their original source. This can allow ozone to dissipate into the air on wind currents, but can also lead to rural areas having high concentrations of ozone particles despite their distance from substantial pollutant sources. Ground-level concentrations of ozone increase when air currents are restricted, such when there is an inversion layer.

### **Particulate Matter**

Particulate matter is a type of air pollution that consists of varying mixtures of particles suspended in the air. Particulate matter less than 2.5 microns in diameter is referred to as PM<sub>2.5</sub>, or fine particles. Particulate matter between 2.5 and 10 microns in diameter is referred to as PM<sub>10</sub>, or coarse particles. (In comparison, a human hair is about 75 microns in diameter.) Major sources of coarse and fine particles include agricultural burning, construction activities, woodburning stoves and fireplaces, vehicle exhaust, wind-blown dust, vehicles traveling on unpaved roads, materials handling, and crushing and grinding operations. Particulate matter is also formed in the atmosphere from reactions of nitrogen dioxide and sulfur dioxide with ammonia.

Particulate matter causes health problems as the human immune system reacts to the presence of inhaled particles that lodge within a person's lungs. Fine particles can lodge deeper within the lungs than coarse particles, posing a more serious health threat. Fine particles also can have a damaging effect on health by interfering with the body's mechanism for clearing the respiratory tract or by acting as a carrier of absorbed toxic substances.

Scientific studies have linked inhaled particulate matter to several significant health problems, including aggravated asthma, increases in respiratory symptoms like coughing and difficult or painful breathing, chronic bronchitis, decreased lung function, irregular heartbeat and nonfatal heart attacks, and premature death in people with heart or lung disease (EPA 2012). Very small particulates of certain substances can cause direct lung damage or can contain absorbed gasses that may be injurious. Populations that are especially sensitive to the health effects of exposure to particulate matter include children, older adults, exercising adults, individuals with influenza, asthmatics, and those who suffer from chronic obstructive pulmonary disease.

In addition to health concerns, particulate matter emissions can result in environmental effects such as reduced visibility, water pollution (as particulates settle out of the air and into water bodies), degradation of vegetation (as particulates settle on leaves as dust), and damage to structures (EPA 2012). Particulate matter can injure crops, trees, and shrubs, and cause damage

to other surfaces such as metal and fabrics, through chemical reactions. Fine particles also impair visibility by scattering light and reducing visual range in urban, rural, and wilderness areas. The haze caused by fine particles can diminish crop yields by reducing sunlight.

### **Toxic Air Contaminants**

Toxic air contaminants (TACs) are pollutants that may pose a hazard to human health. Specifically, TACs may result in an increase in mortality or serious illness. Health effects of TACs include cancer, birth defects, neurological damage, damage to the immune system, and diseases that lead to death. Sources of TACs include motor vehicles, industrial processes such as petroleum refining and chrome plating operations, and commercial operations such as gasoline stations and dry cleaners.

Vehicle exhaust from cars and trucks contains at least 40 different TACs. Diesel exhaust particulate matter has been identified as a TAC. CARB regulates the composition of diesel fuel sold in California to minimize particulate matter in diesel exhaust. Gas stations and high-volume roadways are common sources of TACs. The project site is not proximate to any sources of TACs.

### **Asbestos**

Asbestos is a known carcinogen and is considered a TAC. Health effects of exposure to asbestos can include lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs) (CARB 2010). Naturally occurring asbestos is found in some areas throughout California, most commonly where ultramafic rock or serpentinite rock is present. Another form of asbestos, known as tremolite, can be found associated with ultramafic rock, particularly near faults. When construction activities occur in areas with naturally occurring asbestos in the soils or rock, the asbestos can become airborne and may be inhaled.

The California Department of Conservation's California Geological Survey prepared a map and accompanying report on the relative likelihood for the presence of naturally occurring asbestos in Placer County. Areas that were determined "most likely" and "moderately likely" to contain naturally occurring asbestos are areas with soil types and geologic units where chemical and physical conditions may have supported formation of asbestos. The project site is in an area where soil is from weathered granitic rocks. This soil type and geologic unit does not typically support formation of naturally occurring asbestos. In addition, the project site includes weathered andesitic bedrock and rock outcroppings as well as lahar deposits and outcroppings. Neither of these rock units typically support formation of naturally occurring asbestos. The project site is in an area considered "least likely" to contain naturally occurring asbestos (California Geological Survey 2006).

## 9.1.2 Air Quality Monitoring

Air quality monitoring stations throughout the MCAB measure pollutant concentrations hourly. Data recorded by these stations is used to determine whether the air basin meets the applicable air quality standards. As stated above, air quality complies with most state and federal air quality standards, but the MCAB is designated as a non-attainment area for ozone and PM<sub>10</sub> standards.

Air pollutant monitoring data for some pollutants is publically available at the CARB website. There is one active Placer County air pollutant monitoring station in the MCAB. The station located in Colfax monitors ozone concentrations. Data from each monitoring station is available at the CARB website ([www.arb.ca.gov](http://www.arb.ca.gov)).

In addition to data from the monitoring stations, the CARB website provides pollutant concentration trend summaries for each air basin. Data collected from the monitoring stations and the trend summaries are shown below. Table 9-1, Peak Background Concentrations in the Study Area for the Period of 2010–2014, identifies the maximum concentration of air quality pollutants relative to the adopted standards; Table 9-2, Frequency of Air Quality Standard Violations, identifies how many days in a given year the ozone, PM<sub>10</sub>, and PM<sub>2.5</sub> concentration exceeded the current state and federal standards. For both pollutants, the monitoring data shows that the number of days that air pollutant concentration standards are exceeded each year is generally declining. However, the standards are still being exceeded several times each year.

**Table 9-1  
Peak Background Concentrations in the Study Area for the Period of 2010–2014**

	Monitoring Station	Ambient Air Quality Standard	2010	2011	2012	2013	2014
<i>Ozone</i>							
Maximum 1-hour concentration (state method)	Tahoe City	0.09 ppm	ND	ND	ND	0.049	0.076
Maximum 8-hour concentration		0.070 ppm (state)	ND	ND	ND	0.047	0.069
		0.075 ppm (federal)	ND	ND	ND	0.046	0.068
<i>Respirable Particulate Matter (PM<sub>10</sub>)</i>							
Maximum 24-hour conc. (state method)	Colfax	50 µg/m <sup>3</sup>	<b>74.3</b>	<b>54.3</b>	43.8	<b>95.4</b>	<b>287.0</b>
Maximum 24-hour conc. (federal method)		150 µg/m <sup>3</sup>	80.9	58.5	44.6	102.1	<b>287.0</b>
Annual concentration (state method)		20 µg/m <sup>3</sup>	20.3	ND	13.7	17.3	17.1

**Table 9-1**  
**Peak Background Concentrations in the Study Area for the Period of 2010–2014**

	Monitoring Station	Ambient Air Quality Standard	2010	2011	2012	2013	2014
<i>Fine Particulate Matter (PM<sub>2.5</sub>)</i>							
Maximum 24-hour conc. (federal method)	Truckee-Fire Station	35 µg/m <sup>3</sup>	24.6	17.3	18.0	<b>42.9</b>	<b>79.7</b>
Annual concentration (state method)		12 µg/m <sup>3</sup>	4.7	6.6	10.9	8.2	ND
Annual concentration (federal method)		12.0 µg/m <sup>3</sup>	5.5	6.6	6.1	8.2	6.3

Source: CARB 2015

**Notes:**

ppm = parts per million

ppb=parts per billion

µg/m<sup>3</sup> = micrograms per cubic meter

**Bold** indicates values above standard

NA – data are not available from the listed sources

ND – insufficient data available to determine the value

**Table 9-2**  
**Frequency of Air Quality Standard Violations**

Year	Number of Days Exceeding Standard					
	State 1-Hour O <sub>3</sub>	State 8-Hour O <sub>3</sub>	Federal 8-Hour O <sub>3</sub>	Federal 24-Hour PM <sub>2.5</sub>	State 24-Hour PM <sub>10</sub>	Federal 24-Hour PM <sub>10</sub>
2010	8	52	22	0	12.0	0
2011	14	60	32	0	ND	0
2012	14	90	45	0	0	0
2013	1	49	17	3.2	12.2	0
2014	1	69	30	6.1	6.5	6.6

Source: CARB 2015

Note: ND – insufficient data available to determine the value

### 9.1.3 Sensitive Receptors

Older adults, children, and individuals with certain health concerns are more susceptible to the adverse effects of air pollution. Residential areas are considered sensitive receptors because residents tend to be at home for extended periods, which may result in sustained exposure to any pollutants that are in the vicinity.

Land uses in the immediate vicinity of the project site include rural residences in the Bear Creek Association subdivision to the north of the site and residences along Chalet Road to the south of the site. It is not anticipated that development activities on the project site would expose existing residents and children to increased air pollutant levels due to the location of the site and the limited number of residences.

The project would add residents to the project area, creating a new population of sensitive receptors. However, there are no existing sources of air pollution in the immediate project vicinity. As noted above, the nearest substantial mobile source of emissions is vehicle traffic on State Route 89, approximately 2.7 miles to the west. At this distance, residents at the project site would not be exposed to substantial pollutant concentrations associated with this source.

## **9.2 REGULATORY FRAMEWORK**

### **9.2.1 Federal Regulations**

#### **Clean Air Act**

As required by the federal Clean Air Act, the federal Environmental Protection Agency (EPA) established Ambient Air Quality Standards (AAQS) for six air pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter, and lead. These standards represent the levels of air quality necessary to protect the public health and welfare with an adequate margin of safety. The Federal Clean Air Act requires states to classify air basins (or portions thereof) as either in “attainment” or “non-attainment” with respect to whether the AAQS for each pollutant has been achieved. For areas designated as “non-attainment,” the federal Clean Air Act requires states to prepare air quality plans containing emissions-reduction strategies. The federal AAQS are listed in Table 9-3, Ambient Air Quality Standards, along with the air quality standards set by California.

EPA requires states to prepare State Implementation Plans to demonstrate that attainment of the federal AAQS will be achieved and that air quality will be maintained. State Implementation Plans are periodically updated to reflect the latest emissions inventories, planning documents, and air district rules and regulations. Failure to submit an acceptable State Implementation Plan or failure to implement the plan within the mandated time frame may result in restrictions in transportation funding and sanctions on stationary air pollution sources in the air basin.

The project area is located in the Mountain Counties Air Basin. The Placer County portion of the MCAB is designated as non-attainment for state and federal ozone standards and state PM<sub>10</sub> standards. For state PM<sub>2.5</sub> and carbon monoxide, the MCAB is unclassified.

**Table 9-3  
Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards <sup>1</sup>	Federal Standards <sup>2</sup>	
		Concentration <sup>3</sup>	Primary <sup>3,4</sup>	Secondary <sup>3,5</sup>
Ozone (O <sub>3</sub> )	1 hour	0.09 ppm (180 µg/m <sup>3</sup> )	—	Same as primary standard
	8 hours	0.070 ppm (137 µg/m <sup>3</sup> )	0.070 ppm (137 µg/m <sup>3</sup> )	
Nitrogen dioxide (NO <sub>2</sub> )	1 hour	0.18 ppm (339 µg/m <sup>3</sup> )	0.100 ppm (188 µg/m <sup>3</sup> )	Same as primary standard
	Annual arithmetic mean	0.030 ppm (57 µg/m <sup>3</sup> )	0.053 ppm (100 µg/m <sup>3</sup> )	
Carbon monoxide	1 hour	20 ppm (23 mg/m <sup>3</sup> )	35 ppm (40 mg/m <sup>3</sup> )	None
	8 hours	9.0 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )	
Sulfur dioxide (SO <sub>2</sub> )	1 hour	0.25 ppm (655 µg/m <sup>3</sup> )	0.075 ppm (196 µg/m <sup>3</sup> )	—
	3 hours	—	—	0.5 ppm (1300 µg/m <sup>3</sup> )
	24 hours	0.04 ppm (105 µg/m <sup>3</sup> )	0.14 ppm (for certain areas)	—
	Annual arithmetic mean	—	0.030 ppm (for certain areas)	—
PM <sub>10</sub>	24 hours	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	Same as primary standard
	Annual arithmetic mean	20 µg/m <sup>3</sup>	—	
PM <sub>2.5</sub>	24 hours	—	35 µg/m <sup>3</sup>	Same as primary standard
	Annual arithmetic mean <sup>6</sup>	12 µg/m <sup>3</sup>	12.0 µg/m <sup>3</sup>	15.0 µg/m <sup>3</sup>
Lead <sup>7</sup>	30-day average	1.5 µg/m <sup>3</sup>	—	Same as primary standard
	Calendar quarter	—	1.5 µg/m <sup>3</sup> (for certain areas)	
	Rolling 3-month average	—	0.15 µg/m <sup>3</sup>	
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m <sup>3</sup> )	—	—
Vinyl chloride	24 hours	0.01 ppm (26 µg/m <sup>3</sup> )	—	—
Sulfates	24 hours	25 µg/m <sup>3</sup>	—	—
Visibility-reducing particles	8 hours (10:00 a.m. to 6:00 p.m. PST)	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%	—	—

**Source:** CARB 2016

ppm = parts per million by volume.; µg/m<sup>3</sup> = micrograms per cubic meter; mg/m<sup>3</sup> = milligrams per cubic meter; PST = Pacific Standard Time

**Notes:**

<sup>1</sup> California standards for O<sub>3</sub>, CO, SO<sub>2</sub> (1-hour and 24-hour), NO<sub>2</sub>, suspended particulate matter (PM<sub>10</sub>, PM<sub>2.5</sub>), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California Ambient Air Quality Standards are listed in the standards in Section 70200 of Title 17 of the California Code of Regulations.

<sup>2</sup> National standards (other than O<sub>3</sub>, NO<sub>2</sub>, SO<sub>2</sub>, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O<sub>3</sub> 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 NO<sub>2</sub> and SO<sub>2</sub>, the standard is attained when the 3-year average of the 98th and 99th percentiles, respectively, of the daily maximum 1-hour average at each monitor within an area does not exceed the standard

(effective April 12, 2010). For PM<sub>10</sub>, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 micrograms per cubic meter (µg/m<sup>3</sup>) is equal to or less than 1. For PM<sub>2.5</sub>, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

- <sup>3</sup> Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm (parts per million) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- <sup>4</sup> National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
- <sup>5</sup> National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- <sup>6</sup> On December 14, 2012, the EPA Administrator signed the notice of final rule revising the annual PM<sub>2.5</sub> standard from 15.0 to 12.0 µg/m<sup>3</sup>. The final rule has not been published in the Federal Register as of the date of this report, and an effective date for the ruling has not been set.
- <sup>7</sup> CARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

## Hazardous Air Pollutant Program

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

### 9.2.2 State Regulations

#### California Clean Air Act

California has its own ambient standards for the criteria pollutants, which are presented with the federal AAQS in Table 9-3. The state AAQS are equal to or more stringent than their federal counterparts. State AAQS have also been established for certain pollutants not covered by the federal AAQS, such as hydrogen sulfide and vinyl chloride. Placer County has been designated as a non-attainment area for state AAQS for ozone and PM<sub>10</sub>, and is unclassified for CO and PM<sub>2.5</sub> (meaning there is not enough data to classify the region as attainment or non-attainment for these pollutants). Placer County has been designated as an attainment area for all other criteria air pollutants.

#### California Air Resources Board

The state legislature created CARB as a state regulatory agency directed toward ensuring high air quality across the state. To achieve this goal, CARB uses a variety of regulatory tools, including emissions standards, air quality standards, control measures for toxic materials, and oversight of local air quality districts. CARB also conducts research and air quality monitoring, and assists individual businesses with meeting clean air standards.

To aid local air quality districts in the evaluation of proposed development projects, CARB directed preparation of a computer modeling program that estimates the air pollutant emissions that could result from construction and operation of a project. The modeling program provides estimates of the pollutant emissions associated with new land development projects and evaluates the effectiveness of common mitigation measures and Best Available Control Technologies in reducing project emissions. The current version of the modeling program is CalEEMod, available at [www.caleemod.com](http://www.caleemod.com).

### 9.2.3 Local Regulations

#### Placer County Air Pollution Control District

At the local level, the Placer County APCD regulates air quality by establishing local air quality regulations, permitting stationary sources, and planning activities related to air quality. The Placer County APCD is also responsible for enforcing and implementing federal and state standards. Through its enhanced CEQA review process, the Placer County APCD has developed significance thresholds for land use projects that generate air pollutants. These thresholds apply to both short- and long-term air pollutant emissions. Projects with the potential to generate emissions exceeding the thresholds would have a significant impact on air quality. If the project's impact exceeds any of the significance criteria, various mitigation measures are available depending on the nature of the air quality impact. Table 9-4, Placer County APCD Significance Thresholds, presents the significance thresholds for criteria pollutants.

**Table 9-4  
Placer County APCD Significance Thresholds**

<b>Pollutant</b>	<b>Construction Significance Thresholds (lb/day)</b>	<b>Operational Significance Thresholds (lb/day)</b>	<b>Cumulative Significance Thresholds (lb/day)</b>
ROG	82	55	55
NOx	82	55	55
PM10	82	82	82

**Source:** Placer County Air Pollution Control District 2016.

**Note:** Placer County Air Pollution Control District does not have adopted thresholds for CO. Instead, the District recommends use of the State's standards to determine significance.

Placer County APCD Rule 225 established requirements related to wood-burning devices. These requirements include emissions standards and requirements to provide educational information regarding the appropriate use of such devices and the health effects of wood smoke. Section 302.2.4 limits installation of wood-burning devices in multi-family developments to public areas; thus, no wood-burning devices may be installed in individual residential units within a multi-family development (Placer County 1986).

## Placer County General Plan

The Placer County General Plan (Placer County 1994) Air Quality section of the Natural Resources Element provides guidance in land use and development policies for implementation by the Placer County APCD. The following General Plan policies are applicable to the proposed project:

**Goal 6.F** To protect and improve air quality in Placer County.

**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 area wide source programs and transportation control measures (TCM) programs. Project review shall also address energy-efficient building and site designs and proper storage, use, and disposal of hazardous materials.

**6.F.6.** The County shall require project-level environmental review to include identification of potential air quality impacts and designation of design and other appropriate mitigation measures or offset fees to reduce impacts. The County shall dedicate staff to work with project proponents and other agencies in identifying, ensuring the implementation of, and monitoring the success of mitigation measures.

**6.F.7.** The County shall encourage development to be located and designed to minimize direct and indirect air pollutants.

**6.F.8** The County shall submit development proposals to the [Placer County] APCD for review and comment in compliance with CEQA prior to consideration by the appropriate decision making body.

## Alpine Meadows General Plan

The Alpine Meadows General Plan was adopted in 1968 and does not include any goals or policies that address air quality (Placer County 1968).

## 9.3 IMPACTS

### 9.3.1 Significance Criteria

As evaluated in the Initial Study, the project would have a less-than-significant impact with respect to the following significance criteria:

- Would the project create objectionable odors affecting a substantial number of people?

Therefore, this topic is not discussed further in this Draft EIR.

The analysis below evaluates potentially significant project impacts related to air quality based on the following significance criteria:

- Would the project conflict with or obstruct implementation of the applicable air quality plan?
- Would the project violate any air quality standard?
- Would the project expose sensitive receptors to substantial pollutant concentrations?

The Initial Study also indicated that the project could “Result in a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment.” Analysis of the project’s potential impacts relative to this significance criterion is provided in Chapter 15, Cumulative Impacts.

### 9.3.2 Project Impacts

#### Impact 9.1

Would the project conflict with or obstruct implementation of the applicable air quality plan?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	No impact	No impact
Mitigation measures:	None required	None required
Significance after mitigation:	No impact	No impact

#### ***Alternative A Impacts***

The project site is designated for residential development under the County’s Alpine Meadows General Plan and the County’s zoning ordinance. Development of the proposed 47 residential lots would be consistent with regional land use plans, on which the regional air quality attainment plans are based. As the project is consistent with the land use assumptions in the air quality plan, the project would not conflict with or obstruct implementation of the air quality plan and the project would have **no impact** related to consistency with the air quality plan. No mitigation measures would be required.

#### ***Alternative B Impacts***

Alternative B would slightly decrease the intensity of development compared to Alternative A. Alternative B would be consistent with the land use assumptions in the air quality plan and would not conflict with or obstruct implementation of the air quality plan. Alternative B would

have **no impact** related to consistency with the air quality plan and no mitigation measures would be required.

### **Mitigation Measures**

No mitigation measures are required.

### **Impact 9.2**

Would the project violate any air quality standard during project construction or operation?

<b>Significance and Mitigation</b>	<b>Alternative A</b>	<b>Alternative B</b>
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

### **Alternative A Construction Impacts**

Development of the proposed 47 residential lots and associated infrastructure would generate air pollutant emissions, including dust from earth moving activities, vehicle exhaust, and off-gassing from pavement, architectural coatings, and other construction materials.

To assess the project's potential to contribute to violations of air quality standards, air pollutant emissions associated with construction of the proposed project were modeled using the CalEEMod program. Table 9-5, Alternative A: Unmitigated Construction Air Pollutant Emissions, summarizes the anticipated air pollutant emissions from construction of the proposed roads and infrastructure, 53 dwelling units with a total of 222,000 square feet of building space, and one recreational lot. Table 9-5 identifies the maximum daily emissions for each pollutant in each year of construction. Detailed construction emissions estimates are provided in the CalEEMod output files in Appendix G.

**Table 9-5**  
**Alternative A: Unmitigated Construction Air Pollutant Emissions**

<b>Construction Year</b>	<b>Air Contaminant (maximum pounds per day)</b>					
	<i>ROG</i>	<i>NO<sub>x</sub></i>	<i>CO</i>	<i>SO<sub>2</sub></i>	<i>PM<sub>10</sub></i>	<i>PM<sub>2.5</sub></i>
2017	5.94	68.34	40.19	0.06	21.09	12.62
2018	3.26	26.53	21.72	0.04	2.12	1.60
2019	2.88	24.01	20.84	0.04	1.90	1.40
2020	51.21	21.86	20.11	0.04	1.72	1.23

As shown in Table 9-5, during all phases of project construction, air pollutant emissions would remain below Placer County APCD thresholds.

Placer County APCD requires projects to comply with the following standard conditions to reduce air pollutant emissions during construction:

- a. Prior to approval of Grading or Improvement Plans, (whichever occurs first), on project sites greater than one acre, the applicant shall submit a Construction Emission / Dust Control Plan to the Placer County Air Pollution Control District. The applicant shall not break ground prior to receiving approval of the Construction Emission / Dust Control Plan. To download the form go to [www.placer.ca.gov/apcd](http://www.placer.ca.gov/apcd) and click on Dust Control Requirements. The applicant shall not break ground prior to receiving PCAPCD approval of the Construction Emission / Dust Control Plan, and delivering that approval to the County.

The prime contractor shall submit to the District a comprehensive inventory (e.g., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower or greater) that will be used in aggregate of 40 or more hours for the construction project. If any new equipment is added after submission of the inventory, the prime contractor shall contact the District prior to the new equipment being utilized. At least three business days prior to the use of subject heavy-duty off-road equipment, the project representative shall provide the District with the anticipated construction timeline including start date, name, and phone number of the property owner, project manager, and on-site foreman.

Prior to approval of Grading or Improvement Plans, whichever occurs first, the applicant shall provide a written calculation to the District for approval demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average of 20% of NO<sub>x</sub> and 45% of DPM reduction as compared to CARB statewide fleet average emissions. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.

- b. Include the following standard note on the Improvement/Grading Plan:

A person shall not discharge into the atmosphere volatile organic compounds (VOCs) caused by the use or manufacture of Cutback or Emulsified asphalts for paving, road construction or road maintenance, unless such manufacture or use complies with the provisions Rule 217.

- c. The contractor shall utilize existing power sources (e.g., power poles) or clean fuel (e.g., gasoline, biodiesel, natural gas) generators rather than temporary diesel power generators.

- d. During construction activity, no open burning of removed vegetation shall be allowed unless permitted by the District. (District Regulation 3)
- e. The contractor shall minimize idling time to a maximum of 5 minutes for all diesel powered equipment. (Placer County Code Chapter 10, Article 10.14).
- f. Idling of construction related equipment and construction related vehicles is not recommended within 1,000 feet of any sensitive receptor.
- g. Construction equipment exhaust emissions shall not exceed District Rule 202 Visible Emissions limitations. Operators of vehicles and equipment found to exceed opacity limits are to be immediately notified by the District to cease operations and the equipment must be repaired within 72 hours. (APCD Rule 202)
- h. The contractor shall suspend all grading operations when fugitive dust exceeds District Rule 228 Fugitive Dust limitations. Fugitive dust is not to exceed 40% opacity, nor go beyond the property boundary at any time. Lime or other drying agents utilized to dry out wet grading areas shall not exceed District Rule 228.
- i. Operators of vehicles and equipment found to exceed opacity limits will be notified by the District and the equipment must be repaired within 72 hours. (APCD Rule 228)
- j. The prime contractor shall be responsible for keeping adjacent public thoroughfares clean of silt, dirt, mud, and debris, and shall “wet broom” the streets (or use another method to control dust as approved by the individual jurisdiction) if silt, dirt, mud or debris is carried over to adjacent public thoroughfares. (APCD Rule 228)
- k. During construction activity, traffic speeds on all unpaved surfaces shall be limited to 15 miles per hour or less. (APCD Rule 228)
- l. The prime contractor shall apply methods such as surface stabilization, establishment of a vegetative cover, paving, (or use another method to control dust as approved by the individual jurisdiction) to minimize wind driven dust.
- m. The contractor shall apply water or use other method to control dust impacts offsite. Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt from being released or tracked off-site. (APCD Rule 228)
- n. The prime contractor shall suspend all grading operations when wind speeds (including instantaneous gusts) are excessive and dust is impacting adjacent properties. (APCD Rule 228)
- o. Any device or process that discharges 2 pounds per day or more of air contaminants into the atmosphere, as defined by Health and Safety Code Section 39013, may require a District permit. Developers/contractors should contact the District prior to

construction and obtain any necessary permits prior to the issuance of a Building Permit. (APCD Rule 501)

Alternative A would implement these emission control measures during construction to further reduce air pollutant emissions associated with construction of the proposed infrastructure and residences. Because construction activities would result in air pollutant emissions that are below Placer County APCD’s adopted thresholds, the project would have a **less-than-significant** impact on air quality during construction. No mitigation measures would be required.

### **Alternative B Construction Impacts**

Construction of the proposed 38 residential lots and associated infrastructure would generate air pollutant emissions, including dust from earth moving activities, vehicle exhaust, and off-gassing from pavement, architectural coatings, and other construction materials.

The CalEEMod modeling program was used to assess air pollutant emissions associated with construction of Alternative B. Table 9-6, Alternative B: Unmitigated Construction Air Pollutant Emissions, identifies the anticipated maximum daily air pollutant emissions during each construction year.

**Table 9-6**  
**Alternative B: Unmitigated Construction Air Pollutant Emissions**

Construction Year	Air Contaminant (pounds per day)					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
2017	6.00	68.39	40.82	0.07	21.18	12.64
2018	3.59	27.30	24.58	0.04	2.56	1.72
2019	3.19	24.73	23.39	0.04	2.34	1.52
2020	46.51	22.52	22.39	0.04	2.16	1.35

As shown in Table 9-6, during all phases of project construction, air pollutant emissions would remain below Placer County APCD thresholds. As under the proposed project, Alternative B would implement Placer County APCD’s standard construction emission reduction measures. Construction activities associated with Alternative B would result in a **less-than-significant** impact on air quality. No mitigation measures would be required.

### **Alternative A Operational Impacts**

Air pollutant emissions would occur during project operation (occupation of the residences) through the use of motor vehicles, consumption of electricity, use of propane for heating devices

and water heaters, landscaping equipment, individual barbeques, and consumer products (e.g., cleaning supplies and personal products such as hair spray). The project-specific development standards and conditions of approval would prohibit installation of wood burning devices in all of the residential units and HOA facilities.

Air pollutant emissions associated with operation of the proposed project were modeled using the CalEEMod program based on the operational assumptions described in Appendix G. Table 9-7, Alternative A: Unmitigated Long-Term Air Pollutant Emissions, summarizes the anticipated air pollutant emissions from area sources and vehicle emissions associated with the project. To reflect seasonal variations in electricity and propane use, separate estimates for summer and winter emissions are provided. Use of a front-loader for snow removal and routine maintenance of the emergency generator that would be housed on-site is included in the Area Source emissions shown in Table 9-7. Emissions associated with vehicle use were modeled separately in CalEEMod under two scenarios – one that accounts for the projected total annual vehicle miles traveled, and thus provides the average daily and annual emissions, and one that accounts for the worst-case scenario, which assumes that one long-distance arrival trip and one local trip is made for each of the vacation units on-site in addition to the standard amount of local trips generated by each of the permanent residences on-site. In other words, this scenario assumes that new visitors are arriving to each of the vacation units on the same day. The mobile emissions reported in Table 9-7 reflect the maximum daily emissions in this scenario.

**Table 9-7**  
**Alternative A: Unmitigated Long-Term Air Pollutant Emissions**

Source	Air Contaminant (pounds per day)					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<i>Summer</i>						
Area sources and energy use	5.13	1.29	0.72	0.001	0.07	0.07
Vehicle use	1.15	5.78	16.12	0.04	2.92	0.82
<b>Combined</b>	<b>6.28</b>	<b>7.07</b>	<b>16.84</b>	<b>0.041</b>	<b>2.99</b>	<b>0.89</b>
<i>Winter</i>						
Area sources and energy use	5.67	1.56	0.87	0.001	0.09	0.09
Vehicle use	1.03	6.35	15.49	0.04	2.92	0.82
<b>Combined</b>	<b>6.70</b>	<b>7.91</b>	<b>16.36</b>	<b>0.041</b>	<b>3.01</b>	<b>0.91</b>

**Source:** Appendix G – Alt A construction and operation summer, Alt A worst case summer day mobile emissions, Alt A construction and operation winter, Alt A worst case winter day mobile emissions

Air pollutant emissions generated during operation of Alternative A would remain below the Placer County APCD thresholds. Thus, the project's impacts on regional air quality would be **less than significant**.

### **Alternative B Operational Impacts**

Operational air pollutant emissions were also estimated for Alternative B based on the operational assumptions described in Appendix G. As under Alternative A, operational emissions associated with Alternative B would occur due to the use of motor vehicles, consumption of electricity, landscaping equipment, use of propane for heating devices (propane fireplaces and water heaters), individual barbeques, and consumer products. The project-specific development standards and conditions of approval would prohibit installation of wood burning devices in all of the residential units and HOA facilities.

Table 9-8, Alternative B: Unmitigated Long-Term Air Pollutant Emissions summarizes CalEEMod modeling results for the anticipated air pollutant emissions from area sources and vehicle emissions associated with Alternative B. To reflect seasonal variations in electricity and propane use, separate estimates for summer and winter emissions are provided. Further, mobile source emissions were modeled separately in CalEEMod under the same two scenarios described above for Alternative A. The emissions reported in Table 9-8 reflect the maximum daily emissions from the scenario under which new visitors are arriving to each of the vacation units on the same day, thus reflecting the worst case maximum daily emissions under Alternative B.

**Table 9-8**  
**Alternative B: Unmitigated Long-Term Air Pollutant Emissions**

Source	Air Contaminant (pounds per day)					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<i>Summer</i>						
Area Sources and Energy Uses	5.13	1.29	0.72	0.001	0.07	0.07
Vehicle Use	0.98	5.19	14.76	0.04	2.73	0.77
<b>Combined</b>	<b>6.11</b>	<b>6.48</b>	<b>15.48</b>	<b>0.041</b>	<b>2.80</b>	<b>0.84</b>
<i>Winter</i>						
Area Sources	5.13	1.29	0.72	0.001	0.07	0.07
Vehicle Use	0.88	5.72	14.00	0.03	2.73	0.77
<b>Combined</b>	<b>6.01</b>	<b>7.01</b>	<b>14.72</b>	<b>0.031</b>	<b>2.80</b>	<b>0.84</b>

**Source:** Appendix G – Alt B construction and operation summer, Alt B worst case summer day mobile emissions, Alt B construction and operation winter, Alt B worst case winter day mobile emissions

Air pollutant emissions generated during operation of Alternative B would remain below the Placer County APCD thresholds. Thus, the impact of Alternative B on regional air quality would be **less than significant**. Additionally, comparing the emissions of the two alternatives shown in Tables 9-7 and 9-8 shows that Alternative B would generate slightly less air pollution emissions than Alternative A. Factors that contribute to this include the slight reduction in total building square footage and slightly lower number of daily vehicle trips under Alternative B.

### **Mitigation Measures**

No mitigation measures are required.

### **Impact 9.3**

Would the project expose sensitive receptors to substantial pollutant concentrations?

<b>Significance and Mitigation</b>	<b>Alternative A</b>	<b>Alternative B</b>
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

### **Alternative A Impacts**

Air quality varies as a direct function of the amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. Air quality problems arise when the rate of pollutant emissions exceeds the rate of dispersion. Reduced visibility, eye irritation, and adverse health impacts upon those persons termed “sensitive receptors” are the most serious hazards of existing air quality conditions. As discussed in Section 9.1, some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. The sensitive receptors nearest to the project sites are rural residences in the Bear Creek Association subdivision to the north of the site and residences along Chalet Road to the south of the site.

Alternative A would introduce two stationary sources of air pollution to the area by including an emergency generator within the Homeowners Association facilities onsite as well as an emergency generator for the sewer lift station. The emergency generators would be tested monthly and would emit air pollutants or TACs during testing. However, with the short duration of the testing, the generator would not cause substantial pollutant concentrations that could adversely affect the population in the area. This monthly testing of both generators is reflected in the CalEEMod modeling provided in Appendix G. The project site is not proximate to major mobile sources of TACs. According to Caltrans, peak month average daily traffic on SR-89 in the project vicinity is 14,800 vehicles per day (LSC Transportation Consultants 2015).

In addition, sensitive receptors in the area could be exposed to substantial concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> from construction activity. Alternative A would result in less-than-significant emissions or concentrations of PM<sub>10</sub>, PM<sub>2.5</sub>, or CO, as discussed in Impacts 9-1 and 9-2. Therefore, the project would have a **less-than-significant** impact related to exposure of sensitive receptors to substantial pollutant concentrations and no mitigation measures would be required.

***Alternative B Impacts***

Alternative B would also include two emergency generators, as reflected in the CalEEMod modeling in Appendix G. As discussed above and in Impacts 9-1 and 9-2, emissions associated with Alternative B would be slightly less than those of the Alternative A due to the slight reduction in total building square footage and slightly lower number of daily vehicle trips under Alternative B. Alternative B would not result in substantial concentrations of any air pollutants and this impact would remain **less than significant**. No mitigation measures would be required.

***Mitigation Measures***

No mitigation measures are required.