9.0 AIR QUALITY

This chapter summarizes the 2010 Hidden Falls Regional Park (HFRP) Certified Environmental Impact Report (EIR) air quality findings; describes the existing HFRP and proposed trail network expansion project area (project area) environmental setting and pertinent regulations; evaluates the potential for short-term and long-term project-related impacts on air quality; and provides mitigation measures as necessary to reduce those impacts. The methods of analysis for short-term construction, long-term regional (operational), local mobile source, odor, and toxic air contaminant (TAC) emissions are consistent with the recommendations of the Placer County Air Pollution Control District (PCAPCD).

9.1 SUMMARY OF COUNTY FINDINGS ON THE 2010 HFRP CERTIFIED EIR

As discussed in Section 1.2, the focus of the SEIR is to determine whether the proposed HFRP trails expansion would result in effects not discussed in the prior certified EIR, substantially increase the effect compared to that discussed in the prior certified EIR, or would be consistent with the findings of the prior certified EIR.

9.1.1 FINDINGS OF FACT

A summary of the findings of fact adopted for the 2010 Certified HFRP is provided below. Chapter 9, "Air Quality," of the 2010 HFRP Certified EIR included a detailed discussion of the park environmental and regulatory setting, potential impacts on air quality resulting from implementation of the park project, and any needed mitigation measures to reduce these impacts.

- Short-term emissions of ozone precursors and fugitive dust from construction of trails and other facilities would not exceed PCAPCD's significance thresholds for criteria air pollutants and ozone precursors. Thus, the park project would not violate or contribute substantially to an existing or projected air quality violation, nor expose sensitive receptors to substantial concentrations of pollutants. The impact was determined to be **less than significant**.

- Long-term regional emissions associated with operation of the park project would not exceed PCAPCD's significance thresholds for criteria air pollutants and ozone precursors; thus, project operation would not violate or contribute substantially to an existing or project air quality violation, expose sensitive receptors to substantial pollutant concentrations, or conflict with air quality planning effort. The impact was considered **less than significant**.

- The park project would not expose sensitive receptors to substantial emissions of toxic air contaminants during project construction because construction emissions would be temporary and would rapidly dissipate with distance from the source. The impact was determined to be **less than significant**.

- Construction workers and surrounding residents could be exposed to dust from asbestos rock and soils during project construction. Implementing a mitigation measure to conduct on-site soil testing and prepare and implement an Asbestos dust control plan, if needed, reduced this potentially significant impact to **less than significant**.

- Long-term operational (local) mobile-source emissions of carbon monoxide during park project operation would not violate California Ambient Air Quality Standards or National Ambient Air Quality Standards, nor expose sensitive receptors to substantial pollutant concentrations. The impact was considered **less than significant**.

9.1.2 2010 HFRP MITIGATION MEASURES ADOPTED BY THE COUNTY

Implementation of the following mitigation measures, which were adopted by Placer County when the HFRP EIR was certified in 2010, reduced impacts of the project on air quality to less than significant.

- **Mitigation Measure 9-1:** Conduct On-Site Soil Testing and Prepare and Implement an Asbestos Dust Control Plan, if Needed.

- **Mitigation Measure 9-2:** List Standard Air Quality Notes on Grading and Improvement Plans.

9.2 ENVIRONMENTAL SETTING

This section of the Subsequent EIR describes the air quality related environmental conditions of the proposed HFRP expansion. See Chapter 9.0 “Air Quality” of the 2010 Certified HFRP EIR for information about the existing park.

The existing park and project area are located in the western portion of Placer County, California, which is within the Sacramento Valley Air Basin (SVAB). The SVAB also comprises all of Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba Counties and the eastern portion of Solano County. Western Placer County is also part of the Sacramento Federal Ozone Nonattainment Area, which comprises Sacramento and Yolo Counties and parts of El Dorado, Solano, and Sutter Counties. PCAPCD works in conjunction with the air pollution control and air quality management districts of these contiguous jurisdictions to develop plans to bring the entire ozone nonattainment area into compliance.

Ambient concentrations of air pollutants are determined by the amount of emissions released by pollutant sources and the ability of the atmosphere to transport and dilute such emissions. Terrain, wind, atmospheric stability, and the presence of sunlight all affect transport and dilution. Therefore, existing air quality conditions in the project area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources, as discussed separately below.

9.2.1 TOPOGRAPHY, CLIMATE, AND METEOROLOGY

Land within the SVAB is relatively flat, bordered by the north Coast Range to the west and the northern Sierra Nevada to the east. Air flows into the SVAB through the Carquinez Strait, the only breach in the western mountain barrier, and moves across the Sacramento–San Joaquin Delta (Delta) from the San Francisco Bay Area.

The Mediterranean climate of the project area is characterized by hot, dry summers and cool, rainy winters. During the summer, daily temperatures range from 50 degrees Fahrenheit (^{o}F) to more than 100^{o}F. The inland location and surrounding mountains shelter the area from many of the ocean breezes that keep the coastal regions moderate in temperature.

Most precipitation in the SVAB results from air masses that move in from the Pacific Ocean, usually from the west or northwest during the winter months. More than half the total annual precipitation falls during the winter rainy season (November–February); the average winter temperature is a moderate 49°F. Periods of dense and persistent low-level fog, which are most prevalent between storms, are common during the winter months in the SVAB. The prevailing winds are moderate in speed and vary from moisture-laden breezes from the south to dry-land flows from the north.

The mountains surrounding the SVAB create a barrier to airflow, which leads to the entrapment of air pollutants when meteorological conditions are unfavorable for transport and dilution. Poor air movement occurs most frequently in fall and winter when high-pressure cells are present over the project area and meteorological conditions are stable. The lack of surface winds during these periods, combined with the reduced vertical flow caused by less surface heating, reduces the influx of air and results in the concentration of pollutants. Surface concentrations of air pollutant emissions are highest when these conditions occur in combination with agricultural burning activities or temperature inversions, which hamper dispersion by creating a ceiling over the area and trapping air pollutants near the ground.

May–October is ozone season in the SVAB, and is characterized by poor air movement in the mornings and the arrival of the Delta sea breeze from the southwest in the afternoons. In addition, longer daylight hours provide a plentiful amount of sunlight to fuel photochemical reactions between reactive organic gases (ROG) and oxides of nitrogen (NO_X), which in turn result in ozone formation. Typically, the Delta breeze transports air pollutants northward out of the SVAB; however, during approximately half of the time from July to September, a phenomenon known as the Schultz Eddy prevents this from occurring. The Schultz Eddy phenomenon causes the wind pattern to shift southward, blowing air pollutants back into the SVAB. This phenomenon exacerbates the concentration of air pollutant emissions in the air basin and contributes to violations of the ambient air quality standards.

The winds and unstable atmospheric conditions associated with the passage of winter storms result in periods of low air pollution and excellent visibility. Precipitation and fog tend to reduce or limit some pollutant concentrations. For instance, clouds and fog block sunlight, which is required to fuel photochemical reactions that form ozone. Because carbon monoxide (CO) is partially water soluble, precipitation and fog also tend to reduce concentrations of CO in the atmosphere. In addition, respirable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM_{10}) can be washed from the atmosphere through wet deposition processes, such as rain, snow, and fog. However, between winter storms, high pressure and light winds contribute to low-level temperature inversions and stable atmospheric conditions, resulting in the concentration of air pollutants (e.g., CO, PM_{10}).

Air quality in Placer County is also affected by inversion layers, which occur when a layer of warm air traps a layer of cold air, preventing vertical dispersion of air contaminants. The presence of an inversion layer results in higher concentrations of pollutants near ground level. Inversions occur primarily in the autumn and summer, formed by warm air subsiding in a region of high pressure with accompanying light winds that do not provide adequate dispersion of air pollutants.

9.2.2 AIR QUALITY—CRITERIA AIR POLLUTANTS

Concentrations of several air pollutants—ozone, CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable and fine particulate matter (PM_{10} and $PM_{2.5}$), and lead—are used as indicators of ambient air quality conditions. These pollutants are commonly referred to as "criteria air pollutants" because they are the most prevalent air pollutants known to be deleterious to human health, and extensive documentation is available on the health-effects criteria for these pollutants.

Source types, health effects, and future trends associated with each air pollutant are described below along with the most current attainment area designations and monitoring data for the project area and vicinity.

OZONE

Ozone is a colorless gas that is odorless at ambient levels. It exists primarily as a beneficial component of the ozone layer in the upper atmosphere (stratosphere), shielding the earth from harmful ultraviolet radiation emitted by the sun, and as a pollutant in the lower atmosphere (troposphere).

Ozone is the primary component of urban smog. It is not emitted directly into the air, but is formed through a series of reactions involving Volatile Organic Compound (VOC) and NO_X in the presence of sunlight. VOC emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_X includes various combinations of nitrogen and oxygen, including nitric oxide, NO_2, and others, typically resulting from the combustion of fuels.

Emissions of both VOCs and NO_X are considered critical to ozone formation; therefore, either VOCs or NO_X can limit the rate of ozone production. When the production rate of NO_X is lower, indicating that NO_X is scarce, the rate of ozone production is NO_X-limited. Under these circumstances, ozone levels could be most effectively reduced by lowering current and future NO_X emissions (from fuel combustion), rather than by lowering VOC emissions. Rural areas tend to be NO_X-limited, while areas with dense urban populations tend to be VOC-limited.

Meteorology and terrain play a major role in ozone formation. Generally, low wind speeds or stagnant air coupled with warm temperatures and clear skies provide the optimum conditions for formation. As a result, summer is generally the peak ozone season. Because of the reaction time involved, peak ozone concentrations often occur far downwind of the precursor emissions. Therefore, ozone is a regional pollutant that often affects large areas. In general, ozone concentrations over or near urban and rural areas reflect an interplay of emissions of ozone precursors, transport, meteorology, and atmospheric chemistry.

Individuals exercising outdoors, children, and people with lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible subgroups for ozone effects. Short-term ozone exposure (lasting for a few hours) can result in changes in breathing patterns, reductions in breathing capacity, increased susceptibility to infections, inflammation of lung tissue, and some immunological changes. In recent years, a correlation has also been reported between elevated ambient ozone levels and increases in daily hospital admission rates and mortality (EPA 2017a). An increased risk of asthma has been found in children who participate in multiple sports and live in communities with high ozone levels.

Carbon Monoxide

Carbon Monoxide (CO) is a colorless and odorless gas that, in the urban environment, is produced primarily by the incomplete burning of carbon in fuels, primarily from mobile (transportation) sources. As of the 2014 EPA National Emissions Inventory, more than 50 percent of the nation's CO emissions were from mobile sources (EPA 2018). The remaining emissions are primarily from fires (both wildfires and prescribed fires), releases from vegetation and soil, wood-burning stoves, incinerators, and industrial sources. Relatively high concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300–600 feet) of heavily traveled roadways. Vehicular traffic emissions can cause localized CO impacts, and severe vehicle congestion at major signalized intersections can generate elevated CO levels, called "hot spots," which can be hazardous to human receptors adjacent to the intersections. Overall, CO emissions are decreasing, in part because the Federal Motor Vehicle Control Program has mandated increasingly lower emission levels for vehicles manufactured since 1973.

CO enters the bloodstream through the lungs by combining with hemoglobin, which normally supplies oxygen to the cells. However, CO combines with hemoglobin much more readily than oxygen does, drastically reducing the amount of oxygen available to the cells. Adverse health effects from exposure to high CO concentrations, which typically can occur only indoors or within similarly enclosed spaces, include dizziness, headaches, and fatigue. CO exposure is especially harmful to individuals who suffer from cardiovascular and respiratory diseases (EPA 2017b).

Nitrogen Dioxide

Nitrogen Dioxide (NO_2) is one of a group of highly reactive gases known as oxides of nitrogen, or NO_X. NO_2 is formed when ozone reacts with nitric oxide (i.e., NO) in the atmosphere and is listed as a criteria pollutant because NO_2 is the more toxic than nitric oxide. The major human-made sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. The combined emissions of nitric oxide and NO_2 are referred to as NO_X and reported as equivalent NO_2. Because NO_2 is formed and depleted by reactions associated with ozone, the NO_2 concentration in a particular geographical area may not be representative of local NO_X emission sources. NO_X also reacts with water, oxygen, and other chemicals to form nitric acids, contributing to the formation of acid rain.

Inhalation is the most common route of exposure to NO_2. Breathing air with a high concentration of NO_2 can lead to respiratory illness. Short-term exposure can aggravate respiratory diseases, particularly asthma, resulting in respiratory symptoms (such as coughing, wheezing, or difficulty breathing), hospital admissions, and visits to emergency rooms. Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these subgroups (EPA 2017c).

Sulfur Dioxide

Sulfur Dioxide (SO_2) is one component of the larger group of gaseous oxides of sulfur (SO_X). SO_2 is used as the indicator for the larger group of SO_X, as it is the component of greatest concern and found in the atmosphere at much higher concentrations than other gaseous SO_X. SO_2 is typically produced by such stationary sources as coal

and oil combustion facilities, steel mills, refineries, and pulp and paper mills. The major adverse health effects associated with SO_2 exposure pertain to the upper respiratory tract. On contact with the moist mucous membranes, SO_2 produces sulfurous acid, a direct irritant. Concentration rather than duration of exposure is an important determinant of respiratory effects. Children, the elderly, and those who suffer from asthma are particularly sensitive to effects of SO_2 (EPA 2017d).

SO_2 also reacts with water, oxygen, and other chemicals to form sulfuric acids, contributing to the formation of acid rain. SO_2 emissions that lead to high concentrations of SO_2 in the air generally also lead to the formation of other SO_X, which can react with other compounds in the atmosphere to form small particles, contributing to particulate matter pollution, which can have health effects of its own.

Particulate Matter

Particulate Matter (PM) is a complex mixture of extremely small particles and liquid droplets made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Natural sources of particulates include windblown dust and ocean spray. The major areawide sources of $PM_{2.5}$ and PM_{10} are fugitive dust, especially from roadways, agricultural operations, and construction and demolition. Other sources of PM_{10} include crushing or grinding operations. $PM_{2.5}$ sources also include all types of combustion, including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes. Exhaust emissions from mobile sources contribute only a very small portion of directly emitted $PM_{2.5}$ and PM_{10} emissions; however, they are a major source of VOCs and NO_X, which undergo reactions in the atmosphere to form PM, known as secondary particles. These secondary particles make up the majority of PM pollution.

The size of PM is directly linked to its potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller, because these particles generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects, even death. The adverse health effects of PM_{10} depend on the specific composition of the particulate matter. For example, health effects may be associated with metals, polycyclic aromatic hydrocarbons, and other toxic substances adsorbed onto fine PM (referred to as the “piggybacking effect”), or with fine dust particles of silica or asbestos. Effects from short- and long-term exposure to elevated concentrations of PM_{10} include respiratory symptoms, aggravation of respiratory and cardiovascular diseases, a weakened immune system, and cancer (WHO 2016). $PM_{2.5}$ poses an increased health risk because these very small particles can be inhaled deep in the lungs and may contain substances that are particularly harmful to human health.

Lead

Lead is a highly toxic metal that may cause a range of human health effects. Lead is found naturally in the environment and is used in manufactured products. Previously, the lead used in gasoline anti-knock additives represented a major source of lead emissions to the atmosphere. Soon after its inception, EPA began working to reduce lead emissions, issuing the first reduction standards in 1973. Lead emissions have decreased substantially as a result of the near-elimination of leaded gasoline use. Metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Although the ambient lead standards are no longer violated, lead emissions from stationary sources still pose “hot spot” problems in some areas. As a result, the California Air Resources Board (CARB) has identified lead as a toxic air contaminant (TAC).

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotients. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death, although it appears that lead does not directly affect the respiratory system.

MONITORING STATION DATA AND ATTAINMENT AREA DESIGNATIONS

Health-based air quality standards have been established for criteria pollutants by EPA at the national level and ARB at the state level. These standards were established to protect the public with a margin of safety from adverse health impacts caused by exposure to air pollution. In addition to criteria pollutants, California has established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride.

Table 9-1 presents the national ambient air quality standards (NAAQS) and the California ambient air quality standards (CAAQS). These health-based pollutant standards are reviewed with a legally prescribed frequency and are revised as warranted by new data on health and welfare effects. Each standard is based on a specific averaging time over which the concentration is measured. Different averaging times are based on protection from short-term, high-dosage effects or longer term, low-dosage effects. NAAQS may be exceeded no more than once per year; CAAQS are not to be exceeded.

Table 9-1. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards a	National Standards b	
		Concentration c	Primary c,d	Secondary c,e
Ozone [f]	1 hour	0.09 ppm (180 µg/m^3)	–	Same as primary standard
	8 hours	0.070 ppm (137 µg/m^3)	0.070 ppm (147 µg/m^3)	
Respirable particulate matter—10 micrometers or less [g]	24 hours	50 µg/m^3	150 µg/m^3	Same as primary standard
	Annual arithmetic mean	20 µg/m^3	–	
Fine particulate matter—2.5 micrometers or less [g]	24 hours	–	35 µg/m^3	Same as primary standard
	Annual arithmetic mean	12 µg/m^3	12 µg/m^3	15 µg/m
Carbon monoxide	8 hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
	8 hours (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
Nitrogen dioxide [h]	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary standard
	1 hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	None
Sulfur dioxide [i]	Annual arithmetic Mean	–	0.030 ppm (for certain areas) [i]	–
	24 hours	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas) [i]	–
	3 hours	–	–	0.5 ppm (1,300 µg/m^3)
	1 hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	–

Table 9-1. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards a	National Standards b	
		Concentration c	Primary c,d	Secondary c,e
Lead [j,k]	30-day average	1.5 µg/m^3	–	–
	Calendar quarter	–	1.5 µg/m^3 (for certain areas) [j]	Same as primary standard
	Rolling 3-month average	–	0.15 µg/m^3	
Visibility-reducing particles [l]	8 hours	See footnote l	No national standards	
Sulfates	24 hours	25 µg/m^3		
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m^3)		
Vinyl chloride [j]	24 hours	0.01 ppm (26 µg/m^3)		

Notes: µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; ppb = parts per billion; ppm = parts per million

[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, 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 Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standards.

[c] Concentration expressed first in the units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius (°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 reference pressure of 760 torr; "ppm" in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] *National Primary Standards:* The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[e] *National Secondary Standards:* The levels of air quality necessary to protect public welfare from any known or anticipated adverse effects of a pollutant.

[f] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[g] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[h] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards, the units can be converted from 100 ppb to 0.100 ppm.

[i] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical of 0.075 ppm.

[j] ARB 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.

[k] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.

[l] In 1989, ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and the "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: CARB 2017a

CARB monitors ambient air quality at approximately 250 air monitoring stations across the state (CARB 2017b). Air quality monitoring stations usually measure pollutant concentrations ten feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. Concentrations of criteria air pollutants are measured at several monitoring stations in the SVAB. The Auburn– 11645 Atwood Road and Roseville–North Sunrise Avenue stations are the closest to the project area with recent data for ozone, NO_2, CO, PM_{10}, and $PM_{2.5}$. Table 9-2 summarizes the air quality data from these stations for the most recent 3 years.

Table 9-2. Summary of Annual Ambient Air Quality Data (2015–2017)

Pollutant	California Standard	Federal Standard	Year	Maximum Concentration[a]	Days State/Federal Standard Exceeded
Ozone (O_3)[b]	0.09 ppm (1-Hour)	NA	2015 2016 2017	0.098 ppm 0.115 ppm 0.117 ppm	1/0 5/0 4/0
	0.070 ppm (8-Hour)	0.070 ppm (8-Hour)	2015 2016 2017	0.084 ppm 0.092 ppm 0.088 ppm	6/6 21/20 10/9
Nitrogen Dioxide (NO_2)[b]	0.18 ppm (1-Hour)	0.100 ppm (1-Hour)	2015 2016 2017	0.051 ppm 0.050 ppm 0.059 ppm	0/0 0/0 0/0
Particulate Matter (PM_{10}) [b, d]	50 µg/m^3 (24-Hour)	150 µg/ m^3 (24-Hour)	2015 2016 2017	35.7 µg/ m^3 39.2 µg/ m^3 65.8 µg/ m^3	1/0 0/0 5/0
Fine Particulate Matter ($PM_{2.5}$) [b, d]	12 µg/m^3 (Annual Average)	12 µg/ m^3 (Annual Average)	2015 2016 2017	8.1 µg/ m^3 6.9 µg/m^3 7.2 µg/ m^3	0/0 0/0 0/0

Notes: ppm = parts per million; PM_{10} = particulate matter 10 microns in diameter or less; NM = not measured; µg/m^3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns in diameter or less; NA = not applicable. NA = data not available

1 State and national statistics may differ for the following reasons: State statistics are based on California-approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers. State statistics are based on local conditions while national statistics are based on standard conditions. State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

2 Measured days are those days that an actual measurement was greater than the level of the state daily standard or the national daily standard. Measurements are typically collected every 6 days. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

[a] Maximum concentration is measured over the same period as the California Standards.

[b] Roseville-N Sunrise Avenue Monitoring Station located at 151 North Sunrise Avenue, Roseville, CA.

[c] The United States Environmental Protection Agency revoked the federal 1-hour standard in June of 2005.

[d] PM_{10} and $PM_{2.5}$ exceedances are derived from the number of samples exceeded, not days.

Source: California Air Resources Board, Aerometric Data Analysis and Measurement System (ADAM) Air Quality Data Statistics, http://www.arb.ca.gov/adam/welcome.html

Both CARB and EPA use this type of monitoring data to designate areas according to attainment status for criteria air pollutants published by the agencies. The purpose of these designations is to identify areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are "nonattainment," "attainment," and "unclassified." The "unclassified" designation is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. In addition, the California designations include a subcategory of the nonattainment designation, called "nonattainment-transitional." The nonattainment-transitional designation is given to nonattainment areas that are progressing and nearing attainment. The most recent attainment designations with respect to the Placer County portion of the SVAB are shown in Table 9-3 for each criteria air pollutant.

Table 9-3. Summary of Ambient Air Quality Standards and Western Placer County Designations

Pollutant	Averaging Time	California		National Standards [1]	
		Standards [2,3]	Attainment Status [4]	Concentration[5]	Attainment Status [7]
Ozone	1-hour	0.09 ppm (180 µg/m^3)	N	–	–
	8-hour	0.07 ppm (137 µg/m^3)	N	0.07 ppm[6] (150 µg/m^3)	N
Carbon Monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	A	35 ppm (40 mg/m^3)	A
	8-hour	9 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	A
Nitrogen Dioxide (NO_2) [8]	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	A	0.053 ppm (100 µg/m^3)	A
	1-hour	0.18 ppm (339 µg/m^3)	A	0.100 ppm	U
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	–	A	0.030 ppm (80 µg/m^3)	A
	24-hour	0.04 ppm (105 µg/m^3)	A	0.14 ppm (365 µg/m^3)	
	1-hour	0.25 ppm (655 µg/m^3)	A	0.075 ppm (196 µg/m3)	
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	N	-	–
	24-hour	50 µg/m^3		150 µg/m^3	A
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	A	12 µg/m^3	–
	24-hour	–	–	35 µg/m^3	A
Lead [9]	30-day Average	1.5 µg/m^3	–	NA	A
	Calendar Quarter	NA	–	1.5 µg/m^3	A
	Rolling 3-Month Average	NA	–	1.5 µg/m^3	–

Notes: µg/m^3 = micrograms per cubic meter; ppm = parts per million

[1] National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone and particulates, and those based on annual averages, are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the three-year average of the fourth highest daily concentration is 0.075 ppm (775 ppb) or less. The 24-hour PM_{10} standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than 150 µg/m^3. The 24-hour $PM_{2.5}$ standard is attained when the three-year average of 98th percentile is less than 35 µg/m^3.

[2] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, and suspended particulate matter (PM_{10}) are values that are not to be exceeded. he standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.

[3] Concentration expressed first in units in which it was issued (i.e., parts per million [ppm] or micrograms per cubic meter [µg/m^3]). 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 in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Unclassified (U): The data are incomplete and do not support a designation of attainment or nonattainment.
Attainment (A): The state standard for that pollutant was not violated at any site in the area during a 3-year period.
Nonattainment (N): There was at least one violation of a state standard for that pollutant in the area.
Nonattainment/Transitional (NT) (a subcategory of the nonattainment designation): The area is close to attaining the standard for that pollutant.

[5] National air quality standards are set by the EPA at levels determined to be protective of public health with an adequate margin of safety.

[6] The EPA revised the 8-hour ozone standard from 0.075 to 0.070 ppm on October 1, 2015.

[7] Nonattainment (N): Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.
Attainment (A): Any area that meets the national primary or secondary ambient air quality standard for the pollutant.
Unclassifiable (U): Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

[8] On February 19, 2008, the Office of Administrative Law approved a new NO_2 ambient air quality standard, which lowers the 1-hour standard to 0.19 ppm and establishes a new annual standard of 0.030 ppm. These changes became effective March 20, 2008.

[9] CARB has identified lead and vinyl chloride as toxic air contaminants with no threshold 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.

Sources: Placer County Air Pollution Control District, 2017 CEQA Air Quality Handbook.

9.2.3 EXISTING AIR QUALITY—TOXIC AIR CONTAMINANTS

Both federal and state air quality regulations also focus on TACs. A TAC is an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may otherwise pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their toxicity or health risk may pose a threat to public health even at low concentrations. TACs can be separated into carcinogens and noncarcinogens, based on the nature of the effects associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur. Noncarcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur.

According to the *California Almanac of Emissions and Air Quality* (CARB 2013), most of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines (i.e., diesel particulate matter [DPM]). Other TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene.

DPM differs from other TACs because it is not a single substance, but a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, type of lubricating oil, and presence or absence of an emission control system. Unlike the other TACs, no ambient monitoring data are available for DPM because no routine measurement method currently exists. However, emissions of DPM are forecasted to decline; it is estimated that emissions of DPM in 2035 will be less than half those in 2010, further reducing statewide cancer risk and non-cancer health effects (CARB 2016).

9.2.3 EXISTING AIR QUALITY—ODORS

Odors are generally 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).

The human nose is the sole sensing device for odors. The ability to detect odors varies considerably among the population and is quite subjective. Some individuals can smell very minute quantities of specific substances; others may not have the same sensitivity but may be sensitive to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person (e.g., an odor from a fast food restaurant) may be perfectly acceptable to another. It is important to also 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 occurs only with an alteration in the intensity.

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 odor is quite difficult to detect or recognize. 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.

9.2.4 SENSITIVE RECEPTORS

Some land uses are considered more sensitive to air pollution than others, because of the types of population groups or activities involved. Children, pregnant women, the elderly, those with existing health conditions, and athletes or others who engage in frequent exercise are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered sensitive receptors include schools, daycare centers, parks and playgrounds, and medical facilities.

Residential areas are considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to the pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution, even though exposure periods during exercise are generally short. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent as the majority of the workers tend to stay indoors most of the time.

9.3 REGULATORY SETTING UPDATE

Air quality in Placer County is regulated by EPA, CARB, PCAPCD, and the County. Each of these agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although EPA regulations may not be superseded, both state and local regulations may be more stringent. The regulatory frameworks for criteria air pollutants, TACs, and odor emissions are described separately below.

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments made by Congress were in 1990.

The CAA required EPA to establish national ambient air quality standards (NAAQS). As shown in Table 9-1, EPA has established NAAQS for ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. 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 modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies. EPA must review all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and to determine whether implementing them will achieve air quality goals. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. Failure to submit an approvable SIP or to implement the plan within the mandated time frame may cause sanctions to be applied to transportation funding and stationary air pollution sources in the air basin.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

CARB is responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, required CARB to establish California ambient air quality standards (CAAQS) (Table 9-3). CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest practical date. The act specifies that local air districts should focus particular attention on reducing the emissions from transportation and areawide emission sources, and provides districts with the authority to regulate indirect sources.

Among CARB's other responsibilities are overseeing local air districts' compliance with California and federal laws, approving local air quality plans, submitting SIPs to EPA, monitoring air quality, determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

California's adopted 2007 *State Strategy for the State Implementation Plan for Federal $PM_{2.5}$ and 8-Hour Ozone Standards* was submitted to EPA in November 2007 as a revision to the SIP (CARB 2017b). In July 2011, CARB approved revisions to the 2007 SIP that updated the CARB rulemaking calendar, made adjustments to transportation conformity budgets, revised reasonable further progress tables and made associated reductions for contingency purposes, and updated actions to identify advanced emission control technologies (CARB 2017b). In 2008, EPA strengthened the 8-hour ozone standard to 75 parts per billion (ppb), and again further strengthened this standard in 2015 down to 70 ppb. Sixteen areas in California were designated nonattainment in 2012. In 2012, EPA also strengthened the annual fine particulate matter ($PM_{2.5}$) standard to 12 micrograms per cubic meter ($\mu g/m^3$), and designated four areas in California as nonattainment for this standard. CARB released the *Revised Proposed 2016 State Strategy for the State Implementation Plan*, describing the proposed commitment to achieve the reductions necessary from mobile sources, fuels, and consumer products to meet federal ozone and $PM_{2.5}$ standards over the next 15 years (CARB 2017b).

LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Placer County Air Pollution Control District

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 and programs 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, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the CAA, CAAA, and CCAA.

All projects within PCAPCD's jurisdictional area are subject to PCAPCD rules and regulations in effect at the time of construction. Specific PCAPCD rules that could be applicable to the proposed project may include but are not limited to the following:

- **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 3 minutes in any 1 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 205—Nuisance.** 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. The provisions of Rule 205 do not apply to odors emanating from agriculture operations necessary for the growing of crops or raising of fowl or animals.

- **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% 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 PM_{10} levels to exceed 50 micrograms per cubic meter ($\mu g/m^3$) (24-hour average) when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other EPA-approved equivalent method for PM_{10} 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 1 hour from adjacent streets such material any time 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 clean-up water, shall be prevented from entering waterways or storm water inlets as required to comply 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 the 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 off-site.

  – 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 6 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 Requirement:** 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.

PCAPCD has also produced the *CEQA Thresholds of Significance Justification Report* (2016) *and the CEQA Air Quality Handbook* (2017), which outlines guidance for analyzing construction and operational emissions from land use projects. PCAPCD also includes a list of analysis expectations and methodologies for CEQA analyses. On October 13, 2016, the PCAPCD Board of Directors adopted the *Review of Land Use Projects under CEQA Policy*, which includes recommendations for thresholds of significance for criteria air pollutant emissions. In developing the thresholds, PCAPCD took into account health-based air quality standards and the strategies to attain air quality standards, historical CEQA project review data in Placer County, and the geographic and land use features of Placer County. PCAPCD's emissions thresholds of significance are discussed further below in Section 9.4.2, "Thresholds of Significance."

Air Quality Plans

At the county level, air quality is managed through land use and development planning practices implemented by Placer County and through permitted source controls implemented by the PCAPCD. The PCAPCD is also the agency responsible for enforcing federal and state air quality requirements and for establishing air quality rules and regulations. The 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 PCAPCD's clean air strategy 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. The 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.

Air Quality Attainment Plan

Under the Clean Air Act requirements, each nonattainment area throughout the state is required to develop a regional air quality management plan. Collectively, all regional air quality management plans throughout the state constitute the State Implementation Plan (SIP). With jurisdiction over part of the Sacramento Federal Ozone Nonattainment Area (which covers the project area), the PCAPCD worked with the other local air districts in the Sacramento area to develop a regional air quality management plan to describe and demonstrate how Placer County, as well as the Sacramento federal nonattainment area, would attain the required federal 8-hour ozone standard by the proposed attainment deadline. In accordance with the requirements of the Clean Air Act, the

PCAPCD, along with the other air districts in the region, prepared the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (Ozone Attainment Plan) in July 2017. The ozone SIP for 2008 standard was approved by each air district in the Sacramento region between August and October in 2017. The PCAPCD adopted the Ozone Attainment Plan on October 12, 2017, and CARB determined that the plan meets Clean Air Act requirements and approved it on November 16, 2017, as a revision to the SIP. The updated ozone SIP was submitted to the EPA on December 18, 2017. Accordingly, the 2017 Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan is the applicable air quality plan for the region.

Since the adoption of the Ozone Attainment Plan in early 2009 and its subsequent revision in 2011 and 2017, there were significant updates to emissions calculation methods, vehicle traveled activity data, and growth assumptions used to develop the plan. The 2017 Ozone Attainment Plan revision shows that the region continues to meet federal progress requirements. The 2008 federal 8-hour ozone NAAQS lowered the health-based limit for ambient ozone from 84 ppb to 75 ppb averaged over eight hours. The area is classified as serious based on its design value of 102 ppb at the Folsom Monitoring Site. The region requested reclassification to severe-15 under the 1997 ozone standard because it could not attain by the deadline for a serious area. The region was classified as a severe-15 area with a demonstrated attainment deadline of July 20, 2027.

The 2017 Ozone Attainment Plan updates the emissions inventory, provides a review of photochemical modeling results based on changes in the emissions inventories, updates the reasonable further progress and attainment demonstrations, revises adoption dates for control measures, and establishes new motor vehicle emissions budgets for transportation conformity purposes. The 2017 Ozone Attainment Plan also includes a vehicle mile traveled (VMT) offset demonstration that showed the emissions reduction from transportation control measures and strategies is sufficient to offset the emissions increase due to VMT growth. The 2017 Ozone Attainment Plan contains regional and local control measures that address both ROG and NO_X. A single NO_X pollutant strategy is not appropriate because, even though ROG (and volatile organic compound) measures are not as effective as NO_X control measures, ROG-reducing measures still provide needed reductions in ozone formation.

The SIP provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. The attainment status for Placer County is included in Table 9-3.

PLACER COUNTY GENERAL PLAN

The County's General Plan describes assumptions, goals, and planning principles that provide a framework for land use decisions throughout the County. The following are relevant goals and policies identified by the *Placer County General Plan* (Placer County 2013) for air quality.

GOAL 6.F: To protect and improve air quality in Placer County.

- **Policy 6.F.1.** The County shall cooperate with other agencies to develop a consistent and effective approach to air quality planning and management.
- **Policy 6.F.2.** The County shall develop mitigation measures to minimize stationary source and area source emissions.

- **Policy 6.F.3.** The County shall support the Placer County Air Pollution Control District (PCAPCD) in its development of improved ambient air quality monitoring capabilities and the establishment of standards, thresholds, and rules to more adequately address the air quality impacts of new development.

- **Policy 6.F.4.** The County shall solicit and consider comments from local and regional agencies on proposed projects that may affect regional air quality.

- **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 measure (TCM) programs. Project review shall also address energy-efficient building and site designs and proper 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.

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

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

- **Policy 6.F.9.** In reviewing project applications, the County shall consider alternatives or amendments that reduce emissions of air pollutants.

- **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).

GOAL 6.G: To integrate air quality planning with the land use and transportation planning process.

- **Policy 6.G.1.** The County shall require new development to be planned to result in smooth flowing traffic conditions for major roadways. This includes traffic signals and traffic signal coordination, parallel roadways, and intra- and inter-neighborhood connections where significant reductions in overall emissions can be achieved.

- **Policy 6.G.2.** The County shall continue and, where appropriate, expand the use of synchronized traffic signals on roadways susceptible to emissions improvement through approach control.

- **Policy 6.G.3.** The County shall encourage the use of alternative modes of transportation by incorporating public transit, bicycle, and pedestrian modes in County transportation planning and by requiring new development to provide adequate pedestrian and bikeway facilities.

- **Policy 6.G.4.** The County shall consider instituting disincentives for single-occupant vehicle trips, including limitations in parking supply in areas where alternative transportation modes are available and other measures identified by the Placer County Air Pollution Control District and incorporated into regional plans.

- **Policy 6.G.5.** The County shall endeavor to secure adequate funding for transit services so that transit is a viable transportation alternative. New development shall pay its fair share of the cost of transit equipment and facilities required to serve new projects.

- **Policy 6.G.6.** The County shall require large new developments to dedicate land for and construct appropriate improvements for park-and-ride lots, if suitably located.

- **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.

9.3.1 TOXIC AIR CONTAMINANTS

Air quality regulations also focus on TACs. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts may not be expected to occur. This contrasts with the criteria air pollutants, for which acceptable levels of exposure can be determined and for which the ambient standards have been established (Table 9-3). Instead, EPA and CARB regulate hazardous air pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum available control technology for toxics (MACT) or best available control technology for toxics (BACT) to limit emissions. These in conjunction with additional rules set forth by PCAPCD establish the regulatory framework for TACs.

FEDERAL PLANS, POLICES REGULATIONS AND LAWS

EPA has programs for identifying and regulating HAPs. Title III of the CAAA directed EPA to promulgate national emissions standards for HAPs (NESHAP). The NESHAP for major sources of HAPs may differ from those for area sources. 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 CAAA called on EPA to identify and set two emissions standards. First, the EPA developed technology-based emissions standards designed to reduce emissions as much as feasible. These standards are generally referred to as requiring MACT. For area sources, the standards may be different, based on generally available control technology. For the second, the EPA is required to promulgate health risk–based emissions standards where deemed necessary to address risks remaining after implementation of MACT.

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

STATE AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807 [Chapter 1047, Statutes of 1983]) and the Air Toxics Hot Spots Information and Assessment Act (AB 2588 [Chapter 1252, Statutes of 1987]). AB 1807 sets forth a formal procedure for CARB to designate substances as

TACs. A total of 243 substances have been designated TACs under California law; they include the 189 (federal) HAPs adopted in accordance with AB 2728, which required the state to identify the federal HAPs as TACs to make use of the time and costs the EPA had already invested in evaluating and identifying hazardous/toxic substances.

Once a TAC is identified, CARB 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; for example, the ATCM limits truck idling to 5 minutes (Title 13, Section 2485 of the California Code of Regulations [i.e., 13 CCR Section 2485]).

The Air Toxics Hot Spots Information and Assessment Act requires that existing facilities that emit toxic substances above a specified level prepare an inventory of toxic emissions, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

According to the California Almanac of Emissions and Air Quality (CARB 2013), most of the estimated health risk from TACs is attributed to relatively few compounds, the most dominant being DPM. In 2000, CARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled vehicles and engines. The regulation is anticipated to result in an 85 percent decrease in statewide diesel health risk by 2020 relative to the diesel health risk year in the year 2000 (CARB 2000). Additional regulations apply to new trucks and diesel fuel. Subsequent CARB regulations on diesel emissions include the On-Road Heavy Duty Diesel Vehicle (In Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-road Diesel Vehicle Regulation, and the New Off-road Compression Ignition Diesel Engines and Equipment Program. All of these regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment.

Air Quality and Land Use Handbook: A Community Health Perspective, published by CARB, provides guidance on land use compatibility with sources of TACs (CARB 2005). The handbook is not a law or adopted policy but offers advisory recommendations for the siting of sensitive receptors near uses associated with TACs, such as freeways and high-traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, and industrial facilities, to help keep children and other sensitive populations out of harm's way.

State regulations on asbestos are related to demolition and renovations, and waste disposal of asbestos-containing materials. California also has a statewide regulation covering naturally occurring asbestos. The Asbestos ATCM for Asbestos-Containing Serpentine, adopted in 1990, prohibited the use of serpentine aggregate for surfacing if the asbestos content was 5% or more asbestos. The limit on asbestos content was lowered to 0.25% in 2000 and modified to include ultramafic rock (CARB 2015).

In July 2001, CARB adopted an ATCM for construction, grading, quarrying, and surface mining operations that regulates grading and excavation activities in areas of serpentine or ultramafic rocks. In addition, the Governor's Office of Planning and Research issued a memorandum providing guidance to lead agencies in analyzing the impacts of naturally occurring asbestos during the CEQA review process.

At the local level, air pollution control or management districts may adopt and enforce CARB control measures. Under PCAPCD Rule 501 (General Permit Requirements), Rule 502 (New Source Review), and Rule 507 (Federal Operating Permit), all sources that possess the potential to emit TACs must obtain permits from the

district. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new-source review standards and air toxics control measures. PCAPCD limits emissions and public exposure to TACs through a number of programs. The district prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors.

Sources that require a permit are analyzed by PCAPCD (e.g., through a health risk assessment) based on their potential to emit toxics. A health risk assessment is a tool used to determine the exposure of sensitive receptors to TAC emissions based on a 70-year exposure period. If it is determined that the project will emit toxics in excess of PCAPCD's threshold of significance for TACs, as identified below, sources have to implement the best available control technology for TACs (T-BACT) to reduce emissions. If a source cannot reduce the risk below the threshold of significance even after T-BACT has been implemented, PCAPCD will deny the permit required by the source. This helps to prevent new problems and reduces emissions from existing older sources by requiring them to apply new technology when retrofitting with respect to TACs. It is important to note that the air quality permitting process applies only to stationary sources; properties that may be exposed to elevated levels of TACs from nonstationary sources (e.g., vehicles) and the nonstationary sources themselves are not subject to this process or to any requirements of T-BACT implementation. Rather, emissions controls on nonstationary sources are subject to regulations implemented on the state and federal level.

PCAPCD also enforces CARB's Asbestos ATCM to control dust emissions and human exposure to the asbestos fibers found in serpentine and ultramafic rock (and soil derived from those substrates). The ATCM can be summarized as follows (CARB 2015): Large construction projects are required to prepare a dust mitigation plan and receive approval from the district before the start of the project. The plan must specify measures that will be taken to ensure that no visible dust crosses the property line and must address specific topics. The dust mitigation plan must address control of emissions from track-out, disturbed surface areas, storage piles, on-site vehicle traffic, off-site transport of material, and earthmoving activities. The plan must also address post construction stabilization and air monitoring (if required by the district). Table 1 of the Asbestos ATCM (not shown in this EIR) shows control options for the topics to be addressed in the asbestos dust mitigation plan for large construction projects. Many of these requirements would already be carried out by such projects to minimize nuisance dust complaints and protect water quality.

In addition, PCAPCD adopted a local dust control regulation in 2003 that goes beyond the state's measures by providing standards for the control of sources of fugitive dust, including dust from construction activities, and is not limited in applicability to areas where naturally occurring asbestos is found. In the identified areas of higher probability for the presence of naturally occurring asbestos, and where it or rock potentially containing it is known to be located, PCAPCD enforces the implementation of CARB's Asbestos ATCM.

9.3.2 ODORS

PCAPCD has identified types of facilities that have been known to produce odors: wastewater treatment facilities, chemical manufacturing plants, painting/coating operations, feed lots/dairies, composting facilities, landfills, and transfer stations. Because offensive odors rarely cause any physical harm and no requirements for their control are included in federal or state air quality regulations, PCAPCD has no rules or standards related to odor emissions other than Rule 205 (Nuisance). Any actions related to odors are based on citizen complaints to local governments and PCAPCD.

One of the most important factors influencing the potential for an odor impact to occur is the distance between the odor source and receptors, also referred to as a buffer zone or setback. The greater the distance between an odor source and receptor, the less concentrated the odor emission would be when reaching the receptor.

Meteorological conditions also affect the dispersion of odor emissions, which determines the exposure concentration of odiferous compounds at receptors. The predominant wind direction in an area influences which receptors are exposed to the odiferous compounds generated by a nearby source. Receptors located upwind from a large odor source may not be affected due to the produced odiferous compounds being dispersed away from the receptors. Wind speed also influences the degree to which odor emissions are dispersed away from any area.

PCAPCD Rule 205 (Nuisance) addresses odor exposure and prohibits discharging air contaminants or other material that cause injury, detriment, nuisance, or annoyance to the public; that endanger the public's comfort, repose, health, or safety; or that cause or have a natural tendency to cause injury or damage to business or property.

9.4 IMPACTS

9.4.1 ANALYSIS METHODOLOGY

The focus of this analysis is on air quality impacts that would result from proposed project implementation. This analysis also considers how the HFRP Trails Expansion Project would or would not change the conclusions of the prior environmental review.

Methodologies recommended by PCAPCD were used to assess short-term (construction-related) and long-term regional and local (operational) impacts on air quality; impacts from TACs and odors; and short-term emissions of criteria air pollutants (e.g., particulate matter) and ozone precursors (e.g., ROG and NO_X) generated by project construction. Where quantification was required, emissions from project construction were modeled using the California Emissions Estimator Model (CalEEMod) as recommended by PCAPCD. Project-generated emissions were modeled based on general information provided in the project description and trip generation from the transportation analysis prepared for this project (see Chapter 3.0, "Project Description," and Chapter 8.0, "Transportation and Circulation," of this SEIR). Variables factored into estimating the total construction emissions include the level of activity, length of construction period, number of pieces and types of equipment in use, site characteristics, weather conditions, and number of construction personnel. The duration of construction activities for the project is estimated to be approximately 5 years. Refer to Appendix E for the CalEEMod outputs and results. Table 9-4: Construction Emissions, presents the anticipated daily short-term construction emissions.

Operational emissions associated with the proposed project are estimated using the CalEEMod. Project-generated increases in emissions would be predominantly associated with motor vehicle use. The increase of traffic over existing conditions as a result of the project was obtained from Traffic Impact Analysis for HFRP Expansion, prepared by KD Anderson & Associates, Inc. (2019).

9.4.2 THRESHOLDS OF SIGNIFICANCE

Based on the Placer County CEQA checklist and the State CEQA Guidelines, the proposed project would result in a potentially significant impact on air quality if it would:

- conflict with or obstruct implementation of the applicable air quality plan,
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable NAAQS or CAAQS,
- expose sensitive receptors to substantial pollutant concentrations, or
- result in other emissions (such as those leading to odors) adversely affecting a substantial number or people.

As stated in the State CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. Thus, pursuant to the PCAPCD-recommended thresholds (PCAPCD 2017) the proposed project would result in a potentially significant impact on air quality if it would:

- generate short-term construction-related emissions of ROG, NO_X, or PM_{10} that would exceed the PCAPCD-recommended mass emissions threshold of 82 pounds per day (lb/day);
- generate long-term, operational (regional) emissions of ROG or NO_X would exceed the PCAPCD-recommended mass emissions threshold of 55 lb/day, or 82 lb/day of PM_{10};
- contribute to localized concentrations of air pollutants at nearby receptors that would exceed applicable ambient air quality standards; or
- expose sensitive receptors to excessive nuisance odors, as defined under PCAPCD Rule 205. [See "Regional and Local Plans, Policies, Regulations, and Ordinances," in Section 3.3.2.1, "Criteria Air Pollutants," above.]

For cumulative impacts, PCAPCD states that if a project's impacts would be significant at the project level (i.e., would exceed any of the thresholds listed above), it could also be considered significant on a cumulative level. Chapter 18 of this SEIR addresses cumulative impacts in detail.

9.4.3 IMPACT ANALYSIS

IMPACT 9-1 Air Quality—Short-Term Emission of Criteria Air Pollutants and Precursors during Construction. *Modeled short-term emissions of ozone precursors and fugitive dust from construction of trails and other park and expansion project facilities would not exceed Placer County Air Pollution Control District's (PCAPCD's) significance threshold of 82 lb/day. Thus, emissions of Reactive Organic Gasses (ROG), Oxides of Nitrogen (NO_X), and Particulate Matter with a diameter of 10 micrometers or less (PM_{10}) associated with Project construction would not violate or contribute substantially to an existing or projected air quality violation, nor would they expose sensitive receptors to substantial concentrations of pollutants.*

Significance *Less that Significant (Consistent with prior analysis in the 2010 HFRP certified EIR)*

Mitigation Proposed *None Warranted*

Residual Significance	*Less than Significant*

2010 HFRP CERTIFIED EIR IMPACT SUMMARY

The 2010 park project was to be constructed in phases over several years with the construction of bridge crossings, expansion of the parking area (including relocating the adjacent helistop) at the Didion Ranch portion of the park, and paving and widening of the access road from Garden Bar Road to the park the largest construction-related sources of emissions during Phase 1. Construction of the bunkhouse and restroom facilities was to be the largest contributors to air pollutant emissions; minor emissions were expected from other park improvements. The simultaneous occurrence of these activities and trail construction represented the worst-case scenario for daily air emissions. Based on the modeling conducted, construction-related activities were expected to result in ROG, NO_X, and PM_{10} emissions that would not exceed PCAPCD's significance threshold of 82 lb/day. Construction-related activities associated with the worst-case day were anticipated to result in project-generated daily unmitigated emissions of approximately 43 lb/day of ROG, 67 lb/day of NO_X, and 48 lb/day of PM_{10}. Thus, project-generated construction-related emissions of criteria air pollutants and precursor emissions were not expected to violate or contribute substantially to an existing or projected air quality violation, and/or expose sensitive receptors to substantial pollutant concentrations. As a result, this impact was considered **less than significant**.

2019 HFRP TRAILS EXPANSION PROJECT IMPACT ANALYSIS

The proposed Trails Expansion project would be constructed in phases over a number of years as funding allows. Each phase would allow an additional level of public access to the trail expansion areas. Phase 1 of the construction activities is expected to occur over the next 5 years. Construction of trails and expansion facilities, including bridge crossings, expansion of the parking (including helicopter landing zones), and paving and widening of the access roads at Garden Bar Road, Bell Road, and Curtola Road to the new park entry gates would be the largest construction-related sources of emissions during Phase 1. Construction of access drives and parking lots would be the largest contributors to air pollutant emissions; minor emissions are expected from other trail expansion improvements. It is likely that trail construction would occur at the same time as the construction of these facilities. The simultaneous occurrence of these activities would represent the worst-case scenario for daily air emissions.

Vegetation along the trail corridor would be cleared by hand before construction, but removal of such vegetation would be minimized to the extent possible. Vegetation removed would be chipped or lopped and scattered near the trails. Topical exposed areas prone to erosion would be stabilized with certified weed free straw in accordance with the Storm Water Pollution Prevention Plan. The trail tread would be excavated using a Sweco trail dozer, a mini excavator, and other machinery capable of conforming to the dimensional requirements of the trails.

Construction-related emissions are described as short-term or temporary and have the potential to represent a significant impact with respect to air quality. Project construction activities would result in emissions of criteria air pollutants (PM_{10} and $PM_{2.5}$) and ozone precursors (ROG and NO_X) from site preparation (e.g., excavation, grading, and clearing); exhaust from equipment, material transport vehicles, and worker commute vehicles; vehicle travel on unpaved roads; paving; application of architectural coatings; and other miscellaneous activities.

Construction of the trail system and the associated recreational facilities is expected to generate a maximum of 400 delivery truck trips.

Emissions of fugitive PM dust (e.g., PM_{10} and $PM_{2.5}$) are associated primarily with ground disturbance activities during site preparation, such as grading, and vary as a function of soil silt content, soil moisture, wind speed, acreage of the disturbance area, vehicle miles traveled (VMT) on- and off-site, and other parameters. Exhaust emissions from diesel equipment and worker commute trips also contribute to short-term increases in total PM emissions, but to a much lesser extent. Emissions of ozone precursors are associated primarily with exhaust emitted by off-road (e.g., gas and diesel) construction equipment. Worker commute trips and other construction-related activities (e.g., application of architectural coatings) also contribute to short-term increases in such emissions.

Emissions of criteria air pollutants and precursors associated with project construction were modeled in accordance with methodologies recommended by PCAPCD. For Phase 1 of construction, truck traffic is expected to be approximately 10–20% of the total number of truck trips (i.e., 40–80 truck trips). However, exact project-specific data for each construction phase (e.g., required types and numbers of construction equipment and maximum daily acreage disturbed) were not available at the time of this analysis. Project-generated emissions were modeled based on general information provided in the project description (see Chapter 3.0 of this EIR) and default CalEEMod settings and parameters attributable to the construction period and site location.

Table 9-4 summarizes the modeled emissions for the construction phases. Construction-related effects on air quality were determined by comparing the modeling results by construction phase against applicable PCAPCD significance thresholds. Refer to Appendix E of this SEIR for detailed modeling input parameters and results.

Table 9-4. Summary of Modeled Short-Term Daily Emissions of Criteria Air Pollutants and Precursors Associated with Project Construction (Unmitigated)

Phase	Emissions (lb/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$ [1]
Overall Construction	11	82	22	12
PCAPCD Significance Threshold	82	82	82	-
PCAPCD Threshold Exceeded?	**No**	**No**	**No**	**No**

Notes:

lb/day = pounds per day; NO_X = oxides of nitrogen; PCAPCD = Placer County Air Pollution Control District; $PM_{2.5}$ = fine particulate matter; PM_{10} = respirable particulate matter; ROG = reactive organic gases

[1] PCAPCD has not adopted a significance threshold for $PM_{2.5}$; however, the emissions are included for disclosure purposes.

[2] 14 miles of trail would be constructed. Emissions include on-road emissions resulting from truck trips.

[3] Facilities construction phases are assumed to occur sequentially with no potential overlap between phases.

[4] Worst-case daily emissions were estimated under the premise that trail construction, road improvements, and the facilities construction phase with the highest emissions for each pollutant could occur simultaneously.

Note: Total daily emissions rounded to the nearest whole number. All emissions are for 2018.

Refer to Appendix D for detailed assumptions and modeling output files.

Source: Data modeled by AECOM in 2019

As shown in Table 9-4, construction-related activities associated with the worst-case scenario of summer grading would result in project-generated daily unmitigated emissions of approximately 11 lb/day of ROG, 82 lb/day of NO_X, and 22 lb/day of PM_{10}. The project emissions do not exceed the adopted thresholds for PCAPCD, and

therefore, short-term emissions of criteria air pollutants and precursors associated with the proposed project construction would be **less than significant**.

Short-term emissions of criteria air pollutants and precursors during construction of the proposed Trails Expansion project would not result in new significant environmental effects or substantially increase the severity of previously identified significant effects based on changes in the project, circumstances or new information.

IMPACT 9-2	Air Quality—Long-Term, Regional Emissions of Criteria Air Pollutants and Ozone Precursors Associated with Project Operation. *Operational activities associated with the proposed HFRP Trails Expansion Project would not result in emissions of ROG, NO_X, or PM_{10} exceeding PCAPCD's significance threshold. Thus, emissions of criteria air pollutants and precursors associated with Project operation would not violate or contribute substantially to an existing or projected air quality violation, expose sensitive receptors to substantial pollutant concentrations, or conflict with air quality planning effort.*
Significance	*Less than Significant (Consistent with prior analysis in the 2010 HFRP certified EIR)*
Mitigation Proposed	*None Warranted*
Residual Significance	*Less than Significant*

2010 HFRP CERTIFIED EIR IMPACT SUMMARY

Park project implementation was expected to result in area-source emissions from trail landscape activities and use of heating fuels at the buildings. However, the trail system and recreational facilities were to be designed to be as low maintenance as possible and would likely not require use of mobilized or mechanical equipment, and bunkhouse use would be sporadic. In addition, the increase of visitors to the park would result in additional vehicle trips, particularly on weekends. Based on the modeling conducted, operational activities would not result in project-generated emissions of ROG, NO_X, and PM_{10} exceeding PCAPCD's applicable thresholds at of 82 lb/day NO_X. Modeled emissions of criteria air pollutants and precursors associated with project operation showed operational activities would result in project-generated daily unmitigated emissions of approximately 4.4lb/day of ROG, 7.2 lb/day of NO_X, and 5.9 lb/day of PM_{10}. In addition, because the proposed project would be consistent with the land use designations contained in the County's General Plan, emissions associated with the proposed land uses would have been accounted for in regional air quality planning efforts. As a result, this impact was considered **less than significant**.

2019 HFRP TRAILS EXPANSION PROJECT IMPACT ANALYSIS

Operation of the trails expansion project would generate emissions of ROG, NO_X and PM generated by motor vehicles as visitors travel to and from the expansion areas, utility usage, and water/wastewater conveyance as well as a backup generator for emergency and maintenance use. Table 9-5 depicts the estimated emissions with project operation and provides a comparison against the PCAPCD thresholds. As shown, the project would generate

emissions of criteria air pollutants less than the adopted standards, and therefore, long-term emissions of criteria air pollutants and precursors associated with operation of the proposed project would be **less than significant**.

Table 9-5. 2019 - Summary of Modeled Long-Term Emissions Associated with Project Operation

Source	Emissions (lb/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$ [1]
Mobile Source	7.3	45.4	58.2	15.8
Stationary Sources	8.3	<1.0	<1.0	<1.0
Area Sources	<1.0	<1.0	<1.0	<1.0
Total	15.9	46.2	58.3	15.9
PCAPCD Significance Threshold	55	55	82	–
PCAPCD Threshold Exceeded?	**No**	**No**	**No**	**No**

Notes:

lb/day = pounds per day; NO_X = oxides of nitrogen; PCAPCD = Placer County Air Pollution Control District; $PM_{2.5}$ = fine particulate matter; PM_{10} = respirable particulate matter; ROG = reactive organic gases

[1] PCAPCD has not adopted a significance threshold for $PM_{2.5}$; however, the emissions are included for disclosure purposes.

Refer to Appendix D for detailed assumptions and modeling output files.

Source: Data modeled by AECOM in 2019

The proposed Trails Expansion project would not result in new significant environmental effects or substantially increase the severity of previously identified significant effects regarding air quality impacts from long-term operations of the Project based on changes in the project, circumstances or new information.

IMPACT 9-3 Air Quality—Exposure of Sensitive Receptors to Emissions of Toxic Air Contaminants (TACs). *The proposed Project would not expose sensitive receptors to substantial emissions of TACs during park and project construction because construction emissions would be temporary and would rapidly dissipate with distance from the source. However, construction workers and surrounding residents could be exposed to dust from asbestos rock and soils during park and project construction.*

Significance *Potentially Significant (Consistent with prior analysis in the 2010 HFRP Certified EIR)*

Mitigation Proposed *Mitigation Measure 9-1: Conduct On-Site Soil Testing and Prepare and Implement an Asbestos Dust Control Plan, If Needed*

Mitigation Measure S9-2: List Standard Air Quality Notes on Grading and Improvement Plans.

Residual Significance *Less than Significant*

2010 HFRP CERTIFIED EIR IMPACT SUMMARY

The 2010 Certified EIR found a potential cancer risk from the long-term inhalation of diesel PM. Exhaust from off-road, heavy-duty diesel equipment used for site preparation (e.g., excavation, grading, and clearing), as well as paving, application of architectural coatings, and other miscellaneous project construction activities would result in short-term emissions of diesel PM. However, the use of off-road heavy-duty diesel equipment during the 2010 HFRP project construction would be temporary. For this reason, combined with the highly dispersive properties

of diesel PM (Zhu et al. 2002) and further reductions in exhaust emissions, emissions of TACs associated with project construction, it was determined the HFRP project would not expose sensitive receptors to substantial emissions of TACs. Mobile sources of TACs include land uses that involve the long-term use of heavy-duty diesel trucks. It was determined that implementation of the HFRP project would not lead to the development of any facilities that would require the long-term use of heavy-duty diesel trucks (e.g., loading docks).

The 2010 Certified EIR determined the HFRP project was located in an area moderately likely to contain naturally occurring asbestos, and that ground disturbance activities during construction could expose construction workers and surrounding residents to dust from rocks and soil containing naturally occurring asbestos. Although the amount of asbestos was likely relatively small, this impact was determined to be potentially significant. Implementation of Mitigation Measures 9-1 and 9-2 were found to reduce this impact to a **less-than-significant** level.

2019 HFRP Trails Expansion Project Impact Analysis

The 2019 HFRP Trails Expansion project as proposed may result in exposure of sensitive receptors to emissions of TACs from on-site sources during project construction and exposure to emissions from operational sources. These potential impacts are discussed separately below.

On-Site Emissions Associated with Project Construction

Exhaust from off-road, heavy-duty diesel equipment used for site preparation (e.g., excavation, grading, and clearing), as well as paving, application of architectural coatings, and other miscellaneous project construction activities would result in short-term emissions of diesel particulate matter (PM). Diesel PM was identified as a TAC by Air Resources Board (ARB) in 1998. The potential cancer risk from the inhalation of diesel PM, as discussed below, outweighs the potential noncancer health impacts (CARB 2017c). PCAPCD has not adopted a methodology for analyzing such impacts.

The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC to be compared to applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. Thus, the risks estimated for such an individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period and duration of activities associated with the proposed project (OEHHA 2015). The use of off-road heavy-duty diesel equipment would be temporary, and the use of this equipment is limited to the new parking and entry roads.

The ARB, PCAPCD, and Placer County recognize the public health risk reductions that can be realized by idling limitations for on-road and off-road equipment. The proposed project would be required to comply with the following idling restriction (five minute limitation) requirements from ARB and Placer County Code during construction activity, including the use of both on-road and off-road equipment:

- California Air Resources Board In-use Off-road Diesel regulation, Section 2449(d)(3): Off-road diesel equipment shall comply with the five minute idling restriction. Available via the web: www.arb.ca.gov/regact/2007/ordiesl07/frooal.pdf

- Placer County, Code Section 10.14. Available via the web: http://qcode.us/codes/placercounty/

Portable equipment and engines (i.e., back-up generators) 50 horsepower (hp) or greater, used during construction activities and operation require either a registration certificate issued by ARB, based on the California Statewide Portable Equipment Registration Program (PERP) or an Authority to Construct (ATC) permit issued by PCAPCD to operate. The proposed project would be conditioned to obtain all necessary permits from the ARB and PCAPCD prior to construction.

Sensitive receptors would not be exposed to substantial pollutant concentrations, given the highly dispersive properties of diesel PM (Zhu et al. 2002). Short-term construction and operationally-generated Toxic Air Contaminant emissions would not expose sensitive receptors to substantial pollutant concentrations.

Because the project area is located in an area that is moderately likely to contain naturally occurring asbestos, ground disturbance activities during construction could expose construction workers and surrounding residents to dust from rocks and soil containing naturally occurring asbestos. Some portions of the project area could contain serpentine or ultramafic rock that is common to foothill areas of the county. These types of rock contain thin veins of asbestos that can become airborne when disturbed by grading or mining. Overall, the amount of asbestos is relatively small and typically amounts to less than 1% of the total rock mass. Nevertheless, when material containing naturally occurring asbestos is disturbed, asbestos fibers may be released and become airborne, thereby creating a potential health hazard. Thus, this impact would be potentially significant. However, implementation of Mitigation Measures 9-1 and S9-2 would reduce this impact to a **less-than-significant** level.

Emissions from On-Site Stationary, Mobile, and Area Sources during Project Operation

There are no major existing stationary sources of TACs within 2 miles of the project area. Vehicles on Garden Bar Road, Bell Road, Curtola Ranch Road, and other roads in the vicinity are sources of diesel PM and other TACs associated with vehicle exhaust. Project implementation would not lead to the operation of any stationary sources of TACs. Mobile sources of TACs include land uses that involve the long-term use of heavy-duty diesel trucks. Implementation of the proposed project would not lead to the development of any facilities that would require the long-term use of heavy-duty diesel trucks (e.g., loading docks).

Unlike during short-term construction activities, long-term operation of the project would not result in significant ground disturbance and associated potential for this material to become airborne. Thus, assuming average conditions, exposure of operational users of the park project to naturally occurring asbestos fibers would be minimal and would not be expected to result in a health hazard and impacts related to naturally-occurring asbestos have been determined to be less than significant.

The proposed expansion of the HFRP trails network would not result in new significant environmental effects or substantially increase the severity of previously identified significant effects based on changes in the project, circumstances or new information.

IMPACT 9-4	Air Quality—Long-Term (Local) Mobile-Source Emissions of Carbon Monoxide during Project Operation. *Long-term operational (local) mobile-source emissions of CO would not violate or contribute substantially to a violation of the CAAQS or NAAQS, nor would they expose sensitive receptors to substantial pollutant concentrations.*
Significance	*Less than Significant (Consistent with prior analysis in the 2010 HFRP certified EIR)*
Mitigation Proposed	*None Warranted*
Residual Significance	*Less than Significant*

2010 HFRP CERTIFIED EIR IMPACT SUMMARY

CO concentration is a direct function of motor vehicle activity (e.g., idling time and traffic flow conditions), particularly during peak commute hours, and of meteorological conditions. The 2010 project's traffic analysis indicated that long-term operational (local) mobile-source emissions of carbon monoxide during park project operation would not violate California Ambient Air Quality Standards or National Ambient Air Quality Standards, nor expose sensitive receptors to substantial pollutant concentrations. All signalized intersections that were analyzed would operate at LOS E or LOS F under cumulative conditions with or without the project. As a result, this impact was considered **less than significant**.

2019 HFRP TRAILS EXPANSION PROJECT IMPACT ANALYSIS

As discussed above, CO concentration is a direct function of motor vehicle activity (e.g., idling time and traffic flow conditions), particularly during peak commute hours, and of meteorological conditions. Under specific meteorological conditions (e.g., stable conditions that result in poor dispersion), CO concentrations may reach unhealthy levels with respect to local sensitive land uses such as residential areas, schools, and hospitals. As a result, PCAPCD recommends analysis of CO emissions at a local rather than a regional level.

An appropriate qualitative screening procedure is provided in the procedures and guidelines contained in *Transportation Project-Level Carbon Monoxide Protocol,* published by the University of California, Davis, Institute of Transportation Studies, to determine whether a project poses the potential for a CO hotspot (UCD ITS 1997). A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. In accordance with the statewide CO Protocol, the PCAPCD has established screening methodology for localized CO emissions, which are intended to provide a conservative indication of whether project-generated vehicle trips would result in the generation of localized CO emissions that would contribute to an exceedance of AAQS and potentially expose sensitive receptors to substantial CO concentrations. Per the PCAPCD's screening methodology, if the project would result in vehicle operations producing more than 550 lbs/day of CO emissions and if either of the following scenarios are true, the project could result in localized CO emissions that would violate CO standards:

- Degrade the peak hour level of service (LOS) on one or more streets or at one or more intersections (both signalized and non-signalized) in the project vicinity from an acceptable LOS (i.e., LOS A, B, C, or D) to an unacceptable LOS (i.e., LOS E or F); or

- Substantially worsen an already existing unacceptable peak hour LOS on one or more streets or at one or more intersections in the project vicinity. "Substantially worsen" includes an increase in delay at an intersection by 10 seconds or more when project-generated traffic is included.

According to the Air Quality analysis performed for the proposed project, operation of the project would result in maximum mobile source CO emissions of 159.7 lbs/day (see Appendix E). Consequently, CO emissions related to operation of the proposed project would be far below the 550 lbs/day screening threshold used by PCAPCD. Therefore, according to the PCAPCD's screening methodology for localized CO emissions, the proposed project would not be expected to generate localized CO emissions that would contribute to an exceedance of AAQS, and the proposed project would not expose sensitive receptors to substantial concentrations of localized CO. As a result, this impact is considered **less than significant**.

The proposed Trails Expansion project would not result in new significant environmental effects or substantially increase the severity of previously identified significant effects of long-term mobile sources of CO during operation of the Project based on changes in the project, circumstances or new information

IMPACT 9-5	Air Quality—Exposure of Sensitive Receptors to Odors. *Construction of the proposed trails and recreational facilities would result in diesel exhaust emissions from on-site construction equipment. However, these emissions would be intermittent and would dissipate rapidly with an increase in distance from the source. The proposed Project development would not be a major source of odors.*
Significance	*Less than Significant (Consistent with prior analysis in the 2010 HFRP certified EIR)*
Mitigation Proposed	*None Warranted*
Residual Significance	*Less than Significant*

2010 HFRP CERTIFIED EIR IMPACT SUMMARY

The 2010 Certified EIR found that the park project would result in diesel exhaust emissions from on-site construction equipment during project construction. Such emissions would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance. In addition, the project would not include the long-term operation of any new sources of odor; therefore, the project would not create objectionable odors affecting a substantial number of people. This impact was therefore considered to be **less than significant**.

2019 HFRP TRAILS EXPANSION PROJECT IMPACT ANALYSIS

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptor. Although offensive odors

rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies.

The proposed project would result in diesel exhaust emissions from on-site construction equipment during project construction. Such emissions would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance. In addition, the proposed project would not include the long-term operation of any new sources of odor; therefore, the project would not create objectionable odors affecting a substantial number of people. This impact would be **less than significant**.

The proposed HFRP Trails Expansion project would not result in new significant environmental effects or substantially increase the severity of previously identified significant effects with regards to exposure of sensitive receptors to odors based on changes in the project, circumstances or new information

9.5 MITIGATION MEASURES

Mitigation Measure 9-1: Conduct On-Site Soil Testing and Prepare and Implement an Asbestos Dust Control Plan, If Needed. *(Applies to Impact 9-3)*

Prior to construction activity, the County shall test the on-site soils for the presence of asbestos. If naturally-occurring asbestos, serpentine, or ultramafic rock is either known to be located onsite, or is disclosed in the project's geology/soils survey report, or if the project is located in, partly or entirely, "a most likely" to contain Naturally Occurring Asbestos Area, as shown on the Geologic maps prepared by the California Geologic Survey (formerly the California Division of Mines and Geology), the following measures shall be implemented.

The project shall comply with PCAPCD Rule 228 for fugitive dust control. When the construction area is equal to or greater than one acre, the applicant shall prepare an Asbestos Dust Mitigation Plan (ADMP) as required in Section 93105 of the California Health and Safety Code, "Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations." The ADMP shall be submitted to the PCAPCD a minimum of 21 days before construction activity is scheduled to commence. The applicant should contact the PCAPCD before retaining a qualified state registered geologist to conduct initial geologic evaluations as part of the ADMP application process. The County shall submit the plan to the County Planning Department for review and PCAPCD for review and approval before construction of the first project phase. Approval of the plan must be received from PCAPCD before any asbestos-containing rock (serpentinite) can be disturbed. Upon approval of the asbestos dust control plan by PCAPCD, the County shall ensure that construction contractors implement the terms of the plan throughout the construction period.

Mitigation Measure S9-2: List Standard Air Quality Notes on Grading and Improvement Plans. *(Applies to Impact 9-3)*

The following standard notes shall be listed on all Grading/Improvement Plans:

a. Prior to construction activity, a Dust Control Plan or Asbestos Dust Mitigation Plan shall be submitted to the Placer County Air Pollution Control District (PCAPCD). The Dust Control Plan shall be submitted to the PCAPCD a minimum of 21 days before construction activity is scheduled to

commence. The Dust Control Plan can be submitted online via the fill-in form: http://www.placerair.org/dustcontrolrequirements/dustcontrolform.

b. Construction equipment exhaust emissions shall not exceed the PCAPCD Rule 202 Visible Emissions limitations. Operators of vehicles and equipment found to exceed opacity limits are to be immediately notified by the PCAPCD to cease operations, and the equipment must be repaired within 72 hours.

c. Dry mechanical sweeping is prohibited. Watering of a construction site shall be carried out to mitigate visible emissions. (Based on PCAPCD Rule 228 / Section 301).

d. The contractor shall apply water or use methods 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. (Based on PCAPCD Rule 228 / section 304).

e. During construction activity, traffic speeds on all unpaved surfaces shall be limited to 15 miles per hour or less 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 or visible emissions from crossing the project boundary line. (Based on PCAPCD Rule 228 / section 401.2).

f. The contractor shall suspend all grading operations when fugitive dust exceeds the PCAPCD Rule 228 (Fugitive Dust) limitations. Visible emissions of fugitive dust shall not 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 PCAPCD Rule 228 limitations. (Based on PCAPCD Rule 228 / section 302 & 401.4).

g. The prime contractor shall be responsible for keeping adjacent public thoroughfares clean by keeping dust, silt, mud, dirt, and debris from being released or tracked offsite. Wet broom or other methods can be deployed as control and as approved by the individual jurisdiction. (Based on PCAPCD Rule 228/ section 401.5).

h. The contractor shall suspend all grading operations when wind speeds (including instantaneous gusts) are high enough to result in dust emissions crossing the boundary line, despite the application of dust mitigation measures. (Based on PCAPCD Rule 228 / section 401.6).

i. To minimize wind-driven dust during construction, the prime contractor shall apply methods such as surface stabilization, the establishment of a vegetative cover, paving (or use of another method to control dust as approved by Placer County). (Based on PCAPCD Rule 228 / section 402).

j. The contractor shall not discharge into the atmosphere volatile organic compounds caused by the use or manufacture of Cutback or Emulsified asphalts for paving, road construction or road maintenance unless such manufacture or use complies with the provisions of Rule 217 Cutback and Emulsified Asphalt Paving Materials.

k. During construction, open burning of removed vegetation is only allowed under PCAPCD Rule 304 Land Development Smoke Management. A Placer County Air Pollution Control District permit could be issued for land development burning, if the vegetation removed is for residential development

purposes from the property of a single or two-family dwelling or when the applicant has provided a demonstration as per Section 400 of the Rule that there is no practical alternative to burning and that the Air Pollution Control Officer (APCO) has determined that the demonstration has been made. The APCO may weigh the relative impacts of burning on air quality in requiring a more persuasive demonstration for more densely populated regions for a large proposed burn versus a smaller one. In some cases, all of the removed vegetative material shall be either chipped on site or taken to an appropriate recycling site, or if a site is not available, a licensed disposal site. (Based on PCAPCD Rule 304).

l. 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 an PCAPCD permit. Developers/contractors should contact the PCAPCD before construction and obtain any necessary permits before the issuance of a Building Permit. (PCAPCD Rule 501).

m. 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.

n. 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).

o. Idling of construction-related equipment and construction-related vehicles shall be minimized within 1,000 feet of any sensitive receptor (i.e., house, hospital, or school).