4 AIR QUALITY

4.1 INTRODUCTION

The Air Quality chapter of the EIR describes the potential impacts of the proposed project on local and regional air quality. The chapter describes existing air quality, construction-related air quality impacts resulting from grading and equipment emissions, direct and indirect emissions associated with the proposed project, the impacts of these emissions on both the local and regional scale, and mitigation measures warranted to reduce or eliminate any identified significant impacts. This chapter is based on the *Placer County General Plan*[1] and associated EIR,[2] the Horseshoe Bar/Penryn Community Plan,[3] the Placer County Air Pollution Control District (PCAPCD)'s *CEQA Air Quality Handbook*,[4] PCAPCD's *Review of Land Use Projects Under CEQA*,[5] and technical analysis performed by Raney Planning and Management, Inc.

4.2 EXISTING ENVIRONMENTAL SETTING

The following setting information provides an overview of the existing air quality setting in the proposed project area. In this section, the climate and topography of the region, ambient air quality standards (AAQS), attainment status for Placer County, current air quality, and sensitive receptors in the vicinity of the proposed project are discussed.

Air Basin Characteristics

The proposed project site is located in western Placer County, which falls within the Sacramento Valley Air Basin (SVAB) and is within the jurisdictional boundaries of the PCAPCD. Air flows into the SVAB through the Carquinez Strait, moves across the Delta and carries pollutants from the heavily populated San Francisco Bay Area into the SVAB. The climate is characterized by hot, dry summers and cool, rainy winters. Characteristic of SVAB winter weather are periods of dense and persistent low-level fog, which are most prevalent between storms. From May to October, the region's intense heat and sunlight lead to high ozone concentrations. Prevailing winds are from the south and southwest, and as a result of prevailing winds coming generally from south to southwest, air quality in the area is heavily influenced by mobile and stationary sources of air pollution located upwind in the Sacramento Metropolitan Area.

Most precipitation in the SVAB results from air masses moving in from the Pacific Ocean during the winter months. Storms usually move through the area from the west or northwest. During the

1 Placer County. *Countywide General Plan Policy Document.* August 1994 (updated May 2013).
2 Placer County. *Countywide General Plan EIR.* July 1994.
3 Placer County. *Horseshoe Bar/Penryn Community Plan*. Revised December 2005.
4 Placer County Air Pollution Control District. *CEQA Air Quality Handbook.* November 21, 2017.
5 Placer County Air Pollution Control District. *Review of Land Use Projects Under CEQA.* October 13, 2016.

winter rainy season (November through February) over half the total annual precipitation falls while the average winter temperature is a moderate 49 degrees Fahrenheit. During the summer, daytime temperatures can exceed 100 degrees Fahrenheit. Dense fog occurs mostly in mid-winter and rarely in the summer. Daytime temperatures from April through October average between 60 and 94 degrees Fahrenheit with low humidity. The inland location and surrounding mountains shelter the valley from much of the ocean breeze that keeps the coastal regions moderate in temperature. The only breech in the mountain barrier is the Carquinez Strait, which exposes the midsection of the valley to the coastal air mass.

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. Summer inversions are strong and frequent, but are less troublesome than those that occur in the fall. Autumn inversions, formed by warm air subsiding in a region of high pressure, have accompanying light winds that do not provide adequate dispersion of air pollutants.

Air quality in the project vicinity is influenced by both local and distant emission sources. Air pollutant sources in the immediate project vicinity include emissions from vehicle traffic on Interstate 80 (I-80) and other nearby roadways, as well as emissions from locomotives traveling along the nearby railway. Other sources of air pollutants in the area include activities associated with commercial, residential, and industrial land uses.

Ambient Air Quality Standards

Both the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. The federal standards are divided into primary standards, which are designed to protect the public health, and secondary standards, which are designed to protect the public welfare. The ambient air quality standards for each contaminant represent safe levels that avoid specific adverse health effects. Pollutants for which air quality standards have been established are called “criteria” pollutants. Table 4-1 identifies the major pollutants, characteristics, health effects and typical sources. The federal and California ambient air quality standards (NAAQS and CAAQS, respectively) are summarized in Table 4-2. The NAAQS and CAAQS were developed independently with differing purposes and methods. As a result, the federal and State standards differ in some cases. In general, the State of California standards are more stringent, particularly for ozone and particulate matter (PM), than the federal standards.

A description of each criteria pollutant and its potential health effects is provided in the following section.

Table 4-1
Summary of Criteria Pollutants

Pollutant	Characteristics	Health Effects	Major Sources
Ozone	A highly reactive gas produced by the photochemical process involving a chemical reaction between the sun's energy and other pollutant emissions. Often called photochemical smog.	• Eye irritation • Wheezing, chest pain, dry throat, headache, or nausea • Aggravated respiratory disease such as emphysema, bronchitis, and asthma	Combustion sources such as factories, automobiles, and evaporation of solvents and fuels.
Carbon Monoxide	An odorless, colorless, highly toxic gas that is formed by the incomplete combustion of fuels.	• Impairment of oxygen transport in the bloodstream • Impaired vision, reduced alertness, chest pain, and headaches • Can be fatal in the case of very high concentrations	Automobile exhaust, combustion of fuels, and combustion of wood in woodstoves and fireplaces.
Nitrogen Dioxide	A reddish-brown gas that discolors the air and is formed during combustion of fossil fuels under high temperature and pressure.	• Lung irrigation and damage • Increased risk of acute and chronic respiratory disease	Automobile and diesel truck exhaust, industrial processes, and fossil-fueled power plants.
Sulfur Dioxide	A colorless, irritating gas with a rotten egg odor formed by combustion of sulfur-containing fossil fuels.	• Aggravation of chronic obstruction lung disease • Increased risk of acute and chronic respiratory disease	Diesel vehicle exhaust, oil-powered power plants, and industrial processes.
Particulate Matter (PM_{10} and $PM_{2.5}$)	A complex mixture of extremely small particles and liquid droplets that can easily pass through the throat and nose and enter the lungs.	• Aggravation of chronic respiratory disease • Heart and lung disease • Coughing • Bronchitis • Chronic respiratory disease in children • Irregular heartbeat • Nonfatal heart attacks	Combustion sources such as automobiles, power generation, industrial processes, and wood burning. Also from unpaved roads, farming activities, and fugitive windblown dust.
Lead	A metal found naturally in the environment as well as in manufactured products.	• Loss of appetite, weakness, apathy, and miscarriage • Lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract	Industrial sources and combustion of leaded aviation gasoline.

Sources:

- *California Air Resources Board. California Ambient Air Quality Standards (CAAQS). Available at: http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm. Accessed March 2017.*
- *Sacramento Metropolitan, El Dorado, Feather River, Placer, and Yolo-Solano Air Districts, Spare the Air website. Air Quality Information for the Sacramento Region. Available at: http://www.sparetheair.com/health.cfm?page=healthoverall. Accessed March 2017.*
- *California Air Resources Board. Glossary of Air Pollution Terms. Available at: http://www.arb.ca.gov/html/gloss.htm. Accessed March 2017.*

Table 4-2
Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS	NAAQS	
			Primary	Secondary
Ozone	1 Hour	0.09 ppm	-	Same as primary
	8 Hour	0.070 ppm	0.070 ppm	
Carbon Monoxide	8 Hour	9 ppm	9 ppm	-
	1 Hour	20 ppm	35 ppm	
Nitrogen Dioxide	Annual Mean	0.030 ppm	53 ppb	Same as primary
	1 Hour	0.18 ppm	100 ppb	-
Sulfur Dioxide	24 Hour	0.04 ppm	-	-
	3 Hour	-	-	0.5 ppm
	1 Hour	0.25 ppm	75 ppb	-
Respirable Particulate Matter (PM_{10})	Annual Mean	20 ug/m^3	-	Same as primary
	24 Hour	50 ug/m^3	150 ug/m^3	
Fine Particulate Matter ($PM_{2.5}$)	Annual Mean	12 ug/m^3	12 ug/m^3	15 ug/m^3
	24 Hour	-	35 ug/m^3	Same as primary
Lead	30 Day Average	1.5 ug/m^3	-	-
	Calendar Quarter	-	1.5 ug/m^3	Same as primary
Sulfates	24 Hour	25 ug/m^3	-	-
Hydrogen Sulfide	1 Hour	0.03 ppm	-	-
Vinyl Chloride	24 Hour	0.010 ppm	-	-
Visibility Reducing Particles	8 Hour	see note below	-	-

ppm = parts per million
ppb = parts per billion
µg/m^3 = micrograms per cubic meter

Note: Statewide Visibility Reducing Particle Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Source: California Air Resources Board. Ambient Air Quality Standards. May 4, 2016. Available at: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed March 2017.

Ozone

Ozone is a reactive gas consisting of three oxygen atoms. In the troposphere, ozone is a product of the photochemical process involving the sun's energy, and is a secondary pollutant formed as a result of a complex chemical reaction between reactive organic gases (ROG) and oxides of nitrogen (NO_X) emissions in the presence of sunlight. As such, unlike other pollutants, ozone is not released directly into the atmosphere from any sources. In the stratosphere, ozone exists naturally and shields Earth from harmful incoming ultraviolet radiation. The primary source of ozone precursors is mobile sources, including cars, trucks, buses, construction equipment, and agricultural equipment.

Ground-level ozone reaches the highest level during the afternoon and early evening hours. High levels occur most often during the summer months. Ground-level ozone is a strong irritant that could cause constriction of the airways, forcing the respiratory system to work harder in order to provide oxygen. Ozone at the Earth's surface causes numerous adverse health effects and is a major component of smog. High concentrations of ground level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments.

Reactive Organic Gas

Reactive Organic Gas (ROG) is a reactive chemical gas composed of hydrocarbon compounds typically found in paints and solvents that contributes to the formation of smog and ozone by involvement in atmospheric chemical reactions. A separate health standard does not exist for ROG. However, some compounds that make up ROG are toxic, such as the carcinogen benzene.

Oxides of Nitrogen

Oxides of Nitrogen (NO_X) are a family of gaseous nitrogen compounds and are precursors to the formation of ozone and particulate matter. The major component of NO_X, nitrogen dioxide (NO_2), is a reddish-brown gas that discolors the air and is toxic at high concentrations. NO_X results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of NO_X. NO_X reacts with ROG to form smog, which could result in adverse impacts to human health, damage the environment, and cause poor visibility. Additionally, NO_X emissions are a major component of acid rain. Health effects related to NO_X include lung irritation and lung damage and can cause increased risk of acute and chronic respiratory disease.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless, poisonous gas produced by incomplete burning of carbon-based fuels such as gasoline, oil, and wood. When CO enters the body, the CO combines with chemicals in the body, which prevents blood from carrying oxygen to cells, tissues, and organs. Symptoms of exposure to CO can include problems with vision, reduced alertness, and general reduction in mental and physical functions. Exposure to CO can result in chest pain, headaches, reduced mental alertness, and death at high concentrations.

Sulfur Dioxide

Sulfur Dioxide (SO_2) is a colorless, irritating gas with a rotten egg odor formed primarily by the combustion of sulfur-containing fossil fuels from mobile sources, such as locomotives, ships, and off-road diesel equipment. SO_2 is also emitted from several industrial processes, such as petroleum refining and metal processing. Similar to airborne NO_X, suspended sulfur oxide particles contribute to poor visibility. The sulfur oxide particles are also a component of PM_{10}.

Particulate Matter

Particulate matter, also known as particle pollution or PM, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health impacts. The USEPA is concerned about particles that are 10 micrometers in diameter or smaller (PM_{10}) because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, the particles could affect the heart and lungs and cause serious health effects. USEPA groups particle pollution into three categories based on their size and where they are deposited:

- "Inhalable coarse particles ($PM_{2.5-10}$)," which are found near roadways and dusty industries, are between 2.5 and 10 micrometers in diameter. $PM_{2.5-10}$ is deposited in the thoracic region of the lungs.
- "Fine particles ($PM_{2.5}$)," which are found in smoke and haze, are 2.5 micrometers in diameter and smaller. $PM_{2.5}$ particles could be directly emitted from sources such as forest fires, or could form when gases emitted from power plants, industries, and automobiles react in the air. They penetrate deeply into the thoracic and alveolar regions of the lungs.
- "Ultrafine particles (UFP)," are very, very small particles (less than 0.1 micrometers in diameter) largely resulting from the combustion of fossil fuels, meat, wood, and other hydrocarbons. While UFP mass is a small portion of $PM_{2.5}$, their high surface area, deep lung penetration, and transfer into the bloodstream could result in disproportionate health impacts relative to their mass. UFP is not currently regulated separately, but is analyzed as part of $PM_{2.5}$.

PM_{10}, $PM_{2.5-10}$, and UFP include primary pollutants (emitted directly to the atmosphere) as well as secondary pollutants (formed in the atmosphere by chemical reactions among precursors). Generally speaking, $PM_{2.5}$ and UFP are emitted by combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM_{10} sources include the same sources plus roads and farming activities. Fugitive windblown dust and other area sources also represent a source of airborne dust. Long-term PM pollution, especially fine particles, could result in significant health problems including, but not limited to, the following: increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing; decreased lung function; aggravated asthma; development of chronic respiratory disease in children; development of chronic bronchitis or obstructive lung disease; irregular heartbeat; heart attacks; and increased blood pressure.

Lead

Lead is a relatively soft and chemically resistant metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, and, thus, essentially persists forever. Lead forms compounds with both organic and inorganic substances. As an air pollutant, lead is present in small particles. Sources of lead emissions in California include a variety of industrial activities. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out,

with the result that ambient concentrations of lead have dropped dramatically. However, because lead was emitted in large amounts from vehicles when leaded gasoline was used, lead is present in many soils (especially urban soils) as a result of airborne dispersion and could become re-suspended into the air.

Because lead is only slowly excreted by the human body, exposures to small amounts of lead from a variety of sources could accumulate to harmful levels. Effects from inhalation of lead near the level of the ambient air quality standard include impaired blood formation and nerve conduction. Lead can adversely affect the nervous, reproductive, digestive, immune, and blood-forming systems. Symptoms could include fatigue, anxiety, short-term memory loss, depression, weakness in the extremities, and learning disabilities in children. Lead also causes cancer.

Sulfates

Sulfates are the fully oxidized ionic form of sulfur and are colorless gases. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. The sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

The sulfates standard established by CARB is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and, because they are usually acidic, can harm ecosystems and damage materials and property.

Hydrogen Sulfide

Hydrogen Sulfide (H_2S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. Hydrogen sulfide is extremely hazardous in high concentrations, especially in enclosed spaces (800 ppm can cause death).

Vinyl Chloride

Vinyl Chloride (C_2H_3Cl, also known as VCM) is a colorless gas that does not occur naturally, but is formed when other substances such as trichloroethane, trichloroethylene, and tetrachloro-ethylene are broken down. Vinyl chloride is used to make polyvinyl chloride (PVC) which is used to make a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

Visibility Reducing Particles

Visibility Reducing Particles are a mixture of suspended particulate matter consisting of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. The standard is intended

to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another category of environmental concern. TACs are present in many types of emissions with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Car and truck exhaust contains at least 40 different TACs. In terms of health risks, the most volatile contaminants are diesel particulate matter (DPM), benzene, formaldehyde, 1,3-butadiene and acetaldehyde. Gasoline vapors contain several TACs, including benzene, toluene, and xylenes. Public exposure to TACs can result from emissions from normal operations as well as accidental releases.

Health risks from TACs are a function of both the concentration of emissions and the duration of exposure, which typically are associated with long-term exposure and the associated risk of contracting cancer. Health effects of exposure to TACs other than cancer include birth defects, neurological damage, and death. Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level. The identification, regulation, and monitoring of TACs is relatively new compared to criteria air pollutants that have established AAQS. TACs are regulated or evaluated on the basis of risk to human health rather than comparison to an AAQS or emission-based threshold.

Diesel powered engines, including locomotive engines and heavy duty diesel-powered vehicles, represent a major source of DPM in California. Because locomotive engines and heavy duty diesel-powered vehicles emit DPM during operations, areas where locomotive engines are operated in place/idle frequently or for long periods of time, and areas in proximity to high volume freeways can experience increased atmospheric concentrations of DPM. Consequently, the CARB considers railyards and high volume freeways to be substantial sources of TACs.

The proposed project site is not located in proximity to railyards, distribution centers, or other such sources of DPM. Although a railroad is located approximately 180 feet to the north of the project site, the CARB does not consider railroads to be a substantial source of DPM, because DPM emissions from locomotives traveling along railroads are dispersed. Furthermore, while I-80, a high-volume freeway located to the south of the site, would be considered a potential source of TACs, the project site is located outside of the recommended 500-foot screening distance from high volume freeways.

Naturally Occurring Asbestos

Another concern related to air quality is naturally occurring asbestos (NOA). Asbestos is a term used for several types of naturally-occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. When rock containing asbestos is broken or crushed, asbestos fibers may be released and become airborne. Exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma

(a rare cancer of the thin membranes lining the lungs, chest and abdominal cavity), and asbestosis (a non-cancerous lung disease which causes scarring of the lungs). Because asbestos is a known carcinogen, NOA is considered a TAC. Sources of asbestos emissions include: unpaved roads or driveways surfaced with ultramafic rock; construction activities in ultramafic rock deposits; or rock quarrying activities where ultramafic rock is present.

NOA is typically associated with fault zones, and areas containing serpentinite or contacts between serpentinite and other types of rocks. According to the *Special Report 190: Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County, California* prepared by the Department of Conservation, the project site is located within an area categorized as least likely to contain NOA, because faults and serpentinite outcroppings are not known to be in the project area.[6]

Attainment Status and Regional Air Quality Plans

The Federal Clean Air Act (FCAA) and the California Clean Air Act (CCAA) require all areas of California to be classified as attainment, nonattainment, or unclassified as to their status with regard to the federal and/or State Ambient Air Quality Standards (AAQS). The FCAA and CCAA require that the CARB, based on air quality monitoring data, designate portions of the State where the federal or State AAQS are not met as "nonattainment areas." Because of the differences between the national and State standards, the designation of nonattainment areas is different under the federal and State legislation. The CCAA requires local air pollution control districts to prepare air quality attainment plans. These plans must provide for district-wide emission reductions of five percent per year averaged over consecutive three-year periods or, provide for adoption of "all feasible measures on an expeditious schedule."

As presented in Table 4-3 under the CCAA, Placer County has been designated nonattainment for the State one-hour ozone, State and federal eight-hour ozone and State PM_{10} standard. The County is designated attainment or unclassified for all other AAQS. Due to the nonattainment designations, the PCAPCD, along with the other air districts in the SVAB region, is required to develop plans to attain the federal and State standards for ozone and particulate matter. The air quality plans include emissions inventories to measure the sources of air pollutants, to evaluate how well different control measures have worked, and show how air pollution would be reduced. In addition, the plans include the estimated future levels of pollution to ensure that the area would meet air quality goals. Each of the attainment plans currently in effect are discussed in further detail in the Regulatory Context section of this chapter.

Local Air Quality Monitoring

Air quality is monitored by CARB at various locations to determine which air quality standards are being violated, and to direct emission reduction efforts, such as developing attainment plans and rules, incentive programs, etc.

[6] California Department of Conservation, California Geological Survey. *Special Report 190: Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County, California*. Published 2006.

Table 4-3
Placer County Attainment Status Designations

Pollutant	Averaging Time	California Standards	Federal Standards
Ozone	1 Hour	**Nonattainment**	Revoked in 2005
	8 Hour	**Nonattainment**	**Nonattainment**
Carbon Monoxide	8 Hour	Attainment	Attainment
	1 Hour	Attainment	Attainment
Nitrogen Dioxide	Annual Mean	Attainment	Attainment
	1 Hour	Attainment	Attainment
Sulfur Dioxide	Annual Mean	Attainment	-
	24 Hour	Attainment	-
	3 Hour	Attainment	-
	1 Hour	Attainment	-
Respirable Particulate Matter (PM_{10})	Annual Mean	**Nonattainment**	-
	24 Hour	**Nonattainment**	-
Fine Particulate Matter ($PM_{2.5}$)	Annual Mean	Attainment	-
	24 Hour	Attainment	Attainment
Lead	30 Day Average	Attainment	Attainment
	Calendar Quarter	Attainment	Attainment
	Rolling 3-Month Average	Attainment	Attainment
Sulfates	24 Hour	Attainment	-
Hydrogen Sulfide	1 Hour	-	-
Visibility Reducing Particles	8 Hour	-	-

Source: California Air Resources Board. Area Designations Maps / State and National. Published December 2015.

The nearest local air quality monitoring station to the project sites is the Lincoln-1445 1st Street station, located at 1445 1st Street in Lincoln, CA, approximately 7.53 miles northwest from the project site. Additionally, the Auburn 11645 Atwood Road station, located at 11645 Atwood Street in Auburn CA, approximately 7.81 miles northeast from the project site, provided further information regarding air quality in the project area. Based on the data available for the Lincoln-1445 1st Street Station and the Auburn 11645 Atwood Road monitoring stations, Table 4-4 and Table 4-5, respectively, present the number of days that the State and federal AAQS were exceeded for the three-year period from 2014 to 2016.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics.

Table 4-4
Air Quality Data Summary for the Lincoln-1445 1st Street Station (2014-2016)

Pollutant	Standard	Days Standard Was Exceeded		
		2014	2015	2016
1-Hour Ozone	State	0	0	0
	Federal	1	2	3
8-Hour Ozone	State	4	5	12
	Federal	3	4	11
24-Hour $PM_{2.5}$[1]	Federal	-	-	-
24-Hour PM_{10}[2]	State	0	1	0
	Federal	0	-	0
1-Hour Nitrogen Dioxide[3]	State	0	0	0
	Federal	0	0	0

1 24-Hour $PM_{2.5}$ not monitored at the Lincoln-1445 1st Street Station.
2 24-Hour PM_{10} and 1-Hour Nitrogen Dioxide are not monitored at the Lincoln Lincoln-1445 1st Street Station or the Auburn 11645 Atwood Road Stations. Monitoring data from the Roseville-N Boulevard monitoring station at 151 North Sunrise Boulevard in Roseville, CA, used for informational purposes.

Source: California Air Resources Board, Aerometric Data Analysis and Management (iADAM) System, http://www.arb.ca.gov/adam/welcome.html, accessed July 2017.

Table 4-5
Air Quality Data Summary for the Auburn 11645 Atwood Road Station (2014-2016)

Pollutant	Standard	Days Standard Was Exceeded		
		2014	2015	2016
1-Hour Ozone	State	1	4	5
	Federal	0	0	0
8-Hour Ozone	State	17	16	27
	Federal	15	15	27
24-Hour $PM_{2.5}$	Federal	4	1	0
24-Hour PM_{10}[1]	State			
	Federal			
1-Hour Nitrogen Dioxide[1]	State			
	Federal			

1 24-Hour PM_{10} and 1-Hour Nitrogen Dioxide are not monitored at the Auburn 11645 Atwood Road Station.

Source: California Air Resources Board, Aerometric Data Analysis and Management (iADAM) System, http://www.arb.ca.gov/adam/welcome.html, accessed July 2017.

The existing residential developments to the north, east, west, and south of the project site would be considered the nearest sensitive receptors to the site. In addition, Smart Start Pre-school is located approximately 1,020 feet to the south of the project site and Del Oro High School is located 670 feet to the southwest of the project site.

4.3 REGULATORY CONTEXT

Air quality is monitored and regulated through the efforts of various international, federal, State, and local government agencies. Agencies work jointly and individually to improve air quality

through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for regulating and improving the air quality within the project area are discussed below.

Federal Regulations

The most prominent federal regulation is the FCAA, which is implemented and enforced by the USEPA.

FCAA and USEPA

The FCAA requires the USEPA to set NAAQS and designate areas with air quality not meeting NAAQS as nonattainment. The USEPA is responsible for enforcement of NAAQS for atmospheric pollutants and regulates emission sources that are under the exclusive authority of the federal government including emissions of greenhouse gases (GHGs). The USEPA's air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990. The USEPA has adopted policies consistent with FCAA requirements demanding states to prepare SIP that demonstrate attainment and maintenance of the NAAQS.

State Regulations

California has adopted a variety of regulations aimed at reducing air pollution emissions. The adoption and implementation of the key State legislation described in further detail below demonstrates California's leadership in addressing air quality. Only the most prominent and applicable California air quality-related legislation are included below; however, an exhaustive list and extensive details of California air quality legislation can be found at the CARB website (http://www.arb.ca.gov/html/lawsregs.htm).

CCAA and CARB

The CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the CCAA. The CCAA requires that air quality plans be prepared for areas of the State that have not met the CAAQS for ozone, CO, NO_X, and SO_2. Among other requirements of the CCAA, the plans must include a wide range of implementable control measures, which often include transportation control measures and performance standards. In order to implement the transportation-related provisions of the CCAA, local air pollution control districts have been granted explicit authority to adopt and implement transportation controls. The CARB, California's air quality management agency, regulates and oversees the activities of county air pollution control districts and regional air quality management districts. The CARB regulates local air quality indirectly using State standards and vehicle emission standards, by conducting research activities, and through planning and coordinating activities. In addition, the CARB has primary responsibility in California to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by the USEPA. Furthermore, the CARB is charged with developing rules and regulations to cap and reduce GHG emissions.

Air Quality and Land Use Handbook

CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB Handbook) addresses the importance of considering health risk issues when siting sensitive land uses, including residential development, in the vicinity of intensive air pollutant emission sources including freeways or high-traffic roads, distribution centers, ports, petroleum refineries, chrome plating operations, dry cleaners, and gasoline dispensing facilities.[7] The CARB Handbook draws upon studies evaluating the health effects of traffic traveling on major interstate highways in metropolitan California centers within Los Angeles (I-405 and I-710), the San Francisco Bay, and San Diego areas. The recommendations identified by CARB, including siting residential uses a minimum distance of 500 feet from freeways or other high-traffic roadways, are consistent with those adopted by the State of California for location of new schools. Specifically, the CARB Handbook recommends, "Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day" (CARB 2005).

Importantly, the Introduction section of the CARB Handbook clarifies that the guidelines are strictly advisory, recognizing that: "[l]and use decisions are a local government responsibility. The Air Resources Board Handbook is advisory and these recommendations do not establish regulatory standards of any kind." CARB recognizes that there may be land use objectives as well as meteorological and other site-specific conditions that need to be considered by a governmental jurisdiction relative to the general recommended setbacks, specifically stating, "[t]hese recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues" (CARB 2005).

Assembly Bill 1807

Assembly Bill (AB) 1807, enacted in September 1983, sets forth a procedure for the identification and control of TACs in California. CARB is responsible for the identification and control of TACs, except pesticide use, which is regulated by the California Department of Pesticide Regulation.

AB 2588

The Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588), California Health and Safety Code Section 44300 et seq., provides for the regulation of over 200 TACs, including DPM, and is the primary air contaminant legislation in California. Under the act, local air districts may request that a facility account for its TAC emissions. Local air districts then prioritize facilities on the basis of emissions, and high priority designated facilities are required to submit a health risk assessment and communicate the results to the affected public.

[7] California Air Resources Board. *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005.

Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations

In 2002, the Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations (Title 17, Section 93105, of the California Code of Regulations) went into effect, which requires each air pollution control and air quality management district to implement and enforce the requirements of Section 93105 and propose their own asbestos ATCM as provided in Health and Safety Code section 39666(d).[8]

Senate Bill 656

In 2003, the Legislature passed Senate Bill (SB) 656 to reduce public exposure to PM_{10} and $PM_{2.5}$ above the State CAAQS. The legislation requires the CARB, in consultation with local air pollution control and air quality management districts, to adopt a list of the most readily available, feasible, and cost-effective control measures that could be implemented by air districts to reduce PM_{10} and $PM_{2.5}$ emissions. The CARB list is based on California rules and regulations existing as of January 1, 2004, and was adopted by CARB in November 2004. Categories addressed by SB 656 include measures for reduction of emissions associated with residential wood combustion and outdoor greenwaste burning, fugitive dust sources such as paved and unpaved roads and construction, combustion sources such as boilers, heaters, and charbroiling, solvents and coatings, and product manufacturing. Some of the measures include, but are not limited to, the following:

- Reduce or eliminate wood-burning devices allowed;
- Prohibit residential open burning;
- Permit and provide performance standards for controlled burns;
- Require water or chemical stabilizers/dust suppressants during grading activities;
- Limit visible dust emissions beyond the project boundary during construction;
- Require paving/curbing of roadway shoulder areas; and
- Require street sweeping.

Under SB 656, each air district is required to prioritize the measures identified by CARB, based on the cost effectiveness of the measures and their effect on public health, air quality, and emission reductions. Per SB 656 requirements, the PCAPCD amended their Rule 225 related to wood-burning appliances to include conditions consistent with SB 656, including such conditions as the prohibition of the installation of any new, permanently installed, indoor or outdoor, uncontrolled wood-burning appliances.

[8] California Air Resources Board. *2002-07-29 Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations*. June 3, 2015. Available at: http://www.arb.ca.gov/toxics/atcm/asb2atcm.htm. Accessed April 2017.

Heavy-Duty Vehicle Idling Emission Reduction Program

On October 20, 2005, CARB approved a regulatory measure to reduce emissions of toxics and criteria pollutants by limiting idling of new and in-use sleeper berth equipped diesel trucks.[9] The regulation consists of new engine and in-use truck requirements and emission performance requirements for technologies used as alternatives to idling the truck's main engine. For example, the regulation requires 2008 and newer model year heavy-duty diesel engines to be equipped with a non-programmable engine shutdown system that automatically shuts down the engine after five minutes of idling, or optionally meet a stringent NO_X emission standard. The regulation also requires operators of both in-state and out-of-state registered sleeper berth equipped trucks to manually shut down their engine when idling more than five minutes at any location within California beginning in 2008. Emission producing alternative technologies such as diesel-fueled auxiliary power systems and fuel-fired heaters are also required to meet emission performance requirements that ensure emissions are not exceeding the emissions of a truck engine operating at idle.

In-Use Off-Road Diesel Vehicle Regulation

On July 26, 2007, CARB adopted a regulation to reduce DPM and NO_X emissions from in-use (existing), off-road, heavy-duty diesel vehicles in California.[10] Such vehicles are used in construction, mining, and industrial operations. The regulation is designed to reduce harmful emissions from vehicles by subjecting fleet owners to retrofit or accelerated replacement/repower requirements, imposing idling limitations on owners, operators, renters, or lessees of off-road diesel vehicles. The idling limits require operators of applicable off-road vehicles (self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on-road) to limit idling to less than five minutes. The idling requirements are specified in Title 13 of the California Code of Regulations.

Local

The most prominent local regulations related to air quality are established by the PCAPCD, the Placer County General Plan, and the Horseshoe Bar/Penryn Community Plan.

PCAPCD

The PCAPCD regulates many sources of pollutants in the ambient air, and is responsible for implementing certain programs and regulations for controlling air pollutant emissions to improve air quality in order to attain federal and State AAQS.

[9] California Air Resources Board. *Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling*. October 24, 2013. Available at: http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm. Accessed August 2016.

[10] California Air Resources Board. *In-Use Off-Road Diesel Vehicle Regulation*. December 10, 2014. Available at: http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm. Accessed August 2016.

Air Quality Attainment Plan

As a part of the SVAB federal ozone nonattainment area, the PCAPCD works with the other local air districts within the Sacramento area to develop a regional air quality management plan under the FCAA requirement. The regional air quality management plan is called the State Implementation Plan (SIP) which describes and demonstrates how Placer County, as well as the Sacramento nonattainment area, would attain the required federal ozone standard by the proposed attainment deadline. In accordance with the requirements of the FCAA, 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), adopted by the PCAPCD on February 19, 2009. The CARB determined that the Ozone Attainment Plan met federal Clean Air Act requirements and approved the Plan on March 26, 2009 as a revision to the SIP. Revisions to the Placer County portion of the SIP or Ozone Attainment Plan were made and adopted on August 11, 2011. In addition, an update to the plan, *2013 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (2013 Ozone Attainment Plan), has been prepared and was adopted on September 26, 2013, and approved by CARB as a revision to the SIP on November 21, 2013. The 2013 Ozone Attainment Plan was approved by the USEPA on January 9, 2015.

The 2013 Ozone Attainment Plan demonstrates how existing and new control strategies would provide the necessary future emission reductions to meet the FCAA requirements, including the NAAQS. It should be noted that in addition to strengthening the 8-hour ozone NAAQS, the USEPA also strengthened the secondary 8-hour ozone NAAQS, making the secondary standard identical to the primary standard. The SVAB remains classified as a severe nonattainment area with an attainment deadline of 2027. On October 26, 2015, the USEPA released a final implementation rule for the revised NAAQS for ozone to address the requirements for reasonable further progress, modeling and attainment demonstrations, and reasonably available control measures (RACM) and reasonably available control technology (RACT). On November 6, 2017, the USEPA published designations for areas in attainment/unclassifiable for the 2015 standards. The USEPA has not identified Placer County's attainment status for the 2015 ozone standards.[11]

Because the attainment status of the project site for the 2015 ozone standards is currently unknown, but the project site is located within the current nonattainment area for the 2008 ozone standards, the project would be subject to the requirements set forth in the 2013 Ozone Attainment Plan, as enforced by PCAPCD through rules and regulations.

PCAPCD Rules and Regulations

All projects under the jurisdiction of the PCAPCD are required to comply with all applicable PCAPCD rules and regulations. In addition, PCAPCD permit requirements apply many commercial activities (e.g., print shops, drycleaners, gasoline stations), and other miscellaneous activities (e.g., demolition of buildings containing asbestos). The proposed project is required to comply with all applicable PCAPCD rules and regulations, which shall be noted on County-

[11] U.S. Environmental Protection Agency. *Federal Register Volume 82, Number 220*. Thursday, November 16, 2017.

approved construction plans. The PCAPCD regulations and rules include, but are not limited to, the following:

Regulation 2 – Prohibitions

Regulation 2 is comprised of prohibitory rules that are written to achieve emission reductions from specific source categories. The rules are applicable to existing sources as well as new sources. Examples of prohibitory rules include Rule 202 related to visible emissions, Rule 217 related to asphalt paving materials, Rule 218 related to architectural coatings, Rule 228 related to fugitive dust, Rule 205 related to nuisance, and Rule 225 related to wood-burning appliances.

Rule 228 sets forth requirements necessary to comply with the Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations (Title 17, Section 93105, of the California Code of Regulations), as discussed above.

Regulation 5 – Permits

Regulation 5 is intended to provide an orderly procedure for the review of new sources, and modification and operation of existing sources, of air pollution through the issuance of permits. Regulation 5 primarily deals with permitting major emission sources and includes, but is not limited to, rules such as General Permit Requirements (Rule 501), New Source Review (Rule 502), Emission Statement (Rule 503), Emission Reduction Credits (Rule 504), and Toxics New Source Review (Rule 513). The proposed project includes installation and use of emergency generators. Use, testing, and maintenance of such generators would be subject to Regulation 5 and the permitting requirements therein.

Placer County General Plan

The following goals and policies related to air quality are from the Placer County General Plan:

Air Quality – General

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

Policy 6.F.2 The County shall develop mitigation measures to minimize stationary source and area source emissions.

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

Policy P.F.5 The County shall encourage project proponents to consult early in the planning process with the County regarding the applicability of Countywide indirect and areawide source programs and transportation control measures (TCM) programs. Project review shall also address energy-efficient building and site designs and proper storage, use, and disposal of hazardous materials.

Policy P.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).

Policy 6.F.11 The County shall apply the buffer standards described in Part I of this Policy Document and meteorological analyses to provide separation between possible emission/nuisance sources (such as industrial and commercial uses) and residential uses.

Air Quality – Transportation/Circulation

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

Horseshoe Bar/Penryn Community Plan

The following goals and policies related to air quality are from the Horseshoe Bar/Penryn Community Plan:

Goal 1 Recognize that clean air and water are essential resources for maintaining a high quality of living. Protect the high quality of air, water, and groundwater resources consistent with adopted federal, state, and local standards.

Goal 2 Protect and improve air quality in the plan area.

Goal 3 Integrate air quality planning with the land use and transportation planning process.

Policy 1 Recognize that clean air is a resource to be protected and improved through project mitigation. The contribution of vegetation and water areas in maintaining the air quality shall not be overlooked in any land use proposals.

Policy 2 Development projects shall be located and designed to conserve air quality and minimize direct and indirect emission of air contaminants. Development proposals shall be submitted to the Placer County Air Pollution Control District to identify the project's air quality impacts prior to consideration by the appropriate decision-making body. Appropriate mitigation measures, including any issuance of an air quality permit to direct emission sources, shall be included in the project proposal.

Policy 8 Land development projects which result in 200 or more trip-ends per day may require an air quality analysis to be submitted for review and approval.

4.4 Impacts and Mitigation Measures

The standards of significance and methodology used to analyze and determine the proposed project's potential project-specific impacts related to air quality are described below. In addition, a discussion of the project's impacts, as well as mitigation measures where necessary, is also presented.

Standards of Significance

Based on the recommendations of PCAPCD and in coordination with the County, consistent with Appendix G of the CEQA Guidelines and the County's Initial Study Checklist, the effects of a project are evaluated to determine if they would result in a significant adverse impact on the environment. For the purposes of this EIR, an impact is considered significant if the proposed project would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation (i.e., exceed the PCAPCD thresholds of significance listed in Table 4-6);
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations (including localized CO concentrations and TAC emissions); or
- Create objectionable odors affecting a substantial number of people.

The Initial Study prepared for the proposed project (see Appendix B) determined that development of the proposed project would result in a less-than-significant impact related to the following:

- Create objectionable odors affecting a substantial number of people.

The remaining issue areas are discussed in further depth below.

Criteria Pollutant Emissions and TAC Emissions

In order to evaluate air pollutant emissions from development projects, the PCAPCD established significance thresholds for emissions of ROG, NO_X, and PM_{10}. The significance thresholds, expressed in pounds per day (lbs/day), serve as air quality standards in the evaluation of air quality impacts associated with proposed development projects. Thus, if the proposed project's emissions exceed the PCAPCD thresholds, the project could have a significant effect on regional air quality and attainment of federal and State AAQS. The significance thresholds, expressed in pounds per day (lbs/day), listed in Table 4-6 are the PCAPCD's updated recommended thresholds of significance for use in the evaluation of air quality impacts associated with proposed development projects. Therefore, if the proposed project's emissions exceed the pollutant thresholds presented

in Table 4-6, the project could have a significant effect on air quality, the attainment of federal and State AAQS, and could conflict with or obstruct implementation of the applicable air quality plan.

Table 4-6
PCAPCD Thresholds of Significance

Pollutant	Construction Threshold (lbs/day)	Operational/Cumulative Threshold (lbs/day)
ROG	82	55
NO_X	82	55
PM_{10}	82	82

Source: Placer County Air Pollution Control District. Placer County Air Pollution Control District Policy. Review of Land Use Projects Under CEQA. October 13, 2016.

Additionally, the PCAPCD has developed screening criteria for determining whether a project would cause substantial localized CO emissions at a given intersection. If the project would result in CO emissions from vehicle operations in excess of 550 lbs/day and either of the following conditions are met, the project could potentially result in substantial concentrations of localized CO and further analysis would be required:

- 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 (i.e., increase delay by 10 seconds or more when project-generated traffic is included) an already existing unacceptable peak hour LOS on one or more streets or at one or more intersections in the project vicinity.

For TAC emissions, if a project would introduce a new source of TACs near a new sensitive receptor, a detailed health risk assessment may be required. The PCAPCD considers an increase in cancer risk levels of more than 10 in one million persons or a non-cancer hazard index greater than 1.0 to be a significant impact related to TACs.

GHG Emissions

The project's cumulatively considerable net increase in criteria pollutants (i.e., the third bullet point in the thresholds list on the previous page), as well as impacts related to GHG emissions and global climate change, are addressed in Chapter 11, Cumulative Impacts and Other CEQA Sections, of this EIR.

Method of Analysis

The analysis protocol and guidance provided by the PCAPCD's *CEQA Air Quality Handbook* was used to analyze the proposed project's air quality impacts, including screening criteria and pollutant thresholds of significance.

Construction Emissions

The proposed project's short-term construction emissions were estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 software - a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions from land use projects. The model applies inherent default values for various land uses, including trip generation rates based on the ITE Manual, vehicle mix, trip length, average speed, etc. However, where project-specific data was available, such data was input into the model.

The proposed project is anticipated to be constructed in 13 to 18 months. On-site structures would be demolished prior to site preparation, grading, paving, and construction. As further discussed in Chapter 7, Hazards and Hazardous Materials, of this EIR, the proposed project would include site remediation actions, including removal and off-haul of contaminated soils from the site. Site remediation is anticipated to require approximately 1,400 cubic yards of soil off-haul.[12] Some of the soil to be off-hauled would be transported to the Kettleman Hills Landfill, while the remaining soil being off-hauled would be transported to the Ostrom Road Landfill. Site remediation would occur following abatement of asbestos and lead-based paints in structures and then demolition of the Inn and Annex buildings and prior to the initiation of grading and school construction within the affected portions of the project site.

Based on information provided by the project applicant, the following assumptions were made for the project construction modeling:

- 11,430 square feet of existing building area would be demolished;
- Approximately 240 cubic yards of wood waste would be exported during site preparation;
- A total of approximately 17 acres would be disturbed during the grading phase; and
- 98 parking spaces would be constructed within the project site.

In addition to the foregoing information related to on-site construction activities, the proposed project would include off-site improvements to the intersection of Taylor Road and Penryn Road. Such improvements are anticipated to result in the disturbance of a maximum of 30,125 sf. To provide a conservative analysis, the CalEEMod emissions estimation was adjusted to account for the disturbance of the entire 30,125 sf area and overlay with asphalt.

Compliance with PCAPCD rules and regulations is not inherently accounted for in CalEEMod. As such, the modeling has been adjusted to reflect the use of low-VOC cleaning supplies, which are regulated by the PCAPCD. It should be noted that compliance with PCAPCD Rule 228 related to fugitive dust is not inherently included in the model, and adjustments were not applied to the model, as the full extent of reductions due to implementation of the requirements of Rule 228 cannot be captured using the model. Thus, the construction-related emissions presented in this

[12] It should be noted that the off-haul estimate of 1,400 cubic yards was based on the December 2017 version of the draft Removal Action Work Plan for the project site. The more recent June 2018 version of the draft Removal Action Work Plan (see Appendix K to this EIR) reduced the off-haul estimate to a total of 1,300 cubic yards. Thus, the construction emissions analysis in this chapter presents a worst-case scenario.

analysis represent a conservative estimate, as the proposed project would be required to implement Rule 228, which would result in a reduction of construction-related emissions from what is presented in this analysis.

The results of emissions estimations were compared to the standards of significance discussed above in order to determine the associated level of impact. All CalEEMod modeling results are included in Appendix D to this EIR.

Operational Emissions

The proposed project's operational emissions were estimated using CalEEMod. Based on the construction information provided by the project applicant, the proposed project is anticipated to be fully operational by 2021. The modeling performed for the proposed project included compliance with PCAPCD rules and regulations (i.e., low-VOC [volatile organic compounds] paints and low-VOC cleaning supplies). The structures included in the proposed project would be designed to increase energy efficiency beyond the requirements of the 2016 California Building Energy Efficiency Standards Code; however, to provide a conservative emissions estimation, exceedance of 2016 California Building Energy Efficiency Standards Code was not included in the modeling for the proposed project. The project-specific trip generation rates provided by KD Anderson & Associates, Inc. were applied to the project modeling to capture emissions from trips to the project site related to student travel, operations of the proposed cultural center, and tribal adult education.[13] Furthermore, the proposed project has been designed to include water conservation measures that would reduce indoor water use by 20 percent and outdoor water use by 25 percent compared to the same project without such conservation measures.

In addition to normal school operations, operation of the proposed project would involve infrequent events of varying sizes. As discussed in Chapter 3, Project Description, of this EIR, events at the project site would range from a maximum number of attendees of 200 people, to a mid-range of approximately 100 attendees and small events involving 35 additional attendees. Such events could occur during regular school days, and, thus, would occur in addition to normal operational emissions from the school. The principal source of emissions from large events is anticipated to be mobile source emissions from attendees driving to the event. Attendees are anticipated to carpool to such events, with average vehicles trips transporting 2.5 attendees; consequently, the largest event would be anticipated to involve 80 vehicles entering and leaving the site for a total of 160 event related vehicle trips. Emissions from event related vehicle trips have been quantified using the most up-to-date approved version of the CARB's Emission Factors (EMFAC) model.[14]

The proposed project would include the installation of two emergency generators to provide back-up emergency power to the proposed facilities. Initial stages of the proposed project would include installation of a single generator, but future operation of the proposed project would include installation and operation of a second generator. Both generators would be diesel powered, and,

[13] KD Anderson & Associates, Inc. *Traffic Impact Study for the United Auburn Indian Community School Project.* June 25, 2018.

[14] California Air Resources Board. *Emissions Factors Model (EMFAC) 2014*. Version 1.07. December 14, 2015.

per PCAPCD regulations, the generators would be required to limit operations below 100 hours per year. Information regarding the inclusion of emergency generators was included in the CalEEMod emissions estimation for the proposed project.

The results of emissions estimations were compared to the standards of significance discussed above in order to determine the associated level of impact. All CalEEMod and EMFAC modeling results are included in Appendix D to this EIR.

Project Impacts and Mitigation Measures

The following discussion of impacts is based on implementation of the proposed project in comparison with the standards of significance identified above.

4-1 Violate any air quality standard or contribute substantially to an existing or projected air quality violation during construction. Based on the analysis below, the impact is *less than significant.*

During construction of the project, various types of equipment and vehicles would temporarily operate on the project site. Construction-related emissions would be generated from demolition activity, construction equipment, vegetation clearing and earth movement activities, construction workers' commute, and construction material hauling for the entire construction period. The aforementioned activities would involve the use of diesel- and gasoline-powered equipment that would generate emissions of criteria pollutants. Project construction activities also represent sources of fugitive dust, which includes PM emissions. As construction of the proposed project would generate emissions of criteria air pollutants, including ROG, NO_X, and PM_{10}, intermittently within the site and in the vicinity of the site, until all construction has been completed, construction is a potential concern, as the proposed project is located in a nonattainment area for ozone and PM.

The construction modeling assumptions are described in the Method of Analysis section above. The proposed project's estimated (unmitigated) maximum construction-related emissions from on-site and off-site construction activity are presented in Table 4-7.

Table 4-7
Maximum Unmitigated Project Construction-Related Emissions

Pollutant	Project Emissions (lbs/day)	PCAPCD Significance Threshold (lbs/day)
ROG	5.45	82.0
NO_X	58.19	82.0
PM_{10}	20.74	82.0

Source: CalEEMod, May 2018 (see Appendix D).

As shown in Table 4-7, the project's associated short-term construction-related emissions would be below the applicable PCAPCD thresholds of significance. While Table 4-7 demonstrates that emissions of PM_{10} would be below the PCAPCD's thresholds, such emissions would be further minimized due to the project's required compliance with

PCAPCD Rule 228, which includes implementation of dust control measures, such as minimizing track-out on to paved public roadways, limiting vehicle travel on unpaved surfaces to 15 miles per hour, and stabilization of storage piles and disturbed areas. Emissions of fugitive dust, and thus PM_{10}, would be further reduced through implementation of the Removal Action Work Plan (RAW). The RAW Plan includes various dust control measures such as misting or spraying water while excavating and loading transportation vehicles, covering or wetting stockpiles of soil, and minimizing drop heights while loading and unloading excavated soils. The proposed project would also be conditioned to list the applicable PCAPCD's Rules and Regulations on project grading/improvement plans. A Dust Control Plan must also be submitted to the PCACPD prior to the start of earth-disturbing activities. The Dust Control Plan for the proposed project is discussed in further depth in Chapter 7, Hazards and Hazardous Materials, of this EIR.

Because the proposed project's estimated unmitigated emissions would be below the applicable PCAPCD thresholds of significance, and emissions would be further reduced through adherence to the aforementioned PCAPCD regulations, construction activities associated with development of the proposed project would not substantially contribute to the PCAPCD's nonattainment status for ozone or PM. Accordingly, construction of the proposed project would not violate any AAQS or contribute substantially to an existing or projected air quality violation, and a ***less-than-significant*** impact would occur associated with construction.

Mitigation Measure(s)
None required.

4-2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation during operations, and conflict with or obstruct implementation of the applicable air quality plan. Based on the analysis below, the impact is *less than significant.*

As discussed above, due to the nonattainment designations of the area, the PCAPCD has developed plans to attain the State and federal standards for ozone and particulate matter. The currently applicable air quality plan is the 2013 Ozone Attainment Plan. Adopted PCAPCD rules and regulations, as well as the thresholds of significance, have been developed with the intent to ensure continued attainment of AAQS, or to work towards attainment of AAQS for which the area is currently designated nonattainment, consistent with the applicable air quality plan. Thus, if a project's operational emissions exceed the PCAPCD's mass emission thresholds, a project would be considered to conflict with or obstruct implementation of the PCAPCD's air quality planning efforts.

Operational emissions of ROG, NO_X, and PM_{10} would be generated by the proposed project from both mobile and stationary sources. Day-to-day activities such as future vehicle trips to and from the project site would make up the majority of the mobile emissions. Emissions would also occur from area sources such as architectural coatings, wood burning in fire places, landscape maintenance equipment exhaust, and consumer

products (e.g., deodorants, detergents, hair spray, cleaning products, spray paint, insecticides, floor finishes, polishes, etc.).

The proposed project's maximum unmitigated operational emissions have been estimated using CalEEMod for normal school days. To assess the worst-case scenario emissions from operation of the proposed project, the potential emissions from an event with 200 attendees were modeled using EMFAC and added onto the maximum daily emissions from normal school day operations. The operational and event day modeling assumptions are described in detail in the Method of Analysis section above. The resultant emissions estimated for a normal school day plus emissions resulting from a large event are presented in Table 4-8 below. Given the above, emissions presented in Table 4-8 represent operational emissions that would occur during full operation of the proposed school, cultural center, and an event with 200 attendees.

Table 4-8
Maximum Unmitigated Project Operational Emissions

Pollutant	Project Emissions (lbs/day)	PCAPCD Significance Threshold (lbs/day)
ROG	1.67	55
NO_X	3.68	55
PM_{10}	1.66	82

Source: CalEEMod, May 2018 and EMFAC (see Appendix D).

As shown in the table, the project's operational emissions on a large event day would be below the PCAPCD thresholds of significance, and, thus, would not be considered to contribute substantially to the region's nonattainment status of ozone or PM. Therefore, the project would not violate any air quality standard, contribute substantially to an existing or projected air quality violation, or conflict with and/or obstruct implementation of the PCAPCD's air quality planning efforts, and impacts related to long-term operational emissions of criteria air pollutants associated with development of the proposed project would be ***less than significant***.

Mitigation Measure(s)
None required.

4-3 Expose sensitive receptors to substantial pollutant concentrations. Based on the analysis below, the impact is *less than significant.*

The major pollutants of concern are localized CO emissions and TAC emissions, which are addressed below.

Localized CO Emissions

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. Implementation of the proposed project would increase traffic volumes on streets near the project site; therefore, the project would be expected to increase

local CO concentrations. Concentrations of CO approaching the AAQS are only expected where background levels are high, and traffic volumes and congestion levels are high. The statewide CO Protocol document identifies signalized intersections operating at Level of Service (LOS) E or F, or projects that would result in the worsening of signalized intersections to LOS E or F, as having the potential to result in localized CO concentrations in excess of AAQS, as a result of large numbers of cars idling at stop lights.[15] 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 sourced CO emissions of 8.06 lbs/day, on a school day with a large event (see Appendix D). 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.

TAC Emissions

If a project would introduce a new source of TACs, a detailed health risk assessment may be required. The PCAPCD considers an increase in cancer risk levels of more than 10 in one million persons or a non-cancer hazard index greater than 1.0 to be a significant impact related to TACs.

The CARB Handbook provides recommendations on siting new sensitive receptors near existing sources of TACs and new sources of TACs near existing sensitive receptors. As discussed in the Existing Environmental Setting section of this Chapter, the project site is not located within 500 feet of any land uses considered to be sources of TAC emissions,

[15] University of California, Davis. *Transportation Project-Level Carbon Monoxide Protocol*. December 1997.

and, as such, would not result in the siting of new sensitive receptors in proximity to existing sources of TACs. Operational-related emissions of TACs are often associated with land uses that involve heavy truck traffic or idling. The CARB's Handbook includes facilities (distribution centers) associated with 100 or more heavy-duty diesel trucks per day as a source of substantial DPM emissions. The project is not a distribution center and is not located near any existing distribution centers. Students would be transported to the project site within vans, rather than diesel powered school buses, which would reduce the potential for the proposed project to result in mobile source DPM emissions. Although operation of the school facility may involve some heavy-duty diesel truck traffic related to the delivery of goods, such operations would not result in 100 or more heavy-duty diesel truck trips per day.

In addition to mobile diesel engines such as heavy-duty diesel trucks, the CARB considers stationary diesel engines, such as generators to be sources of DPM. The proposed project would include the installation of one stationary diesel generator during the initial stages of the proposed project, with a second generator anticipated for future installation. Both generators would be used exclusively to provide back-up electricity in the case of emergencies. Installation and operation of the emergency generators would be subject to PCAPCD Rule 501, General Permit Requirements, under which any construction, alteration, replacement, or operation of a source that would emit or may emit air pollutants must obtain an Authority to Construct (ATC) and/or a Permit to Operate (PTO). More specifically, the use of any stationary source that may cause emissions is required by law to first obtain an ATC from the Air Pollution Control Officer (APCO) before the PTO for any new source is granted. A written permit is also required from the APCO. A PTO would not be granted for the operation of any source constructed or installed without such authorizations until the information required is presented to the APCO and conforms to the standards set forth in Rule 501.

According to Rule 501, the construction and operation of any source must comply with Rule 502, New Source Review, Rule 513, Toxics New Source Review: Federal Clean Air Act Section 112(G), and an ATC and PTO must be obtained. The APCO denies any ATC or PTO if the construction and operation of the source is not shown to be designed, controlled, or equipped with such an air pollution control article, machine, equipment, or other contrivance, in a manner not to cause emissions in violation of Section 41700, 41701, or 42301 of the California Health and Safety Code, and the other PCAPCD-applicable rules mentioned above (e.g., compliance with New Source Review standards).

Per the foregoing permitting process, the generators would be regulated and monitored to ensure any associated emissions are under specified limitations. In addition, the generators are intended to be used only for emergency situations in order to provide continuous power during utility power outages, as required by the California Building Standards Code. Outside of emergency situations, periodic testing of the generators would occur; however, such testing would be limited to approximately one hour per month, totaling 12 hours per year. In addition, DPM is a highly dispersive pollutant, and the generators would be located in the interior of the project site, which would likely separate the generators by more than 300 feet from the nearest off-site receptor. Considering the limited operational time and

the distance between the generators and the nearest sensitive receptor, the proposed generators would not be anticipated to expose sensitive receptors to any substantial pollutant concentrations during operation of the proposed project.

Construction-related activities have the potential to generate emissions of TACs, specifically DPM, from on-road haul trucks and off-road equipment exhaust emissions. However, construction is temporary and occurs over a relatively short duration in comparison to the operational lifetime of the proposed project. Methodologies for conducting health risk assessments are associated with long-term exposure periods (e.g., over a 70-year lifetime); in comparison, construction of the proposed project is anticipated to be completed over the course of a year. Only portions of the site would be disturbed at a time throughout the construction period, with operation of construction equipment occurring intermittently throughout the course of a day. In particular, the proposed project would only include construction of buildings within the northern portion of the project site, while construction activity throughout the remainder of the site would be limited to improvements related to trails and play fields. Therefore, construction equipment would not be anticipated to operate within all areas of the project site; rather, construction equipment would primarily occur within the central and northern portion of the project site, which is setback from nearby sensitive receptors.

Off-site areas that would be disturbed during implementation of the proposed project in proximity to existing residences would include portions of the intersection of Penryn Road and Taylor Road. However, construction activity related to off-site intersection improvements would occur over a much shorter duration than construction activity within the project site. Additionally, improvements would occur in several areas within the intersection, and, thus, construction equipment would be operated at varying distances from the existing residences. Considering the short duration of construction activity related to off-site intersection improvements, as well as the limited nature of such improvements, off-site construction activity would not be anticipated to result in substantial emissions of TACs in proximity to existing residences.

In addition, all construction equipment and operation thereof would be regulated per the In-Use Off-Road Diesel Vehicle Regulation. The In-Use Off-Road Diesel Vehicle Regulation includes emissions reducing requirements such as limitations on vehicle idling, disclosure, reporting, and labeling requirements for existing vehicles, as well as standards relating to fleet average emissions and the use of Best Available Control Technologies. Thus, off-road diesel vehicles used during construction of the proposed project would be required to comply with statewide emissions reductions targets. Project construction would also be required to comply with all applicable PCAPCD rules and regulations, such as Rule 218 related to architectural coatings and Rule 228 related to fugitive dust. Considering the intermittent nature of construction equipment operating within an influential distance to the nearest sensitive receptors, the duration of construction activities in comparison to the operational lifetime of the project, the typical long-term exposure periods associated with conducting health risk assessments, and compliance with regulations, the likelihood that any one sensitive receptor would be exposed to high concentrations of DPM for any extended period of time would be low.

Naturally Occurring Asbestos

According to the *Special Report 190: Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County, California*, prepared by the Department of Conservation, the project site is located within an area categorized as least likely to contain NOA, because faults and serpentinite outcroppings are not known to be in the project area.[16] Consequently, NOA is not anticipated to be present on the project site.

Demolition Activity and Existing Site Contamination

As discussed in further depth in Chapter 7, Hazards and Hazardous Materials, of this EIR, the existing structures may contain lead-based paint (LBP) and asbestos containing building materials. Additionally, the Phase II Environmental Site Assessment prepared for the proposed project identified arsenic and organochlorine pesticides in soil samples from the project site. Therefore, demolition of the existing structures and disturbance of arsenic contaminated soils during construction activity would have the potential to result in the emission of lead, asbestos, arsenic, and organochlorine pesticides through the creation of dust and disturbance of material. A RAW has been prepared for soil remediation activity.[17] The RAW includes a *Site-Specific Health and Safety Plan* which would be used to implement various measures intended to reduce the potential for exposure of site workers and the public to contaminated materials. Such measures include dust removal from equipment and personnel working within contaminated portions of the project site, proper training on dust control, and medical surveillance. Furthermore, Mitigation Measures 7-1(b) and 7-1(c) of this EIR, included in Chapter 7, Hazards and Hazardous Materials, include specific requirements for the remediation of existing hazardous materials conditions during implementation of the proposed project. Considering the requirements included in Chapter 7 of this EIR, construction of the proposed project is not anticipated to result in the emissions of hazardous materials that could expose members of the public to substantial pollutant concentrations.

Conclusion

Based on the above analysis, demolition of the existing structures, remediation of on-site soils, and construction of the proposed project is not anticipated to result in exposure of nearby sensitive receptors to substantial pollutant concentrations. In addition, NOA is not anticipated to occur on-site, and, thus, the project would have no potential to disturb NOA. Despite inclusion of two diesel-powered emergency generators within the project, considering the intermittent use of the generators and lack of other operational activities that would have the potential to release pollutants, operation of the proposed project would not have the potential to expose nearby sensitive receptors to substantial pollutant concentrations. Consequently, impacts related to exposure of sensitive receptors to substantial pollutant concentrations would be ***less than significant***.

[16] California Department of Conservation, California Geological Survey. *Special Report 190: Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County, California.* Published 2006.

[17] Cornerstone Earth Group. *Draft Removal Action Work Plan*. December 6, 2017.

Mitigation Measure(s)
None required.