

4.2 AIR QUALITY

This chapter provides a discussion of existing air quality, evaluates potential air quality impacts associated with the proposed project, and identifies mitigation measures recommended for potentially significant adverse impacts. Air quality modeling data and assumptions that are used for quantifying the proposed project's emissions are included in Appendix B, Air Quality and GHG Data, of this EIR.

4.2.1 ENVIRONMENTAL SETTING

The California Air Resources Board (CARB) divides the State into 15 air basins that share similar meteorological and topographical features. The proposed project is located within the Sacramento Valley Air Basin (Basin). This Basin comprises all of Shasta, Tehama, Glenn, Butte, Colusa, Sutter, Yuba, Placer, Yolo-Solano, Solano, and Sacramento counties. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions. These factors along with applicable regulations are discussed below.

The proposed project is in western Placer County, which falls within the Sacramento Valley Air Basin (SVAB) and is within the jurisdictional boundaries of the Placer County Air Pollution Control District (PCAPCD). The climate is characterized by hot, dry summers and cool, rainy winters. 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. Over half the total annual precipitation falls during the winter rainy season (November through February), while the average winter temperature is a moderate 49 degrees Fahrenheit (49°F). Winter weather in the SVAB typically includes periods of dense and persistent low-level fog, which is most prevalent between storms. The region's intense heat and sunlight lead to high ozone concentrations from May to October. During the summer, daytime temperatures can exceed 100°F, while the average daytime temperatures from April through October are between 70°F and 90°F with extremely low humidity.

Prevailing winds are from the south and southwest, and as a result, air quality in western Placer County is influenced by mobile and stationary air pollution sources located upwind in the Sacramento Metropolitan Area. The inland location and surrounding mountains to the west shelter the valley from much of the ocean breeze that keeps the coastal regions moderate in temperature. The only breach in the mountain barrier is the Carquinez Strait, which exposes the midsection of the valley to the coastal air mass. Air flow into the SVAB through the Carquinez Strait also carries pollutants from the San Francisco Bay Area.

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.

AIR QUALITY MONITORING

CARB monitors ambient air quality at approximately 250 air monitoring stations across the state. 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. The closest air monitoring station to the proposed project is the Roseville-N Sunrise Avenue Monitoring Station. Local air quality data from 2014 to 2016 are provided in *Table 4.2-1: Local Air Quality Levels*. This table lists the monitored maximum concentrations and number of exceedances of federal/state air quality standards for each year.

Table 4.2-1: Local Air Quality Levels

Pollutant	California Standard	Federal Standard	Year	Maximum Concentration ^a	Days State/Federal Standard Exceeded
Ozone (O ₃) ^b	0.09 ppm (1-Hour)	NA ^c	2015	0.098 ppm	1/0
			2016	0.115 ppm	5/0
			2017	0.117 ppm	4/0
	0.070 ppm (8-Hour)	0.070 ppm (8-Hour)	2015	0.084 ppm	6/6
			2016	0.092 ppm	21/20
			2017	0.088 ppm	10/9
Nitrogen Dioxide (NO ₂) ^b	0.18 ppm (1-Hour)	0.100 ppm (1-Hour)	2015	0.051 ppm	0/0
			2016	0.050 ppm	0/0
			2017	0.059 ppm	0/0
Particulate Matter (PM ₁₀) ^{b, d}	50 µg/m ³ (24-Hour)	150 µg/m ³ (24-Hour)	2015	35.7 µg/m ³	1/0
			2016	39.2 µg/m ³	0/0
			2017	65.8 µg/m ³	5/0
Fine Particulate Matter (PM _{2.5}) ^{b, d}	12 µg/m ³ (Annual Average)	12 µg/m ³ (Annual Average)	2015	8.1 µg/m ³	0/0
			2016	6.9 µg/m ³	0/0
			2017	7.2 µg/m ³	0/0

Notes: ppm = parts per million; PM₁₀ = particulate matter 10 microns in diameter or less; NM = not measured; µg/m³ = micrograms per cubic meter; PM_{2.5} = particulate matter 2.5 microns in diameter or less; NA = not applicable.

^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 PM₁₀ 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>, accessed on June 18, 2018.

Air Pollutants of Concern

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. These regulated air pollutants are known as criteria air pollutants and are categorized as primary and secondary pollutants. Primary air pollutants include carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxide (NO_x), sulfur dioxide (SO₂), coarse particulate matter (PM₁₀) and fine particulate matter (PM_{2.5}), lead, and fugitive dust—are those that are emitted directly from sources. Of these, CO, NO_x, SO₂, PM₁₀, and PM_{2.5} are criteria pollutants. ROG and NO_x are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O₃) and nitrogen dioxide (NO₂) are the principal secondary criteria pollutants. *Table 4.2-2: Air Contaminants and Associated Public Health Concerns*, provides a description of each of the criteria air pollutants and their known health effects.

Table 4.2-2: Air Contaminants and Associated Public Health Concerns

Pollutant	Major Man-Made Sources	Human Health Effects
Particulate Matter (PM ₁₀ and PM _{2.5})	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; asthma; chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility.
Ozone (O ₃)	Formed by a chemical reaction between reactive organic gases/volatile organic compounds (ROG or VOC) ^a and nitrous oxides (NO _x) in the presence of sunlight. Motor vehicle exhaust industrial emissions, gasoline storage and transport, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
Sulfur Dioxide (SO ₂)	A colorless gas formed when fuel containing sulfur is burned and when gasoline is extracted from oil. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO ₂)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone. Contributes to global warming and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.

Pollutant	Major Man-Made Sources	Human Health Effects
Lead	Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Due to the phase-out of leaded gasoline, metals processing is the major source of lead emissions to the air today. 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.	Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children, resulting in learning deficits and lowered IQ.

Notes:

- a Volatile Organic Compounds (VOCs or Reactive Organic Gases [ROG]) are hydrocarbons/organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases including ROGs and VOCs. Both ROGs and VOCs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. The major sources of hydrocarbons are combustion engine exhaust, oil refineries, and oil-fueled power plants; other common sources are petroleum fuels, solvents, dry cleaning solutions, and paint (via evaporation).

Source: California Air Pollution Control Officers Association, Health Effects, <http://www.capcoa.org/health-effects/>, Accessed April 10, 2018.

TOXIC AIR CONTAMINANTS

Toxic air contaminants (TACs) are defined as a set of airborne pollutants that may pose a present or potential hazard to human health. A wide range of sources, from industrial plants to motor vehicles, emit TACs. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis or genetic damage; or short-term acute effects such as eye-watering, respiratory irritation (a cough), runny nose, throat pain, and headaches.

SENSITIVE RECEPTORS

Sensitive populations are more susceptible to the effects of air pollution than the general population. Sensitive populations (sensitive receptors) that are in proximity to localized sources of toxins and CO are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. The nearest sensitive receptors to the proposed project are single-family residences located approximately 30 feet to the east of the proposed project. Other sensitive receptors are located less than 0.1 mile from the project's boundary.

4.2.2 REGULATORY AND PLANNING FRAMEWORK

FEDERAL STANDARDS

Air quality is federally protected by the Clean Air Act and its amendments. Under the Federal Clean Air Act (FCAA), the EPA developed the primary and secondary National Ambient Air Quality Standards (NAAQS) for the criteria air pollutants including ozone, NO₂, CO, SO₂, PM₁₀, PM_{2.5}, and lead. Proposed projects in or near nonattainment areas could be subject to more stringent air-permitting requirements. The FCAA requires each state to prepare a State Implementation Plan (SIP) to demonstrate how it will attain the NAAQS within the federally imposed deadlines.

The EPA can withhold certain transportation funds from states that fail to comply with the planning requirements of the FCAA. If a state fails to correct these planning deficiencies within two years of Federal notification, the EPA is required to develop a Federal implementation plan for the identified nonattainment area or areas. The EPA has designated enforcement of air pollution control regulations to the individual states. The SVAB attainment status with respect to federal standards is summarized in *Table 4.2-3: State and Federal Ambient Air Quality Standards*.

Table 4.2-3: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	State Standards ^a		Federal Standards ^b	
		Concentration	Attainment Status	Concentration ^c	Attainment Status
Ozone (O ₃)	1 Hour	0.09 ppm (180 µg/m ³)	N	NA	-
	8 Hour	0.070 ppm (137 µg/m ³)	N	0.070 ppm ^d	N ^e
Particulate Matter (PM ₁₀)	24-Hour	50 µg/m ³	N	150 µg/m ³	A
	Annual Arithmetic Mean	20 µg/m ³	N	NA	-
Fine Particulate Matter (PM _{2.5})	24-Hour	NA	-	35 µg/m ³	N
	Annual Arithmetic Mean	12 µg/m ³	A	12 µg/m ³	A
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m ³)	A	35 ppm (40 mg/m ³)	A
	8 Hour	9.0 ppm (10 mg/m ³)	A	9 ppm (10 mg/m ³)	A
Nitrogen Dioxide (NO ₂)	1 Hour	0.18 ppm (339 µg/m ³)	A	0.100 ppm	U
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	A	0.053 ppm (100 µg/m ³)	A
Sulfur Dioxide (SO ₂)	1 Hour	0.25 ppm (655 µg/m ³)	A	0.075 ppm (196 µg/m ³)	A
	24 Hour	0.04 ppm (105 µg/m ³)	A	0.14 ppm (365 µg/m ³)	A

Pollutant	Averaging Time	State Standards ^a		Federal Standards ^b	
		Concentration	Attainment Status	Concentration ^c	Attainment Status
	Annual Arithmetic Mean	NA	A	0.030 ppm (80 µg/m ³)	A
Lead (Pb)	30-Day Average	1.5 µg/m ³	-	NA	A
	Calendar Quarter	NA	-	1.5 µg/m ³	A
	Rolling 3-Month Average	NA	-	0.15 µg/m ³	-

Notes: A = attainment; N = nonattainment; U = unclassified; N/A = not applicable or no applicable standard; ppm = parts per million; µg/m³ = micrograms per cubic meter; mg/m³ = milligrams per cubic meter; - = not indicated or no information available.

^a California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, and suspended particulate matter (PM₁₀) are values that are not to be exceeded. The 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 PM₁₀ 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.

^b 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 PM₁₀ standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than 150 µg/m³. The 24-hour PM_{2.5} standard is attained when the three-year average of 98th percentile is less than 35 µg/m³.

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

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

Source: Placer County Air Pollution Control District, *2017 CEQA Air Quality Handbook*, November 21, 2017.

California Air Resources Board

CARB administers the air quality policy in California. The California Ambient Air Quality Standards (CAAQS) were established in 1969 pursuant to the Mulford-Carrell Act. These standards, included with the National Ambient Air Quality Standards (NAAQS) in Table 4.2-3, are generally more stringent and apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility reducing particulates, hydrogen sulfide, and sulfates.

The California Clean Air Act (CCAA), which was approved in 1988, requires that each local air district prepare and maintain an Air Quality Management Plan (AQMP) to achieve compliance with CAAQS. These AQMPs also serve as the basis for the preparation of the SIP for meeting federal clean air standards for the State of California. Like the EPA, CARB also designates areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data shows that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events such as wildfires, volcanoes, etc. are not considered

violations of a State standard, and are not used as a basis for designating areas as nonattainment. The SVAB attainment status with respect to state standards is summarized in Table 4.2-3.

Placer County Air Pollution Control District

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 4.2-3.

PCAPCD Rules and Regulations

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

Rule 202 – Visible Emissions. A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker in shade as that designated as number 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.

Rule 205 – Nuisances. A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause to have a natural tendency to cause injury or damage to business or property.

Rule 207 – Particulate Matter. For the MCAB (Mountain Counties Air Basin) portions of the Placer County Air Pollution Control District, a person shall not release or discharge into the atmosphere from any source or single processing unit, exclusive of sources emitting combustion contaminants only, particulate matter emissions in excess of 0.1 grains per cubic foot of gas at district standard conditions.

Rule 217 – Cutback and Emulsified Asphalt Paving Materials. A person shall not manufacture for sale nor use for paving, road construction, or road maintenance any rapid cure cutback asphalt; slow cure cutback asphalt containing organic compounds which evaporate at 500°F or lower as determined by current American Society for Testing and Materials (ASTM) Method D402; medium cure cutback asphalt except as provided in Section 1.2.; or emulsified asphalt containing organic compounds which evaporate at 500°F or lower as determined by current ASTM Method D244, in excess of 3 percent by volume.

Rule 218 – Application of Architectural Coatings. No person shall: (i) manufacture, blend, or repackage for use within the district; (ii) supply, sell, or offer for use within the district; or (iii) solicit for application or apply within the district, any architectural coating with a VOC [volatile organic compound] content in excess of the identified limit. Limits are expressed as VOC regulatory content as defined in subsection 278, in grams of VOC per liter of coating thinned to the manufacturer's maximum recommendation, excluding any colorant added to the tint bases; except for Low Solid Coatings where limits are expressed as VOC actual content as defined in subsection 276.

Rule 225 – Wood Burning Appliances. Rule 225 establishes limits on the rate of particulate matter emissions from operation of a wood-burning appliance.

Rule 228 – Fugitive Dust

- **Visible Emissions Not Allowed Beyond the Boundary Line:** A person shall not cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area (including disturbance as a result of the raising and/or keeping of animals or by vehicle use), such that the presence of such dust remains visible in the atmosphere beyond the boundary line of the emission source.

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

- Unpaved areas subject to vehicle traffic must be stabilized by being kept wet, treated with a chemical dust suppressant, or covered.
 - The speed of any vehicles and equipment traveling across unpaved areas must be no more than 15 miles per hour unless the road surface and surrounding area are 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 246 – Natural Gas-Fired Water Heaters. The purpose is to limit the emission of nitrogen oxides (NO_x) from natural gas-fired water heaters. This rule applies to any person who manufactures, distributes, offers for sale, sells, or installs any natural gas-fired water heater with

a rated heat input capacity less than 75,000 British Thermal Units per hour (BTU/hr), for use in this District.

Rule 247 – Natural Gas-Fired Water Heaters, Small Boilers and Process Heaters. To limit the emissions of oxides of nitrogen (NOx) from the use of natural gas-fired water heaters, small boilers and process heaters. The rule applies to any person that offers for sale, sells, or installs any natural gas-fired water heater, boiler or process heater with a rated heat input capacity of greater than or equal to 75,000 British Thermal Units per hour (Btu/hr) and less than 5 million Btu/hr in Placer County.

Rule 501 – General Permit Requirements. Any person operating an article, machine, equipment, or other contrivance, the use of which may cause, eliminate, reduce, or control the issuance of air contaminants, shall first obtain a written permit from the Air Pollution Control Officer (APCO). Stationary sources subject to the requirements of Rule 507, Federal Operating Permit Program, must also obtain a Title V permit pursuant to the requirements and procedures of that rule.

Placer County General Plan

The Placer County General Plan (Placer County 1994, updated May 2013) Air Quality section of the Natural Resources Element provides guidance in land use and development policies for implementation by the Placer County APCD. The General Plan policies related to air quality that are applicable to the proposed project are discussed in *Table 4.2-4: General Plan Goals and Policies – Air Quality*.

Granite Bay Community Plan

The Granite Bay Community Plan goals and policies related to air quality that are applicable to the proposed project are discussed in *Table 4.2-5: General Plan Goals and Policies – Air Quality*.

Table 4.2-4: General Plan Goals and Policies – Air Quality

General Plan Goals and Policies	Consistency Determination	Analysis
<p>Goal 6.F: To protect and improve air quality in Placer County</p>	<p>Consistent</p>	<p>The project is consistent with this goal. The proposed project would develop a residential care home in a transitional area of the County rather than in areas farther from commercial and retail centers and within existing communities. The proposed project does not generate a significant amount of traffic and a shuttle is provided for the residents for group outings and errands, and therefore auto emissions are reduced.</p>
<p>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 area wide source programs and transportation control measures (TCM) programs. Project review shall also address energy-efficient building and site designs and proper storage, use, and disposal of hazardous materials.</p>	<p>Consistent</p>	<p>The project is consistent with this policy. This air quality analysis in this document provides the County with the opportunity to review the project, including the applicability of Countywide programs to the project. The project is not a significant generator of traffic and transportation control measures are not required. The project would implement California’s Energy Efficiency Standards for Residential and Non-residential Buildings which are incorporated into the California Building Code to reduce California’s energy consumption and provide energy efficiency standards for residential and non-residential buildings. Additionally, the California Plumbing and Green Building Codes require water efficient fixtures that would reduce water consumption and water related energy use. For example, the code requires automatic irrigation systems utilizing weather and/or soil moisture-based irrigation controllers. The code also requires the installation of high efficiency toilets with a maximum of 1.28 gallons per flush, install kitchen faucets, bath faucets, and shower heads that are 20 percent more efficient than typical low-flow plumbing fixtures.</p>
<p>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</p>	<p>Consistent</p>	<p>The project is consistent with this policy. A project level analysis was prepared for this project. Construction and operational emissions and potential emission impacts have been assessed using PCAPCD-recommended methodologies and compared to PCAPCD’s significance thresholds as evaluated in this chapter of the EIR.</p>

Table 4.2-4: General Plan Goals and Policies – Air Quality

General Plan Goals and Policies	Consistency Determination	Analysis
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.	Consistent	The project is consistent with this policy. The proposed design features would result in direct and indirect emissions benefits associated with the proposed project. These features include incorporation of dining and recreational amenities into the project which would reduce vehicle trips. Other features that would reduce emissions are an improved bicycle and pedestrian network, and a prohibition on wood burning devices.
Policy 6.F.8: The County shall submit development proposals to the [Placer County] APCD for review and comment in compliance with CEQA prior to consideration by the appropriate decision-making body.	Consistent	The project is consistent with this policy. This air quality chapter was submitted to PCAPCD for review prior to the release of the Draft EIR and the Draft EIR would be distributed to PCAPCD prior to consideration by the Placer County Board of Supervisors. This analysis includes standard conditions of approval and a mitigation measure to reduce air quality impacts. As part of this submittal, the Draft EIR also includes an analysis of alternatives that reduce 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).	Consistent	The project is consistent with this policy. Please see discussion for Policy 6.F.8 above.

Table 4.2-4: General Plan Goals and Policies – Air Quality

General Plan Goals and Policies	Consistency Determination	Analysis
<p>Goal 6.G: To integrate air quality planning with the land use and transportation planning process.</p>	<p>Consistent</p>	<p>The project is consistent with this goal. The proposed project evaluated air quality impacts concurrent with land planning. The proposed project is adjacent to a major arterial roadway (Sierra College Boulevard), and near to commercial and retail centers as well as other residential communities, thereby minimizing trip lengths as compared to project locations which are located further away from major roads and commercial services.</p>
<p>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.</p>	<p>Consistent</p>	<p>The project is consistent with this policy. The project provides new bicycle and pedestrian facilities under both of the Old Auburn Road frontage improvement options.</p>

Table 4.2-5: Granite Bay Community Plan Goals and Policies – Air Quality

Granite Bay Community Plan Goals and Policies	Consistency Determination	Analysis
<p>Goal 5.15.2: Integrate land use, transportation, and air quality planning to make the most effective use of public resources and to create a healthier and more livable environment for the Granite Bay area.</p>	<p>Consistent</p>	<p>The project is consistent with this goal. The proposed project would develop a residential care home in a transitional area of the County rather than in areas farther from commercial and retail centers and within existing communities. The proposed project does not generate a significant amount of traffic and a shuttle is provided for the residents for group outings and errands, and therefore auto emissions are reduced.</p>
<p>Goal 5.15.3: Reduce emission impacts to “sensitive receptors” (children, the elderly, persons afflicted with health issues) living in the Granite Bay Community Plan area.</p>	<p>Consistent</p>	<p>The project is consistent with this goal. The project proposes a residential care home for seniors. The project is located on an 8.9-acre lot with building setbacks that far exceed the 30-foot requirement of the RA zone. The project is not located in an area that would be exposed to elevated levels of pollutant emissions.</p>
<p>Policy 5.15.1: Ensure that project air quality impacts are quantified using analysis methods and significance thresholds as recommended by the PCAPCD.</p>	<p>Consistent</p>	<p>The project is consistent with this policy. Construction and operational emissions and potential impacts have been assessed using PCAPCD recommended methodologies (CalEEMod modeling) and compared to PCAPCD’s air quality significance thresholds. The air quality analysis was reviewed by PCAPCD staff prior to the release of the Draft EIR.</p>
<p>Policy 5.15.2: Ensure that projects which may have potential air quality impacts mitigate any of its anticipated emissions which exceed allowable emissions as established by PCAPCD.</p>	<p>Consistent</p>	<p>The project is consistent with this policy. With the incorporation of the project design features, standard conditions and mitigation measure, the proposed project would not exceed any of PCAPCD thresholds.</p>
<p>Policy 5.15.3: Ensure all air quality mitigation measures are feasible, implementable, and effective for individual projects and on a community-wide basis.</p>	<p>Consistent</p>	<p>The project is consistent with this policy. The incorporation of the standard conditions for construction activity and a mitigation prohibiting wood burning fireplaces, the proposed project includes feasible and implementable mitigation measures.</p>

Table 4.2-5: Granite Bay Community Plan Goals and Policies – Air Quality

Granite Bay Community Plan Goals and Policies	Consistency Determination	Analysis
<p>Policy 5.15.4: Encourage innovative mitigation measures and approaches to reduce air quality impacts by coordinating with the PCAPCD, project applicants, and other interested parties.</p>	Consistent	<p>The project is consistent with this policy. With the incorporation of the project design features, standard conditions and mitigation measure, the proposed project would not exceed any of PCAPCD thresholds. The air quality analysis was reviewed by PCAPCD staff prior to the release of the Draft EIR.</p>
<p>Policy 5: Work with the PCAPCD to reduce particulate emissions from project consultation, grading, excavation, demolition and other sources.</p>	Consistent	<p>The project is consistent with this policy. As discussed in the analysis below the project would implement standard conditions of approval to ensure compliance during construction with the PCAPCD rules and regulations.</p>
<p>Policy 6: Encourage the use of pollution control measures such as landscaping, vegetation and other materials, which trap particulate matter or control pollution.</p>	Consistent	<p>The project is consistent with this policy. As shown in Figure 3-10, the project proposes an extensive landscape plan and proposes to retain as many existing trees as possible. Between the two roadway frontage options proposed, Option 2: Modified Frontage Improvements (the proposed project) would retain more of the existing mature trees along Old Auburn Road.</p>

4.2.3 POTENTIAL IMPACTS AND MITIGATION MEASURES

Significance Criteria and Thresholds

Based upon the criteria derived from Appendix G of the CEQA Guidelines, a project normally would have a significant effect on the environment if it 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;
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people; or
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).

Significance Thresholds. According to the PCAPCD, an air quality impact is considered significant if the proposed project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The PCAPCD has established thresholds of significance for air quality for construction and operational activities of land use development projects such as that proposed, as shown in *Table 4.2-6: PCAPCD CEQA Significance Thresholds*.

Table 4.2-6: PCAPCD CEQA Significance Thresholds

Pollutant	Criteria Pollutant Thresholds (pounds per day)		
	Construction Phase	Operational Phase Project-Level	Operational Phase Cumulative-Level
ROG	82	55	55
NO _x	82	55	55
PM ₁₀	82	82	82

Source: Placer County Air Pollution Control District, CEQA Thresholds and Review Principles, November 21, 2017
<http://www.placerair.org/landuseandceqa/ceqathresholdsandreviewprinciples>

Methodology

This air quality impact analysis considers construction and operational impacts associated with the proposed project. Construction equipment, trucks, worker vehicles, and ground-disturbing

activities associated with proposed project construction would generate emissions of criteria air pollutants and precursors. Construction-related and operational emissions are evaluated consistent with methodologies outlined in the PCAPCD *CEQA Air Quality Handbook* for assessing and mitigating air quality impacts. The proposed project's construction-related exhaust emissions are compared to the daily criteria pollutant emissions significance thresholds in order to determine the significance of a project's impact on regional air quality.

The PCAPCD *CEQA Air Quality Handbook* also provide significance thresholds for emissions associated with proposed project operations. Operational emissions associated with the proposed project are estimated using the California Emissions Estimator Model (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 *Placer Retirement Residence Traffic Impact Study*, prepared by Kimley Horn (June 18, 2018).

Construction Impacts

Significance Criteria 4.2-1: Project construction would violate an air quality standard or contribute substantially to an existing or projected air quality violation. (Less Than Significant Impact)

The project would generate short-term emissions from construction activities such as site grading, asphalt paving, building construction, and architectural coatings (e.g., painting). Common construction emissions include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips. During construction, fugitive dust, the dominant source of PM₁₀ and PM_{2.5} emissions, is generated when wheels or blades disturb surface materials. Uncontrolled dust from construction can become a nuisance and potential health hazard to those living and working nearby. Renovation of buildings can also generate PM₁₀ and PM_{2.5} emissions. Off-road construction equipment is often diesel-powered and can be a substantial source of NO_x emissions, in addition to PM₁₀ and PM_{2.5} emissions. Worker commute trips and architectural coatings are dominant sources of ROG emissions.

Construction associated with the proposed project would generate short-term emissions of criteria air pollutants. The criteria pollutants of primary concern within the project area include ozone-precursor pollutants (i.e., ROG and NO_x) and PM₁₀ and PM_{2.5}. Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the PCAPCD's thresholds of significance.

Construction equipment would include excavators, dozers, rollers, rubber tire loaders, tractors, trenchers, and pavers. Exhaust emission factors for typical diesel-powered heavy equipment are based on the California Emissions Estimator Model (CalEEMod) program defaults. 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, number of construction personnel, and the amount of materials to be transported on- or off-site.

The duration of construction activities for the project is estimated to be approximately 18 months. The project would not require demolition. However, the project would require the export of 37,000 cubic yards of soil during the grading phase. The analysis of daily construction emissions has been prepared utilizing CalEEMod. Refer to Appendix B for the CalEEMod outputs and results. *Table 4.2-7: Construction Emissions*, presents the anticipated daily short-term construction emissions.

Table 4.2-7: Construction Emissions

Emissions Source	Pollutant (pounds per day) ^{a, b}				
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
Unmitigated Construction Emissions					
2019	5.43	74.41	37.42	20.61	12.17
2020	26.56	46.71	45.52	5.74	2.91
<i>PCAPCD Threshold</i>	82	82	<i>None</i>	82	<i>None</i>
PCAPCD Threshold Exceeded?	No	No	N/A	No	N/A
Mitigated Construction Emissions^c					
2019	5.43	74.41	37.42	10.25	6.48
2020	26.56	46.71	45.52	5.55	2.86
<i>PCAPCD Threshold</i>	82	82	<i>None</i>	82	<i>None</i>
PCAPCD Threshold Exceeded?	No	No	N/A	No	N/A

Notes:

- a Emissions were calculated using the California Emissions Estimator Model (CalEEMod), as recommended by the PCAPCD.
- b Worst case emissions would occur under the Modified Frontage Improvements option and are represented in the modeling results. The worst-case emissions would occur under the Modified Frontage Improvements option because it requires the greatest amount of earthwork. Emissions associated with the Full Frontage Improvements option would be incrementally less.
- c The modeling incorporates reduction/credits for construction emissions based on measures included in CalEEMod and as required by PCAPCD Rule 228 (Fugitive Dust).

Additionally, it should be noted that the modeling input parameters were adjusted to reflect the requirements of applicable PCAPCD rules. In addition, the following standard conditions of approval would be included, should the project be approved, to ensure compliance with the PCAPCD rules and regulations:

Construction

1. Prior to approval of Improvement Plans, the applicant shall submit a Construction Emission / Dust Control Plan to the PCAPCD.¹ The applicant shall provide written evidence, provided by PCAPCD to the County, that the plan has been submitted to PCAPCD. It is the responsibility of the applicant to deliver the approved plan to the County. The applicant shall not break ground prior to receiving PCAPCD approval of the Construction Emission / Dust Control Plan, and delivering that approval to the County.
2. The prime contractor shall submit to the PCAPCD a comprehensive inventory (i.e., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower or greater) that will be used in aggregate of 40 or more hours for the construction project. If any new equipment is added after submission of the inventory, the prime contractor shall contact the PCAPCD prior to the new equipment being utilized. At least three business days prior to the use of subject heavy-duty off-road equipment, the project representative shall provide the PCAPCD with the anticipated construction timeline including start date, name, and phone number of the property owner, project manager, and on-site foreman.
3. The contractor shall use CARB ultra-low sulfur diesel fuel for all diesel-powered equipment.
4. In order to control dust, an operational watering truck shall be on site during construction hours. In addition, dry, mechanical sweeping is prohibited. Watering of a construction site shall be carried out in compliance with all pertinent PCAPCD rules.
5. The prime contractor shall be responsible for keeping adjacent public thoroughfares clean of silt, dirt, mud, and debris, and shall “wet broom” the streets (or use another method to control dust as approved by the individual jurisdiction) if silt, dirt, mud or debris is carried over to adjacent public thoroughfares. (Based on PCAPCD Rule 228 / section 401.5)
6. The contractor shall apply water or use other method to control dust impacts offsite. Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt from being released or tracked off-site. (Based on PCAPCD Rule 228 / section 401.1, 401.4)
7. During construction, traffic speeds on all unpaved surfaces shall be limited to 15 miles per hour or less. (Based on PCAPCD Rule 228 / section 401.5)

¹ The online Dust Control Plan Application form can be accessed on the PCAPCD’s website (www.placer.ca.gov/apcd and click on Dust Control Requirements). If the PCAPCD does not respond within twenty (20) days of the plan being accepted as complete, the plan shall be considered approved.

8. The prime contractor shall suspend all grading operations when wind speeds (including instantaneous gusts) are excessive and dust is impacting adjacent properties. (Based on PCAPCD Rule 228)
9. In order to minimize wind driven dust during construction, the prime contractor shall apply methods such as surface stabilization, establishment of a vegetative cover, paving, (or use another method to control dust as approved by the individual jurisdiction). (Based on PCAPCD Rule 228 / section 402)
10. The contractor shall suspend all grading operations when fugitive dust exceeds PCAPCD Rule 228 (Fugitive Dust) limitations. The prime contractor shall be responsible for having an individual who is CARB-certified to perform Visible Emissions Evaluations (VEE). This individual shall evaluate compliance with Rule 228 on a weekly basis. It is to be noted that fugitive dust is not to exceed 40 percent opacity and not go beyond the property boundary at any time. Lime or other drying agents utilized to dry out wet grading areas shall not exceed PCAPCD Rule 228 Fugitive Dust limitations. Operators of vehicles and equipment found to exceed opacity limits will be notified by PCAPCD and the equipment must be repaired within 72 hours. (Based on PCAPCD Rule 228)
11. Construction equipment exhaust emissions shall not exceed PCAPCD Rule 202 Visible Emission limitations. Operators of vehicles and equipment found to exceed opacity limits are to be immediately notified by PCAPCD to cease operations and the equipment must be repaired within 72 hours. (Based on PCAPCD Rule 202)
12. A person shall not discharge into the atmosphere volatile organic compounds (VOCs) caused by the use or manufacture of Cutback or Emulsified asphalts for paving, road construction or road maintenance, unless such manufacture or use complies with the provisions of Rule 217. (Based on PCAPCD Rule 217).
13. During construction the contractor shall utilize existing power sources (e.g., power poles) or clean fuel (i.e. gasoline, biodiesel, natural gas) generators rather than temporary diesel power generators.
14. During construction, the contractor shall minimize idling time to a maximum of 5 minutes for all diesel powered equipment.
15. During construction, no open burning of removed vegetation shall be allowed unless permitted by the PCAPCD. All 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 310).

As shown in Table 4.2-7, all criteria pollutant emissions would remain below their respective thresholds. The project would also be subject to compliance with PCAPCD Rule 228 that would require dust control measures (e.g., soil and stockpile stabilization measures). Impacts **are less than significant**.

Option 1: Full Frontage Improvements – (Less Than Significant Impact)

Under the Full Frontage Improvements option, the proposed project would incorporate the same project design as discussed above with the exception of the Old Auburn Road westbound roadway improvements and the eastbound turn lane to southbound Sierra College Boulevard. As noted above, Table 4.2-7 presents the worst-case construction emissions (which would occur under the Modified Frontage Improvements option). Emissions associated with the Full Frontage Improvements option would be incrementally less than the emissions shown in Table 4.2-7. The difference would not change the magnitude of construction emissions. Impacts would be **less than significant** and no additional mitigation would be required.

Option 2: Modified Frontage Improvements (the Proposed Project) – (Less Than Significant Impact)

Under the Modified Frontage Improvements option, the proposed project would occur within the same project area and have the same project components as what was evaluated above. As noted above, Table 4.2-7 presents the emissions associated with the Modified Frontage Improvements option, which represent worst-case construction emissions. As shown above, emissions and associated impacts would be **less than significant** and no additional mitigation would be required.

Operational Impacts

Significance Criteria 4.2-2: Project operations would violate any air quality standard or contribute substantially to an existing or projected air quality violation. (Less Than Significant Impact with Mitigation Incorporated)

Operational emissions for residential developments are typically generated from mobile sources (burning of fossil fuels in cars); energy sources (cooling, heating, and cooking); and area sources (landscape equipment and household products). Long-term operational emissions are summarized in *Table 4.2-8: Unmitigated Operational Emissions*. As shown, daily ROG thresholds would be exceeded. The predominant source of ROG emissions is fireplaces and woodstoves.

Mobile Source Emissions

Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_x, PM₁₀, and PM_{2.5} are all pollutants of regional concern (NO_x and ROG react with sunlight to form O₃ [photochemical smog], and wind currents readily transport PM₁₀ and PM_{2.5}). However, CO tends to be a localized pollutant, dispersing rapidly at the source.

Project-generated vehicle emissions have been estimated using CalEEMod. Trip generation rates associated with the project were based on the project Traffic Impact Study. Based on the Traffic Impact Study, the proposed project would result in an average of approximately 294 total daily vehicle trips. As shown in Table 4.2-8, unmitigated mobile source emissions from the proposed project would not exceed PCAPCD thresholds.

Table 4.2-8: Unmitigated Operational Emissions

Emissions Source	Pollutant (pounds per day) ^a				
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
Winter Emissions					
Area Source	225.91	4.47	285.93	38.47	38.47
Energy Use	0.04	0.36	0.15	0.03	0.03
Mobile Source	0.56	4.07	6.99	1.83	0.51
Total	226.51	8.90	293.07	40.33	39.01
<i>PCAPCD Threshold</i>	<i>55</i>	<i>55</i>	<i>None</i>	<i>82</i>	<i>None</i>
Summer Emissions					
Area Source	225.91	4.47	285.93	38.47	38.47
Energy Use	0.04	0.36	0.15	0.03	0.03
Mobile Source	0.68	3.88	7.20	1.83	0.51
Total	226.64	8.71	293.29	40.33	39.01
<i>PCAPCD Threshold</i>	<i>55</i>	<i>55</i>	<i>None</i>	<i>82</i>	<i>None</i>
PCAPCD Threshold Exceeded?	Yes	No	No	No	No

Notes:

^a Emissions were calculated using the California Emissions Estimator Model (CalEEMod), as recommended by the PCAPCD.

Energy Source Emissions

Energy source emissions would be generated as a result of electricity and natural gas (non-hearth) usage associated with the proposed project. The primary use of electricity and natural gas by the proposed project would be for space heating and cooling, water heating, ventilation, lighting, appliances, and electronics. As shown in Table 4.2-8, unmitigated energy source emissions from the proposed project would not exceed PCAPCD thresholds for ROG, NO_x, PM₁₀, or PM_{2.5}.

Area Source Emissions

Area source emissions would be generated due to an increased demand for consumer products, architectural coating, hearths, and landscaping. As shown in Table 4.2-8, unmitigated area source emissions from the proposed project would exceed PCAPCD thresholds for ROG in the winter and summer seasons. However, with Mitigation Measure AQ-1: Prohibition of Wood Burning Fire Places, the ROG emissions would be reduced below the PCAPCD threshold (refer *Table 4.2-9: Mitigated Operational Emissions*). Therefore, impacts would be **less than significant** after mitigation.

Table 4.2-9: Mitigated Operational Emissions

Emissions Source	Pollutant (pounds per day) ^{a, b}				
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
Winter Emissions					
Area Source	4.26	2.30	12.94	0.24	0.24
Energy Use	0.04	0.36	0.15	0.03	0.03
Mobile Source	0.56	4.07	6.99	1.83	0.51
Total	4.86	6.73	20.07	2.10	0.78
<i>PCAPCD Threshold</i>	55	55	None	82	None
Summer Emissions					
Area Source	4.26	2.30	12.94	0.24	0.24
Energy Use	0.04	0.36	0.15	0.03	0.03
Mobile Source	0.68	3.88	7.20	1.83	0.51
Total	4.98	6.54	20.29	2.10	0.78
<i>PCAPCD Threshold</i>	55	55	None	82	None
PCAPCD Threshold Exceeded?	No	No	No	No	No

Notes:

a Emissions were calculated using the California Emissions Estimator Model (CalEEMod), as recommended by the PCAPCD.

b Mitigation includes the prohibition of wood burning fire places.

As indicated in Table 4.2-9, mitigated operational emissions from the proposed project would not exceed PCAPCD thresholds. As such, the project would not violate any air quality standards or contribute substantially to an existing or projected air quality violation. As a result, impacts associated with operational air quality would be **less than significant**.

Option 1: Full Frontage Improvements – (Less Than Significant Impact with Mitigation Incorporated)

The Full Frontage Improvements option involves the same project design as discussed above except for the Old Auburn Road westbound roadway improvements and the eastbound turn lane to southbound Sierra College Boulevard. These components would not generate new vehicle

trips or affect the project's operational emissions. Impacts would be **less than significant** with the implementation of Mitigation Measure AQ-1. No additional mitigation would be required.

Option 2: Modified Frontage Improvements (the Proposed Project) – (Less Than Significant Impact with Mitigation Incorporated)

The Modified Frontage Improvements option would have the same project components as what was evaluated above. This option would not generate new vehicle trips or affect the project's operational emissions. As shown above, emissions and associated impacts would be **less than significant** with the implementation of Mitigation Measure AQ-1. No additional mitigation would be required.

Mitigation Measure

AQ-1: Prohibition of Wood-Burning Fireplaces. The installation of wood-burning fireplaces shall be prohibited within the development. Only natural gas or propane fired fireplace appliances are permitted. These appliances shall be clearly delineated on the Floor Plans submitted in conjunction with the Building Permit application.

Exposure of Sensitive Receptors

Significance Criteria 4.2-3: Project implementation would not expose sensitive receptors to substantial pollutant concentrations. (Less Than Significant Impact)

Sensitive land uses are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. Sensitive receptors in the area include residences to the north, south, west, and east. The nearest sensitive receptor is located approximately 100 feet from the construction fence line east of the project site.

Construction

Construction would result in the generation of diesel particulate matter (DPM) emissions from the use of off-road diesel equipment required for grading and excavation, paving, and other construction activities. For construction activity, DPM is the primary toxic air contaminant of concern. On-road diesel-powered haul trucks traveling to and from the construction area to deliver materials and equipment are less of a concern because they would not stay on the site for long durations. Diesel exhaust from construction equipment operating at the site poses a

health risk to nearby sensitive receptors. The closest sensitive receptor to the project site is a residence approximately 100 feet to the east.

Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer. The use of diesel-powered construction equipment would be episodic and would occur throughout the 9-acre site. Additionally, construction activities would be subject to and would comply with California regulations limiting idling to no more than 5 minutes, which would further reduce nearby sensitive receptors' exposure to temporary and variable DPM emissions. Furthermore, even during the most intense year of construction, emissions of DPM would be generated from different locations on the project site rather than in a single location because different types of construction activities (e.g., site preparation and building construction) would not occur at the same place at the same time.

The EPA recommended screening model AERSCREEN has been used to evaluate potential health effects to sensitive receptors from construction DPM emissions. AERSCREEN is the recommended screening model based on the AERMOD dispersion model. The model produces estimates of worst-case concentrations without the need for hourly meteorological data. According to the EPA Support Center for Regulatory Atmospheric Modeling (SCRAM) website, AERSCREEN is intended to produce concentration estimates that are equal to or greater than the estimates produced by AERMOD with a fully developed set of meteorological and terrain data.² Maximum (worst case) PM_{2.5} exhaust construction emissions over the entire construction period were used in AERSCREEN to approximate construction DPM emissions. Risk levels were calculated according to the California Office of Environmental Health Hazard Assessment (OEHHA) guidance document, *Air Toxics Hot Spots Program Risk Assessment Guidelines* (February 2015).

Results of this assessment indicate that the maximum concentration of PM_{2.5} during construction would be 0.008 µg/m³. The highest calculated carcinogenic risk from project construction is 1.34 per million, which is below the PCAPCD threshold of 10 in one million. Non-cancer hazards for DPM would be below PCAPCD threshold of 1.0, with a chronic hazard index computed at 0.002 and an acute hazard index of 0.03. As described above, worst-case construction risk levels based on screening-level modeling (AERSCREEN) and conservative assumptions would be below the PCAPCD's thresholds. Therefore, construction risk levels would be **less than significant**.

Another potential source of TACs associated with construction-related activities is the airborne entrainment of asbestos due to the disturbance of naturally-occurring asbestos-containing soils. The proposed project is not located in an area designated by the State of California as likely to

² US EPA, *Air Quality Dispersion Modeling Screening Models*, 2017. <https://www.epa.gov/scram/air-quality-dispersion-modeling-screening-models>

contain naturally-occurring asbestos (DOC 2000). Additionally, review of the naturally occurring asbestos hazard maps available on the PCAPCD's website shows that all of the asbestos-containing soils within Placer County are in the foothills and mountain areas.³ Since the proposed project is located in an area that does not contain asbestos-containing (serpentine) soils, soil disturbance does not represent an asbestos-related inhalation risk. As a result, construction-related activities would not be anticipated to result in increased exposure of sensitive land uses to asbestos.

Impacts associated with construction activities would be **less than significant**.

Operations

Project operation would not result in the development of any sources of TACs. In April 2005, CARB released the *Air Quality and Land Use Handbook: A Community Health Perspective*, which offers guidance on siting sensitive land uses in proximity to sources of air toxics. According to this guidance document, CARB does not consider residential neighborhoods to be sources of air toxics (CARB 2005).

There is a potential that future residents at the residential development could be exposed to TAC emissions from stationary and/or mobile sources. Per PCAPCD guidance, all TAC sources within 1,000 feet of a proposed sensitive receptor need to be identified and analyzed. The only potential source of TACs within 1,000 feet is Sierra College Boulevard, located approximately 150 feet from the nearest proposed residence. CARB's *Air Quality and Land Use Handbook*, which offers guidance on developing sensitive land uses in proximity to sources of air toxics, provides guidance concerning the placement of sensitive receptors in the vicinity of freeways and major roadways. The handbook recommends that sensitive land uses be sited no closer than 500 feet from a freeway or major roadway that accommodates more than 100,000 automobile trips daily. This 500-foot buffer area was developed to protect sensitive receptors from exposure to DPM and was based on traffic-related studies that showed a 70 percent drop in PM concentrations at 500 feet from the roadway. Presumably, acute and chronic risks as well as lifetime cancer risk due to DPM exposure are lowered proportionately. As stated, the project site is located approximately 150 feet from Sierra College Boulevard. However, according to the project Traffic Study, this roadway has a capacity of 54,000 average daily vehicles and is projected to have up to average of 51,900 automobile trips daily during Cumulative (2035) plus project conditions. Therefore, per CARB guidance, Sierra College Boulevard would not represent a negative impact to the proposed project. This impact is **less than significant**.

³ <http://www.placer.ca.gov/~media/apc/documents/NOA/NaturallyOccurringAsbestosMapIndexMap092908.pdf>

Carbon Monoxide

The primary mobile-source criteria pollutant of local concern is carbon monoxide. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Transport of this criteria pollutant is extremely limited; CO disperses rapidly with distance from the source under normal meteorological conditions. Under certain meteorological conditions, however, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors.

According to the PCAPCD, CO concentrations should be analyzed at intersections in the project vicinity if the level of service (LOS) would be degraded from acceptable (i.e., A, B, C, or D) to unacceptable (i.e., E or F), and if a project would result in the addition of traffic that would substantially worsen (delay of 10 seconds or more) already unacceptable intersections. According to the project traffic study, the greatest average intersection delay with the addition of project traffic would be up to 2.5 seconds during the “Cumulative Plus Project” PM-peak hour at the Sierra College Boulevard and Old Auburn Road intersection, which already operates at unacceptable LOS. Therefore, because the delay is less than 10 seconds, the project would not substantially worsen already unacceptable intersections, and this impact would be **less than significant**.

Option 1: Full Frontage Improvements – (Less Than Significant Impact)

The Full Frontage Improvements option involves the same project design as discussed above except for the Old Auburn Road westbound roadway improvements and the eastbound turn lane to southbound Sierra College Boulevard. These components would not result in new sources of pollutants that would cause localized impacts to sensitive receptors beyond what was identified above. As shown above, impacts would be **less than significant** and no additional mitigation would be required.

Option 2: Modified Frontage Improvements (the Proposed Project) – (Less Than Significant Impact)

The Modified Frontage Improvements option would have the same project components as what was evaluated above. This option would not result in new sources of pollutants that would cause localized impacts to sensitive receptors beyond what was identified above. As shown above, emissions and associated impacts would be **less than significant** and no additional mitigation would be required.

Mitigation Measures: No mitigation is required.

Odors

Significance Criteria 4.2-4: Project implementation would not create objectionable odors affecting a substantial number of people. (Less Than Significant Impact)

The project would not result in the development of land uses associated with the creation of substantial odors (such as a wastewater treatment plant, rendering plant, composting facility, asphalt batch plant, etc.). The project impacts on adjacent and nearby properties with respect to odor effects emanating from the project site would be **less than significant**.⁴

Option 1: Full Frontage Improvements – (Less Than Significant Impact)

The Full Frontage Improvements option would not result in new sources of odors. As described above, impacts would be **less than significant** and no additional mitigation would be required.

Option 2: Modified Frontage Improvements (the Proposed Project) – (Less Than Significant Impact)

The Modified Frontage Improvements option would not result in new sources of odors. As described above, impacts would be **less than significant** and no additional mitigation would be required.

Air Quality Plan Consistency

Significance Criteria 4.2-5: Construction-related and operational criteria pollutant emissions could conflict with or obstruct implementation of the applicable Air Quality Plan. (Less Than Significant Impact)

As described above, the PCAPCD is responsible for developing and implementing the air quality plan for attainment and maintenance of the ambient air quality standards in the region. As part of this effort, the PCAPCD has also developed input to the State Implementation Plan, which is required under the Federal Clean Air Act for areas that are out of attainment for air quality standards. The SIP includes the PCAPCD's plans and control measures for attaining the O₃ national ambient air quality standards.

The SIP plans and control measures are based on information derived from projected growth in Placer County to project future emissions and then determine strategies and regulatory controls

⁴ The California Supreme Court in a December 2015 opinion (*California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal. 4th 369 [No. S 213478]) confirmed that CEQA, with several specific exceptions, is concerned with the impacts of a project on the environment, not the effects the existing environment may have on a project. As such, the analysis of odor impact to potential future residents is provided for informational purposes only.

for the reduction of emissions. Growth projections are based on the general plans developed by Placer County and the incorporated cities in the county. As such, projects that propose development consistent with the growth anticipated by the respective general plan of the jurisdiction in which the proposed development is located would be consistent with the SIP. If a project would propose a development that is less dense than that associated with the general plan, the project would likewise be consistent with the SIP. If a project, however, proposes a development that is denser than that assumed in the general plan, the project may conflict with the SIP and could therefore result in a significant impact on air quality.

The project site is currently designated Rural Residential. No changes to the General Plan land use designation are proposed. The proposed project includes a zone change that would modify the site zoning from Residential RS-AG-B-100 to Agricultural Residential, Combining Minimum Building Site of 100,000 Square Feet (RA-B-100). The adoption of the zoning amendment would permit the construction of a single senior care building permitted with the approval of a Minor Use Permit in the agricultural residential zone. The proposed zoning would retain the B-100 combining district which requires a minimum lot size. The project would retain the existing 8.9-acre lot as a single lot. The large lot size allows for increased setbacks which are consistent with the intent of the combining district to be sensitive to environmental characteristics, limited resource capacities, and community character. The project does not propose any changes to the existing planning designations or goals and policies identified in the County General Plan or Granite Bay Community Plan.

The proposed project would be consistent with the county zoning ordinance for a Minor Use Permit (Section 17.58.120) and meet the requirements needed for a permit Issuance (Section 17.58.140) that would enable use of the site for senior housing.

The proposed change to the zoning classification would not result in a substantial deviation from the existing plans because the project would maintain the residential use on the site. The residential nature of the proposed care facility would serve the existing community and would not contribute to population growth that would conflict with the SIP. The proposed project would be consistent with the County zoning ordinance for a Minor Use Permit (Section 17.58.120) and meet the requirements needed for a Permit Issuance (Section 17.58.140) that would enable use of the site for senior housing. The SIP contains air pollutant reduction strategies based, in part, on regional population projections originating with the County's General Plan. Since the proposed project is consistent with the Placer County General Plan, potential impacts would be **less than significant**.

Option 1: Full Frontage Improvements – (Less Than Significant Impact)

The Full Frontage Improvements option would involve roadway improvements that would not change the proposed use or the number of dwelling units. As described above, impacts would be **less than significant** and no additional mitigation would be required.

Option 2: Modified Frontage Improvements (the Proposed Project) – (Less Than Significant Impact)

The Modified Frontage Improvements option would not change the proposed use or the number of dwelling units. As described above, impacts would be **less than significant** and no additional mitigation would be required.

4.2.4 CUMULATIVE IMPACTS

The setting for this cumulative analysis consists of the Sacramento Valley Air Basin (SVAB) and associated growth and development anticipated. This includes consideration of attainment efforts for the SVAB under development that could potentially result from all existing, proposed, planned, and reasonably foreseeable projects and growth in the region.

The proposed project, in combination with cumulative development in the SVAB, would not result in a cumulatively considerable net increase of criteria air pollutants for which the air basin is designated nonattainment. This would be a **less than cumulatively considerable impact**.

According to the PCAPCD, in the case that operational emissions attributable to the project are below the cumulative threshold of significance of 55 pounds per day of ROG or 55 pounds per day NO_x, the project's contribution to impacts would be considered less than cumulatively considerable. PCAPCD does not recommend cumulative thresholds of significance for PM₁₀ or CO emissions. In addition, PCAPCD does not recommend cumulative thresholds of significance for construction emissions. As identified under Significance Criteria 4.2.3 (see Table 4.2-8), the proposed project unmitigated emissions would exceed both PCAPCD's project thresholds (82 pounds per day for ROG and NO_x) and the cumulative threshold. Implementation of the prohibition of wood-burning fireplaces under Mitigation Measure AQ-1 would reduce ROG and NO_x emissions below the 55 pounds per day threshold for cumulative impacts. Therefore, the project's contribution of air pollutants would be **less than cumulatively considerable**.

4.2.5 REFERENCES – AIR QUALITY

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