4.1 AIR QUALITY

4.1.1 INTRODUCTION

This section presents existing air quality conditions in the project area (including the project site, the applicable air district jurisdiction, and the air basin) and analyzes the potential air quality impacts, both temporary (i.e., construction) and long term (i.e., operational), from the implementation of the proposed El Dorado Hills Apartments project ("proposed project"). The section also provides a description of the regulatory framework for air quality management on a federal, state, regional, and local level. The section is based on an *Air Quality and Greenhouse Gas Analysis* prepared by De Novo Planning Group, dated June 2017. The report is included in **Appendix 4.1** of this Draft EIR**.**

4.1.2 ENVIRONMENTAL SETTING

4.1.2.1 Climate and Meteorology

The project site is located in the western portion of the County of El Dorado that is part of the Mountain Counties Air Basin (MCAB). The MCAB comprises portions of Placer County and the County of El Dorado, and all of Plumas, Sierra, Nevada, Amador, Calaveras, Tuolumne, and Mariposa counties. The MCAB includes the central and northern Sierra Nevada Mountains. Elevations range from several hundred feet above mean sea level (MSL) in the foothills to over 10,000 feet above MSL along the Sierra crest. The project site is located within the El Dorado County portion of MCAB.

Ambient concentrations of air pollutant emissions are determined by the amount of pollutants emitted and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and the presence of sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as climate, meteorology, and topography, in addition to the level of emissions generated by existing air pollutant sources.

The MCAB generally experiences warm, dry summers and wet winters. Winter temperatures in the mountains can be below freezing for weeks at a time, and substantial depths of snow can accumulate, but in the western foothills, winter temperatures usually dip below freezing only at night, and precipitation is mixed as rain or light snow. In the summer, temperatures in the mountains are mild, with daytime peaks in the 70s to low 80s, but the western end of the county can routinely exceed 100 degrees.

Average annual precipitation generally increases with altitude, ranging from about 30 inches in the west to more than 60 inches near the crest of the Sierra Nevada. The prevailing wind direction over the county is westerly. However, the terrain of the area has a great influence on local winds, so that wide variability

in wind direction can be expected. In the foothills, regional airflow patterns are influenced by the mountainous and hill covered terrain, which directs surface air flows, causes shallow vertical mixing, and creates areas of high pollutant concentrations by hindering dispersion. Inversion layers, where warm air overlays cooler air, frequently occur and trap pollutants close to the ground.

From an air quality perspective, the topography and meteorology of the MCAB combine such that local conditions predominate in determining the effect of emissions in the basin. Regional airflows are affected by the mountains and hills, which direct surface air flows, cause shallow vertical mixing, and create areas of high pollutant concentrations by hindering dispersion. Inversion layers, where warm air overlays cooler air, frequently occur and trap pollutants close to the ground. In the winter, these conditions can lead to CO "hotspots" along heavily traveled roads and at busy intersections. During summer's longer daylight hours, stagnant air, high temperatures, and plentiful sunshine provide the conditions and energy for the photochemical reaction between reactive organic compounds (ROG) and oxides of nitrogen (NOx) that results in the formation of ozone. Because of its long formation time, ozone is a regional pollutant rather than a local hotspot problem.

In the summer, the strong upwind valley air flowing into the basin from the Central Valley to the west is an effective transport medium for ozone precursors and ozone generated in the Bay Area and the Sacramento and San Joaquin Valleys. These transported pollutants predominate as the cause of ozone in the MCAB and are largely responsible for the exceedances of the State and federal ozone ambient air quality standards in the MCAB. The California Air Resources Board (CARB) has officially designated the MCAB as "ozone impacted" by transport from those areas.

Air Pollutants and Health Effects

Both the State and federal governments have established health-based Ambient Air Quality Standards (AAQS) for six criteria air pollutants: carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Long-term exposure to elevated levels of criteria pollutants may result in adverse health effects. However, emission thresholds established by an air district are used to manage total regional emissions within an air basin based on the air basin's attainment status for criteria pollutants. These emission thresholds are established by the air district for individual projects that would contribute to regional emissions and pollutant concentrations and could adversely affect or delay the projected attainment target year for certain criteria pollutants.

Because of the conservative nature of the thresholds, and the basin-wide context of individual project emissions, there is no direct correlation between a single project and localized air quality-related health effects. One individual project that generates emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like nitrogen oxides (NOx) and reactive organic gases (ROG).

Occupants of facilities such as schools, day care centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to air pollutants because these population groups have increased susceptibility to respiratory disease. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions, compared to commercial and industrial areas, because people generally spend longer periods of time at their residences, with greater associated exposure to ambient air quality conditions. Recreational use areas are also considered sensitive compared to commercial and industrial land uses due to greater exposure to ambient air quality conditions associated with exercise. Air pollutants and their health effects are summarized below in **Table 4.1-1, Sources and Health Effects of Air Pollutants.**

Table 4.1-1
Sources and Health Effects of Air Pollutants

Pollutant	Sources	Primary Health Effects
Carbon Monoxide (CO)	• Any source that burns fuel such as cars, trucks, construction, and farming equipment, and residential heaters and stoves	• Chest pain in heart patients[1] • Headaches, nausea • Reduced mental alertness • Death at very high levels
Nitrogen Dioxide (NO_2)	• See CO sources.	• Increased response to allergens
Ozone (O_3)	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.	• Cough, chest tightness[2] • Difficulty taking a deep breath • Worsened asthma symptoms • Lung inflammation
Toxic Air Contaminants	• Cars and trucks (especially diesels) • Industrial sources, such as chrome platers • Neighborhood businesses, such as dry cleaners and service stations • Building materials and products	• Cancer • Chronic eye, lung, or skin irritation • Neurological and reproductive disorders
Suspended Particulate Matter (PM2.5 and PM10)	• Cars and trucks (especially diesels) • Fireplaces, woodstoves • Windblown dust from roadways, agriculture, and construction	• Hospitalizations for worsened heart disease • Emergency room visits for asthma • Premature death

Pollutant	Sources	Primary Health Effects

Source: California Air Resources Board (CARB) Fact Sheet: Air Pollution and Health, http://www.arb.ca.gov/research/health/fs/fs1/fs1.htm

[1] *Health effects from CO exposures occur at levels considerably higher than ambient.*

[2] Ozone is not generated directly by these sources. Rather, chemicals emitted by these precursor sources react with sunlight to form ozone in the atmosphere.

4.1.2.2 Regional Air Quality

The determination of whether a region's air quality is healthful or unhealthful is made by comparing contaminant levels in ambient air samples to national and state AAQS. The state and national ambient air quality standards for each of the monitored pollutants and their effects on health are summarized in **Table 4.1-2, Ambient Air Quality Standards**. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation and other aspects of the general welfare. California standards are generally the same as or more stringent than federal standards.

Table 4.1-2
Ambient Air Quality Standards

Air Pollutant	Averaging Time	California Standards	National Standards[1]	
			Primary[2,3]	Secondary[2,4]
Ozone (O_3)	1-hour	0.09 ppm (180 µg/m^3)	--	--
	8-hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 mg/m^3)	Same as primary --
Carbon Monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	--
	8-hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	--
Nitrogen Dioxide (NO_2)	1-hour	0.18 ppm (339 µg/m^3)	100 ppb[7] (188 µg/m^3)	
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3) [5]	Same as primary
Sulfur Dioxide (SO_2)	1-hour	0.25 ppm (655 µg/m^3)	0.075 ppm[7] (196 µg/m^3) [8]	--
	3-hour	--	--[7]	0.5 ppm[9] (1300 µg/m^3)
	24-hour	0.04 ppm (105 µg/m^3)	--	--
	Annual Arithmetic Mean	--	0.030 ppm	--
Respirable Particulate Matter (PM10)	24-hour	50 µg/m^3	--	--
	Annual Arithmetic Mean	20 µg/m^3	150 µg/m^3	Same as primary
Fine Particulate Matter (PM2.5)	24-hour	--	35 µg/m^3	Same as primary
	Annual Arithmetic Mean	12 µg/m^3	12.0 µg/m^3	15 µg/m^3
Lead	30-day Average	1.5 µg/m3	--	--
	Calendar Quarter	--	1.5 µg/m^3	Same as primary

Air Pollutant	Averaging Time	California Standards	National Standards[1]	
			Primary[2,3]	Secondary[2,4]
	Rolling 3 month average	--	0.15 µg/m^3	Same as primary

Source: De Novo Planning, 2017; California Air Resources Board, Ambient Air Quality Standards Chart, 2015.
ppm = parts per million by volume; µg/m^3 = microgram per cubic meter; mg/m^3 = milligrams per cubic meter; ppb = parts per billion.

1 *Standards, other than for ozone and those based on annual averages, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.*

2 *Concentrations are expressed first in units in which they were promulgated. Equivalent units given in parenthesis.*

3 *Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than three years after that state's implementation plan is approved by the U.S. Environmental Protection Agency (US EPA).*

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

5 *The level of annual NO_2 standard in is 53 ppb.*

6 *The national 1-hour ozone standard was revoked by US EPA on June 15, 2005. A new 8-hour standard was established in May 2008.*

7 *The form of the 1-hour NO_2 standard is the 3-year average of the 98th percentile of the daily maximum 1-hour average concentration.*

8 *On June 2, 2010 the US EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of the 1-hour daily maximum. The US EPA also revoked both the existing 24-hour and annual average SO_2 standards.*

9 *Not to be exceeded more than once per year.*

Air quality of a region is considered to be in attainment of the National Ambient Air Quality Standards (NAAQS) if the measured ambient air pollutant levels are not exceeded more than once per year, except for O_3, PM10, PM2.5. Attainment of the NAAQS for O_3, PM10, and PM2.5 is based on statistical calculations (averages or arithmetic means) over one- to three-year periods, depending on the pollutant.

Air quality of a region is considered to be in attainment of the state standards if the measured ambient air pollutant levels of O_3, CO, SO_2 (1- and 24-hour), NO_2, PM10, PM2.5, and visibility reducing particles are not exceeded, and all other standards are not equaled or exceeded at any time in any consecutive three-year period.

The CARB is required to designate areas of the State as attainment, non-attainment or unclassified for any State standard. An "attainment" designation for an area signifies that pollutant concentrations did not violate pollutant standards. A "non-attainment" designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An "unclassified" designation signifies that data does not support either an attainment or nonattainment status. The law divides districts into moderate, serious and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. EPA designates areas for ozone, CO, and NO_2 as either "does not meet the primary standards," or "cannot be classified" or "is better than national standards." For SO_2, areas are designated as "does not

meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "is better than national standards." In 1991, new nonattainment designations were assigned to areas for PM10 based on the likelihood that they would violate national PM10 standards. All other areas are designated "unclassified."

The MCAB does not meet CAAQS or NAAQS for ground level ozone, nor State standards for PM10 and national standards for PM2.5.

4.1.2.3 Local Air Quality

The air quality of any region is evaluated by comparing the concentrations of air pollutants present in the air to an appropriate ambient air quality standard. The standards represent the allowable pollutant concentrations designed to ensure that the public health and welfare are protected, while including a reasonable margin of safety to protect the more sensitive individuals in the population. The CARB is responsible for maintaining and monitoring the five air-quality stations (including three in MCAB and two in the Lake Tahoe Air Basin) located in the County of El Dorado (Baughman 2016). The EDCAQMD relies on the air-quality monitoring stations to measure ambient concentrations of the criteria pollutants.

While three of the air-quality monitoring stations are located in the County and the MCAB, the nearest monitoring station to the project site is located on Natoma Street in the City of Folsom in Sacramento County.[1] As the topography and elevation varies throughout the County, with higher elevations found in the eastern portion of the County, compared to the western portion, the air-quality monitoring station located directly north of the project site (while not within the boundaries of the MCAB) is more representative of the air quality near the project site. **Table 4.1-3, Highest Measured Air Pollutant Concentrations near the Project Site**, provides a summary of air pollutant monitoring data for this station. This table shows the highest air pollutant concentrations measured at the station over the three-year period from 2012 through 2015.

1 This monitoring station is located within the boundaries of the Sacramento Metropolitan AQMD.

Table 4.1-3
Highest Measured Air Pollutant Concentrations near the Project Site

Pollutant	Year			
	2012	2013	2014	2015
OZONE (O_3)				
Maximum 1-hour concentration (ppm)	**0.112**	**0.114**	**0.100**	**0.114**
Maximum 8-hour concentration (ppm)	**0.105**	**0.087**	**0.084**	**0.093**
CARBON MONOXIDE (CO)				
Maximum 8-hour concentration (ppm)	N/A	N/A	N/A	N/A
NITROGEN DIOXIDE (NO_2)				
Maximum 1-hour concentration (ppm)	0.029	0.030	0.035	0.026
Annual average concentration (ppm)				
RESPIRABLE PARTICULATE MATTER (PM_{10})				
Maximum 24-hour concentration, state ($\mu g/m^3$)	43.0	**63.5**	42.8	**51.4**
Annual arithmetic mean concentration ($\mu g/m^3$)	15.8	**23.2**	18.8	18.0
FINE PARTICULATE MATTER ($PM_{2.5}$)				
Maximum 24-hour concentration ($\mu g/m^3$)	25.6	29.2	**52.0**	**38.1**
Annual arithmetic mean concentration ($\mu g/m^3$)[6]	7.2	*	7.2	8.1

Source: CARB iADAM https://www.arb.ca.gov/adam/topfour/topfourdisplay.php
Folsom-Natoma Street Air Quality Monitoring Station used for all pollutant concentrations except PM10.
Ambient air concentrations of carbon monoxide are not available for the range of years 2012-2015.
1. PM10 concentrations obtained from Sacramento-Del Paso Manor air quality monitoring station.
ppm = parts per million by volume; µg/m3 = microgram per cubic meter.
*Values reported in **bold** exceed ambient air quality standards.*

Existing air quality concerns within the project area are related to increases in regional criteria air pollutants (e.g., ozone and particulate matter), exposure to toxic air contaminants, and odors. The primary source of ozone (smog) pollution is motor vehicles, which account for 70 percent of the ozone in the region. Particulate matter is caused by dust, primarily dust from construction and grading activities, and smoke which is emitted from fireplaces, wood-burning stoves, and agricultural burning.

4.1.2.4 Sensitive Receptors

As noted previously, certain groups of people are more affected by air pollution than others. CARB has identified the following population groups as most likely to be affected by air pollution: children under 14, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. The project is surrounded by commercial uses and no sensitive receptors

are located in close proximity of the project site. The nearest sensitive receptor is El Dorado Hills Kindercare, located approximately 900 feet to the northwest of the project site. Other sensitive receptors in the vicinity of the project site include residential uses (Sunset Mobile Home Park and the Cresleigh Subdivision) and a park (Creekside Greens Park) located approximately 0.25 miles south of the project site across White Rock Road. No hospitals or schools are located within the immediate vicinity of the project site. The closest schools (Oak Meadow Elementary School and William Brooks Elementary School) are both located approximately 0.8 miles to the northwest and northeast of the project site, respectively. The nearest hospital (Mercy Hospital of Folsom) is located approximately 4.5 miles northwest of the project site.

4.1.3 REGULATORY CONSIDERATIONS

Air quality within the MCAB is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly as well as individually to improve air quality through legislation, regulations, planning, policymaking, education, and a variety of programs. With respect to the proposed project, the EDCAQMD would administer most of the air quality requirements affecting the proposed project. The agencies primarily responsible for improving the air quality within MCAB are discussed below along with their individual responsibilities.

4.1.3.1 United States Environmental Protection Agency

Criteria Pollutants

The United States Environmental Protection Agency (US EPA) is responsible for implementing and enforcing the federal Clean Air Act (CAA) and developing the NAAQS. The NAAQS are summarized above in **Table 4.1-2** and the relevant health effects of the criteria pollutants are presented in **Table 4.1-1**. As part of its implementation responsibilities, the US EPA requires each state to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain and/or maintain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs.

The MCAB is currently classified by the US EPA as a nonattainment area for the 8-hour standard for O_3 and a nonattainment area for PM2.5. Additionally, it has been designated as an attainment/unclassifiable area for the 1-hour and 8-hour standards for CO and the annual standard for NO_2, and as an unclassified area for the 24-hour and annual SO_2 standards. The MCAB is currently designated as unclassifiable for the 24-hour PM10 standard. The status of MCAB with respect to attainment with the NAAQS is summarized in **Table 4.1-4, National Ambient Air Quality Standard Designations – MCAB.**

Table 4.1-4
National Ambient Air Quality Standard Designations – MCAB

Pollutant	Designation/Classification
Ozone (O_3)	Nonattainment
Carbon Monoxide (CO)	Unclassified/Attainment
Nitrogen Dioxide (NO_2)	Unclassified/Attainment
Sulfur Dioxide (SO_2)	Unclassified
Respirable Particulate Matter (PM10)	Unclassified
Fine Particulate Matter (PM2.5)	Nonattainment
Lead (Pb)	Unclassified/Attainment
Sulfates (SO_4)	Attainment
Hydrogen Sulfide (H_2S)	Unclassified
Vinyl Chloride	Unclassified
Visibility Reducing Particles	Unclassified

Source: California Air Resources Board, "Area Designations Maps/State and National," http://www.arb.ca.gov/desig/adm/adm.htm. 2015

Hazardous Air Pollutants

Regulation of hazardous air pollutants (HAPs) under federal regulations is achieved through federal and state controls on individual sources. Federal law defines HAPs as non-criteria air pollutants with short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects. The 1990 federal CAA Amendments offer a comprehensive plan for achieving significant reductions in both mobile and stationary source emissions of HAPs. Under the 1990 CAA Amendments, a total of 189 chemicals or chemical families were designated HAPs because of their adverse human health effects. Title III of the 1990 federal CAA Amendments amended Section 112 of the CAA to replace the former program with an entirely new technology-based program. Under Title III, the US EPA must establish maximum achievable control technology emission standards for all new and existing "major" stationary sources through promulgation of National Emission Standards for Hazardous Air Pollutants (NESHAP). Major stationary sources of HAPs are required to obtain an operating permit from the local air district pursuant to Title V of the 1990 CAA Amendments. A major source is defined as one that emits at least 10 tons per year of any HAP or at least 25 tons per year of all HAPs. As a residential project, the proposed project would not generate any HAPs and would not be considered a major source.

4.1.3.2 California Air Resources Board (CARB)

CARB, a branch of the California Environmental Protection Agency (CalEPA), oversees air quality

planning and control throughout California. It is primarily responsible for ensuring implementation of the 1988 California Clean Air Act (CCAA), for responding to the federal CAA requirements, and for regulating emissions from motor vehicles and consumer products within the state. The CCAA and other California air quality statutes invest local air districts, such as the EDCAQMD, with the responsibility for regulating most stationary sources, and to a certain extent, area sources.

Criteria Pollutants

CARB has established ambient air quality standards for the state (i.e., California Ambient Air Quality Standards [CAAQS]) which apply to the same seven criteria pollutants as the federal CAA and also address sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. Based on monitored pollutant levels, the CCAA divides O_3 nonattainment areas into four categories (moderate, serious, severe, and extreme) to which progressively more stringent planning and emission control requirements apply.

The MCAB is a nonattainment area for the California 1-hour and 8-hour ozone standard. The MCAB is designated as nonattainment for the California 24-hour and annual PM10 standards. The MCAB is designated as attainment or unclassifiable for all other CAAQS. The ozone precursors (reactive organic gases [ROG], and oxides of nitrogen [NO_X]), in addition to PM10, are the criteria air pollutants of concern for projects located in the MCAB. The status of the MCAB with respect to attainment with the CAAQS is summarized in **Table 4.1-5, California Ambient Air Quality Standard Designations – MCAB**.

Table 4.1-5
California Ambient Air Quality Standard Designations – MCAB

Pollutant	Designation/Classification
Ozone (O_3)	Nonattainment
Carbon Monoxide (CO)	Unclassified
Nitrogen Dioxide (NO_2)	Attainment
Sulfur Dioxide (SO_2)	Attainment
Respirable Particulate Matter (PM10)	Nonattainment
Fine Particulate Matter (PM2.5)	Unclassified
Lead (Pb)	Attainment
Sulfates (SO_4)	Attainment
Hydrogen Sulfide (H_2S)	Unclassified
Vinyl Chloride	Unclassified
Visibility Reducing Particles	Unclassified

Source: California Air Resources Board, "Area Designations Maps/State and National," http://www.arb.ca.gov/desig/adm/adm.htm. 2015

Toxic Air Contaminants

California law defines toxic air contaminants (TACs) as air pollutants which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. A total of 245 substances have been designated TACs under California law; they include the federal HAPs adopted as TACs in accordance with Assembly Bill 2728. The Air Toxics Hot Spots Information and Assessment Act of 1987, Assembly Bill 2588 (AB 2588), seeks to identify and evaluate risk from air toxics sources; AB 2588 does not regulate air toxics emissions directly. Under AB 2588, sources emitting more than 10 tons per year of any criteria air pollutant must estimate and report their toxic air emissions to the local air districts. Local air districts then prioritize facilities on the basis of emissions, and high priority facilities are required to submit a health risk assessment and communicate the results to the affected public. Depending on risk levels, emitting facilities are required to implement varying levels of risk reduction measures.

TACs do not have ambient air quality standards, but are regulated by the US EPA, CARB, and the EDCAQMD. In 1998, CARB identified particulate matter from diesel-fueled engines as a TAC. CARB has completed a risk management process that identified potential cancer risks for a range of activities and land uses that are characterized by use of diesel-fueled engines. High-volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truck stops) were identified as posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high volume transit centers, and schools with a high volume of bus traffic. Health risks from TACs are a function of both concentrations of the TAC and the duration of exposure.

It is important to note that TACs are not considered criteria air pollutants and thus are not specifically addressed through the setting of ambient air quality standards. Instead, the US EPA and CARB regulate TACs through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions.

Naturally Occurring Asbestos

In addition to criteria pollutants, a pollutant of concern in the County of El Dorado is naturally occurring asbestos (NOA) due to the presence of ultramafic materials (materials that contain magnesium and iron and a very small amount of silica) in the soil in many parts of the county. Emissions of NOA have been attributed to soil-disturbing activities, including construction activities. NOA has been identified as a TAC by CARB, however, a quantitative significance threshold for NOA has not been established. The State regulates NOA through the State of California Asbestos Airborne Toxic Control Measure for

Construction, Grading, Quarrying, and Surface Mining Operations (2008), which addresses asbestos containing fugitive dust generated by construction and construction-related activities at the State level.

High Volume Roadways

Air pollutant exposures and their associated health burdens vary considerably within places in relation to sources of air pollution. Motor vehicle traffic is perhaps the most important source of intra-urban spatial variation in air pollution concentrations. Air quality research consistently demonstrates that pollutant levels are substantially higher near freeways and busy roadways, and human health studies have consistently demonstrated that children living within 100 to 200 meters (328 to 656 feet) of freeways or busy roadways have reduced lung function and higher rates of respiratory disease. At present, it is not possible to attribute the effects of roadway proximity on non-cancer health effects to one or more specific vehicle types or vehicle pollutants. Engine exhaust, from diesel, gasoline, and other combustion engines, is a complex mixture of particles and gases, with collective and individual toxicological characteristics.

Federal and State regulations control air pollutants at the regional level by limiting vehicle and stationary source emissions. However, air quality regulations have not limited the use of vehicles and generally have not protected sensitive land uses from air pollution "hot spots" associated with proximity to transportation facilities.

4.1.3.3 El Dorado County Air Quality Management District

The EDCAQMD is tasked with achieving and maintaining healthful air quality for its residents by establishing programs, plans, and regulations enforcing air pollution control rules, in order to attain State and federal ambient air quality standards and minimize public exposure to airborne toxins and nuisance odors. EDCAQMD encourages local jurisdictions to include General Plan policies or elements that, when implemented, would improve air quality.

The EDCAQMD has adopted several attainment plans to achieve State and federal air quality standards and comply with California and federal CAA requirements. EDCAQMD continuously monitors its progress in implementing attainment plans and must periodically report to CARB and the US EPA. EDCAQMD, in partnership with the five air districts in the Sacramento Metropolitan Area, CARB, and the Sacramento Area Council of Governments (SACOG), periodically revises its attainment plans to reflect new conditions and requirements in accordance with schedules mandated by the California and federal CAAs.

The California CAA requires a triennial assessment of the extent of air quality improvements and emissions reductions achieved with control measures. The 2006 and 2009 Triennial Assessment and Plan

Update developed by EDCAQMD was prepared pursuant to CARB guidance, complies with plan revision requirements, and compares and incorporates updated population, industry, and vehicle-related projections, as necessary. The 2009 Assessment Plan provided emissions projections for the years 2010, 2015, and 2020 for stationary, area, and on- and off-road mobile sources.

The 2013 Revision to the Sacramento Regional 8-Hour Ozone Attainment Plan is the current air plan for the EDCAQMD, and sets out stationary source control programs and statewide mobile source control programs for attainment of the 8-hour ozone standard.

EDCAQMD's primary means of implementing air quality plans is by adopting rules and regulations. Relevant EDCAQMD rules include but are not limited to the following (2012):

- **Rule 205 - Nuisance**: To restrict 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**: To limit 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 dry exhaust gas at standard conditions.

- **Rule 215 - Architectural Coatings**: To limit the quantity of volatile organic compounds (VOC) in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured, blended, or repackaged for use within EDCAQMD.

- **Rule 223-1 - Fugitive Dust, Construction, Bulk Material Handling, Blasting, Other Earth Moving Activities, and Carryout and Trackout Prevention**: To reduce fugitive dust generated by construction and construction-related activities.

- **Rule 223-2 - Fugitive Dust, Asbestos Hazard Mitigation**: To reduce the amount of asbestos particulate matter entrained in the ambient air as a result of any construction or construction related activities, that disturbs or potentially disturbs naturally occurring asbestos by requiring actions to prevent, reduce or mitigate asbestos emissions.

- **Rule 224 - Cutback and Emulsified Asphalt Paving Materials**: To restrict discharge to the atmosphere of VOCs caused by the use or manufacture, mixing, storage and application of Cutback or Emulsified asphalt for paving, road construction or road maintenance.

- **Rule 300 - Open Burning**: To limit emissions to the atmosphere from open burning.

- **Rule 501.1 - General Permit Requirements:** To provide an orderly procedure for the review of new sources of air pollution and the orderly review of the modification and operation of existing sources through the issuance of permits.

CEQA Guide to Air Quality Assessment

The EDCAQMD published the *Guide to Air Quality Assessment: Determining Significance of Air Quality Impacts under the California Environmental Quality Act* in February 2002 *(*hereinafter *AQMD CEQA Guide)*. This guide outlines quantitative and qualitative significance criteria, methodologies for the estimation of construction and operational emissions, and mitigation measures to reduce such impacts. The quantitative and qualitative significance criteria are similar to the criteria for and developed in coordination with the surrounding air quality districts. To reduce NOx emissions and visible emissions from off-road diesel construction equipment, the following measures are recommended by the EDCAQMD:

- "All mass grading operations shall provide a plan for approval by the EDCAQMD demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project-wide fleet-average 20 percent NOX reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at the time of construction; and the project representative shall submit a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction operations occur. At least 48 hours before the use of subject heavy-duty off-road equipment, the project representative shall provide the EDCAQMD with the anticipated construction time line including start date, and name and phone number of the project manager and onsite foreman. Acceptable options for reducing emissions include the use of late-model engines, low-emission diesel products, alternative fuels, particulate matter traps, engine retrofit technology, after-treatment products, and/or other options as become available."

- "All mass grading operations shall ensure that emissions from off-road diesel powered equipment used on the project site do not exceed 40 percent opacity for more than 3 minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringlemann 2.0) shall be repaired immediately, and the EDCAQMD shall be notified within 48 hours of identification of noncompliant

equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction operations occur. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The EDCAQMD and/or officials may conduct periodic site inspections to determine compliance. The above recommendations shall not supersede other EDCAQMD or state rules and regulations."

- "The primary contractor shall be responsible for ensuring that all heavy-duty equipment is properly tuned and maintained, in accordance with manufacturers' specifications."

Local Asbestos Concerns

As discussed above, NOA is a pollutant of concern in the County of El Dorado. The EDCAQMD is responsible for implementing and enforcing asbestos-related regulations and programs. This includes implementation of Title 17, Sections 93105 and 93106 of the California Code of Regulations (Asbestos Airborne Toxic Control Measure-Asbestos-Containing Serpentine) and the County's Naturally Occurring Asbestos and Dust Protection Ordinance. Regulated activities include construction or digging on a site containing NOA in rock or soils and the sale and use of serpentine material or rock containing asbestos materials for surfacing.

EDCAQMD issued a map that can be used as a screening-level indicator of the likelihood of NOA being present on any given project site. The Asbestos Review Areas map shows the location of individual parcels and areas within the following four categories considered to be subject to elevated risk of containing NOA: (1) Found Area of NOA; (2) Quarter Mile Buffer for Found Area of NOA; (3) More Likely to Contain Asbestos; and (4) Quarter Mile Buffer for More Likely to Contain Asbestos or Fault Line.

If a project site is located outside of all four areas listed above, it may be considered to have a relatively lower probability of containing NOA and will be considered to have a less-than-significant impact. However, if the project is located within one of the above categories, the EDCAQMD Rule 223-2 requires an Asbestos Dust Mitigation Plan when more than 20 cubic yards of earth will be moved at a site identified as being in an Asbestos Review Area. According to the AQMD Asbestos Review Areas map the project site is located within a "Quarter Mile Buffer for More Likely to Contain Asbestos or Fault Line."

4.1.3.4 Local Plans and Policies

County of El Dorado General Plan

The following presents guiding and implementing policies from the current County of El Dorado General Plan (2004) relevant to air quality and contained within the Public Health, Safety, and Noise Element.

GOAL 6.7: AIR QUALITY MAINTENANCE:

A. Strive to achieve and maintain ambient air quality standards established by the U.S. Environmental Protection Agency and the California Air Resources Board.

B. Minimize public exposure to toxic or hazardous air pollutants and air pollutants that create unpleasant odors.

OBJECTIVE 6.7.4: PROJECT DESIGN AND MIXED USES: Encourage project design that protects air quality and minimizes direct and indirect emissions of air contaminants.

Policy 6.7.4.4 All discretionary development applications shall be reviewed to determine the need for pedestrian/bike paths connecting to adjacent development and to common service facilities (e.g., clustered mail boxes, bus stops).

Policy 6.7.4.6 The County shall regulate wood-burning fireplaces and stoves in all new development. Environmental Protection Agency (EPA)-approved stoves and fireplaces burning natural gas or propane are allowed. The County shall discourage the use of non-certified wood heaters and fireplaces during periods of unhealthy air quality.

Policy 6.7.4.7 The County shall inform the public regarding the air quality effects associated with the use of wood for home heating. The program should address proper operation and maintenance of wood heaters, proper wood selection and use, the health effects of wood smoke, weatherization methods for homes, and determining the proper size of heaters needed before purchase and professional installation. The County shall develop an incentive program to encourage homeowners to replace high-pollution emitting non-EPA-certified wood stoves that were installed before the effective date of the applicable EPA regulation with newer cleaner-burning EPA-certified wood stoves.

OBJECTIVE 6.7.6: AIR POLLUTION-SENSITIVE LAND USES: Separate air pollution sensitive land uses from significant sources of air pollution.

Policy 6.7.6.1 Ensure that new facilities in which sensitive receptors are located (e.g., schools, child care centers, playgrounds, retirement homes, and hospitals) are sited away from significant sources of air pollution.

Policy 6.7.6.2 New facilities in which sensitive receptors are located (e.g. residential subdivisions, schools, childcare centers, playgrounds, retirement homes, and hospitals) shall be sited away from significant sources of air pollution.

OBJECTIVE 6.7.7: CONSTRUCTION RELATED, SHORT-TERM EMISSIONS: Reduce construction related, short-term emissions by adopting regulations which minimize their adverse effects.

Policy 6.7.7.1 The County shall consider air quality when planning the land uses and transportation systems to accommodate expected growth, and shall use the recommendations in the most recent version of the EDCAQMD's Guide to Air Quality Assessment: Determining Significance of Air Quality Impacts Under the California Environmental Quality Act, to analyze potential air quality impacts (e.g., short-term construction, long-term operations, toxic and odor related emissions) and to require feasible mitigation requirements for such impacts.

4.1.4 IMPACTS AND MITIGATION MEASURES

4.1.4.1 Significance Criteria

For the purposes of this Draft EIR, air quality impacts of the proposed project would be considered significant if they would exceed the following Standards of Significance, which are based on Appendix G of the *State CEQA Guidelines*. According to Appendix G of the *State CEQA Guidelines*, a project would normally have a significant impact on air quality 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;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is 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 pollution concentrations; or
- create objectionable odors affecting a substantial number of people.

4.1.4.2 Issues adequately addressed in the Initial Study

As noted in the Initial Study, construction of the proposed project would require the use of diesel-fueled equipment and architectural coatings, both of which have associated odors. However, these odors would be short-term and temporary and would not be pervasive enough to affect a substantial number of people or be objectionable. Routine operation of the proposed project would not involve activities that typically produce odors, such as wastewater treatment, manufacturing, agriculture, etc. Occasional use of maintenance products on the project site could produce localized odors, but they would be temporary and limited in area. Consequently, short-term construction and long-term operation of the proposed project would not create objectionable odors that could affect a substantial number of persons, nor would the project expose project site occupants to substantial odors, and the impact would be less than significant. No further analysis is required in the EIR.

4.1.4.3 Methodology

Information presented in this impact analysis is based on the Air Quality/Greenhouse Gas Emissions Analysis – El Dorado Hills Apartments prepared by De Novo Planning. The California Emissions Estimator Model (CalEEMod) Version 2016.3.1 was used to estimate operational emissions of the proposed project. **Appendix 4.1** contains the full report.

4.1.4.4 Project Impacts and Mitigation Measures

Impact AIR-1: **Construction activities associated with the proposed project would result in a violation of an air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment under an applicable national or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors). (*Significant; Less than Significant with Mitigation*)**

Site preparation and project construction would involve clearing, cut and fill activities, grading, and building activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase because most combustion and dust emissions are associated with the excavation, handling, and transport of soils on the site. If not properly controlled, these activities

would temporarily generate PM10, PM2.5, and to a lesser extent CO, SO2, NOx, and ROGs. Impacts associated with construction equipment exhaust and dust emissions are discussed further below.

Construction Equipment Exhaust Emissions

The *AQMD CEQA Guide* provides two approaches for screening construction equipment exhaust emissions for significance: one is based on fuel use, the other on the incorporation of mitigation measures into the project design. If exhaust emissions are determined to be not significant under either approach, then further calculations to determine construction equipment exhaust emissions are not necessary.

Based on the EDCAQMD's experience with construction activities, and taking into account the temporary and non-continuous nature of construction emissions, ROG and NOx emissions during construction may be assumed to be not significant if:

a. the project encompasses 12 acres or less of ground that is being worked at one time and at least one of the mitigation measures relating to such pollutants described in the *AQMD CEQA Guide* (or an equivalent measure) is incorporated into the project; or

b. the project proponent commits to pay mitigation fees in accordance with the provisions of an established mitigation fee program in the District (or such program in another air district that is acceptable to District).

If ROG and NOx mass emissions are determined to be not significant under the provisions above, then it can be assumed that exhaust emissions of other air pollutants from the operation of equipment and worker commute vehicles are also not significant. In such event, the steps for estimating exhaust emissions of these other pollutants need not be undertaken.

The proposed project is 4.5 acres, which is less than the 12-acre threshold identified in (a) above, and the project would implement at least one mitigation measure relating to such pollutants as contained in the *AQMD CEQA Guide* and as presented below in **Mitigation Measure AIR-1a.** In addition, the project would implement **Mitigation Measure AIR-1b** to control ROG emissions from architectural coatings used during construction. As such, with mitigation, the proposed project would not result in a violation of the ambient air quality standards, and the project's construction equipment exhaust emissions and other construction-phase ROG emissions would result in a less than significant air quality impact.

Fugitive Dust (PM10) Emissions

Sources of fugitive dust (PM10) would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit dirt and

mud on local streets, which could be an additional source of airborne dust after it dries. PM10 emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM10 emissions would depend on soil moisture, the silt content of soil, wind speed, and the number of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site. These emissions would be temporary and limited to the immediate area surrounding the construction site.

For PM10 emissions, the screening approach is based on specific dust suppression measures that will prevent visible emissions beyond the boundaries of the project. According to the EDCAQMD, mass emissions of fugitive dust PM10 need not be quantified, and may be assumed to be not significant if the project includes mitigation measures that will prevent visible dust beyond the project property lines, in compliance with Rule 403.

The proposed project would implement the fugitive dust mitigation measures contained in the *AQMD CEQA Guide*, as set forth in **Mitigation Measures AIR-1c** and **1d** below. As such, with mitigation, the construction activities associated with the proposed project would not result in a violation of the ambient air quality standards, and the impact from the project's PM10 emissions during construction would be less than significant.

Mitigation Measures:

AIR-1a To ensure that the impact from the project's construction equipment exhaust remains less than significant, the project shall implement at least one of the following EDCAQMD construction mitigation measures:

- Require the prime contractor to provide an approved plan demonstrating that heavy-duty (i.e., greater than 50 horsepower) off-road vehicles to be used in the construction project, and operated by either the prime contractor or any subcontractor, will achieve, at a minimum, a fleet-averaged 15 percent NOx reduction compared to the most recent CARB fleet average. Implementation of this measure requires the prime contractor to submit a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during the construction project. In addition, the inventory list shall be updated and submitted monthly throughout the duration of when the construction activity occurs.

- Require the prime contractor to use an alternative fuel, other than Diesel, verified by the CARB or otherwise documented through emissions testing to have the greatest

NOx and PM10 reduction benefit available, provided each pollutant is reduced by at least 15 percent.

AIR-1b Prior to the start of construction activities, the project applicant shall coordinate with the El Dorado AQMD to ensure that only low-VOC architectural coatings are utilized during the construction phase of the proposed project, for both indoor and outdoor surfaces. All architectural coatings used during the construction phase shall have a maximum allowable VOC content limit of 50 g/L.

AIR-1c During construction activities, the project applicant shall implement the following Best Available Fugitive Dust Control Measures as outlined in Table C.4 in the *AQMD CEQA Guide*.

Fugitive Dust Source Category	Control Actions
Earth-moving (except construction cutting and filling areas, and mining operations)	1a. Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the District; two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR 1a-1. For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Earth-moving – construction fill areas	1b. Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the District; for areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM method 1557 or other equivalent method approved by the District, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content; two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.
Earth-moving – construction cut areas and mining operations	1c. Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining areas unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	2a/b. Apply dust suppression in a sufficient quantity and frequency to maintain a stabilized surface; any areas which cannot be stabilized, as evidenced by wind driven dust, must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas – completed grading areas	2c. Apply chemical stabilizers within 5 working days or grading completion; OR 2d. Take action 3a or 3c specified for inactive disturbed surface areas.
Inactive disturbed surface areas	3a. Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible due to excessive slope or other safety conditions; OR 3b. Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR

	3c. Establish a vegetative ground cover within 21 days after active operations have ceased; ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR 3d. Utilize any combination of control actions 3a, 3b and 3c such that, in total, they apply to all inactive disturbed surface areas.
Unpaved roads	4a. Water all roads used for any vehicular traffic at least once per every two hours of active operations; OR 4b. Water all roads used for any vehicular traffic once daily and restrict vehicle speed to 15 mph; OR 4c. Apply chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	5a. Apply chemical stabilizers; OR 5b. Apply water to at least 80 percent of the surface areas of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR 5c. Install a three-sided enclosure with walls with no more than 50 percent porosity that extend, at a minimum, to the top of the pile.
Track-out control	6a. Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and width of at least 20 feet; OR 6b. Pave from the point of intersection with the public paved road surface, and extending for a centerline distance of at least 25 feet and a width of at least 20 feet, and install a track-out control device immediately adjacent to the paved surface such that exiting vehicles do not travel on any unpaved road surface after passing through the track-out control device.
All categories	7a. Any other control measures approved by the District.

AIR-1d During construction activities in high wind conditions, the project applicant shall implement the following Best Available Fugitive Dust Control Measures as outlined in Table C.5 in the *AQMD CEQA Guide*.

Fugitive Dust Source Category	Control Actions
Earth moving	1A. Cease all active operations, OR 2A. Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	1B. On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR 1B. Apply chemical stabilizers prior to a wind event; OR 2B. Apply water to all unstabilized disturbed areas 3 times per day; if there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR 3B. Take the actions specified in Table B.6, Item 3c; OR 4B. Utilize any combination of control actions specified in Table 1, Items 1B, 2B and 3B, such that, in total, they apply to all disturbed surfaced areas.
Unpaved roads	1C. Apply chemical stabilizers prior to a wind event; OR 2C. Apply water twice per hour during active operation; OR 3C. Stop all vehicular traffic.
Open storage piles	1D. Apply water twice per hour; OR

Fugitive Dust Source Category	Control Actions
	2D. Install temporary coverings.
Paved road track-out	1E. Cover all haul vehicles; OR 2E. Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for operation on both public and private roads.
All categories	1F. Any other control measures approved by the District.

Significance after Mitigation: As indicated above, **Mitigation Measures AIR-1a, -1b, -1c, and -1d** would be implemented to ensure the proposed project controls equipment exhaust emissions to levels required by the EDCAQMD and complies with all applicable fugitive dust mitigation measures included in the *AQMD CEQA Guide*. As such, with mitigation, the proposed project would not result in emissions that could cause a violation of the ambient air quality standards, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment under an applicable national or State ambient air quality standard. The project's construction equipment exhaust and fugitive dust emissions would result in a less than significant air quality impact.

Impact AIR-2: **Operation of the proposed project would result in a violation of an air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment under an applicable national or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors). (*Significant; Less than Significant with Mitigation*)**

The proposed project would be a direct and indirect source of air pollution, in that it would generate and attract vehicle trips in the region (mobile source emissions) and it would increase area source emissions and energy use emissions. The mobile source emissions would be entirely from vehicles, while the area source and energy use emissions would be primarily from the use of natural gas as fuel, hearth fuel combustion, landscape fuel combustion, consumer products, and architectural coatings (used during the life of the project for property maintenance).

ROG and NOX Emissions

CalEEMod v.2016.3.1 was used to estimate operational emissions of ROG and NOx that would be associated with the proposed project. **Table 4.1-6, Operational Emissions (Unmitigated Maximum Daily lbs/day),** shows the emissions, which include mobile source, area source, and energy use emissions of

criteria pollutants that would result from operations of the proposed project. The estimated emissions are highly conservative as they do not take into account the sustainable design features that are a part of the proposed project (see **Section 3.6.5)**.

Table 4.1-6
Operational Emissions (Unmitigated Maximum Daily lbs/day)

Emission Source	ROG	NOx
Summer		
Area	334.46	6.60
Energy Use	0.03	0.27
Mobile	7.26	11.78
Total	**341.75**	**18.65**
Threshold of Significance	**82**	**82**
Exceeds Threshold?	**Yes**	**No**
Winter		
Area	334.46	6.60
Energy Use	0.03	0.27
Mobile	6.38	13.20
Total	**340.87**	**20.06**
Threshold of Significance	**82**	**82**
Exceeds Threshold?	**Yes**	**No**

Source: De Novo Planning, 2017

As shown in the table above, operational NOx emissions would be below the thresholds of significance for the individual emission categories (i.e., area, energy, and mobile sources), as well as the total for these categories. ROG emissions for the Area Source category, as well as the total for all categories, would exceed the project-level operational threshold of significance. The impact would be significant.

CalEEMod was used to estimate project-level operational emissions for the proposed project with the implementation of mitigation measures. The primary source of operational emissions that was targeted for mitigation in the model was the area source emissions, which are estimated at 334.46 lbs/day without mitigation; however, mitigation measures targeting other sources were also applied. Mitigation was entered into the model to reduce the total operational area source emissions. Mitigation included a combination of project design features (i.e., location, walkability, accessibility, transit), mobile source mitigation (traffic calming, pedestrian access), and area source mitigation (no wood burning).

Table 4.1-7, Operational Emissions (Mitigated Maximum Daily lbs/day), shows the project-level operational emissions, which include area, energy use, and mobile source emissions that would result

from operations of the proposed project with mitigation.

Table 4.1-7
Operational Emissions (Mitigated Maximum Daily lbs/day)

Emission Source	ROG	NOx
Summer		
Area	7.33	3.40
Energy Use	0.03	0.25
Mobile	5.60	7.12
Total	**12.96**	**10.77**
Threshold of Significance	**82**	**82**
Exceeds Threshold?	**No**	**No**
Winter		
Area	7.33	3.40
Energy Use	0.03	0.25
Mobile	4.61	7.94
Total	**11.96**	**11.58**
Threshold of Significance	**82**	**82**
Exceeds Threshold?	**No**	**No**

Source: De Novo Planning, 2017

As shown in the table above, all emissions are reduced to a level that does not exceed the project-level operational thresholds of significance. With the implementation of **Mitigation Measure AIR-2**, which requires the implementation of several of the project's sustainable development features that are listed in **Chapter 3.0** as well as additional mitigation measures**,** the proposed project would have a less than significant impact related to operational emissions of criteria pollutants.

Emissions of Other Criteria Pollutants

EDCAQMD has put forth screening techniques to identify projects that can be conservatively assumed not to be associated with significant emissions of other criteria pollutants, namely, CO, particulates, SO2, NO2 sulfates, lead, and H2S. Application of air pollution modeling techniques need not be applied to emissions that can be addressed through screening.

CO and Particulates

The *AQMD CEQA Guide* provides an emissions estimation technique for CO and particulates to determine the significance of the pollutant emissions. The following emissions calculations were made

following the procedures as prescribed in Section 6.3.2 of the *AQMD CEQA Guide*. The results of these calculations show that the proposed project would result in lower emissions than the applicable AAQS standards. Therefore, there would be a less than significant impact for CO and particulates. **Tables 4.1-8**, Operational Emissions – Pollutant Concentration/Significance Determination (CO), and **4.1-9, Operational Emissions – Pollutant Concentration/Significance Determination (PM10)**, below, provide the results of this analysis.

Table 4.1-8
Operational Emissions – Pollutant Concentration/Significance Determination (CO)

1. Background Concentration	2.64 μg/m^3
2. Project-related Pollutant Concentration	0.7 μg/m^3
3. Anticipated Total Concentration	3.34 μg/m^3
4. Ambient Air Quality Standard	20 μg/m^3
5. Significance Determination: Significant if >0	**-16.66 (Less than Significant)**

Source: De Novo Planning, 2017

Table 4.1-9
Operational Emissions – Pollutant Concentration/Significance Determination (PM10)

1. Background Concentration	18 μg/m^3
2. Project-related Pollutant Concentration	0
3. Anticipated Total Concentration	18 μg/m^3
4. Ambient Air Quality Standard	50 μg/m3
5. Significance Determination: Significant if >0	**-32 (Less than Significant)**

Source: De Novo Planning, 2017

SO2 and NO2

For directly emitted SO2 or NO2, the EDCAQMD indicates that project-related concentrations need only be estimated if the project is one that contains components that are known to produce SO2 or NO2, such as sources that burn sulfur-based fuels or that have components such as power plants or oil refineries, or projects that generate more heavy-duty vehicle trips than occur generally. Since the proposed project would not utilize sulfur-based fuels or generate heavy-duty vehicle trips than occur generally, this would

represent a less than significant impact.

Lead, Sulfates, and H2S

The EDCAQMD indicates that lead, sulfates, and H2S emissions may be assumed to be not significant except for industrial sources that have specific processes resulting in direct emissions of lead, sulfates, or H2S, such as a foundry, acid plant, or pulp mill. The proposed project is a residential project and does not include any of these industrial sources. As such, the proposed project would not result in significant emissions for lead, sulfates, and H2S, and the impact would be less than significant.

Visibility Impacts

The EDCAQMD indicates that it may be assumed that visibility impacts from development projects in the MCAB portion of the county are not significant; such impacts will be controlled to the maximum extent feasible through state and national regulatory programs governing vehicle emissions, and through mitigation required for ozone precursors and particulate matter. As such, the proposed project would result in a less than significant impact related to visibility.

Mitigation Measures:

AIR-2 To ensure that project emissions remain below applicable thresholds, the project applicant shall implement the following sustainable design features and mitigation measures:

1. Exceed Title 24 by 10 percent
2. Install high-efficiency lighting
3. Install energy-efficient appliances
4. Use only natural gas hearths (i.e. fireplaces)(sealed natural gas only, no wood burning)
5. Install low flow bathroom faucets
6. Install low flow kitchen faucets
7. Install low flow toilets
8. Install low flow showers

9. Use water-efficient irrigation system

10. Design and construct the parking garage to allow for the installation of electric vehicle charging facilities when the demand for the charging facilities is demonstrated.

11. Provide bicycle storage with convenient access

Significance after Mitigation: As shown above in **Table 4.1-7**, implementation of measures listed in **Mitigation Measure AIR-2** would reduce the summer period ROG operational emissions to be less than significant.

Impact AIR-3: The proposed project would not conflict with or obstruct implementation of the applicable air quality plan. (*Less than Significant*)

Regional air quality plans are developed to meet requirements of both the federal and California CAAs. The federal CAA requires that areas not attaining the air quality standards develop an attainment plan demonstrating how control strategies help the area meet reasonable further progress goals and attain the air quality standards. The California CAA also requires a triennial assessment of the extent of air quality improvements and emissions reductions achieved with control measures.

The Sacramento Regional Ozone Air Quality Attainment Plan (AQAP) was developed to bring the region (which includes the MCAB) into attainment as required by the federal and California CAAs. The AQAP assumes annual increases in air pollutant emissions resulting from regional growth; however, the AQAP also assumes the incremental increase in emissions will be partially offset through the implementation of stationary, area, and indirect source control measures contained within the AQAP. These measures consist of the EDCAQMD's rules and regulations and other development- and transportation-related mitigation measures.

The *AQMD CEQA Guide* sets forth methodology that a lead agency may use to demonstrate a development project's consistency with the AQAP for ROG and NOx emissions. According to the *AQMD CEQA Guide* (Chapter 8.0), "Development projects in the MCAB portion of the county are considered consistent with the AQAP if:

1. The project does not require a change in the existing land use designation (e.g., a general plan amendment or rezone), and projected emissions of ROG and NOx from the proposed project are equal to

or less than the emissions anticipated for the site if developed under the existing land use designation;

2. The project does not exceed the "project alone" significance criteria.

3. The lead agency for the project requires the project to implement any applicable emission reduction measures contained in and/or derived from the AQAP (Appendix E); and

4. The project complies with all applicable district rules and regulations."

To the extent that a project exceeds any of the four criteria listed above, the *AQMD CEQA Guide* provides additional guidance, and notes that if the project requires a general plan or zoning amendment, "the project's transportation-related ROG and NOX emissions should be estimated for both the existing and proposed general plan or zoning designations. A similar estimate of any ROG and NOx directly emitted from operations before and after the amendment should be made. If the combined transportation-related and direct emissions are estimated to be greater for the proposed land use designation, the project will have a significant cumulative air quality impact."

The proposed project is evaluated below utilizing this guidance provided by the EDCAQMD:

1. The project does not require a change in the existing land use designation (e.g., a general plan amendment or rezone), and projected emissions of ROG and NOx from the proposed project are equal to or less than the emissions anticipated for the site if developed under the existing land use designation;

- The project site is part of the TCE project and is designated for General Commercial Uses. Development of retail uses, as well as a hotel use, has previously been considered for this site. Each of these uses would be allowed under the existing General Plan designation and Zoning Ordinance zoning; however, the proposed residential use is not an allowed use under the existing designation or zoning. The proposed project would require a General Plan Amendment and Rezone to enable a residential use to be located at this site. Because the project would require a general plan amendment, a retail scenario[2] was developed to determine if project emissions would be greater or less than a project that is consistent with the designated land use (i.e., retail) and does not require a general plan amendment or rezoning. Based on CalEEMod emissions outputs (provided in **Appendix 4.1**), the

[2] As presented in detail in **Appendix 4.1**, the retail scenario analyzed for the project site included the development of seven retail buildings ranging in size from 2,750 square feet to 24,700 square feet. The total square footage of the retail development analyzed is 74,350 square feet. This amount of retail space is substantially lower than the amount of retail that could be entitled for this site under its current land use designation and zoning. However, this retail scenario is considered a realistic scenario as its development density is consistent with that of the adjoining commercial development in the TCE.

proposed residential project would result in 12.75 percent lower emissions of ROG and 24.97 percent lower emissions of NOx compared to the retail scenario.

2. The project does not exceed the "project alone" significance criteria.

- As shown under **Impact AIR-2**, with mitigation, the proposed project's operational emissions do not exceed the "project alone" significance criteria. As shown under **Impact AIR-1**, with the incorporation of mitigation measures that are required by the EDCAQMD, the proposed project's construction emissions do not exceed the "project alone" significance criteria.

3. The lead agency for the project requires the project to implement any applicable emission reduction measures contained in and/or derived from the AQAP.

- The proposed project is an infill development of the larger Town Center project, and many emission reduction measures have already been incorporated into the project. In addition, **Mitigation Measures AIR-1a** through **-1d** and **AIR-2** would be implemented to reduce the project's construction and operational air pollutant emissions. These mitigation measures are derived from and consistent with the *AQMD CEQA Guide.* The emission reduction measures (both the project design features and **Mitigation Measures AIR-1a** through **-1d** and **AIR-2**) are consistent with the objectives, goals, and policies of the Sacramento Regional Ozone AQAP.

4. The project complies with all applicable district rules and regulations.

- The *AQMD CEQA Guide* was used to review the proposed project relative to the EDCAQMD's rules and regulations. The proposed project complies with all applicable rules and regulations.

Therefore, the proposed project would not conflict with or obstruct implementation of the applicable air quality plan. The impact would be less than significant.

Mitigation Measures: No mitigation measures are required.

Impact AIR-4: Project operations would not expose project site sensitive receptors to substantial pollutant concentrations. (*Less than Significant*)

The proposed project includes residences that are considered sensitive receptors. There are existing sources of TAC emissions near the project site that could adversely affect these project site receptors. The effects of these sources on the project site receptors were analyzed in two categories: (1) effects of nearby

roadways, and (2) effects of stationary sources.[3]

CARB published the *Air Quality and Land Use Handbook: A Community Health Perspective* (2007) to provide information to local planners and decision-makers about land use compatibility issues associated with emissions from industrial, commercial and mobile sources of air pollution. The CARB Handbook indicates that mobile sources continue to be the largest overall contributors to the State's air pollution problems, representing the greatest air pollution health risk to most Californians. The most serious pollutants on a statewide basis include diesel exhaust particulate matter (diesel PM), benzene, and 1,3-butadiene, all of which are emitted by motor vehicles. These mobile source TACs are largely associated with freeways and high traffic roads. Non-mobile source air toxics are largely associated with industrial and commercial uses. **Table 4.1-10, CARB Minimum Separation Recommendations of Siting Sensitive Land Uses,** provides the California Air Resources Board minimum separation recommendations on siting sensitive land uses.

Table 4.1-10
CARB Minimum Separation Recommendations of Siting Sensitive Land Uses

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	• 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.
Distribution Centers	• Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). • Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	• Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. • Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	• Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the CARB on the status of pending analyses of health risks.
Refineries	• Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	• Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloro-	• Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For

[3] In California Building Industry Association v. Bay Area Air Quality Management District (2015) 62 Cal.4th 369, the California Supreme Court held that "CEQA generally does not require an analysis of how existing environmental conditions will impact a project's future users or residents." The Court identified certain exceptions to this general rule (e.g., where a project would "exacerbate" existing environmental hazards), which generally do not apply to the instant project. Although CEQA does not require an agency to consider the impact of existing conditions on future project users, the analysis of the impact of nearby roadways and stationary sources on project residents is included for informational purposes.

Source Category	Advisory Recommendations
ethylene	operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district.
	• Do not site new sensitive land uses in the same building with perc dry cleaning operations.
Gasoline Dispensing Facilities	• Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

Sources: "Air Quality And Land Use Handbook: A Community Health Perspective" (CARB 2005)

There are two gasoline dispensing facilities located in the vicinity of the project site. This includes a Valero gas station located at the northwestern corner of Town Center Boulevard and Post Street and a Chevron gas station located at the southwestern corner of Town Center and Post Street. These are considered typical fuel dispensing facilities. The CARB recommends that lead agencies provide a 50-foot separation for typical gas dispensing facilities. The closest fuel dispensing station at the Valero gas station is located 956 feet from the project site boundary. The closest fuel dispensing station at the Chevron gas station is located 984 feet from the project site boundary. The proposed project is consistent with the CARB *Minimum Separation Recommendations on Siting Sensitive Land Uses* (2005) for gasoline dispensing facilities.

There is one freeway located in the vicinity of the project site. This includes U.S. 50 located directly north of the project site. CARB recommends that lead agencies avoid siting new sensitive land uses within 500 feet of a freeway. U.S. 50 is located 511 feet from the project site boundary. The proposed project is consistent with the CARB Minimum Separation Recommendations on Siting Sensitive Land Uses (2005) for freeways. There are no high-traffic roads (urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles per day) within 500 feet of the project site.

Because the proposed project is adequately separated from existing TAC sources, the project would not expose project site residents to substantial concentrations of TACs, and the impact would be less than significant.

Mitigation Measures: No mitigation measures are required.

Impact AIR-5: Project construction would expose sensitive receptors to substantial pollutant concentrations. (*Potentially Significant; Less than Significant with Mitigation*)

Project construction activities would have the potential to expose sensitive receptors to substantial

pollutant concentrations of naturally occurring asbestos.

The USEPA Region 9 office is working in areas of California to address concerns about potential effects of naturally occurring asbestos. The term "asbestos" is used to describe a variety of fibrous minerals that, when airborne, can result in serious human health effects. Naturally Occurring Asbestos (NOA) is commonly associated with ultramafic rocks and serpentinite. NOA can take the form of long, thin, separable fibers. Natural weathering or human disturbance can break NOA down to microscopic fibers, easily suspended in air. There is no health threat if asbestos fibers in soil remain undisturbed and do not become airborne. When inhaled, these thin fibers irritate tissues and resist the body's natural defenses. Asbestos, a known carcinogen, causes cancers of the lung and the lining of internal organs, as well as asbestosis and other diseases that inhibit lung function. Chrysotile, which is also known as "white asbestos" and found in serpentine rocks, is probably the most common NOA. However, other types of asbestos, such as tremolite-actinolite, can also be found throughout California.

Soil in El Dorado Hills has been known to have NOA. The EDCAQMD has prepared the parcel-based map "Asbestos Review Areas, Western Slope" which shows areas of known NOA and areas likely to have NOA, as well as 0.25-mile buffers around known and likely NOA areas. The project site lies within the Quarter Mile Buffer for More Likely to Contain Asbestos or Fault Line on the County's Asbestos Review Areas Map. The project site was graded as part of the previous development in the Town Center; however, it is not known whether the soil material at the time of grading had NOA, or if any material containing NOA is currently on the project site. Because the project site lies within the Quarter Mile Buffer for More Likely to Contain Asbestos or Fault Line on the County's Asbestos Review Areas Map, an Asbestos Hazard Dust Mitigation Plan must be prepared to ensure that adequate dust control and asbestos hazard mitigation measures are implemented during project construction. Additionally, the project must obtain AQMD approval prior to commencing construction activities. **Mitigation Measure AIR-5** is set forth below to ensure that any construction activities that may result in the release of asbestos would include appropriate measures contained within an Asbestos Hazard Dust Mitigation Plan so that exposure to construction workers and the public is minimized to acceptable State and local levels. With the implementation of **Mitigation Measure AIR-5**, the potential impact would be reduced to a less than significant level.

Mitigation Measures:

AIR-5 Prior to any grading activities, the project applicant shall prepare an Asbestos Hazard Dust Mitigation Plan and shall comply with applicable state and local regulations regarding asbestos, including CARB's asbestos airborne toxic control measure (ATCM) (Title 17, CCR § 93105 and 93106) and EDCAQMD Rule 223-2 Fugitive Dust – Asbestos Hazard Mitigation, to ensure that exposure to construction workers and the public is reduced to an acceptable level.

Significance after Mitigation: With implementation of an Asbestos Hazard Dust Mitigation Plan, potential impacts to construction workers and the public would be reduced to a less than significant level.

Impact AIR-6: The proposed project would not create objectionable odors affecting a substantial number of people. (*Less than Significant*)

Project construction would generate localized emissions of diesel exhaust during equipment operation and truck activity. The odor associated with these emissions may be noticeable from time to time to persons in the nearby commercial development. However, the emissions would be temporary, short-term, and localized and are not likely to result in confirmed odor complaints. Furthermore, EDCAQMD-recommended control measures would be implemented to minimize diesel exhaust emissions emitted on the project site during construction. The odor impact from construction-phase emissions would be less than significant. The proposed project does not include any land uses that could subject existing receptors in the project vicinity to substantial odors.

There are no sources of substantial odors near the project site that could subject the new residents of the site to substantial odors. There would be no impact on the new residents related to exposure to odors.

Mitigation Measures: No mitigation measures are required.

4.1.4.5 Cumulative Impacts and Mitigation Measures

Cumulative Impact C-AIR-1: The proposed project, in conjunction with other past, present and reasonably foreseeable future development, would not result in significant cumulative air quality impacts. (*Less than Significant*)

As discussed above, El Dorado County is in non-attainment for ozone, PM10, and PM2.5. The

EDCAQMD's primary criterion for determining whether a project has significant cumulative impacts is whether the project is consistent with an approved plan or mitigation program of District-wide or regional application in place for the pollutants emitted by the project. This criterion is applicable to both the construction and operation phases of a project for ROG and NOx (ozone precursors), and PM10/PM2.5 (particulates).

ROG and NOx

The Sacramento Regional Ozone Air Quality Attainment Plan (AQAP) was developed to bring the region (including the MCAB) into attainment as required by the federal and California Clean Air Acts. The AQAP assumes annual increases in air pollutant emissions resulting from regional growth; however, the AQAP also assumes the incremental increase in emissions will be partially offset through the implementation of stationary, area, and indirect source control measures contained within the AQAP. These measures consist of the EDCAQMD's rules and regulations and other development- and transportation-related mitigation measures. If a project can demonstrate consistency with the AQAP for ROG and NOx emissions, it can be categorized as not having a significant cumulative air quality impact with respect to ozone.

As discussed under **Impact AIR-3**, the proposed project would require a General Plan Amendment and rezoning to allow for the development of a residential project on the project site. However, as demonstrated above, this change in land use would not result in an increase in emissions of ROG and NOx that is greater than the increase in emissions that would result if the site were developed with retail uses consistent with the site's current Specific Plan designation and zoning. Additionally, the project would not result in significant project-level air quality impacts with implementation of all feasible mitigation measures, which are derived from and consistent with EDCAQMD guidance. Therefore, implementation of the proposed project would not result in a significant cumulative air quality impact with respect to ROG and NOx emissions.

Particulates

The *AQMD CEQA Guide* states that a project would not be considered significant for cumulative impacts of particulates if the following conditions are met:

1. For projects that are principally development projects, or where the majority of the emissions of these pollutants is attributable to motor vehicle sources:

    a. The project is not significant for "project alone" emissions of these pollutants;

b. The project complies with all applicable rules and regulations of the District; and

c. The project is not cumulatively significant for ROG, NOx, and CO based on the criteria previously set forth.

As discussed under **Impact AIR-2**, given the residential nature of the project, it would not generate trips by heavy-duty diesel vehicles in greater proportion than such trips occur generally on public roadways, and its impact relative to particulate emissions would be less than significant. The project would not generate a significant impact from "project-alone" emissions of particulates. The proposed project would have a less than significant impact with regard to construction-related particulate emissions, after implementation of mitigation measures.

Furthermore, as the analysis above shows, the project is not cumulatively significant for ROG, NOx, and CO.

Therefore, implementation of the proposed project would not result in a significant cumulative air quality impact with respect to particulate emissions.

Mitigation Measures: No mitigation measures are required.

4.1.5 REFERENCES

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