4.2 Air Quality

This section of the EIR describes the existing conditions and regulatory setting related to air quality for the Fanita Ranch Project (proposed project), evaluates the potential for impacts to air quality due to implementation of the proposed project, and recommends mitigation measures to reduce or avoid adverse impacts, as necessary. This evaluation includes the potential for the proposed project to result in significant emissions of criteria pollutants, toxic air contaminants (TACs), or odors. The information in this section is based on an Air Quality Technical Report prepared by LSA Associates, Inc. (2020), included as Appendix C1, and the Health Risk Assessment Report (HRA) prepared by LSA Associates, Inc. (2020), included as Appendix C2.

4.2.1 Environmental Setting

Air quality is defined by the concentration of pollutants in relation to their impact on human health. Concentrations of air pollutants are determined by the rate and location of pollutant emissions released by pollution sources, and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, and sunlight. Therefore, ambient air quality conditions within the local air basin are influenced by such natural factors as topography, meteorology, and climate, in addition to the amount of air pollutant emissions released by existing air pollutant sources.

Southern California is characterized as a semiarid climate, although it contains three distinct zones of rainfall that coincide with the coast, mountain, and desert. The project site is located within the San Diego Air Basin (SDAB). The SDAB is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the west and high mountain ranges to the east. The topography in the SDAB region varies greatly, from beaches on the west, to mountains, and then desert to the east.

4.2.1.1 Climatology

Regional climate and local meteorological conditions influence ambient air quality. The climate in the SDAB is largely dominated by the strength and position of the semi-permanent high-pressure system over the Pacific Ocean, known as the Pacific High. This high-pressure ridge over the West Coast often creates a pattern of late night and early morning low clouds, hazy afternoon sunshine, daytime onshore breezes, and little temperature variation year-round. Average annual precipitation ranges from approximately 10 inches on the coast to over 30 inches in the mountains to the east (the desert regions of the County of San Diego (County) generally receive between 4 and 6 inches per year).

The favorable climate of the SDAB also works to create air pollution problems. Sinking or subsiding air from the Pacific High Pressure Zone creates a temperature inversion, known as a "subsidence inversion," which acts as a lid to vertical dispersion of pollutants. Weak summertime pressure gradients further limit horizontal dispersion of pollutants in the mixed layer below the subsidence inversion. The combination of poorly dispersed anthropogenic emissions and strong sunshine leads to photochemical reactions, which results in the creation of ozone (O_3) at this surface layer. Daytime onshore flow (i.e., sea breeze) and nighttime offshore flow (i.e., land breeze) are common in Southern California. The sea breeze helps to moderate daytime temperatures in the western portion of the County, which adds to the climatic draw of the region. This also leads to emissions being blown out to sea at night and returning to land the following day. Under certain conditions, this atmospheric oscillation results in the offshore transport of air from the Los Angeles region to the County, which often results in high O_3 concentrations being measured at County air pollution monitoring stations. Transport of air pollutants from Los Angeles to San Diego has also been shown to occur within the stable layer of the elevated subsidence inversion. In this layer, removed from fresh emissions of nitrogen oxides (NO_x), which would scavenge and reduce O_3 concentrations, high levels of O_3 are transported into the County.

4.2.1.2 Air Pollutants

Air quality laws and regulations have divided air pollutants into two broad categories: criteria air pollutants and TACs. Criteria air pollutants are a group of common air pollutants regulated by the federal and state governments by means of ambient standards based on criteria regarding public health and environmental effects of pollution (USEPA 2016). TACs are pollutants with the potential to cause significant adverse health effects. In California, the California Air Resources Board (CARB) identifies exposure thresholds for TACs that indicate the level below which no significant adverse health effects are anticipated from exposure to the identified substance. However, thresholds are not specified for TACs that have no safe exposure level, or where insufficient data is available to identify an exposure threshold (CARB 2011).

Criteria Air Pollutants

Individual air pollutants at certain concentrations may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. The U.S. Environmental Protection Agency (USEPA) and CARB have identified six air pollutants of concern at nationwide and statewide levels: carbon monoxide (CO), NO_x, O_3, particulate matter (PM), sulfur dioxide (SO_2), and lead. Additionally, hydrogen sulfide is a state criteria pollutant that is relevant to the discussion of odor-related impacts. The following describes the health effects for each of these criteria air pollutants, with the exception of lead. Emissions from lead typically result from industrial processes such as ore and metals processing, and leaded aviation gasoline (USEPA 2017). These sources are not proposed as part of the proposed project; therefore, lead emissions are not included in the project analysis.

Carbon Monoxide

CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. CO is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions.

Nitrogen Oxides

NO_2, a reddish brown gas, and nitric oxide (NO), a colorless, odorless gas, are formed from fuel combustion under high temperature or pressure. These compounds are referred to as NO_X,, which is a primary component of the photochemical smog reaction. NO_2 also contributes to other pollution problems, including a high concentration of fine particulate matter ($PM_{2.5}$), poor visibility, and acid deposition (i.e., acid rain). NO_2 decreases lung function and may reduce resistance to infection.

Ozone

O_3 (smog) is formed by photochemical reactions between NOx and volatile organic compounds (VOCs) rather than being directly emitted. O_3 is a pungent, colorless gas typical of Southern California smog. Elevated O_3 concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors (e.g., the sick, the elderly, and young children). O_3 levels peak during summer and early fall.

Particulate Matter

PM is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles (PM_{10}) derive from a variety of sources, including windblown dust and grinding operations. Fuel combustion and resultant exhaust from power plants and diesel buses and trucks are primarily responsible for $PM_{2.5}$ levels. Fine particles can also be formed in the atmosphere through chemical reactions. PM_{10} can accumulate in the respiratory system and aggravate health problems (e.g., asthma). The USEPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to the health effects listed in a number of recently published community epidemiological studies at concentrations that extend well below those allowed by the current PM_{10} standards. These health effects include premature death and increased hospital admissions and emergency room visits (primarily among the elderly and individuals with cardiopulmonary disease), increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease [e.g., asthma]), decreased lung function (particularly in children and individuals with asthma), and alterations in lung tissue and structure and in respiratory tract defense mechanisms.

Sulfur Dioxide

SO_2 is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine PM, and reduces visibility and the level of sunlight.

Volatile Organic Compounds

VOCs are formed from the combustion of fuels and the evaporation of organic solvents. VOCs are not defined as criteria pollutants; however, because VOCs accumulate in the atmosphere more quickly during the winter, when sunlight is limited and photochemical reactions are slower, they are a prime component of the photochemical smog reaction.

Hydrogen Sulfide

Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. H_2S is formed during bacterial decomposition of sulfur-containing organic substances. In addition, H_2S can be present in sewer gas and some natural gas and can be emitted as the result of geothermal energy exploitation. In 1984, a CARB committee concluded that the ambient standard for H_2S is adequate to protect public health and significantly reduce odor annoyance (Appendix C1). H_2S emissions are not typically associated with construction or operation of the proposed land uses and are not included in the analysis of criteria pollutant emissions below. This pollutant is included here because it is relevant to the discussion of odor-related impacts.

4.2.1.3 Existing Air Quality

Ambient air pollutant concentrations in the SDAB are measured at air quality monitoring stations operated by CARB and the San Diego Air Pollution Control District (SDAPCD). The closest air quality monitoring station to the project site is the El Cajon station, located at 533 First Street in El Cajon, approximately 6 miles southeast of the project site, which monitors air pollutant data for all the criteria pollutants. Table 4.2-1 presents a summary of the highest pollutant concentrations monitored during the 3 most recent years (2017 through 2019) for which the SDAPCD has reported data for this station. As shown in Table 4.2-1, CO, NO_2, SO_2, and $PM_{2.5}$ levels are below the applicable state and federal standards.

The state 1-hour O_3 standard was not exceeded between 2017 and 2019. The federal and state 8-hour O_3 standard was exceeded 2 to 9 days between 2017 and 2019.

Table 4.2-1. Ambient Air Quality Monitored at the El Cajon Monitoring Station

Pollutant	Standard	2017	2018	2019
Carbon Monoxide (CO)				
Maximum 1-hr concentration (ppm)		1.4	1.8	1.3
Number of days exceeded:	State: > 20 ppm	0	0	0
Maximum 8-hr concentration (ppm)		1.5	1.1	1.0
Number of days exceeded:	State: ≥ 9.0 ppm	0	0	0
	Federal: ≥ 9.0 ppm	0	0	0
Ozone (O_3)				
Maximum 1-hr concentration (ppm)		0.096	0.087	0.094
Number of days exceeded:	State: > 0.12 ppm	0	0	0
Maximum 8-hr concentration (ppm)		0.081	0.079	0.074
Number of days exceeded:	State: > 0.07 ppm	9	3	2
	Federal: > 0.07 ppm	9	3	2
Coarse Particulates (PM_{10})				
Maximum 24-hr concentration (µg/m^3)		ND	43	38
Number of days exceeded:	State: > 50 µg/m^3	0	0	0
	Federal: > 150 µg/m^3	0	0	0
Annual arithmetic average concentration (µg/m^3)		ND	ND	ND
Exceeded for the year:	State: > 20 µg/m^3	ND	ND	ND
Fine Particulates ($PM_{2.5}$)				
Maximum 24-hr concentration (µg/m^3)		31.8	36.2	23.8
Number of days exceeded:	Federal: > 35 µg/m^3	0	0	0
Annual arithmetic average concentration (µg/m^3)		9.6	9.6	8.6
Exceeded for the year:	State: > 12 µg/m^3	No	No	No
	Federal: > 15 µg/m^3	No	No	No
Nitrogen Dioxide (NO_2)				
Maximum 1-hr concentration (ppm)		0.044	0.045	0.039
Number of days exceeded:	State: > 0.18 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.010	0.007	0.010
Exceeded for the year:	State: > 0.030 ppm	No	No	No
	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2)				
Maximum 24-hr concentration (ppm)		0.0004	0.004	0.008
Number of days exceeded:	State: > 0.04 ppm	0	0	0
	Federal: > 0.14 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.0001	0.0001	0.0007
Exceeded for the year:	Federal: > 0.030 ppm	No	No	No

Source: Appendix C1.

Notes: µg/m^3 = micrograms per cubic meter; hr = hour; ND = no data; $PM_{2.5}$ = particulate matter smaller than or equal to 2.5 microns in diameter; PM_{10} = particulate matter smaller than or equal to 10 microns in diameter; ppm = parts per million

Toxic Air Contaminants

In addition to criteria pollutants, both federal and state air quality regulations also focus on TACs. TACs can be separated into carcinogens and noncarcinogens based on the nature of the effects associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur. Any exposure to a carcinogen poses some risk of contracting cancer. Noncarcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

TACs may be emitted by stationary or mobile sources, as described below.

Stationary TAC Sources

Common stationary sources of TAC emissions include gasoline stations, dry cleaners, and diesel backup generators, which are subject to local air district permit requirements. Padre Dam Municipal Water District's (PDMWD) Roy Stoyer Water Recycling Facility (WRF) is on Fanita Parkway west of the project site. The facility treats sewage, and the process includes the use of chlorine and SO_2 gas. Both chemicals are housed in separate buildings on the property. The Risk Management Plan for the Ray Stoyer WRF (SCS Tracer Environmental 2017) lays out a comprehensive plan for the protection of public health and addresses the chemicals of concern associated with the facility. Therefore, it is not analyzed as a potential source of significant TAC exposure. No other potential sources of TAC emissions, such as gasoline stations, dry cleaners, freeways, high-volume roadways, or distribution centers, are located within 0.2 mile of project site.

Mobile TAC Sources

The other, often more significant, sources of TAC emissions are motor vehicles on freeways, high-volume roadways, or other areas with high numbers of diesel vehicles, such as distribution centers. Off-road mobile sources are also major contributors of TAC emissions and include construction equipment, ships, and trains.

Particulate exhaust emissions from diesel-fueled engines known as diesel particulate matter (DPM) were identified as a TAC by CARB in 1998. Federal and state efforts to reduce DPM emissions have focused on the use of improved fuels, adding particulate filters to engines, and requiring the production of new technology engines that emit fewer exhaust particulates.

Diesel engines tend to produce a much higher ratio of fine particulates than other types of internal combustion engines. The fine particles that make up DPM tend to penetrate deep into the lungs and the rough surfaces of these particles makes it easy for them to bind with other toxins within the exhaust, thus increasing the hazards of particle inhalation. Long-term exposure to DPM is known to lead to chronic, serious health problems including cardiovascular disease, cardiopulmonary disease, and lung cancer.

Sensitive Receptors

Some members of the population are especially sensitive to air pollutant emissions and should be given special consideration when evaluating air quality impacts from projects. Air quality regulators typically define sensitive receptors as schools (preschool–12th grade), hospitals, resident care facilities, daycare centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. The County's CEQA Guidelines definition of a sensitive receptor also includes residents (County of San Diego 2007).

Sensitive receptors near the project site include existing City of Santee (City) residential neighborhoods south of the project site and the existing residential community of Eucalyptus Hills east in the County.

Odor

Odors are considered an air quality issue both at the local level (e.g., odor from wastewater treatment) and at the regional level (e.g., smoke from wildfires). Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

The ability to detect odors varies considerably among the population and is subjective. Some individuals have the ability to smell minute quantities of specific substances while others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person (e.g., from a fast-food restaurant or bakery) may be perfectly acceptable to another. Unfamiliar odors may be more easily detected and likely to cause complaints than familiar ones.

Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, the VOCs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

Several examples of common land use types that generate substantial odors include wastewater treatment plants, landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants. No composting facilities, refineries, or chemical plants are near the project site. Sycamore Landfill is approximately 1.7 miles from the closest proposed residential unit on the project site. Odors generated at the landfill readily dissipate and are not a nuisance on the project site.

The PDMWD Ray Stoyer WRF is located on Fanita Parkway west of the project site. The existing Conditional Use Permit for the facility contains required measures that would be implemented once the proposed project is constructed to reduce potential odor impacts. These measures include the use of an odor scrubber to limit hydrogen sulfide to 6 to 10 parts per million (ppm) at peak operations, the replacement of the existing primary clarifier system with a chemical scrubbing system, the covering of all zones of the biological nutrient removal basins, the installation of additional chemical scrubbers, and the installation of an additional SO_2 neutralization system at the dechlorination building (Helix 2015). As described in detail in Section 4.8, Hazards and Hazardous Material, the chlorine and SO_2 gases in this system are injected into the water under a vacuum. The facility has an aggressive and active safety program, known as the "Accidental Release Prevention Program and Chemical-Specific Prevention Steps," in place to manage the handing of chlorine and SO_2 gas and to prevent and minimize exposure from accidental release.

4.2.2 Regulatory Framework

Below are the applicable federal, state, and local regulations pertaining to air quality.

4.2.2.1 Federal

Federal Clean Air Act

The Clean Air Act (CAA) of 1970 is the comprehensive federal law that regulates air emissions from stationary and mobile sources. The CAA authorizes the USEPA to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants. Current NAAQS are listed in Table 4.2-2. The primary standards listed in Table 4.2-2 have been set at levels intended to protect public health. The USEPA has classified air basins (or portions thereof) as being in "attainment," "nonattainment," or "unclassified" for each criteria air pollutant, based on whether or not the NAAQS have been achieved. Nonattainment areas are air basins that do not meet one or more of the California Ambient Air Quality Standards (CAAQS) and are subject to additional restrictions as required by the USEPA. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. The USEPA classifies the SDAB as in attainment for the federal CO, NO_2, lead, $PM_{2.5}$, and SO_2 standards. It is unclassifiable for PM_{10} with respect to federal air quality standards. The SDAB is classified as moderate nonattainment for O_3 (SDAPCD 2016a). Table 4.2-3 lists the attainment status of the SDAB for criteria pollutants.

The CAA requires states to develop a plan to attain and maintain the NAAQS in all areas of the country and a specific plan to attain the standards for each area designated nonattainment for a NAAQS. These plans, known as State Implementation Plans (SIPs), are developed by state and local air quality management agencies and submitted to USEPA for approval. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them.

Table 4.2-2. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	Federal Standards[2]	
		Concentration[3]	Primary[3, 4]	Secondary[3, 5]
Ozone (O_3)[6]	1-hour	0.09 ppm (180 µg/m^3)	—	Same as Primary Standards
	8-hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	
Respirable Particulate Matter (PM_{10})[7]	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary Standards
	Annual Arithmetic Mean	20 µg/m^3	—	
Fine Particulate Matter ($PM_{2.5}$)[7]	24 Hour	—	35 µg/m^3	Same as Primary Standards
	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	15 µg/m^3
Carbon Monoxide (CO)	8-hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
Nitrogen Dioxide (NO_2)[8]	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary Standard
	1-hour	0.18 ppm (470 mg/m^3)	100 ppb (188 µg/m^3)	
Sulfur Dioxide (SO_2)[9]	Annual Arithmetic Mean	—	0.030 ppm (for certain areas)	—
	24 Hour	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas)	—
	3 Hour	—	—	0.5 ppm (1300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
Lead[10, 11]	30 Day Average	1.5 µg/m^3	—	—
	Calendar Quarter	—	1.5 µg/m^3 (for certain areas)	Same as Primary Standard
	Rolling 3-Month Average[7]	—	0.15 µg/m^3	
Visibility-Reducing Particles[12]	8-hour	See Footnote 12.	No Federal Standards	
Sulfates	24 Hour	25 µg/m^3	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m^3)	No Federal Standards	
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 µg/m^3)	No Federal Standards	

Source: CARB 2016.

Notes:

1 California standards for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, $PM_{2.5}$, and visibility-reducing particles are values that are not to be exceeded. The standards for sulfates, lead, hydrogen sulfide, and vinyl chloride standards are not to be equaled or exceeded. The CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2 National standards (other than O_3, PM, and those based on annual averages) are not to be exceeded more than once per year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in 1 year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the USEPA for further clarification and current national policies.

3 Concentration expressed first in units in which it was promulgated. Equivalent units given in parenthesis are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference

temperature of 25°C and a reference pressure of 760 torr; parts per million (ppm) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

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

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

6 On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.

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

8 To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

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

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm

10 The CARB had identified lead and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

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

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

Table 4.2-3. San Diego Air Basin Attainment Status

Pollutant	California Standards	Federal Standards
Ozone (O_3) (1 Hour)	**Nonattainment**	No Federal Standard
Ozone (O_3) (8 Hour)	**Nonattainment**	**Nonattainment**
Respirable Particulate Matter (PM_{10})	**Nonattainment**	Unclassified[1]
Fine Particulate Matter ($PM_{2.5}$)	**Nonattainment**	Attainment
Carbon Monoxide (CO)	Attainment	Attainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Lead	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Sulfates	Attainment	No Federal Standard
Hydrogen Sulfide	Unclassified	No Federal Standard
Visibility-Reducing Particles	Unclassified	No Federal Standard

Source: Appendix C1.

Note:

1 Unclassified; indicates data are not sufficient for determining attainment or nonattainment.

4.2.2.2 State

Air Quality and Land Use Handbook: A Community Health Perspective

CARB has also developed the Air Quality and Land Use Handbook: A Community Health Perspective to provide guidance on land use compatibility with sources of TACs (CARB 2005). These sources include freeways and high-traffic roads, commercial distribution centers, rail yards, refineries, dry cleaners, gasoline stations, and industrial facilities. The handbook is not a law or adopted policy, but offers advisory recommendations for the siting of sensitive receptors near uses associated with TACs. The handbook indicates that land use agencies have to balance a number of other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

California Ambient Air Quality Standards

CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of air pollution control programs in California. The CAA allows states to adopt Ambient Air Quality Standards and other regulations if they are at least as stringent as federal standards. California has adopted ambient standards (the CAAQS) that are equal to or stricter than the federal standards for six criteria air pollutants. The CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations, and provided in Table 4.2-2. Similar to the federal CAA, areas have been designated as attainment, nonattainment or unclassified with respect to the state Ambient Air Quality Standards. As shown in Table 4.2-3, the SDAB is in nonattainment with the CAAQS for O_3, PM_{10}, and $PM_{2.5}$. The SDAB is designated as an attainment area for the state CO, NO, SO_2, lead, and sulfates standards. Hydrogen sulfide and visibility-reducing particles are unclassified in the SDAB.

Toxic Air Contaminant Regulations

California regulates TACs primarily through the Tanner Air Toxics Act (AB 1807, Tanner Act) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Hot Spots Act). The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB designates a substance as a TAC. To date, CARB has designated nearly 200 compounds as TACs. The majority of estimated health risks from TACs can be attributed to a relatively small number of compounds, the most important being PM from diesel-fueled engines (i.e., DPM).

4.2.2.3 Local

San Diego Air Pollution Control District

The SDAPCD has jurisdiction over air quality programs in the SDAB. State and local government projects, as well as projects proposed by the private sector, are subject to SDAPCD requirements.

Additionally, the SDAPCD, along with CARB, maintains and operates ambient air quality monitoring stations at numerous locations throughout the SDAB including the El Cajon station mentioned previously.

Under the requirements of the California CAA, each local air district is required to develop its own strategies to achieve both state and federal air quality standards for its air basin. The SDAPCD developed the 2016 Revision of the Regional Air Quality Strategy for San Diego County (RAQS) pursuant to California CAA requirements to identify feasible emission-control measures to provide progress in the County toward attaining the state O_3 standard. The pollutants addressed are VOCs and NO_x, precursors to the photochemical formation of O_3 (the primary component of smog). The RAQS control measures focus on emission sources under the SDAPCD's authority, specifically stationary emission sources (such as power plants, manufacturing and industrial facilities) and some area-wide sources (such as water heaters, architectural coatings, and consumer products). However, the emission inventories and emission projections in the RAQS reflect the impact of all emission sources and all control measures, including those under the jurisdiction of CARB (on-road and off-road motor vehicles) and the USEPA (aircraft, ships, and trains). Thus, while legal authority to control various pollution sources is divided among agencies, the SDAPCD is responsible for reflecting federal, state, and local measures in a single plan to achieve state O_3 standards in the SDAB. The RAQS was initially adopted by the SDAPCD in 1992 and has generally been updated on a triennial basis, in accordance with state requirements. The latest version of the RAQS was adopted in 2016 (SDAPCD 2016b).

Additionally, as mentioned previously, because the SDAB is currently designated as a nonattainment area for the 8-hour O_3 NAAQS, the SDAPCD must submit to USEPA, through CARB, an implementation plan as part of the California SIP identifying control measures and associated emission reductions as necessary to demonstrate attainment of the federal 8-hour O_3 standard within the SDAB. The SDAPCD adopted its 2008 Eight-Hour Ozone Attainment Plan and Reasonable Available Control Technology Demonstration for the 2008 8-hour O_3 NAAQS for the SDAB in December 2016.

Neither the RAQS nor the SIP addresses emissions of PM in the SDAB. The SDAPCD prepared the report, Measures to Reduce Particulate Matter in San Diego County, in December 2005. This report, which identifies existing federal, state, and local measures to control particulates in the SDAB, outlines potential measures for PM control that the SDAPCD may further evaluate for future rule adoption. It does not outline a plan for Ambient Air Quality Standards compliance that the proposed project would need to implement. As such, this report is not discussed further in this analysis.

The SDAPCD is also responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws. Development projects in the City are subject to the following SDAPCD rules (as well as others):

- **Rule 51, Nuisance:** prohibits emissions that 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 injury or damage to business or property.
- **Rule 52, Particulate Matter:** establishes limits to the discharge of any PM from non-stationary sources.
- **Rule 54, Dust and Fumes:** establishes limits to the amount of dust or fume discharged into the atmosphere in any 1 hour.
- **Rule 55, Fugitive Dust Control:** sets restrictions on visible fugitive dust from construction and demolition projects.
- **Rule 67, Architectural Coatings:** establishes limits to the VOC content for coatings applied within the SDAPCD.

Santee General Plan

The Santee General Plan includes various goals, objectives, and policies that would help to improve air quality conditions through land use siting and compatibility in the City, including the following policies from the Land Use Element:

- **Policy 4.3:** The City should locate new neighborhood commercial uses along major roadways in consolidated centers that utilize common access and parking for commercial uses, discourage the introduction of strip commercial uses, and require adequate pedestrian links to residential areas.
- **Policy 5.3:** The City shall ensure that industrial development creates no significant off-site impacts related to access and circulation, noise, dust, odors, visual features, and hazardous materials that cannot be adequately mitigated.
- **Policy 6.2:** The City should promote the use of innovative site planning to avoid on-site hazards and minimize risk levels.
- **Policy 8.4:** The City should consider the adjacent land use compatibility guide chart to assist in an initial determination of overall land use compatibility for adjacent land uses.

Sustainable Santee Plan: The City's Roadmap to Greenhouse Gas Reductions

The City adopted the Sustainable Santee Plan in January 2020. The Sustainable Santee Plan provides greenhouse gas emissions reduction goals and strategies focused on reducing resource consumption, improving alternative modes of transportation, and reducing overall emissions throughout the City. The Sustainable Santee Plan presents the following goals that would provide air quality co-benefits (City of Santee 2020):

- Goal 1: Increase Energy Efficiency in Existing Residential Units
- Goal 2: Increase Energy Efficiency in New Residential Units
- Goal 3: Increase Energy Efficiency in Existing Commercial Units
- Goal 4: Increase Energy Efficiency in New Commercial Units
- Goal 5: Decrease Energy Demand through Reducing Urban Heat Island Effect
- Goal 6: Decrease Greenhouse Gas Emissions through Reducing Vehicle Miles Traveled
- Goal 7: Increase Use of Electric Vehicles
- Goal 8: Improve Traffic Flow
- Goal 9: Decrease Greenhouse Gas Emissions through Reducing Solid Waste Generation
- Goal 10: Decrease Greenhouse Gas Emissions through Increasing Clean Energy Use

On February 7, 2020, Preserve Wild Santee, Climate Action Campaign, and the Center for Biological Diversity filed a lawsuit challenging the Sustainable Santee Plan (Preserve Wild Santee v. City of Santee, San Diego Superior Court Case No. 37-2020-7331). Although the action remains pending as of the date of this analysis, filing of a lawsuit does not affect the validity of the Sustainable Santee Plan. As such, the City may continue to rely on the plan for the purposes of this analysis.

4.2.3 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, the proposed project would have a significant impact on air quality if it would:

- **Threshold 1:** Conflict with or obstruct the implementation of the applicable air quality plan.
- **Threshold 2:** Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
- **Threshold 3:** Expose sensitive receptors to substantial pollutant concentrations.
- **Threshold 4:** Result in other emissions (such as those leading to odors) affecting a substantial number of people.

Because the City has not adopted air quality emissions thresholds for CEQA purposes, this analysis relies on the County's Air Quality Guidelines (County of San Diego 2007) for the assessment of air quality impacts for the proposed project. The proposed project would have a potentially significant impact related to criteria pollutant emissions if it would exceed the following thresholds:

- 75 pounds per day (lbs/day) or 13.7 tons per year (tons/year) of VOC
- 250 lbs/day or 40 tons/year of NO_x
- 550 lbs/day or 100 tons/year of CO
- 100 lbs/day or 15 tons/year of PM_{10}
- 55 lbs/day or 10 tons/year of $PM_{2.5}$
- 250 lbs/day or 40 tons/year of sulfur oxides (SO_x)

Regarding Threshold 3, a project would have a significant impact to sensitive receptors related to CO exposure if project emissions would result in an exceedance of the 1-hour or 8-hour CAAQS standard as follows:

- California 1-hour CO standard of 20.0 ppm
- California 8-hour CO standard of 9.0 ppm

Also regarding Threshold 3, the limits for maximum individual cancer risk and non-cancer acute and chronic hazard index from concentrations of TACs were published by the SDAPCD and are applicable to impacts to sensitive receptors related to TAC exposure (SDAPCD 2015). The following limits apply to the proposed project:

- Cancer risk would be considered significant if the increase in total cancer risk due to total TAC emissions would exceed 10 in 1 million (1.0×10^{-5}) for any individual.
- Chronic health risk would be considered significant if the cumulative increase in the total chronic health index for any target organ system due to total TAC emissions would exceed 1.0 for any individual.

4.2.4 Method of Analysis

4.2.4.1 Criteria Pollutants

The most recent version of the California Emissions Estimator Model (CalEEMod) (Version 2016.3.2.25) was used to calculate criteria pollutant emissions from project construction and operation. CalEEMod is designed to model construction emissions for land development projects and allows for the input of project-specific information, such as equipment, hours of operation, duration of construction activities, and selection of emission-control measures. Due to the model limitation on input data scale, construction activities were divided into two scenarios, as follows, and modeled separately:

A. All construction activities of Phase 1 and Phase 2, plus Phase 3 site preparation and grading
B. All construction activities of Phase 3 and Phase 4, plus Phase 1 building construction, and Phase 2 surface improvements and building construction

For construction years 2021 through 2027, maximum daily emissions were calculated based on Scenario A. For construction years 2027 through 2035, maximum daily emissions were calculated based on Scenario B. Construction activities would be identical for the preferred land use plan with school and the land use plan without school; therefore, the reported construction emissions for Scenarios A and B apply to either land use plan. To determine daily emissions, a detailed phasing of the equipment listed in Table 4.2-4 was applied in the modeling, which resulted in peak daily emissions by year. The resulting year-by-year emissions are based on assuming an aggressive level of construction activities with overlapping phases.

Table 4.2-4 lists the anticipated construction equipment that would be required for project construction, as estimated by the applicant. A detailed equipment list is included in Appendix C1.

Table 4.2-4. Diesel Construction Equipment by Construction Phase

Phase No.	Phase Name	Off-Road Equipment Type	Off-Road Equipment Unit Amount	Hours Used per Day	Horsepower	Load Factor
1	Site Preparation	Rubber-Tired Dozers	1	5.1	436	0.4
		Rubber-Tired Loaders	1	5.1	249	0.36
1	Grading	Excavators	1	0.2	760	0.38
		Graders	2	0.2–2.3	275	0.41
		Off-Highway Trucks	8	0.2–8.0	300–1025	0.38
		Plate Compactors	1	2.3	554	0.43
		Rubber-Tired Dozers	6	0.2–2.3	354–600	0.4
		Scrapers	10	2.3	600	0.48
		Tractors/Loaders/Backhoes	1	0.6	249	0.37
1	Utilities	Excavators	15	0.2–3.0	85–417	0.38
		Off-Highway Trucks	18	0.1–1.1	170–450	0.38
		Tractors/Loaders/Backhoes	10	0.2–2.5	164–170	0.37
1	Surface Improvements	Dumpers/Tenders	22	0.6	515	0.38
		Graders	2	0.6	150	0.41
		Off-Highway Trucks	25	0.1–0.9	170–450	0.38
		Pavers	1	0.2	225	0.42
		Paving Equipment	1	0.9	140	0.36
		Rollers	6	0.2–0.6	36–120	0.38
		Scrapers	1	0.6	150	0.48
		Tractors/Loaders/Backhoes	1	0.6	78	0.37
1	Building Construction	Cement and Mortar Mixers	1	3.0	505	0.56
		Off-Highway Trucks	8	1.0–5.0	170–300	0.38
2	Site Preparation	Rubber-Tired Dozers	1	4.8	436	0.4
		Rubber-Tired Loaders	1	4.8	249	0.36
2	Grading	Excavators	1	6.0	760	0.38

Table 4.2-4. Diesel Construction Equipment by Construction Phase

Phase No.	Phase Name	Off-Road Equipment Type	Off-Road Equipment Unit Amount	Hours Used per Day	Horsepower	Load Factor
		Graders	2	6.0–7.1	275	0.41
		Off-Highway Trucks	8	6.0–8.0	300–1025	0.38
		Plate Compactors	1	7.1	554	0.43
		Rubber-Tired Dozers	6	6.0–7.1	354–600	0.4
		Scrapers	10	7.1	600	0.48
		Tractors/Loaders/Backhoes	1	1.8	249	0.37
2	Utilities	Excavators	15	0.3–4.2	85–417	0.38
		Off-Highway Trucks	18	0.1–3.1	170–450	0.38
		Tractors/Loaders/Backhoes	10	0.4–4.5	164–170	0.37
2	Surface Improvements	Dumpers/Tenders	22	0.6	515	0.38
		Graders	2	0.6	150	0.41
		Off-Highway Trucks	25	0.1–0.9	170–450	0.38
		Pavers	1	0.2	225	0.42
		Paving Equipment	1	0.9	140	0.36
		Rollers	6	0.2–0.6	36–120	0.38
		Scrapers	1	0.6	150	0.48
		Tractors/Loaders/Backhoes	1	0.6	78	0.37
2	Building Construction	Cement and Mortar Mixers	1	2.0	505	0.56
		Off-Highway Trucks	8	0.8–3.0	170–300	0.38
3	Site Preparation	Rubber-Tired Dozers	1	4.2	436	0.4
		Rubber-Tired Loaders	1	4.2	249	0.36
3	Grading	Excavators	1	1.1	760	0.38
		Graders	2	1.1–2.6	275	0.41
		Off-Highway Trucks	8	1.1–8.0	300–1025	0.38
		Plate Compactors	1	2.6	554	0.43
		Rubber-Tired Dozers	6	1.1–2.6	354–600	0.4
		Scrapers	10	2.6	600	0.48
		Tractors/Loaders/Backhoes	1	0.7	249	0.37
3	Utilities	Excavators	15	0.3–5.5	85–417	0.38
		Off-Highway Trucks	18	0.1–1.9	170–450	0.38
		Tractors/Loaders/Backhoes	10	0.1–3.0	164–170	0.37
3	Surface Improvements	Dumpers/Tenders	22	0.6	515	0.38
		Graders	2	0.6	150	0.41
		Off-Highway Trucks	25	0.1–0.9	170–450	0.38
		Pavers	1	0.2	225	0.42
		Paving Equipment	1	0.9	140	0.36

Table 4.2-4. Diesel Construction Equipment by Construction Phase

Phase No.	Phase Name	Off-Road Equipment Type	Off-Road Equipment Unit Amount	Hours Used per Day	Horsepower	Load Factor
		Rollers	6	0.2–0.6	36–120	0.38
		Scrapers	1	0.6	150	0.48
		Tractors/Loaders/Backhoes	1	0.6	78	0.37
3	Building Construction	Cement and Mortar Mixers	1	2.0	505	0.56
		Off-Highway Trucks	8	0.8–3.0	170–300	0.38
4	Site Preparation	Rubber-Tired Dozers	1	4.2	436	0.4
		Rubber-Tired Loaders	1	4.2	249	0.36
4	Grading	Excavators	1	1.1	760	0.38
		Graders	2	1.1–2.6	275	0.41
		Off-Highway Trucks	8	1.1–8.0	300–1025	0.38
		Plate Compactors	1	2.6	554	0.43
		Rubber-Tired Dozers	6	1.1–2.6	354–600	0.4
		Scrapers	10	2.6	600	0.48
		Tractors/Loaders/Backhoes	1	0.7	249	0.37
4	Utilities	Excavators	15	0.2–4.8	85–417	0.38
		Off-Highway Trucks	18	0.1–1.7	170–450	0.38
		Tractors/Loaders/Backhoes	10	0.1–2.7	164–170	0.37
4	Surface Improvements	Dumpers/Tenders	22	0.6	515	0.38
		Graders	2	0.6	150	0.41
		Off-Highway Trucks	25	0.1–0.9	170–450	0.38
		Pavers	1	0.2	225	0.42
		Paving Equipment	1	0.9	140	0.36
		Rollers	6	0.2–0.6	36–120	0.38
		Scrapers	1	0.6	150	0.48
		Tractors/Loaders/Backhoes	1	0.6	78	0.37
4	Building Construction	Cement and Mortar Mixers	1	3.0	505	0.56
		Off-Highway Trucks	8	1.3–5.0	170–300	0.38

Source: Detailed equipment list is included in Appendix C1.

Development on the project site would reuse on-site rock materials such as large boulders, rock cobble, decomposed granite, and processed rock. Use of these on-site materials would eliminate the need for importing rough or finished materials, reducing construction-related vehicle trips and associated emissions. However, large quantities of materials would be moved on the project site from the on-site aggregate plant to the grading areas. The Aggregate Report (Appendix K), estimated the number of trips that would be anticipated to haul aggregate during project construction. These trips were distributed among the four phases based on the total aggregate quantities by phase, and each trip was assumed to be 3 miles roundtrip, which would be the longest possible distance between the on-site aggregate plant and grading areas. In addition, based on CalEEMod defaults and the number of residential units and the floor area of commercial buildings to be built during each phase, the proposed project would generate a daily maximum of approximately 1,099 worker trips and 312 vendor trips per day. Trip estimates were calculated as part of determining aggregate and other building material requirements for the proposed project in the Aggregate Report (Appendix K); however, to be conservative, the on-site hauling, worker, and vendor trip estimates calculated by CalEEMod are used to evaluate air pollutant emissions. It is assumed that construction equipment would generally be kept on site for the duration of construction to minimize trips transporting construction equipment off site. The Construction Phasing Plan is included in Appendix C1.

Following construction, the vehicle miles traveled (VMT) for the preferred land use plan with school and the land use plan without school provided in the Transportation Impact Analysis (Appendix N) were used to calculate operational mobile emissions. The preferred land use plan with school would generate approximately 243,266 VMT per day. The land use plan without school would generate approximately 249,124 VMT per day. Changes were made to CalEEMod defaults to include standard project design features, including complying with 2019 Title 24, Building Energy Efficiency Standards, which is estimated to be 7 percent more efficient than the CalEEMod default of 2016 Title 24. The proposed project has been designed to prohibit wood stoves and fireplaces and to allow a total of six natural gas fire pits in the community areas of the villages. The Open Space, Agriculture Overlay, Habitat Preserve, and roadways were excluded from the long-term air quality analysis because operation of these land uses would either not generate air pollutant emissions or only generate nominal levels of emissions. Vehicle trips for these uses are incorporated into the total VMT for each land use plan. Modeling takes into account that the proposed project would comply with state regulations and that the project would include features designed to reduce utility use and greenhouse gas emissions. These regulations and project features would also reduce project criteria pollutant emissions. These regulations, project features, and associated modeling assumptions are provided in Tables 4.7-5 and 4.7-6 in Section 4.7, Greenhouse Gas Emissions. Detailed assumptions for project operation are provided in Appendix C1.

The proposed project would include orchards, vineyards, crops, and gardens in the Agriculture Overlay. Except for vehicle trips, agricultural uses would only generate air pollutant emissions from operational sources by using off-road equipment. The operation details of agricultural uses are not available. However, air pollutant emissions from off-road equipment operation are nominal. For example, a diesel crawler tractor operating 8 hours a day would only emit 0.4 lbs/day VOC, 1.1 lbs/day NO_x, 1.9 lbs/day CO, less than 0.1 lbs/day SO_x, $PM^{2.5}$, and PM^{10}, which are nominal compared to the emissions from other land uses of the project (Appendix C1). Therefore, agricultural equipment emissions were not specifically modeled. Vehicle trips associated with the Agricultural Overlay are included in total vehicle emissions.

Carbon Monoxide Hot Spots

CALINE4 was used to model CO hot spots. Intersections expected to operate at level of service E or worse in 2035 as projected in the Transportation Impact Analysis (Appendix N) were analyzed as potential CO hot spots. The nearest receptor was assumed to be at the corner of the modeled intersection. One-hour CO concentrations were calculated using the worst-case wind angle scenario in the CALINE4 model. CO emission factors were generated using the EMFAC2017 model and using the CO emission factor associated with 2035 for the total vehicle mix during conditions in January at a temperature of 40 degrees Fahrenheit. An ambient 1-hour CO concentration of 1.5 ppm and an ambient 8-hour CO concentration of 1.1 ppm were used to reflect ambient conditions. An urban persistence factor of 0.7 (USEPA 1993) was assumed to convert modeled 1-hour concentrations to the maximum cumulative 8-hour CO concentration.

Toxic Air Contaminants

An HRA was prepared for the proposed project and is included as Appendix C2. The HRA estimates the increased risk of health problems in people who are exposed to TACs. The evaluation combines the results of studies on the health effects of various animal and human exposures to TACs with the results of studies that estimate the level of exposures at different distances from pollutant sources. The purpose of the HRA is to determine the increased cancer and non-cancer health risks from exposure to TACs for future residents of the proposed project and the impact of the proposed project to existing sensitive receptors. The HRA follows the CARB, CAPCOA, and SDAPCD guidance and recommendations for preparation. Specifically, the HRA methods were chosen as prescribed in the SDAPCD's Supplemental Guidelines for Submission of Rule 1200 Health Risk Assessments (HRAs) (SDAPCD 2019). The HRA examines the potential health effects from TAC emissions from the proposed project, particularly construction equipment exhaust during construction of the proposed project. The assumptions and methods of the HRA are summarized below. Additional detail is provided in Appendix C2.

Air dispersion modeling using the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) was performed to assess the impact of TAC emissions on the off-site sensitive receptors surrounding the project site, the off-site roadway construction areas, and the on-site residents that would live in the Village Center in Fanita Commons during the construction of later phases of the proposed project. The residents of the Village Center in Fanita Commons are anticipated to be the earliest occupied units and, therefore, would have the longest exposure. The model was used to calculate the annual average and short duration (i.e., 1-hour) pollutant concentrations associated with each emitting source. Meteorological data at the El Cajon Meteorological Station was provided by the SDAPCD and used in the AERMOD modeling. The results of the criteria pollutant modeling performed using CalEEMod for project construction, described previously, were used to determine that worst-case DPM emissions would occur during year 2024 when construction of Phases 1 and 2 would overlap.

In addition, a separate model was conducted using CalEEMod to estimate exhaust PM_{10} emissions at off-site receptors during roadway construction only. CalEEMod emission modeling output files for construction are provided in Appendix C2. Roadway construction would occur at the beginning of project construction and would not last until 2024 to overlap with the worst-case scenario of on-site construction. On-site receptors would not be exposed to DPM from modeled off-site roadway construction because residents would not be able to move in until off-site roadway construction is completed to provide access to the site.

The cancer risk for DPM was determined by multiplying pollutant concentration calculated by AERMOD by the exposure factor, inhalation absorption factor, and cancer potency factor. The hazard quotient for non-cancer risks from DPM was determined by dividing the concentration in micrograms per cubic meter ($\mu g/m^3$) by the reference exposure level for DPM.

4.2.5 Project Impacts and Mitigation Measures

4.2.5.1 Threshold 1: Consistency with Applicable Air Quality Plan

Would implementation of the proposed project result in a conflict with or obstruct implementation of the applicable air quality plan?

Impact: The proposed project would result in a conflict with applicable air quality plans.	**Mitigation:** Rule 55 Dust-Control Measures (AIR-1), Supplemental Dust-Control Measures (AIR-2), Tier 4 Construction Equipment (AIR-3), Construction Equipment Maintenance (AIR-4), Use of Electricity During Construction (AIR-5), Transportation Demand Management (AIR-6), On-Site Electric Vehicle Charging Stations (AIR-7), High-Efficiency Equipment and Fixtures (AIR-8), Low-Volatile Organic Compound Coating (AIR-9), Electric Landscape Equipment (AIR-10), and All-Electric Homes (GHG-4).
Significance Before Mitigation: Potentially significant.	**Significance After Mitigation:** Significant and unavoidable.

Impact Analysis

The California SIP is the document that sets forth the state's strategies for attaining the NAAQS. The SDAPCD is the agency responsible for preparing and implementing the portion of the California SIP applicable to the SDAB. Since the SDAB is designated in basic nonattainment of the NAAQS for O_3 and in serious nonattainment of the more stringent CAAQS for O_3, the SDAPCD's RAQS outlines the plans and control measures designed to attain the Ambient Air Quality Standards for O_3. The California SIP and the SDAPCD's RAQS were developed in conjunction with each other to reduce regional O_3 emissions. The 2016 RAQS revision is the most recent RAQS prepared by the SDAPCD that fulfills all statutory requirements.

The SDAPCD relies on information from CARB and the San Diego Association of Governments (SANDAG), including projected growth and mobile, area, and all other source emissions, in order to predict future emissions and develop appropriate strategies for the reduction of source emissions through regulatory controls. The CARB mobile source emissions projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the incorporated cities and the County. As such, projects that propose development that is consistent with the growth anticipated by SANDAG would be consistent with the RAQS and the SIP.

The Santee City Council adopted the Santee General Plan on August 27, 2003. The City also adopted a General Plan Housing Element Amendment on April 10, 2013. Development consistent with the Santee General Plan and 2013 General Plan Housing Element Amendment would be consistent with the RAQS and SIP. The project site is zoned and designated as Planned Development in the Santee General Plan. The 2013 Santee General Plan Housing Element Amendment projected approximately 1,380 single-family residential units and 15 live/work units (1,395 units total) within the Fanita Planned Development area, while the proposed project proposes 2,949 housing units under the preferred land use plan with school or 3,008 housing units under the land use plan without school, along with the development of other types of land uses. The proposed project would exceed the number of residential units identified for the project site in the 2013 Santee General Plan Housing Element Amendment projections. Thus, the proposed project would exceed the SANDAG growth assumptions assumed for the project site and would be inconsistent with the emissions projections in the RAQS and the SIP.

Moreover, if a project's emissions would exceed regional thresholds for VOC, NO_x, PM_{10}, or $PM_{2.5}$, it follows that the emissions could cumulatively contribute to an exceedance of a pollutant for which the SDAB is in nonattainment (O_3, NO_2, PM_{10}, and $PM_{2.5}$) at a monitoring station in the SDAB. An exceedance of a nonattainment pollutant at a monitoring station would not be consistent with the goals of the RAQS to achieve attainment of pollutants. As discussed below in Section 4.2.5.2, with implementation of all feasible mitigation measures, criteria air pollutant emissions would be reduced but the proposed project would still exceed the regional significance threshold for PM_{10} and $PM_{2.5}$ during project construction and would exceed the thresholds for VOC and PM_{10} during project operation. Therefore, the proposed project is considered inconsistent with the RAQS and this impact would be potentially significant.

Mitigation Measures

Mitigation Measures AIR-1 through AIR-10 and Mitigation Measure GHG-4 in Section 4.7 would reduce criteria pollutant emissions but not to below applicable regional criteria pollutant thresholds, as described in Section 4.2.5.2. As such, project emissions would potentially exceed future regional emissions inventories and conflict with air quality plans. This impact would be significant and unavoidable after implementation of mitigation measures.

AIR-1: **Rule 55 Dust-Control Measures.** As required by the San Diego Air Pollution Control District Rule 55, Fugitive Dust Control, the applicant shall implement dust-control measures during each phase of project development to reduce the amount of particulate matter entrained in the ambient air. The following measures shall be implemented by the construction contractor and included in project construction documents, including the grading plan, which shall be reviewed and approved by the City of Santee prior to issuance of a grading permit.

- Use track-out grates or gravel beds at each egress point, wheel washing at each egress point during muddy conditions, soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding.
- Use secured tarps or cargo covering, watering, or treating of transported material for outbound transport trucks.
- Remove visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out at the conclusion of each workday when active operations cease or every 24 hours for continuous operations. If a street sweeper is used to remove any track-out/carry-out, only respirable particulate matter (PM_{10})-efficient street sweepers certified to meet the most current South Coast Air Quality Management District's Rule 1186 requirements shall be used.

In addition, visual fugitive dust emissions monitoring shall be conducted during the construction phases. Visual monitoring shall be logged. If high wind conditions result in visible dust during visual monitoring, this demonstrates that the above measures are inadequate to reduce dust in accordance with San Diego Air Pollution Control District Rule 55, and construction shall cease until high winds decrease and conditions improve.

AIR-2: **Supplemental Dust-Control Measures.** As a supplement to San Diego Air Pollution Control District Rule 55, Fugitive Dust Control, the applicant shall require the contractor to implement the following dust-control measures during construction. These measures shall be included in project construction documents, including the grading plan, and be reviewed and approved by the City of Santee prior to issuance of a grading permit.

- Apply soil stabilizers to inactive construction areas (graded areas that would not include active construction for multiple consecutive days).
- Quickly replace ground cover in disturbed areas that are no longer actively being graded or disturbed. If an area has been graded or disturbed and is currently inactive for 20 days or more but will be disturbed at a later time, soil stabilizers shall be applied to stabilize the soil and prevent windblown dust.
- Reduce vehicle speeds on unpaved roads.

AIR-3: **Tier 4 Construction Equipment.** The City of Santee shall require heavy-duty, diesel-powered construction equipment used on the project site during construction to be powered by California Air Resources Board-certified Tier 4 (Final) or newer engines and diesel-powered haul trucks to be 2010 model year or newer that conform to 2010 U.S. Environmental Protection Agency truck standards. This requirement shall be included in the construction contractor's contract specifications and the project construction documents, including the grading plan, which shall be reviewed and approved by the City of Santee prior to issuance of a grading permit. This mitigation measure applies to all construction phases.

AIR-4: **Construction Equipment Maintenance.** The City of Santee shall require the project construction contractor to maintain construction equipment engines in good condition and in proper tune per the manufacturer's specification for the duration of construction. Contract specifications shall be included in project construction documents, including the grading plan, which shall be reviewed and approved by the City of Santee prior to issuance of a grading permit.

AIR-5: **Use of Electricity During Construction.** During construction activities, when on-site electricity is available, the City of Santee shall require the contractor to rely on the electricity infrastructure surrounding the construction site rather than electrical generators powered by internal combustion engines. Contract specifications shall be included in project construction documents, including the grading plan, which shall be reviewed and approved by the City of Santee prior to issuance of a grading permit.

AIR-6: **Transportation Demand Management.** Prior to recordation of the first final map in each phase, the applicant or its designee shall provide evidence to the City of Santee that the proposed project shall implement the following Transportation Demand Management measures identified in the Transportation Impact Analysis (prepared by Linscott, Law & Greenspan, Engineers, in 2020):

- Improve design of development to enhance walkability and connectivity
- Provide pedestrian network improvements
- Provide traffic-calming measures
- Provide bike lanes in the street design
- Provide bike parking for multi-family residential uses
- Implement car-sharing programs
- Provide ride-sharing programs
- Implement commuter trip reduction marketing
- Implement a school carpool program under the preferred land use plan with school
- Implement a neighborhood electric vehicle network

AIR-7: **On-Site Electric Vehicle Charging Stations.** Prior to the issuance of building permits, the applicant or its designee shall provide evidence to the City of Santee that the proposed project shall include a total of 1,203 240-volt Level 2 Electric Vehicle Supply Equipment (EVSE) in each garage provided for a Low Density Residential (LDR) unit, a total of 354 EVSE within the parking areas of the remaining residential units (Medium Density Residential (MDR), Village Center (VC), and Active Adult Residential (AA)), and 15 EVSE within the proposed project's commercial parking lots.

AIR-8: **High-Efficiency Equipment and Fixtures.** Prior to the issuance of building permits, the applicant or its designee shall provide evidence to the City of Santee that the applicant will utilize high-efficiency equipment and fixtures that exceed 2016 California Green Building Standards Code and 2019 Title 24, Part 6 energy conservation standards by 14 percent. When the standards are updated, the applicant shall use high-efficiency equipment and fixtures meeting or exceeding the latest standards.

AIR-9: **Low-Volatile Organic Compound Coating.** Prior to the issuance of building permits, the applicant or its designee shall provide evidence to the City of Santee that the proposed project will comply with the San Diego Air Pollution Control District's Rule 67.0.1, Architectural Coatings, and use paints with no more than 50 grams of volatile organic compound per liter of coating. The applicant shall use water-based paints when possible. In addition, to reduce the exterior area of the buildings that needs to be repainted, when possible, the applicant shall use construction materials that do not require painting or pre-painted construction materials. Furthermore, the applicant shall use low-volatile organic compound cleaning supplies to reduce volatile organic compound emissions from area sources. This requirement shall be included in the construction contractor's contract specifications and project construction documents, which shall be reviewed and approved by the City of Santee prior to issuance of a construction permit.

AIR-10: **Electric Landscape Equipment.** Prior to the issuance of building permits, the applicant or its designee shall provide evidence to the City that the design plans for residential structures include electrical outlets in the front and rear of the structure to facilitate use of electrical lawn and garden equipment.

4.2.5.2 Threshold 2: Cumulative Increase in Criteria Pollutant Emissions

Would implementation of the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Impact: The proposed project would result in a significant net increase in criteria pollutant emissions during construction and operation.	**Mitigation:** Rule 55 Dust-Control Measures (AIR-1), Supplemental Dust-Control Measures (AIR-2), Tier 4 Construction Equipment (AIR-3), Construction Equipment Maintenance (AIR-4), Use of Electricity During Construction (AIR-5), Transportation Demand Management (AIR-6), On-Site Electric Vehicle Charging Stations (AIR-7), High-Efficiency Equipment and Fixtures (AIR-8), Low-Volatile Organic Compound Coating (AIR-9), Electric Landscape Equipment (AIR-10), and All-Electric Homes (GHG-4).
Significance Before Mitigation: Potentially significant.	**Significance After Mitigation:** Significant and unavoidable.

Impact Analysis

Criteria pollutant emissions associated with the proposed project would occur over the short-term from construction activities (e.g., fugitive dust from site preparation and grading) and emissions from equipment exhaust. Long-term regional emissions would be associated with project-related vehicular trips and energy consumption by the proposed project. Construction and operational emissions are addressed separately below.

Construction

Construction activities produce combustion emissions from various sources (e.g., site preparation, grading, utilities construction, surface improvements, and motor vehicles transporting the construction crew). Exhaust emissions from construction activities envisioned on site would vary daily as construction activity levels change. The use of construction equipment on site would result in localized exhaust emissions. Table 4.2-5 summarizes the maximum daily emissions that would be expected to occur during each construction year, including on and off-site emissions.

Table 4.2-5. Short-Term Regional Construction Emissions

Construction Year	Daily Regional Pollutant Emissions, lbs/day							
	VOC	NO_x	CO	SO_x	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
2021–2022	6.18	72.75	41.44	0.12	564.20	2.46	57.43	2.27
2022–2023	7.61	78.65	57.94	0.17	210.69	2.72	22.28	2.51
2023–2024	9.23	72.10	83.23	0.28	6,454.72	2.54	645.77	2.33
2024–2025	26.40	243.89	195.98	0.60	313.00	8.53	41.96	7.86
2025–2026	25.34	220.61	200.32	0.64	151.15	7.62	25.74	7.02
2026–2027	16.05	128.39	135.04	0.47	258.99	3.66	31.07	3.39
2027–2028	15.80	127.68	132.91	0.47	179.83	3.65	22.25	3.38
2028–2029	13.66	112.16	115.54	0.38	699.28	3.56	73.09	3.30
2029–2030	13.47	111.76	114.33	0.37	85.55	3.56	12.65	3.30
2030–2031	12.80	54.77	87.27	0.32	161.89	1.48	19.52	1.48
2031–2032	8.21	48.00	78.68	0.29	15.01	0.56	4.04	0.56
2032–2033	3.94	26.23	39.32	0.15	8.47	0.26	2.28	0.25
2033–2035	3.84	26.07	38.83	0.15	8.47	0.25	2.28	0.25
Peak Daily	**26.40**	**243.89**	**200.32**	**0.64**	**6,457.26**		**648.10**	
Peak Annual (tons)	**2.84**	**24.95**	**21.82**	**0.07**	**5.58**		**1.02**	
Daily County Thresholds	**75**	**250**	**550**	**250**	**100**		**55**	
Annual County Threshold (tons)	**13.7**	**40**	**100**	**40**	**15**		**10**	
Significant Emissions?	**No**	**No**	**No**	**No**	**Yes**		**Yes**	

Source: Appendix C1.

Note: CO = carbon monoxide; County = County of San Diego; lbs/day = pounds per day; NO_x = nitrogen oxides; PM_{10} = particulate matter smaller than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter smaller than or equal to 2.5 microns in diameter; VOC = volatile organic compound; SO_x = sulfur oxides

Shade = Exceeds significance threshold

Detailed construction schedule by phase and year is provided in Appendix C1.

As shown in Table 4.2-5, peak annual emissions would be below the annual thresholds for each year of construction, and daily emissions of VOC, NO_x, CO, and SO_x would not exceed the daily significance thresholds during any construction year. However, daily exceedances of PM_{10} would occur from 2021 to 2028 and in 2030 during construction phases 1 through 4, and $PM_{2.5}$ from 2021 to 2029, and in 2030–2031 during construction phases 1 through 4. The exceedance of the daily County thresholds for PM_{10} and $PM_{2.5}$ would be primarily due to the hauling trips on internal, unpaved roads during site preparation, grading, and utilities construction. PM_{10} and $PM_{2.5}$ emissions would be higher in 2023–2024 than in other years because Phase 1 grading would involve a large number of trips within the project boundary due to the large aggregate quantities required by mass grading in Phase 1 for that initial phase. As shown in Table 4.2-5, impacts associated with criteria air pollutant emissions during construction would be potentially significant and mitigation measures would be required.

Operation

Long-term air pollutant emissions impacts are those associated with stationary sources and mobile sources involving any project-related changes. Operation of the proposed project would result in net increases in stationary, area, and mobile source emissions. Stationary sources of emissions include the use of architectural coatings, consumer products, landscape equipment, and energy use. Area-source emissions would be associated with activities such as natural gas for heating and other sources. Mobile source emissions of air pollutants would include project-generated vehicle trips. Operational emissions calculated for the preferred land use plan with school and the land use plan without school are reported separately below.

Table 4.2-6 shows the long-term operational emissions associated with the proposed project. Table 4.2-6 shows that buildout year project-related emissions of VOC, CO, and PM_{10} would exceed daily and annual County thresholds for criteria pollutants. Therefore, criteria air pollutant direct impacts during long-term operation of the preferred land use plan with school would be potentially significant. Impacts related to VOC and PM_{10} emissions would also be cumulatively considerable because of the SDAB's nonattainment status for O_3 and PM_{10}.

Table 4.2-6. Buildout Year Regional Operational Emissions – Preferred Land Use Plan With School

Source	Pollutant Emissions, lbs/day					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Area[1]	169.56	22.76	251.19	0.14	2.96	2.96
Energy[2]	1.90	16.54	8.89	0.10	1.32	1.32
Mobile[3]	20.18	84.89	314.90	1.49	181.58	48.98
Total Project Daily Emissions	**191.64**	**124.19**	**574.99**	**1.74**	**185.86**	**53.26**
Total Project Annual Emissions (tons)	**33.87**	**18.78**	**77.47**	**0.28**	**32.4**	**9.08**
Daily County Threshold	**75**	**250**	**550**	**250**	**100**	**55**
Annual County Threshold (tons)	**13.7**	**40**	**100**	**40**	**15**	**10**
Significant?	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**

Source: Appendix C1.

Note: County = County of San Diego; lbs/day = pounds per day; NO_x = nitrogen oxides; PM_{10} = particulate matter less than or equal to 10 microns in size; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in size; SO_x = sulfur oxides; VOC = volatile organic compound.

Numbers in table may not appear to add up correctly due to rounding.

[1] Area source includes architectural coatings, consume products, and landscaping equipment.

[2] Energy source includes natural gas consumption.

[3] Mobile source includes project-generated vehicle trips.CO = carbon monoxide.

Table 4.2-7 shows that the buildout year project-related emissions of VOC, CO, and PM_{10} under the land use plan without school would exceed daily and annual County thresholds for criteria pollutants. Therefore, criteria air pollutant direct impacts during long-term operation of the land use plan without school would be potentially significant. Impacts related to VOC and PM_{10} emissions would also be cumulatively considerable because of the SDAB's nonattainment status for O_3 and PM_{10}.

Table 4.2-7. Buildout Year Regional Operational Emissions – Land Use Plan Without School

Source	Pollutant Emissions, lbs/day					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Area[1]	170.67	23.79	256.35	0.15	3.07	3.07
Energy[2]	1.93	16.75	8.93	0.11	1.33	1.33
Mobile[3]	20.31	85.31	318.67	1.51	184.10	49.66
Total Daily Project Emissions	**192.91**	**125.85**	**583.95**	**1.77**	**188.50**	**54.06**
Total Annual Project Emissions (tons)	**34.15**	**19.13**	**79.12**	**0.29**	**33.18**	**9.30**
Daily County Threshold	**75**	**250**	**550**	**250**	**100**	**55**
Annual County Threshold (tons)	**13.7**	**40**	**100**	**40**	**15**	**10**
Significant?	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**

Source: Appendix C1.

Note: CO = carbon monoxide; County = County of San Diego; lbs/day = pounds per day; NO_x = nitrogen oxides; PM_{10} = particulate matter less than or equal to 10 microns in size; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in size; SO_x = sulfur oxides; VOC = volatile organic compound.

Numbers in table may not appear to add up correctly due to rounding.

[1] Area source includes architectural coatings, consume products, and landscaping equipment.

[2] Energy source includes natural gas consumption.

[3] Mobile source includes project-generated vehicle trips.

Mitigation Measures

Mitigation Measures AIR-1 through AIR-5, listed in Section 4.2.5.1, would reduce significant construction emissions of PM_{10} and $PM_{2.5}$ associated with the proposed project. However, as shown in Table 4.2-8, construction emissions of PM_{10} and $PM_{2.5}$ would not be reduced to below the applicable daily thresholds. Therefore, construction impacts would remain significant and unavoidable after implementation of mitigation measures.

Table 4.2-8. Mitigated Short-Term Regional Construction Emissions

Construction Year	Daily Regional Pollutant Emissions, lbs/day							
	VOC	NO_x	CO	SO_x	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
2021–2022	1.64	13.20	47.71	0.12	121.49	0.22	12.47	0.21
2022–2023	2.62	16.60	74.54	0.17	46.15	0.32	5.06	0.31
2023–2024	7.28	43.55	95.52	0.28	1,385.64	0.87	138.85	0.82
2024–2025	10.70	61.30	230.42	0.60	75.12	1.26	11.38	1.23
2025–2026	10.98	63.28	253.78	0.64	40.21	1.32	7.85	1.29
2026–2027	10.56	70.65	156.43	0.47	66.45	1.31	7.93	1.25
2027–2028	10.33	70.13	154.28	0.47	47.51	1.31	7.84	1.25
2028–2029	8.29	55.29	136.66	0.38	154.39	1.26	16.94	1.20
2029–2030	8.10	54.90	135.46	0.37	25.69	1.26	4.85	1.20
2030–2031	6.71	43.75	121.96	0.32	39.42	0.48	5.52	0.48
2031–2032	6.47	43.40	84.86	0.29	11.73	0.40	3.23	0.40
2032–2033	3.28	24.24	41.14	0.15	6.62	0.20	1.83	0.19
2033–2035	3.18	24.08	40.65	0.15	6.62	0.19	1.83	0.19
Peak Daily	**10.98**	**70.65**	**253.78**	**0.64**	**1,385.95**		**139.14**	
Peak Annual (tons)	**1.26**	**7.54**	**27.21**	**0.07**	**5.58**		**1.02**	
Daily County Thresholds	**75**	**250**	**550**	**250**	**100**		**55**	
Annual County Thresholds (tons)	**13.7**	**40**	**100**	**40**	**15**		**10**	
Significant Emissions?	**No**	**No**	**No**	**No**	**Yes**		**Yes**	

Source: Appendix C1.

Note: CO = carbon monoxide; County = County of San Diego; lbs/day = pounds per day; NO_x = nitrogen oxides; PM_{10} = particulate matter smaller than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter smaller than or equal to 2.5 microns in diameter; SO_x = sulfur oxides; VOC = volatile organic compound

Shade = Exceeds significance threshold

Mitigation Measures AIR-6 through AIR-10, listed in Section 4.2.5.1, and Mitigation Measure GHG-4 in Section 4.7 would reduce significant daily and annual operational emissions of VOC, CO, and PM_{10} associated with the proposed project. Tables 4.2-9 and 4.2-10 show the mitigated operational emissions under the preferred land use plan with school and the land use plan without school, respectively. As shown in Tables 4.2-9 and 4.2-10, operational CO emissions from implementation of the proposed project would be reduced to a less than significant level. However, VOC and PM_{10} emissions would remain cumulatively considerable and unavoidable under both land use plans after implementation of mitigation measures.

Table 4.2-9. Mitigated Regional Operational Emissions – Preferred Land Use Plan With School

Source	Pollutant Emissions, lbs/day					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Area[1]	120.49	2.23	184.34	<0.01	1.01	1.01
Energy[2]	0.48	4.36	3.66	0.03	0.33	0.33
Mobile[3]	13.35	58.43	234.19	1.10	135.07	36.49
Total Daily Project Emissions	**136.32**	**65.02**	**422.19**	**1.14**	**136.40**	**37.83**
Total Annual Project Emissions (tons)	**24.38**	**11.91**	**57.14**	**0.19**	**23.91**	**6.59**
Daily County Threshold	**75**	**250**	**550**	**250**	**100**	**55**
Annual County Threshold (tons)	**13.7**	**40**	**100**	**40**	**15**	**10**
Significant?	**Yes**	**No**	**No**	**No**	**Yes**	**No**

Source: Appendix C1.

Note: CO = carbon monoxide; County = County of San Diego; lbs/day = pounds per day; NO_x = nitrogen oxides; PM_{10} = particulate matter less than or equal to 10 microns in size; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in size

SO_x = sulfur oxides; VOC = volatile organic compound

Numbers in table may not appear to add up correctly due to rounding

[1] Area source includes architectural coatings, consume products, and landscaping equipment.

[2] Energy source includes natural gas consumption.

[3] Mobile source includes project-generated vehicle trips.

Table 4.2-10. Mitigated Regional Operational Emissions – Land Use Plan Without School

Source	Pollutant Emissions, lbs/day					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Area[1]	121.08	2.27	187.97	<0.01	1.03	1.03
Energy[2]	0.47	4.24	3.56	0.03	0.32	0.32
Mobile[3]	15.82	60.19	242.69	1.15	140.22	37.88
Total Daily Project Emissions	**137.37**	**66.70**	**434.21**	**1.18**	**141.57**	**39.23**
Annual Total Project Emissions (tons)	**24.59**	**12.35**	**59.28**	**0.21**	**25.05**	**6.89**
Daily County Threshold	**75**	**250**	**550**	**250**	**100**	**55**
Annual County Threshold (tons)	**13.7**	**40**	**100**	**40**	**15**	**10**
Significant?	**Yes**	**No**	**No**	**No**	**Yes**	**No**

Source: Appendix C1.

Note: CO = carbon monoxide; County = County of San Diego; lbs/day = pounds per day; NO_x = nitrogen oxides; PM_{10} = particulate matter less than or equal to 10 microns in size; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in size; SOx = sulfur oxides; VOC = volatile organic compound

Numbers in table may not appear to add up correctly due to rounding

[1] Area source includes architectural coatings, consume products, and landscaping equipment.

[2] Energy source includes natural gas consumption.

[3] Mobile source includes project-generated vehicle trips.

4.2.5.3 Threshold 3: Sensitive Receptors

Would implementation of the proposed project expose sensitive receptors to substantial pollutant concentrations?

Impact: Construction and operation of the proposed project would potentially expose sensitive receptors to substantial pollutant concentrations.

Mitigation: Tier 4 Construction Equipment (AIR-3), Construction Equipment Maintenance (AIR-4), Construction Buffer Area (AIR-11), New Source Review (AIR-12).

Significance Before Mitigation: Potentially significant.

Significance After Mitigation: Less than significant.

Impact Analysis

Sensitive receptors are defined as residences, schools, hospitals, resident care facilities, daycare centers, or other facilities that may house individuals with health conditions that would be adversely affected by changes in air quality. The two primary emissions of concern regarding health effects for land development projects are CO and TACs. These emissions are addressed separately below.

The project site is approximately 3 miles from the State Route (SR-) 52 and SR-67 freeways. According to the Transportation Impact Analysis (Appendix N), none of the major roadways within 500 feet of the project site would exceed the CARB screening level of 50,000 vehicles per day. No other TAC-emitting facilities exist in close vicinity to the project site. Therefore, future on-site residents would not be exposed to substantial emissions from existing off-site TAC-emitting sources and impacts from off-site sources are not addressed below.

Carbon Monoxide Hot Spots

Areas with high vehicle density, such as congested intersections and parking garages, have the potential to create high concentrations of CO, known as CO hot spots. An air quality pollutant concentration impact is considered significant if CO emissions create a hot spot where either the California 1-hour standard of 20 ppm or the federal and state 8-hour standard of 9.0 ppm is exceeded. This typically occurs at severely congested intersections (level of service E or worse).

Table 4.2-11 displays the estimated CO concentrations in 2035 under the preferred land use plan with school and the land use plan without school at the nearest receptor from each modeled intersection. The estimated worst-case 1-hour CO concentration at any intersection would be 2.7 ppm at the intersection of Mast Boulevard and the SR-52 westbound (WB) ramps. The concentration at that location, however, would not exceed the California 1-hour standard of 20 ppm or the federal 1-hour standard of 35 ppm. The maximum cumulative 8-hour CO concentration at the same intersection would be 1.9 ppm and would not exceed the California and federal 8-hour standard of 9 ppm. Therefore, the increase in vehicle trips that would result from the proposed project would not result in a CO hot spot at any modeled intersection. Impacts would be less than significant.

Table 4.2-11. Estimated Carbon Monoxide Concentrations

Intersection	Peak Hour	1-Hour CO Concentration (ppm)			8-Hour CO Concentration (ppm)			Impact?
		2035 Without Project	2035 With Project (With School)	2035 With Project (Without School)	2035 Without Project	2035 With Project (With School)	2035 With Project (Without School)	
Princess Joann Road and Cuyamaca Street	AM	1.7	1.8	1.7	1.2	1.3	1.2	No
	PM	1.7	1.8	1.8	1.2	1.3	1.3	No
Ganley Road and Fanita Parkway	AM	1.7	1.8	1.8	1.2	1.3	1.3	No
	PM	1.7	1.9	1.8	1.2	1.4	1.4	No
Woodglen Vista Drive and Cuyamaca Street	AM	1.7	1.9	1.9	1.2	1.4	1.4	No
	PM	1.8	1.9	1.9	1.3	1.4	1.4	No
El Nopal and Cuyamaca Street	AM	1.9	2.0	1.9	1.4	1.5	1.4	No
	PM	1.9	2.0	2.0	1.4	1.5	1.5	No
El Nopal and Magnolia Avenue	AM	1.9	2.0	1.9	1.4	1.5	1.4	No
	PM	1.9	2.0	2.0	1.4	1.5	1.5	No
El Nopal and Los Ranchitos Road	AM	1.8	1.8	1.8	1.3	1.3	1.3	No
	PM	1.8	1.8	1.8	1.3	1.3	1.3	No
Lake Canyon Road and Fanita Parkway	AM	1.7	1.9	1.8	1.2	1.4	1.3	No
	PM	1.8	1.9	1.9	1.3	1.4	1.4	No
Beck Drive and Cuyamaca Street	AM	1.9	2.0	2.0	1.4	1.5	1.5	No
	PM	1.9	2.0	2.0	1.4	1.5	1.5	No
Mast Boulevard and SR-52 WB Ramps	AM	2.6	2.7	2.7	1.9	1.9	1.9	No
	PM	2.1	2.2	2.2	1.5	1.6	1.6	No
Mast Boulevard and West Hills Parkway	AM	2.2	2.3	2.2	1.6	1.7	1.6	No
	PM	2.3	2.4	2.4	1.7	1.7	1.7	No
Mast Boulevard and Fanita Parkway	AM	2.1	2.3	2.2	1.5	1.7	1.6	No
	PM	2.0	2.1	2.1	1.5	1.5	1.5	No
Mast Boulevard and Cuyamaca Street	AM	2.0	2.1	2.1	1.5	1.5	1.5	No
	PM	2.2	2.2	2.2	1.6	1.6	1.6	No
Riverford Road and SR-67 SB Ramps	AM	2.1	2.1	2.1	1.5	1.5	1.5	No
	PM	2.1	2.1	2.1	1.5	1.5	1.5	No
Riverford Road and Woodside Avenue	AM	2.1	2.1	2.1	1.5	1.5	1.5	No
	PM	2.0	2.1	2.1	1.5	1.5	1.5	No
Mission Gorge Road and West Hills Parkway	AM	2.3	2.4	2.3	1.7	1.7	1.7	No
	PM	2.0	2.0	2.0	1.5	1.5	1.5	No

Table 4.2-11. Estimated Carbon Monoxide Concentrations

Intersection	Peak Hour	1-Hour CO Concentration (ppm)			8-Hour CO Concentration (ppm)			Impact?
		2035 Without Project	2035 With Project (With School)	2035 With Project (Without School)	2035 Without Project	2035 With Project (With School)	2035 With Project (Without School)	
Mission Gorge Road and Carlton Hills Boulevard	AM	2.3	2.5	2.5	1.7	1.8	1.8	No
	PM	2.2	2.3	2.3	1.6	1.7	1.7	No
Mission Gorge Road and Town Center Parkway	AM	1.9	1.9	1.9	1.4	1.4	1.4	No
	PM	2.1	2.2	2.2	1.5	1.6	1.6	No
Mission Gorge Road and Cuyamaca Street	AM	2.1	2.1	2.1	1.5	1.5	1.5	No
	PM	2.3	2.4	2.4	1.7	1.7	1.7	No
Mission Gorge Road and Cottonwood Avenue	AM	1.8	1.8	1.8	1.3	1.3	1.3	No
	PM	2.0	2.0	2.0	1.5	1.5	1.5	No
Mission Gorge Road and Magnolia Avenue	AM	2.3	2.3	2.3	1.7	1.7	1.7	No
	PM	2.4	2.4	2.4	1.7	1.7	1.7	No
Woodside Avenue N and SR-67 SB Off-Ramp	AM	1.9	1.9	1.9	1.4	1.4	1.4	No
	PM	2.1	2.1	2.1	1.5	1.5	1.5	No
Fanita Drive and SR-52 WB Off-Ramp	AM	1.8	1.8	1.8	1.3	1.3	1.3	No
	PM	1.8	1.8	1.8	1.3	1.3	1.3	No
Buena Vista Avenue and Cuyamaca Street	AM	2.0	2.0	2.0	1.5	1.5	1.5	No
	PM	2.2	2.2	2.3	1.6	1.6	1.7	No
Prospect Avenue and Fanita Drive	AM	1.9	1.9	1.9	1.4	1.4	1.4	No
	PM	1.8	1.8	1.8	1.3	1.3	1.3	No

Source: See Appendix C1 for model output sheets.

Note: CO = carbon monoxide; ppm = parts per million; SB = southbound; SR- = State Route;; WB = westbound

Toxic Air Contaminants

Construction

The greatest potential for TAC emissions during project construction activities would be related to emissions of DPM associated with heavy equipment operations during site preparation, grading, and utilities construction activities. Construction-related activities would result in short-term emissions of DPM from off-road heavy-duty diesel equipment exhaust. Construction of Phase 1 and Phase 2 would be primarily in the southwestern area of the project site, closest to existing sensitive receptors and, as such, was analyzed as the worst-case scenario. Later construction phases in the eastern portion of the project site would be outside the 1,000-foot screening distance for potential impacts and emit lower levels of DPM because less earthwork would be required during these phases, resulting in less intensive construction activity.

Figure 4.2-1, Phase 1 and Phase 2 Construction DPM Concentrations, depicts the DPM concentrations during construction of Phase 1 and Phase 2 at the first occupied on-site sensitive receptors (represented by Fanita Commons Village Center) and nearest off-site sensitive receptors (existing terminus of Cuyamaca Street). Figure 4.2-2, Roadway Construction DPM Concentrations, depicts the DPM concentrations from off-site roadway construction. Maximum cancer and non-cancer risk levels are provided in Table 4.2-12. As shown in Table 4.2-12, cancer risk levels at off-site sensitive receptors and the first occupied on-site sensitive receptors would exceed the SDAPCD threshold during Phase 1 and Phase 2 construction of the proposed project. The impact would be potentially significant. Non-cancer risk levels at on-site and off-site sensitive receptors would not exceed the SDAPCD threshold, and impact would be less than significant.

Table 4.2-12. Health Risk Levels from Project Construction

Receptors	Maximum Cancer Risk (Risk in 1 Million)	Maximum Non-Cancer Chronic Risk (Hazard Index)
On-Site	135.05 (southwest corner of Fanita Commons Village Center)	0.05239 (southwest corner of Fanita Commons Village Center)
Off-Site	31.82 (existing terminus of Cuyamaca Street)	0.01489 (existing terminus of Cuyamaca Street)
SDAPCD Threshold	**10**	**1**
Significant?	**Yes**	**No**

Source: See Appendix C2 for figures and calculations.
Notes: SDAPCD = San Diego Air Pollution Control District

Operation

The specific future uses or tenants of the commercial components of the proposed project are unknown at this time, but allowable uses include gasoline-dispensing stations that could emit TACs. However, location and operation details of these facilities are currently unknown. Therefore, this impact is potentially significant.

Assessment of Project Operational Health Impacts

As shown in Tables 4.2-6 and 4.2-7, operation of the proposed project would result in significant and unavoidable criteria pollutant emissions. Unlike operation, health impacts from construction could be meaningfully quantified above because the location of emissions is limited to a particular construction area and the formation and dispersion of the pollutant of concern, DPM, can be modeled using industry accepted methods for land development projects. However, current scientific, technological, and modeling limitations prevent the relation of expected adverse operational criteria pollutant emissions to likely health consequences. Therefore, this section explains in detail why it is not feasible to provide such a meaningful assessment of potential health impacts from operational emissions.

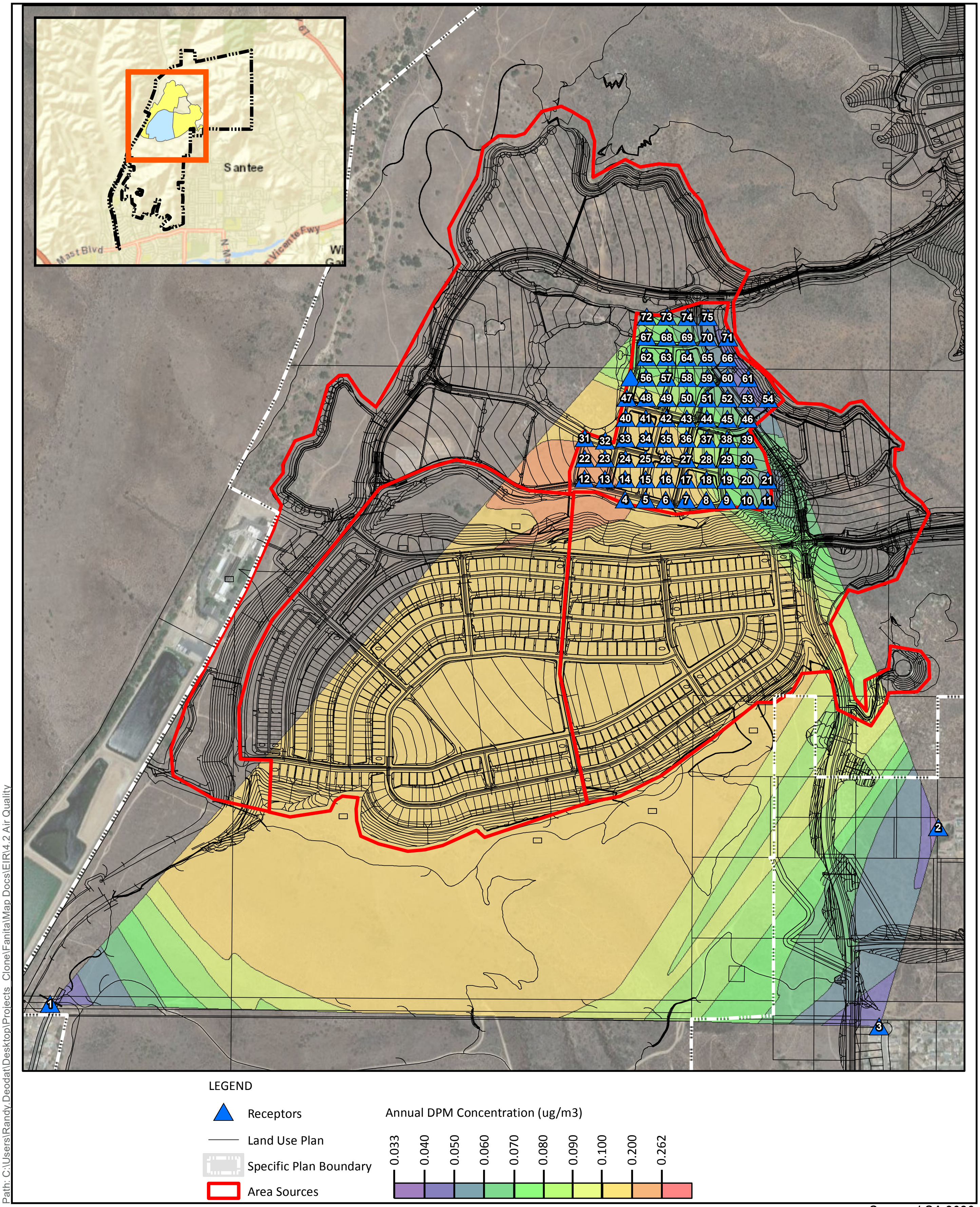

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Figure 4.2-1

Phase 1 and Phase 2 Construction DPM Concentrations

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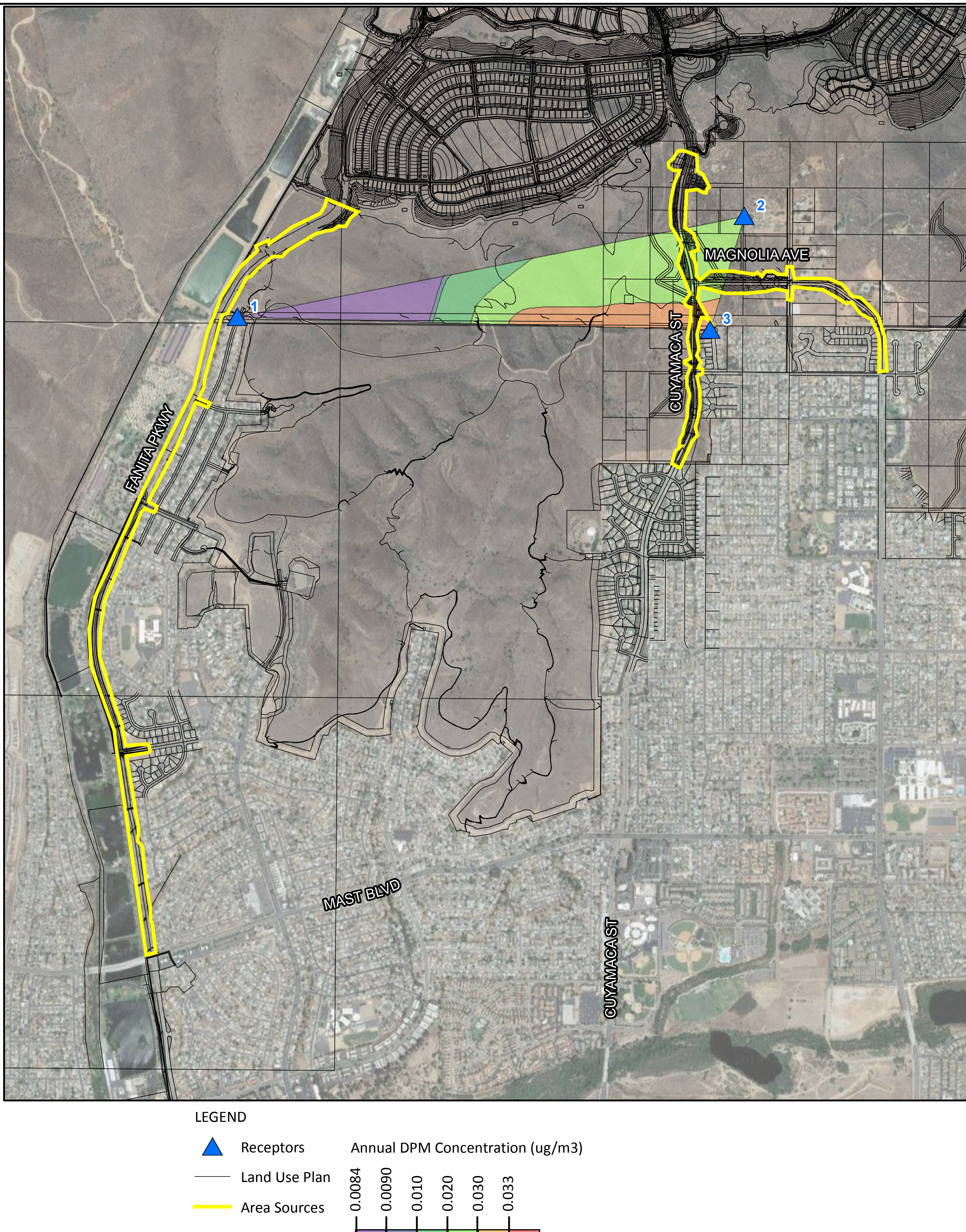

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Figure 4.2-2

Roadway Construction DPM Concentrations

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Although the proposed project is expected to exceed the County of San Diego's numeric regional mass daily emission thresholds for VOC and PM_{10}, this does not in itself constitute a significant health impact to the population adjacent to the project site and within the SDAB. The regional thresholds are based in part on Section 180 (e) of the CAA and are intended to provide a means of consistency in significance determination within the environmental review process. Notwithstanding, simply exceeding the regional mass daily thresholds does not constitute a particular health impact to an individual nearby. The reason for this is that the mass daily thresholds are in pounds per day emitted into the air whereas health effects are determined based on the concentration of emissions in the air at a particular location (e.g., parts per million by volume of air or micrograms per cubic meter of air). State and federal Ambient Air Quality Standards were developed to protect the most susceptible population groups from adverse health effects and were established in terms of parts per million or micrograms per cubic meter for the applicable emissions.

The SDAPCD does not require localized air quality impact analysis and has not established localized significance thresholds for operational emissions from land development. Compared to project construction, operation of the proposed project would emit fewer criteria air pollutants, and the pollutants would be less toxic than the DPM emitted from off-road construction equipment. Moreover, the pollutants would be dispersed over the entire project site, which is much larger than the Phase 1 and Phase 2 construction area analyzed in the HRA. Further, the proposed project would not accommodate land uses that would generate a large number of heavy truck trips during operation. Residential and commercial land uses are not typical generators of substantial DPM. Therefore, the on-site and off-site sensitive receptors would be subject to lower health risks during project operation than during project construction. Therefore, operation of the proposed project would not be expected to result in any basin-wide increase in health effects.

As noted in the Brief of Amicus Curiae filed by the South Coast Air Quality Management District in Sierra Club v. County of Fresno (2018) 6 Cal.5th 502 (SCAQMD 2015), the SCAQMD has acknowledged that, for criteria pollutants, it would be extremely difficult, if not impossible, to quantify operational health impacts from land development for various reasons, including modeling limitations, as well as where in the atmosphere air pollutants interact and form. Furthermore, as noted in the Brief of Amicus Curiae by the San Joaquin Valley Air Pollution Control District (SJVAPCD) in the Sierra Club litigation, currently available modeling tools are not equipped to provide a meaningful analysis of the correlation between an individual development project's air pollutant emissions and specific human health impacts (SJVAPCD 2015). The SJVAPCD explained that "running the photochemical grid model used for predicting ozone attainment with emissions solely from one project would thus not be likely to yield valid information given the relative scale involved" (SJVAPCD 2015). O_3 is not directly emitted into the air but is instead formed as ozone precursors undergo complex chemical reactions through sunlight exposure (SJVAPCD 2015).

In fact, the SJVAPCD indicated that even a project with criteria pollutant emissions that exceed a CEQA threshold does not necessarily cause localized human health impacts because, even when faced with relatively high emissions, the SJVAPCD cannot determine “whether and to what extent emissions from an individual project directly impact human health in a particular area” (SJVAPCD 2015). On that point, the SCAQMD reiterated that “an agency should not be required to perform analyses that do not produce reliable or meaningful results” (SCAQMD 2015).

Additionally, the SCAQMD acknowledges that health effects quantification from O_3, as an example, is correlated with the increases in ambient level of O_3 in the air (concentration) that an individual person breathes. The SCAQMD goes on to state that it would take a large amount of additional emissions to cause a modeled increase in ambient O_3 levels over the entire region. The SCAQMD states that based on its own modeling in the 2012 AQMP, a reduction of 432 tons/864,000 pounds per day of NO_x and a reduction of 187 tons/374,000 pounds per day of VOCs would reduce O_3 levels at the highest monitored site by only 9 parts per billion. As such, the SCAQMD concludes that it is not currently possible to accurately quantify O_3-related health impacts caused by NO_x or VOC emissions from relatively small projects (defined as projects with regional scope) due to photochemistry and regional model limitations (SCAQMD 2015).

To underscore this point, the SCAQMD goes on to state that it has only been able to correlate potential health outcomes for very large emissions sources as part of its rulemaking activity. Specifically, 6,620 pounds per day of NO_x and 89,180 pounds per day of VOC were expected to result in approximately 20 premature deaths per year and 89,947 school absences due to O_3.

The proposed project would generate far less than 6,620 pounds per day of NO_x or 89,190 pounds per day of VOC emissions. As shown in Tables 4.2-8, 4.2-9, and 4.2-10, with implementation of Mitigation Measures AIR-6 through AIR-10 and GHG-4, the proposed project would generate a maximum of 70.65 pounds per day of NO_x during construction and 65.02 or 66.70 pounds per day of NO_x during operation (approximately 1 percent of 6,620 pounds per day). The proposed project would also generate a maximum of 10.98 pounds per day of VOC emissions during construction and 136.32 or 137.37 pounds per day of VOC emissions during operation (0.15 percent of 89,190 pounds per day).

Therefore, the proposed project’s emissions are not sufficiently high to use a regional modeling program to correlate health effects on a basin-wide level. Further, the SJVAPCD acknowledges the same: “The Air District is simply not equipped to analyze what extent the criteria pollutant emissions of an individual CEQA project directly impacts human health in a particular area... even for projects with relatively high levels of emissions of criteria pollutant precursor emissions” (SCAQMD 2015).

Mitigation Measures

Mitigation Measures AIR-3, AIR-4, and AIR-11 would be required to reduce residential cancer risk during Phase 1 and Phase 2 of construction. Figures 4.2-3, Phase 1 and 2 Construction Mitigated DPM Concentrations, and 4.2-4, Roadway Construction Mitigated DPM Concentrations, depict the mitigated DPM concentrations during Phase 1 and Phase 2 construction and roadway construction, respectively. Table 4.2-13 summarizes the maximum mitigated project construction residential cancer risks.

Table 4.2-13. Mitigated Health Risk Levels for On-Site and Off-Site Residents

Receptors	Maximum Cancer Risk (Risk in 1 Million)
On-Site	9.96
Off-Site	2.84
SDAPCD Threshold	**10**
Significant?	**No**

Source: See Appendix C2 for figures and calculations.
Notes: SDAPCD = San Diego Air Pollution Control District

As shown in Table 4.2-13, implementation of Mitigation Measures AIR-3, AIR-4, and AIR-11 would reduce impacts to a less than significant level. Appendix C2 includes detailed modeling and assumptions for the mitigated scenario. Mitigation Measure AIR-12 avoids siting new on-site toxic air contaminant sources in close vicinity of residences and schools and would ensure that operational impacts would be less than significant.

AIR-11: **Construction Buffer Area.** The City of Santee shall require the applicant to complete Phase 1 earthmoving and paving activities within 300 feet from the southwestern corner of the Village Center in Fanita Commons before any residents occupy the Village Center. The applicant shall also integrate the Phase 2 grading and utilities activities within 500 feet from the southwestern corner of the Village Center into Phase 1 so that activities are complete prior to occupation of the Fanita Commons Village Center.

AIR-12: **New Source Review.** The City of Santee shall require the applicant to avoid siting new on-site toxic air contaminant sources in the vicinity of residences and schools. Gasoline-dispensing facilities with a throughput of less than 3.6 million gallons per year must have the gasoline dispensers at least 50 feet from the nearest residential land use, daycare center, or school. In addition, gasoline-dispensing facilities with a throughput of 3.6 million gallons per year or more, distribution centers, and dry cleaning operations are prohibited within the project.

4.2.5.4 Threshold 4: Odors

Would implementation of the proposed project result in other emissions (such as those leading to odors) affecting a substantial number of people?

Impact: The proposed project would not result in emissions leading to odors that would affect a substantial number of people.	**Mitigation:** No mitigation is required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Less than significant.

Impact Analysis

Heavy-duty equipment on the project site during construction would emit odors, primarily from equipment exhaust. However, the construction activity would cease to occur after individual construction is completed in a given area. Generally, construction would be separate from existing receptors by hundreds of feet due to the distance of the nearest off-site residences to the village development areas. Additionally, as shown in Table 4.2-5, emissions of SO_x, the pollutant most associated with odors, would be minimal. Therefore, impacts during construction would be less than significant.

Following construction, operation of the proposed agricultural areas (specifically the Farm) could release localized odors. However, localized odors would generally be confined to the Agriculture Overlay zone on the project site and would dissipate quickly beyond the limits of the Farm based on typical agricultural operations. An extensive animal husbandry operation is not proposed and would not be accommodated within the Farm; therefore, the potential to generate odors would be low. The remaining proposed commercial and residential uses are not typical sources of nuisance odors.

Although not an impact under CEQA, as an impact of the environment on the proposed project, it is noted that operation of the proposed project would require implementation of Conditional Use Permit measures at the PDMWD Ray Stoyer WRF located on Fanita Parkway west of the project site. The existing Conditional Use Permit for the PDMWD Ray Stoyer WRF contains measures that require implementation once the proposed project is constructed. These measures include the use of an odor scrubber to limit hydrogen sulfide, the replacement of the existing primary clarifier system with a chemical scrubbing system, the covering of all zones of the biological nutrient removal basins, the installation of additional chemical scrubbers, and the installation of an additional SO_2 neutralization system at the dechlorination building (Helix 2015).

Therefore, objectionable odors affecting a substantial number of people would not occur because of the proposed project. This impact would be less than significant.

Mitigation Measures

Impacts related to odors are considered less than significant; therefore, no mitigation is required.

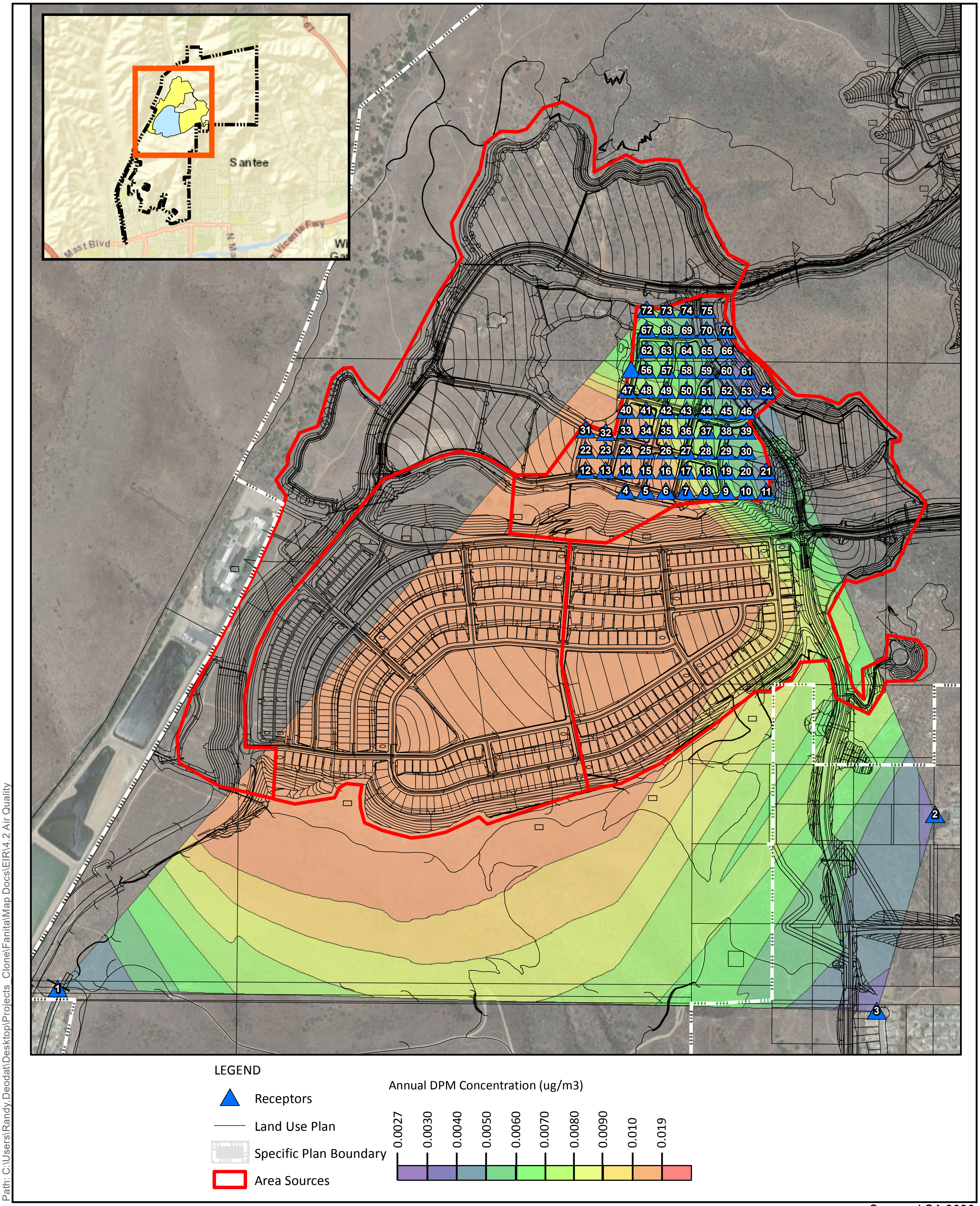

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Figure 4.2-3

Phase 1 and 2 Construction Mitigated DPM Concentrations

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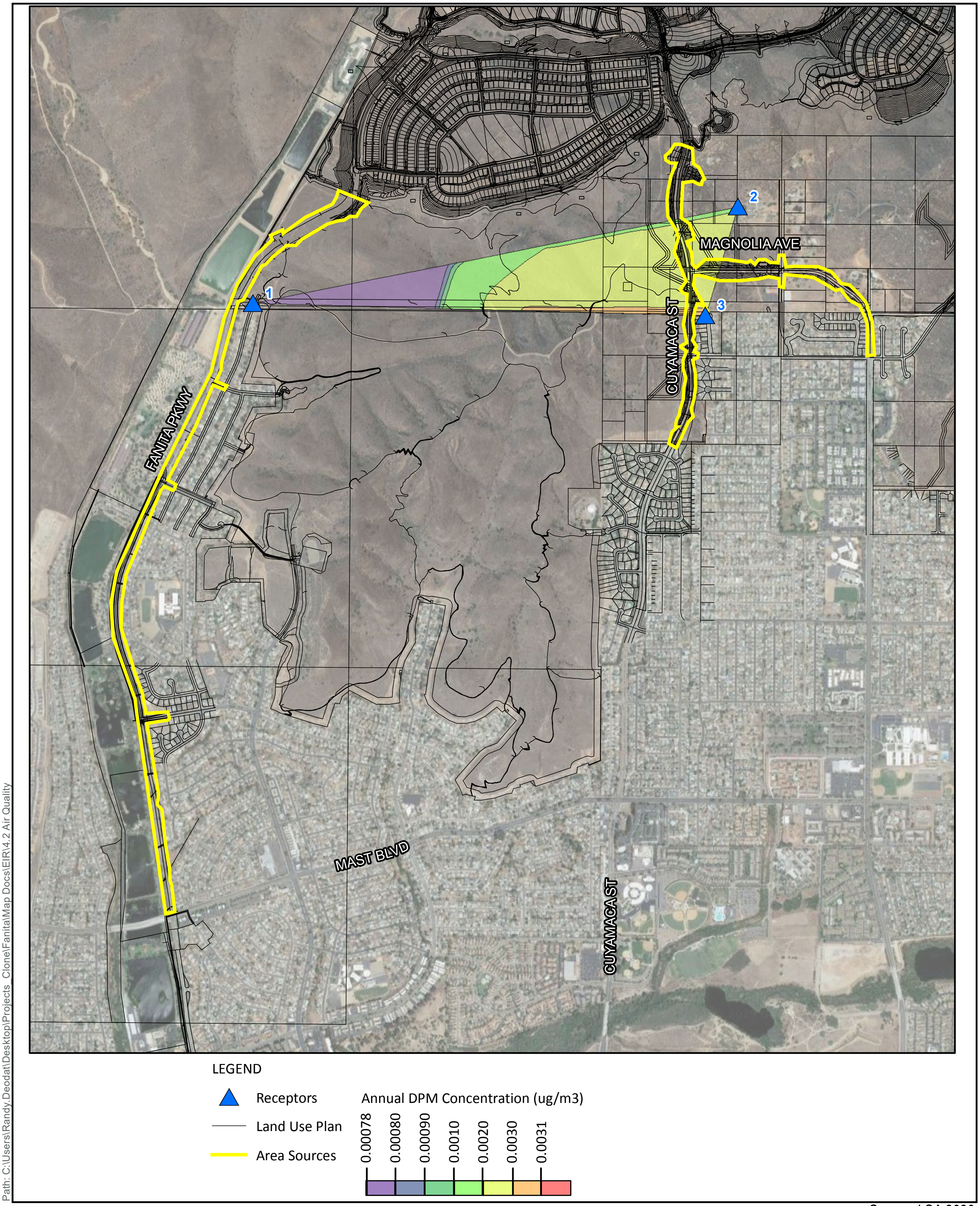

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Figure 4.2-4

Roadway Construction Mitigated DPM Concentrations

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4.2.6 Cumulative Impacts and Mitigation Measures

Would implementation of the proposed project have a cumulatively considerable contribution to a cumulative air quality impact considering past, present, and probable future projects?

Cumulative Impact	Significance	Proposed Project Contribution
Threshold 1: Consistency with Applicable Air Quality Plan	Potentially significant	Cumulatively considerable
Threshold 2: Cumulative Increase in Criteria Pollutant Emissions	Potentially significant	Cumulatively considerable
Threshold 3: Sensitive Receptors	Less than significant	Not cumulatively considerable
Threshold 4: Odors	Less than significant	Not cumulatively considerable

4.2.6.1 Cumulative Threshold 1: Consistency with Applicable Air Quality Plan

The geographic context for the analysis of cumulative air quality impacts is the SDAB. The RAQS and SIP are intended to address cumulative impacts in the SDAB based on future growth predicted by SANDAG. As described previously, implementation of the proposed project would be inconsistent with the growth projections in the RAQS and SIP. Most cumulative development would not be expected to result in a significant impact in terms of conflicting with the SDAPCD air quality management plans and the California SIP because the majority of cumulative projects would propose development that is consistent with the applicable growth projections incorporated into local air quality management plans. However, because implementation of the proposed project would result in growth that would conflict with or obstruct implementation of the RAQS or SIP air quality plans, any additional incremental unaccounted growth because of cumulative projects would result in a cumulatively considerable impact. The proposed project's contribution would be cumulatively considerable.

4.2.6.2 Cumulative Threshold 2: Cumulative Increase in Criteria Pollutant Emissions

An existing significant cumulative impact related to PM_{10}, $PM_{2.5}$, and O_3 precursors (NO_x and VOC) exists in the SDAB because the SDAB is in nonattainment for these pollutants. The thresholds listed in Section 4.2.5.2 reflect the potential for the proposed project to result in a potentially significant contribution of criteria pollutant emissions to regional air quality and Ambient Air Quality Standards attainment. As described in Section 4.2.5.2, even with implementation of all feasible mitigation measures, the proposed project would exceed the regional significance threshold for PM_{10} and $PM_{2.5}$ during project construction, and would exceed the thresholds for VOC and PM_{10} during project operation. Therefore, the proposed project's contribution be cumulatively considerable.

4.2.6.3 Cumulative Threshold 3: Sensitive Receptors

Cumulative growth in the planning area, including the cumulative projects listed in Table 4-2, Cumulative Projects, in Chapter 4, Environmental Impact Analysis, would have the potential to increase congestion and potentially result in CO hot spots. However, as described in Section 4.2.5.3, the increase in vehicle trips associated with the implementation of the proposed project, in combination with cumulative trips, would not result in significant congestion at any intersection. Therefore, a significant cumulative impact related to CO hot spots would not occur.

The cumulative projects listed in Table 4-2 would also have the potential to result in a significant cumulative impact associated with sensitive receptors if, in combination, they would expose sensitive receptors to a substantial concentration of TACs that would significantly increase cancer risk. As discussed in Section 4.2.5.3, the proposed project would have the potential to result in a significant incremental increase in cancer risk during construction. The cumulative projects surrounding the project site include approximately two dozen residential projects, a religious facility, visitor-serving uses, several health care facilities, and approximately one dozen commercial and light industrial projects that would not be expected to result in significant emissions of TACs during operation or require extended construction periods like the proposed project. As stated in Section 4.2.5.3, implementation of Mitigation Measures AIR-3, AIR-4, and AIR-11 would reduce the proposed project's direct impact to below a level of significance. Therefore, cumulative projects, in combination with the proposed project, would not result in an increased risk in exposure to TAC sources due to project construction, and a significant cumulative impact would not occur. The proposed project's contribution would not be cumulatively considerable.

4.2.6.4 Cumulative Threshold 4: Odors

The geographic context for the analysis of impacts relative to objectionable odors are limited to the area immediately surrounding the odor source and are not cumulative in nature because the air emissions that cause odors disperse beyond the sources of the odor. As the emissions disperse, the odor becomes decreasingly detectable. The cumulative projects surrounding the project site include residential and commercial projects that would not be expected to result in objectionable odors. In addition, implementation of the proposed project would not generate a new source of objectionable odors. Therefore, a cumulative impact would not occur and the proposed project's contribution would not be cumulatively considerable.

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