4.2 AIR QUALITY

This section describes the projects impacts on air quality and contribution to regional air quality conditions and climate change of the project site, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed Villa Storia Planned Development (PD) Plan (proposed project). The following analysis is based upon the Air Quality Technical Report for the Villa Storia PD Plan that was prepared for the proposed project by Dudek in November 2014, and is incorporated by reference herein (Dudek 2014). The air quality report is included in Appendix B of this EIR.

4.2.1 Relevant Plans, Policies, and Ordinances

Federal

Clean Air Act

The federal Clean Air Act (CAA), passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The U.S. Environmental Protection Agency (EPA) is responsible for implementing most aspects of the CAA, including the setting of National Ambient Air Quality Standards (NAAQS) for major air pollutants, hazardous air pollutant standards, approval of state attainment plans, motor vehicle emission standards, stationary source emission standards and permits, acid rain control measures, stratospheric ozone (O_3) protection, and enforcement provisions.

NAAQS are established by the EPA for "criteria pollutants" under the CAA, which are O_3, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb).

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The Clean Air Act requires the EPA to reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a State Implementation Plan (SIP) that demonstrates how those areas will attain the standards within mandated time frames. NAAQS are presented in Table 4.2-1.

State

California Clean Air Act

The California Clean Air Act (CCAA) was adopted in 1988 and establishes the State's air quality goals, planning mechanisms, regulatory strategies, and standards of progress.

Under the Clean Air Act, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts (AQMDs) and air pollution control districts (APCDs) at the regional and county levels. CARB is responsible for ensuring implementation of the CCAA, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products. Pursuant to the authority granted to it, CARB has established California Ambient Air Quality Standards (CAAQS), which are generally more restrictive than the NAAQS. CAAQS are also presented in Table 4.2-1

Table 4.2-1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	National Standards[2]	
		Concentration[3]	*Primary[3,4]*	*Secondary[3,5]*
O_3	1 hour	0.09 ppm (180 μg/m³)	—	Same as Primary Standard
	8 hour	0.070 ppm (137 μg/m³)	0.075 ppm (147 μg/m³)	
CO	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	—
	8 hour	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	
NO_2, [6]	1 hour	0.18 ppm (339 μg/m³)	0.100 ppm (188 μg/m³)	Same as Primary Standard
	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)	0.053 ppm (100 μg/m³)	
SO_2, [7]	1 hour	0.25 ppm (655 μg/m³)	0.75 ppm (196 μg/m³)	—
	3 hour	—	—	0.5 ppm (1300 μg/m³)
	24 hour	0.04 ppm (105 μg/m³)	0.14 ppm (for certain areas)[7]	
	Annual Arithmetic Mean	—	0.030 ppm (for certain areas)[7]	—
PM_{10}, [8]	24 hour	50 μg/m³	150 μg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 μg/m³	—	
$PM_{2.5}$, [8]	24 hour	—	35 μg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 μg/m³	12.0 μg/m³	15.0 μg/m³
Lead[9,10]	30-day Average	1.5 μg/m³	—	—
	Calendar Quarter	—	1.5 μg/m³ (for certain areas)[10]	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 μg/m³	
Hydrogen sulfide	1 hour	0.03 ppm (42 μg/m³)	—	—
Vinyl chloride[9]	24 hour	0.01 ppm (26 μg/m³)	—	—
Sulfates	24 hour	25 μg/m3	—	—
Visibility reducing particles[11]	8 hour(10:00 a.m. to 6:00 p.m. PST)	See footnote 11	—	—

ppm= parts per million by volume
μg/m3 = micrograms per cubic meter
mg/m3= milligrams per cubic meter
Source: Dudek 2014

[1] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than O3, NO2, SO2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O3 standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For NO2 and SO2, the standard is attained when the 3-year average of the 98th and 99th percentile, respectively, of the daily maximum 1-hour average at each monitor within an area does not exceed the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr.
Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] 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] 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.

[7] On June 2, 2010, a new 1-hour SO2 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 SO2 national standards (24-hour and annual) remain in effect until one 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.

[8] On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m3 to 12 µg/m3. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 µg/m3, as was the annual secondary standard of 15 µg/m3. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[9] CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[10] The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one 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.

[11] 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.

Toxic Air Contaminants

California regulates TACs primarily through the Tanner Air Toxics Act (Assembly Bill 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (Assembly Bill 2588). 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 can designate a substance as a TAC. To date, CARB has identified over 21 TACs and has adopted the EPA's list of hazardous air pollutants as TACs. Once a TAC is identified, CARB then adopts an airborne toxics control measure for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate best

available control technology for toxics to minimize emissions. None of the TACs identified by CARB have a safe threshold.

Under the Air Toxics "Hot Spots" Act existing facilities that emit air pollutants above specified level were required to (1) prepare a TAC emission inventory plan and report, (2) prepare a risk assessment if TAC emissions were significant, (3) notify the public of significant risk levels, and (4) if health impacts were above specified levels, prepare and implement risk reduction measures.

California Health & Safety Code Section 41700

This section of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

Local

San Diego Air Pollution Control District

While CARB is responsible for the regulation of mobile emission sources within the state, local AQMDs and APCDs are responsible for enforcing standards and regulating stationary sources. The project site is located within the San Diego Air Basin (SDAB) and is subject to the guidelines and regulations of the San Diego Air Pollution Control District (SDAPCD).

In San Diego County, O_3 and particulate matter are the pollutants of main concern, since exceedances of state ambient air quality standards for those pollutants are experienced here in most years. For this reason, the SDAB has been designated as a nonattainment area for the state PM_{10}, $PM_{2.5}$, and O_3 standards. The SDAB is also a federal O_3 attainment (maintenance) area for 1997 8-hour O_3 standard, a O_3 nonattainment area for the 2008 8-hour O_3 standard, and a CO maintenance area (western and central part of the SDAB only). The project site is in the CO maintenance area.

The SDAPCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The County Regional Air Quality Strategy (RAQS) was initially adopted in 1991, and is updated on a triennial basis, most recently in 2009. The RAQS outlines SDAPCD's plans and control measures designed to attain the state air quality standards for O_3. The RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, and information regarding projected growth in

the cities and San Diego County, to project future emissions and determine the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by the cities and San Diego County as part of the development of their general plans.

The Eight-Hour Ozone Attainment Plan for San Diego County indicates that local controls and state programs would allow the region to reach attainment of the federal 1997 8-hour O_3 standard by 2009. In this plan, SDAPCD relies on the RAQS to demonstrate how the region will comply with the federal O_3 standard. The RAQS details how the region will manage and reduce O_3 precursors (oxides of nitrogen (NO_x) and volatile organic compounds (VOCs)) by identifying measures and regulations intended to reduce these contaminants. The control measures identified in the RAQS generally focus on stationary sources; however, the emissions inventories and projections in the RAQS address all potential sources, including those under the authority of CARB and the EPA. Incentive programs for reduction of emissions from heavy-duty diesel vehicles, off-road equipment, and school buses are also established in the RAQS. In the Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County, the San Diego Air Basin did not reach attainment of the federal 1997 standard until 2011. This plan, however, demonstrates the region's attainment of the 1997 O_3 NAAQS and outlines the plan for maintaining attainment status.

In December 2005, SDAPCD prepared a report *titled Measures to Reduce Particulate Matter in San Diego County* to address implementation of Senate Bill (SB) 656 in San Diego County (SB 656 required additional controls to reduce ambient concentrations of PM_{10} and $PM_{2.5}$). In the report, SDAPCD evaluated the implementation of source-control measures that would reduce particulate matter emissions associated with residential wood combustion; various construction activities including earthmoving, demolition, and grading; bulk material storage and handling; carryout and trackout removal and cleanup methods; inactive disturbed land; disturbed open areas; unpaved parking lots/staging areas; unpaved roads; and windblown dust.

As stated above, the SDAPCD is responsible for planning, implementing, and enforcing federal and state ambient standards in the SDAB. The following rules and regulations apply to all sources in the jurisdiction of SDAPCD:

- **SDAPCD Regulation IV: Prohibitions; Rule 51: Nuisance.** Prohibits the discharge, from any source, of such quantities of air contaminants or other materials that cause or have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property.
- **SDAPCD Regulation IV: Prohibitions; Rule 55: Fugitive Dust.** Regulates fugitive dust emissions from any commercial construction or demolition activity capable of

generating fugitive dust emissions, including active operations, open storage piles, and inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a project site.

- **SDAPCD Regulation IV: Prohibitions; Rule 67.0: Architectural Coatings.** Requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

Pollutants and Effects

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal and state standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include: O_3, NO_2, CO, sulfur dioxide (SO_2), PM_{10}, $PM_{2.5}$, and lead (Pb). These pollutants are discussed below.[1] In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants.

Ozone. O_3 is a colorless gas that is formed in the atmosphere when volatile organic compounds (VOCs), sometimes referred to as reactive organic gases (ROGs), and NO_x react in the presence of ultraviolet sunlight. O_3 is not a primary pollutant; it is a secondary pollutant formed by complex interactions of two pollutants directly emitted into the atmosphere. The primary sources of VOCs and NO_x, the precursors of O_3, are automobile exhaust and industrial sources. Meteorology and terrain play major roles in O_3 formation and ideal conditions occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. Short-term exposures (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes.

Nitrogen Dioxide. Most NO_2, like O_3, is not directly emitted into the atmosphere but is formed by an atmospheric chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as NO_x and are major contributors to O_3 formation. High concentrations of NO_2 can cause breathing difficulties and result in a brownish-red cast to the atmosphere with reduced visibility. There is some indication of a relationship between NO_2 and

[1] The following descriptions of health effects for each of the criteria air pollutants associated with project construction and operations are based on the Environmental Protection Agency (EPA) Six Common Air Pollutants (EPA 2012) and the CARB Glossary of Air Pollutant Terms (CARB 2014a) published information.

chronic pulmonary fibrosis and some increase in bronchitis in children (2 and 3 years old) has also been observed at concentrations below 0.3 parts per million by volume (ppm).

Carbon Monoxide. CO is a colorless and odorless gas formed by the incomplete combustion of fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the project location, automobile exhaust accounts for the majority of CO emissions. CO is a non-reactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions; primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. The highest levels of CO typically occur during the colder months of the year when inversion conditions are more frequent. In terms of health, CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can be dizziness, fatigue, and impairment of central nervous system functions.

Sulfur Dioxide. SO_2 is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels. SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. SO_2 can also yellow plant leaves and erode iron and steel.

Particulate Matter. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Fine particulate matter, or $PM_{2.5}$, is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_x), NO_x, and VOC. Inhalable or coarse particulate matter, or PM_{10}, is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances, such as Pb, sulfates, and nitrates, can cause lung damage directly or be absorbed into the blood stream, causing damage elsewhere in the body. Additionally, these substances can transport absorbed gases, such as chlorides or ammonium, into the lungs, also causing injury. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility.

Lead. Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline, the manufacturing of batteries, paint, ink, ceramics, and ammunition and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phase-out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emission sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance including intelligence quotient performance, psychomotor performance, reaction time, and growth.

Toxic Air Contaminants. A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic noncancer health effects. A toxic substance released into the air is considered a toxic air contaminant (TAC). Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources such as automobiles; and area sources such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced either on short-term (acute) or long-term (chronic) exposure to a given TAC.

4.2.2 Existing Conditions

Climate

The weather of the San Diego region, as in most of Southern California, is influenced by the Pacific Ocean and its semi-permanent high-pressure systems that result in dry, warm summers and mild, occasionally wet winters. The average temperature ranges (in degrees Fahrenheit (°F)) from the mid-40s to the high 90s. Most of the region's precipitation falls from November to April, with infrequent (approximately 10%) precipitation during the summer. The average seasonal precipitation along the coast is approximately 10 inches; the amount increases with elevation as moist air is lifted over the mountains.

The topography in the San Diego region varies greatly, from beaches on the west to mountains and desert on the east; along with local meteorology, it influences the dispersal and movement of pollutants in the basin. The mountains to the east prohibit dispersal of pollutants in that direction and help trap them in inversion layers.

The interaction of ocean, land, and the Pacific High Pressure Zone maintains clear skies for much of the year and influences the direction of prevailing winds (westerly to northwesterly). Local terrain is often the dominant factor inland, and winds in inland mountainous areas tend to blow through the valleys during the day and down the hills and valleys at night.

Air Pollution Climatology

The project site is located within the San Diego Air Basin (SDAB) and is subject to the San Diego Air Pollution Control District (SDAPCD) guidelines and regulations. The SDAB is one of 15 air basins that geographically divide the State of California. The SDAB is currently classified as a federal nonattainment area for ozone (O_3) and a state nonattainment area for particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and O_3.

The SDAB lies in the southwest corner of California and comprises the entire San Diego region, covering 4,260 square miles, and is an area of high air pollution potential. The basin experiences warm summers, mild winters, infrequent rainfalls, light winds, and moderate humidity. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds.

The SDAB experiences frequent temperature inversions. Subsidence inversions occur during the warmer months as descending air associated with the Pacific High Pressure Zone meets cool marine air. The boundary between the two layers of air creates a temperature inversion that traps pollutants. The other type of inversion, a radiation inversion, develops on winter nights when air near the

ground cools by heat radiation and air aloft remains warm. The shallow inversion layer formed between these two air masses also can trap pollutants. As the pollutants become more concentrated in the atmosphere, photochemical reactions occur that produce O_3, commonly known as smog.

Light daytime winds, predominately from the west, further aggravate the condition by driving air pollutants inland, toward the mountains. During the fall and winter, air quality problems are created due to carbon monoxide (CO) and oxides of nitrogen (NO_x) emissions. CO concentrations are generally higher in the morning and late evening. In the morning, CO levels are elevated due to cold temperatures and the large number of motor vehicles traveling. Higher CO levels during the late evenings are a result of stagnant atmospheric conditions trapping CO in the area. Since CO is produced almost entirely from automobiles, the highest CO concentrations in the basin are associated with heavy traffic. Nitrogen dioxide (NO_2) levels are also generally higher during fall and winter days.

Under certain conditions, atmospheric oscillation results in the offshore transport of air from the Los Angeles region to San Diego County. This often produces high O_3 concentrations, as measured at air pollutant monitoring stations within the County. The transport of air pollutants from Los Angeles to San Diego has also occurred within the stable layer of the elevated subsidence inversion, where high levels of O_3 are transported.

Air Quality Characteristics

Air quality varies as a direct function of the amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. Air quality problems arise when the rate of pollutant emissions exceeds the rate of dispersion. Reduced visibility, eye irritation, and adverse health impacts upon those persons termed sensitive receptors are the most serious hazards of existing air quality conditions in the area. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. Sensitive receptors include residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

SDAB Attainment Designation

An area is designated in attainment when it is in compliance with the NAAQS and/or CAAQS. These standards are set by the EPA or CARB for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or the public welfare.

The criteria pollutants of primary concern that are considered in this analysis are O_3, NO_2, CO, SO_2, PM_{10}, and $PM_{2.5}$. Although there are no ambient standards for VOCs or NO_x, they are important as precursors to O_3.

The portion of the SDAB where the project site is located is designated by the EPA as an attainment area for the 1997 8-hour NAAQS for O_3 and as a marginal nonattainment area for the 2008 8-hour NAAQS for O_3.The SDAB is designated in attainment for all other criteria pollutants under the NAAQS with the exception of PM_{10}, which was determined to be unclassifiable.

The SDAB is currently designated nonattainment for O_3 and particulate matter, PM_{10} and $PM_{2.5}$, under the CAAQS. It is designated attainment for the CAAQS for CO, NO_2, SO_2, lead, and sulfates.

Table 4.2-2 summarizes the SDAB's federal and state attainment designations for each of the criteria pollutants.

Table 4.2-2
SDAB Attainment Classification

Pollutant	Federal Designation	State Designation
O_3 (1 hour)	Attainment[1]	Nonattainment
O_3 (8 hour – 1997) (8 hour – 2008)	Attainment (Maintenance) Nonattainment (Marginal)	Nonattainment
CO	Unclassifiable/Attainment[2]	Attainment
PM_{10}	Unclassifiable[3]	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
NO_2	Unclassifiable/Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(no federal standard)	Attainment
Hydrogen Sulfide	(no federal standard)	Unclassified
Visibility-Reducing Particles	(no federal standard)	Unclassified

Source: Dudek 2014.

1 The federal 1-hour standard of 0.12 ppm was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in State Implementation Plans.

2 The western and central portions of the SDAB are designated attainment, while the eastern portion is designated unclassifiable/attainment.

3 At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassifiable.

Air Quality Monitoring Data

The SDAPCD operates a network of ambient air monitoring stations throughout San Diego County, which measure ambient concentrations of pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. The SDAPCD monitors air quality conditions at 10 locations throughout the basin. Due to its proximity to the site and similar geographic and climactic characteristics, the Del Mar – Mira Costa College monitoring station concentrations for 8-hour and

1-hour O_3, are considered most representative of the project site. The Escondido - East Valley Parkway monitoring station is the nearest location to the project site where PM_{10}, $PM_{2.5}$, NO_2, and CO concentrations are monitored. The San Diego – 1110 Beardsley Street monitoring station is the nearest location to the project site where SO_2 concentrations are monitored. Ambient concentrations of pollutants from 2009 through 2013 are presented in Table 4.2-3. The number of days exceeding the AAQS is shown in Table 4.2-4. The state 8-hour O_3 standards were exceeded in 2009, 2010, 2011 and 2012; the state 1-hour standards were exceeded in 2009, while the federal 8-hour O_3 standard was exceeded in 2009 and 2012. The state 24-hour PM_{10} standard was exceeded in 2009 and 2013; the state annual PM_{10} standard was exceeded in 2009 and 2010; and the federal 24-hour $PM_{2.5}$ standard was exceeded in 2009, 2010, 2011, 2012 and 2013. Air quality within the project region was in compliance with both CAAQS and NAAQS for NO_2, CO, and SO_2 during this monitoring period.

Table 4.2-3
Ambient Air Quality Data
(ppm unless otherwise indicated)

Pollutant	Averaging Time	2009	2010	2011	2012	2013	Most Stringent Ambient Air Quality Standard	Monitoring Station
O_3	8-hour	0.084	0.072	0.075	0.079	0.070	0.070	Del Mar – Mira Costa College
	1-hour	0.097	0.085	0.091	0.088	0.076	0.090	
PM_{10}	Annual	24.6 µg/m³	21.0 µg/m³	18.8 µg/m³	18.1 µg/m³	23.1 µg/m³	20 µg/m³	Escondido – East Valley Parkway
	24-hour	74.0 µg/m³	43.0 µg/m³	40.0 µg/m³	33.0 µg/m³	82.0 µg/m³	50 µg/m³	
$PM_{2.5}$	Annual[1]	13.4 µg/m³	12.2 µg/m³	10.4 µg/m³	10.6 µg/m³	10.5 µg/m³	12 µg/m³	Escondido – East Valley Parkway
	24-hour	78.4 µg/m³	52.2 µg/m³	27.4 µg/m³	70.7 µg/m³	56.3 µg/m³	35 µg/m³	
NO_2	Annual	0.016	0.014	0.013	0.013	0.013	0.030	Escondido – East Valley Parkway
	1-hour	0.073	0.064	0.062	0.062	0.061	0.100	
CO	8-hour	3.54	2.46	2.30	3.70	—	9.0	Escondido – East Valley Parkway
	1-hour[2]	4.40	3.90	3.50	4.40	—	20	
SO_2	Annual	0.001	0.000	—	—	—	0.030	San Diego – 1110 Beardsley Street
	24-hour	0.006	0.002	0.003	0.001	—	0.040	

Source: Dudek 2014
Data represent maximum values
Notes * Data were taken from EPA 2013

Table 4.2-4
Frequency of Air Quality Standard Violations

Monitoring Site	Year	Number of Days Exceeding Standard				
		State 1-Hour O_3	*State 8-Hour O_3*	*National 8-Hour O_3*	*State 24-hour PM_{10}**	*National 24-hour $PM_{2.5}$**
Del Mar – Mira Costa College	2009	1	3	1	—	—
	2010	0	2	0	—	—
	2011	0	1	0	—	—
	2012	0	2	2	—	—
	2013	0	0	0	—	—
Escondido – East Valley Parkway	2009	—	—	—	5.6 (1)	2.0 (2)
	2010	—	—	—	0.0 (0)	2.0 (2)
	2011	—	—	—	0.0 (0)	3.0 (3)
	2012	—	—	—	0.0 (0)	1.0 (1)
	2013	—	—	—	6.0 (1)	1.0 (1)

Source: Dudek 2014.

* Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and daily, respectively. "Number of days exceeding the standards" is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

4.2.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to air quality are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to air quality would occur if the project would:

A. Conflict with or obstruct implementation of the applicable air quality plan.

B. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

C. Result in a cumulatively considerable new increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative threshold emissions which exceed quantitative thresholds for ozone precursors).

D. Expose sensitive receptors to substantial pollutant concentrations.

E. Create objectionable odors affecting a substantial number of people.

SDAPCD

As part of its air quality permitting process, the SDAPCD has established thresholds in Rule 20.2 requiring the preparation of Air Quality Impact Assessments (AQIA) for permitted stationary sources. The SDAPCD sets forth quantitative emission thresholds below which a stationary

source would not have a significant impact on ambient air quality. Project-related air quality impacts estimated in this environmental analysis would be considered significant if any of the applicable significance thresholds presented in Table 4.2-5 are exceeded.

For CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality.

Table 4.2-5
San Diego Air Pollution Control District Air Quality Significance Thresholds

Construction Emissions			
Pollutant	*Total Emissions (Pounds per Day)*		
Respirable Particulate Matter (PM_{10})	100		
Fine Particulate Matter ($PM_{2.5}$)	55		
Oxides of Nitrogen (NO_x)	250		
Oxides of Sulfur (SO_x)	250		
Carbon Monoxide (CO)	550		
Volatile Organic Compounds (VOC)	137*		
Operational Emissions			
Pollutant	*Total Emissions*		
	Pounds per Hour	*Pounds per Day*	*Tons per Year*
Respirable Particulate Matter (PM_{10})	—	100	15
Fine Particulate Matter ($PM_{2.5}$)	—	55	10
Oxides of Nitrogen (NO_x)	25	250	40
Sulfur Oxides (SO_x)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	—	3.2	0.6
Volatile Organic Compounds (VOC)	—	137*	13.7

Source: Dudek 2014
* VOC threshold based on the significance thresholds recommended by the Monterey Bay Unified Air Pollution Control District for the North Central Coast Air Basin, which has similar federal and state attainment status as the SDAB for O3.

The thresholds listed in Table 4.2-5 represent screening-level thresholds that can be used to evaluate whether project-related emissions could cause a significant impact on air quality. Emissions below the screening-level thresholds would not cause a significant impact. In the event that emissions exceed these thresholds, modeling would be required to demonstrate that the project's total air quality impacts result in ground-level concentrations that are below the CAAQS and NAAQS, including appropriate background levels. For nonattainment pollutants, if emissions exceed the thresholds shown in Table 4.2-5, the project could have the potential to result in a cumulatively considerable net increase in these pollutants and thus could have a significant impact on the ambient air quality.

SDAPCD Rule 51 (Public Nuisance) prohibits emission of any material that causes nuisance to a considerable number of persons or endangers the comfort, health, or safety of any person. A project that proposes a use that would produce objectionable odors would be deemed to have a significant odor impact if it would affect a considerable number of off-site receptors.

4.2.4 Impacts Analysis

A. Would the project conflict with or obstruct implementation of the applicable air quality plan?

As described in Section 4.2.1, the SDAPCD and SANDAG are responsible for developing and implementing the clean air plans for attainment and maintenance of the ambient air quality standards in the SDAB; specifically, the SIP and RAQS.[2] The federal O_3 maintenance plan, which is part of the SIP, was adopted in 2012. The SIP includes a demonstration that current strategies and tactics will maintain acceptable air quality in the SDAB based on the NAAQS. The RAQS was initially adopted in 1991 and is updated on a triennial basis (most recently in 2009). The RAQS outlines SDAPCD's plans and control measures designed to attain the state air quality standards for O_3. The SIP and RAQS rely on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in San Diego County and the cities in county, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by San Diego County and the cities in the county as part of the development of their general plans.

If a project proposes development that is greater than that anticipated in the local plan and SANDAG's growth projections, the project might be in conflict with the SIP and RAQS and may contribute to a potentially significant cumulative impact on air quality. Planning Areas 1 and 2 are designated single-family detached residential (SFD-R) and Planning Areas 3 and 4 are designated Private Institutional. The proposed project requires General Plan and Zoning Amendments to establish appropriate land use designations and density ranges to allow for the residential development proposed by the project applicant. While the SDAPCD does not provide guidance regarding the analysis of impacts associated with air quality plan conformance, the County of San Diego's Report Format and Content Requirements does discuss conformance with the RAQS. The guidance indicates that, in the event that a project requires a general plan amendment, additional analysis may still provide substantial evidence that the growth is accounted for in the RAQS assumptions. To demonstrate conformance in this case, a growth

[2] For the purpose of this discussion, the relevant federal air quality plan is the ozone maintenance plan. The RAQS is the applicable plan for purposes of state air quality planning. Both plans reflect growth projections in the SDAB.

projection analysis can be completed for the applicable Subregional Area (SRA) and/or Metropolitan Statistical Area (MSA) comparing the SANDAG growth projections with the actual development expected to occur. If the project, in conjunction with other projects, contributes to growth projections that would not exceed SANDAG's growth projections for that SRA or MSA, the project would not be in conflict with the RAQS.

The project is located within SRA 42 – Oceanside which includes the City of Oceanside in its entirety. SANDAG's population estimate for this SRA in 2010 (the closest year SANDAG has available data to 2009 when the most recent RAQS was adopted) was 159,423, and the forecasted population in 2020 (the closest year SANDAG has available data to 2019 - project buildout) is 186,615. Therefore, SANDAG's projections anticipated approximately 27,192 new residents in this SRA over a 10-year period. Because the western portion of SRA 42 is essentially built out, the anticipated growth would occur almost exclusively in the eastern portion of the City of Oceanside.

Since the economic recession hit in 2007, homebuilding in this area has slowed considerably, resulting in fewer new homes being built and therefore fewer new residents. Because development in this SRA has not kept pace with SANDAG's projections, the addition of 420 residential units (approximately 1,197 new residents) to the SRA as a result of the proposed project would be accommodated in the population forecast used to prepare the 2009 RAQS. While the proposed project was not included in the underlying growth estimates for the SDAB used as the basis for the RAQS update, it would not conflict with or obstruct implementation of the RAQS since the SANDAG population projections for SRA 42 would accommodate substantially more growth (27,192 new residents) than that associated with the proposed project (1,197 residents). Furthermore, the project would be consistent with the stationary and mobile source measures included in the RAQS for the purposes of reducing emissions, such as further control of architectural coatings and residential water heaters.

Therefore, implementation of the proposed project would not conflict with the RAQS or SIP and proposed development would be consistent with growth in the region. Impacts would be less than significant.

B. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Construction

Construction of the proposed project would result in a temporary addition of pollutants to the local airshed caused by soil disturbance, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials. Construction emissions can vary substantially from day to day, depending on the level of

activity, the specific type of operation, and, for dust, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts. Fugitive dust (PM_{10} and $PM_{2.5}$) emissions would primarily result from grading and site preparation activities. NO_x and CO emissions would primarily result from the use of construction equipment and motor vehicles.

Emissions from the construction phase of the project were estimated using the California Emissions Estimator Model (CalEEMod) Version 2013.2.2, available online (www.caleemod.com). For the purposes of modeling and at the time the original air quality analysis was conducted, it was assumed that construction of the proposed project would commence in April 2015. Construction would occur intermittently over an approximately 4-year period and consist of the following phases:

- Site preparation (9 weeks)
- Mass grading (39 weeks)
- Paving (13 weeks)
- Trenching and utility work (5 weeks)
- Building construction (2 years)
- Architectural coatings (3 years).

A detailed depiction of the construction schedule—including information regarding subphases, demolition, and equipment used during each subphase—is included in Appendix A of the air quality report (air quality report found in Appendix B of this EIR). The information contained in Appendix A of the air quality report was used as CalEEMod model inputs.

Model defaults were used for construction equipment specifications, and the equipment mix is meant to represent a reasonably conservative estimate of construction activity. For the analysis, it was generally assumed that heavy construction equipment would be operating at the site for approximately eight hours per day, five days per week (22 days per month), during project construction. Additionally, CalEEMod model assumptions were used for worker trips and vendor trips during building construction subphases.

The proposed project is subject to SDAPCD Rule 55 – Fugitive Dust Control. This rule requires that the project take steps to restrict visible emissions of fugitive dust beyond the property line. Compliance with Rule 55 would limit fugitive dust (PM_{10} and $PM_{2.5}$) that may be generated during grading and construction activities. To account for dust control measures in the calculations, it was assumed that the active sites would be watered at least two times daily, resulting in an approximately 55% reduction of particulate matter. The proposed project is also

subject to SDAPCD Rule 67.0 – Architectural Coatings. This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

Table 4.2-6 shows the estimated maximum daily construction emissions associated with the construction phases of the proposed project. Complete details of the emissions calculations are provided in Appendix A of the air quality report (air quality report found in Appendix B of this EIR).

Table 4.2-6
Estimated Maximum Daily Construction Emissions (pounds/day)

	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
2015	6.85	79.14	51.83	0.06	11.37	7.35
2016	6.55	74.90	50.03	0.07	6.54	4.84
2017	35.91	31.26	34.16	0.07	4.45	2.44
2018	35.86	2.20	3.91	0.00	0.61	0.28
2019	35.82	2.01	3.74	0.00	0.59	0.25
Maximum Daily Emissions	35.91	79.14	51.83	0.07	11.37	7.35
Emission Threshold	137	250	550	250	100	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Dudek 2014. See Appendix A of the air quality report for complete results (air quality report found in Appendix B of this EIR.

As shown, daily construction emissions would not exceed the SDAPCDs significance thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$; therefore, impacts during construction would be less than significant.

Operation

Following the completion of construction activities, the proposed project would generate VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile and stationary sources, including vehicular traffic and area sources (space heating, water heating, landscaping).

Vehicular Traffic

The proposed project would impact air quality through the vehicular traffic generated by the proposed project. According to the proposed project's Traffic Impact Analysis prepared by Linscott, Law, and Greenspan, Engineers (LLG), utilized for Section 4.14, Traffic and Circulation, and found in Appendix J of this EIR, the proposed project would result in a total of 3,284 average daily trips.

The CalEEMod model was used to estimate daily emissions from proposed vehicular sources (refer to Appendix A of the air quality report found in Appendix B of this EIR). CalEEMod default data, including temperature, trip characteristics, variable start information, emissions factors, and trip distances, were conservatively used for the model inputs.

Project-related traffic was assumed to include a mixture of vehicles in accordance with the model outputs for traffic. Emission factors representing the vehicle mix and emissions for 2018 were used to estimate emissions associated with full buildout of the proposed project.

Area Sources

In addition to estimating mobile source emissions, the CalEEMod model was also used to estimate emissions from the project's area sources, which include other natural gas combustion, landscaping (which would not produce winter emissions), and architectural coatings for maintenance. Refer to Appendix A of the air quality report (found in Appendix B of this EIR) for additional information.

Table 4.2-7 presents the maximum daily emissions associated with the operation of the proposed project after all phases of construction have been completed. The values shown for motor vehicles and area sources are the maximum summer or winter daily emissions results from CalEEMod. Complete details of the emissions calculations are provided in Appendix A of the air quality report (found in Appendix B of this EIR).

Table 4.2-7
Estimated Daily Maximum Operational Emissions (pounds/day)

Emission Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Summer						
Area Sources	15.81	0.38	32.77	0.00	0.73	0.72
Energy	0.11	0.92	0.39	0.00	0.07	0.07
Motor Vehicles	10.33	22.66	105.61	0.29	0.17	5.6
Total	**26.25**	**23.96**	**138.77**	**0.29**	**20.97**	**6.39**
Winter						
Area Sources	15.84	0.38	32.77	0.00	0.73	0.72
Energy	0.11	0.92	0.39	0.00	0.07	0.07
Motor Vehicles	10.95	24.07	110.60	0.28	20.17	5.6
Total	**26.87**	**25.37**	**143.76**	**0.28**	**20.97**	**6.40**
Emission Threshold	*137*	*250*	*550*	*250*	*100*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Dudek 2014
Emissions represent maximum of summer and winter. "Summer" emissions are representative of the conditions that may occur during the ozone season (May 1 to October 31), and "winter" emissions are representative of the conditions that may occur during the balance of the year (November 1 to April 30).

As shown, the daily operational emissions would not exceed the SDAPCD's significance threshold for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$. Operational emissions would be less than significant.

C. Would the project result in a cumulatively considerable new increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative threshold emissions which exceed quantitative thresholds for ozone precursors)?

In analyzing cumulative impacts from the proposed project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SDAB is designated as nonattainment for the CAAQS and NAAQS. If the proposed project does not exceed thresholds and is determined to have less than significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality if the emissions from the project, in combination with the emissions from other proposed or reasonably foreseeable future projects, are in excess of established thresholds. However, the project would only be considered to have a significant cumulative impact if the project's contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact).

The SDAB has been designated as a federal nonattainment area for O_3 and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. PM_{10} and $PM_{2.5}$ emissions associated with construction generally result in near-field impacts. The nonattainment status is the result of cumulative emissions from all sources of these air pollutants and their precursors within the SDAB. As discussed in response (b), the emissions of all criteria pollutants would be below the significance levels. Construction would be short term and temporary in nature. Additionally, construction activities required for the implementation of the proposed project would be considered typical of a residential project. Once construction is completed, construction-related emissions would cease. Operational emissions generated by the proposed project would not result in a significant impact. As such, the proposed project would result in less than significant impacts to air quality relative to construction and operational emissions.

As stated in response (a), the SIP and RAQS rely on SANDAG growth projections based on population, vehicle trends, and land use plans developed by the cities and by the county as part of the development of their general plans. Therefore, projects that propose development that is consistent with the growth anticipated by local plans would be consistent with the SIP and RAQS. While the proposed project was not included in the underlying growth estimates for the SDAB used as the basis for the RAQS update, it would not conflict with or obstruct implementation of the RAQS since the SANDAG population projections for SRA 42 would accommodate substantially more growth (27,192 new residents) than that associated with the

proposed project (1,197 residents). Furthermore, the project would be consistent with the stationary and mobile source measures included in the RAQS for the purposes of reducing emissions, such as further control of architectural coatings and residential water heaters. Therefore, implementation of the proposed project would not conflict with the RAQS or SIP and proposed development would be consistent with growth in the region. Impacts would be less than significant.

D. Would the project expose sensitive receptors to substantial pollutant concentrations?

In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the state and federal government as TACs or hazardous air pollutants (HAPs). State law has established the framework for California's TAC identification and control program, which is generally more stringent than the federal program, and is aimed at TACs that are a problem in California. The state has formally identified more than 200 substances as TACs, including the federal HAPs, and is adopting appropriate control measures for sources of these TACs.

The greatest potential for TAC emissions during construction would be diesel particulate emissions from heavy equipment operations and heavy-duty trucks and the associated health impacts to sensitive receptors. The closest sensitive receptors include residences located north of Frazee Road, east of Spring Canyon Way, and south of State Route 76; Old Mission Montessori School located approximately 250 feet west of the project site; and Ivey Ranch Child Development Center and Preschool located approximately 400 feet southwest of the project site.

Health effects from carcinogenic air toxics are usually described in terms of cancer risk. The SDAPCD recommends an incremental cancer risk threshold of 10 in a million. "Incremental cancer risk" is the likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 70-year lifetime will contract cancer based on the use of standard risk-assessment methodology. The proposed project would not require the extensive use of heavy-duty construction equipment, which is subject to a CARB Airborne Toxics Control Measure (ATCM) for in-use diesel construction equipment to reduce diesel particulate emissions, and would not involve extensive use of diesel trucks, which are also subject to an ATCM. Total construction of the proposed project that requires the use of heavy-duty construction equipment would last approximately 18 months, after which project-related TAC emissions would cease. Thus, the proposed project would not result in a long-term (i.e., 70-year) source of TAC emissions. No residual TAC emissions and corresponding cancer risk are anticipated after construction, nor are any long-term sources of TAC emissions anticipated during operation of the proposed project. As such, the exposure of project-related TAC emission impacts to sensitive receptors would be less than significant.

E. Would the project create objectionable odors affecting a substantial number of people?

Odors would be generated from vehicles and/or equipment exhaust emissions during construction of the proposed project. Odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment and architectural coatings. Such odors are temporary and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be considered less than significant.

Land uses and industrial operations that are associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project involves residential construction and would not result in the creation of a land use that is commonly associated with odors. Therefore, project operations would result in an odor impact that is less than significant.

4.2.5 Mitigation Measures

Impacts would be less than significant and no mitigation is required.

4.2.6 Level of Significance After Mitigation

Impacts would be less than significant and no mitigation is required.