5.2 AIR QUALITY

This section of the Draft Environmental Impact Report (Draft EIR) evaluates the potential for the proposed Section 31 Specific Plan Project ("Section 31 Specific Plan" or "Project") to impact air quality on a local and regional context. More specifically, this section evaluates impacts associated with the Project that may potentially affect regional and local air quality. Various federal, State, regional, and local programs and regulations related to anticipated air quality impacts are also discussed in this section. Emission calculations and air quality modeling completed for the proposed Project are contained in **Appendix B: Air Quality and Greenhouse Gas Emissions Model Output** of this Draft EIR.

Prior to the preparation of this Draft EIR, an Initial Study (included in **Appendix A: Notice of Preparation (NOP), Initial Study (IS), Comment Letters on the NOP and IS, and Distribution List** of this Draft EIR) was prepared using the CEQA Guidelines Appendix G Environmental Checklist Form to assess potential environmental impacts associated with air quality. The following Initial Study screening criteria related to air quality do not require additional analysis in this Draft EIR:

- Potential impacts related to the creation of other emissions (such as those leading to odors) adversely affecting a substantial number of people were evaluated and determined to be "Less than Significant" in the Initial Study. As discussed therein, the proposed Project would not include facilities typical of odor sources (e.g., sanitary landfills, wastewater treatment plants, composting facilities, chemical manufacturing facilities, auto body shops, etc.). Therefore, this issue is not addressed any further within this section.

Impacts found to be less than significant are further discussed in **Section 8.1: Effects Not Found to be Significant** of this Draft EIR. Please see **Section 9.0: Terms, Definitions, and Acronyms** for a glossary of terms, definitions, and acronyms used in this Draft EIR.

A. ENVIRONMENTAL SETTING

1. Existing Conditions

Air Pollutants of Concern

Criteria Air Pollutants

The criteria air pollutants that are most relevant to current air quality planning and regulation in the Salton Sea Air Basin (SSAB) include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). In addition, volatile organic compounds (VOC) and toxics air contaminants (TACs) are a concern in the SSAB, but are not classified under Ambient Air Quality Standards (AAQS). The characteristics of each of these pollutants are briefly described below.

The State and AAQS and their attainment status in the SSAB for each of the criteria pollutants are summarized in **Table 5.2-1: Ambient Air Quality Standards and Attainment Status**. Under federal and State standards, the SSAB is currently designated as nonattainment for O_3 and PM_{10}.

Table 5.2-1
Ambient Air Quality Standards and Attainment Status

Pollutant	Averaging Period	California		Federal	
		Standards	Attainment Status	Standards	Attainment Status
Ozone (O_3)	1-hour	0.09 ppm (180 µg/m^3)	Nonattainment	--	Nonattainment
	8-hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)	
Nitrogen Dioxide (NO_2)	Annual Arithmetic mean	0.03 ppm (57 µg/m^3)	Attainment	0.053 ppm (100 µg/m^3)	Unclassified/ Attainment
	1-hour	0.18 ppm (339 µg/m^3)		0.100 ppm (188 µg/m^3)	
Carbon Monoxide (CO)	8 hours	9.0 ppm (10 mg/m^3)	Attainment	9 ppm (10 mg/m^3)	Unclassified/ Attainment
	1 hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)	
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm	Attainment	0.075 ppm	Attainment
	24 hour	0.04 ppm		-	
Lead (Pb)	30-day average	1.5 µg/m^3	Attainment	-	Unclassified/ Attainment
	Rolling 3-month average	-		0.15 µg/m^3	
Respirable Particulate Matter (PM_{10})	24 hour	50 µg/m^3	Nonattainment	150 µg/m^3	Nonattainment
	Annual arithmetic mean	20 µg/m^3		-	
Fine Particulate Matter ($PM_{2.5}$)	24 hours	-	Attainment	35 µg/m^3	Unclassified/ Attainment
	Annual arithmetic mean	12 µg/m^3		12 µg/m^3	

Source: California Air Resources Board website at: https://www.arb.ca.gov/research/aaqs/aaqs2.pdf (accessed May 2019) and CARB, "Area Designations Maps/State and National," http://www.arb.ca.gov/desig/adm/adm.htm (last reviewed December 28, 2018).

Note: ppm = parts per million.

Ozone (O_3)

O_3 is a highly reactive and unstable gas that is formed when reactive organic gases (ROGs), sometimes referred to as VOC, and nitrogen oxides (NOx), byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. O_3 concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.

Individuals exercising outdoors, children and people with preexisting lung disease such as asthma and chronic pulmonary lung disease are considered to be the most susceptible sub-groups for ozone effects. 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. Elevated ozone levels are associated with increased school absences. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in high ozone communities.

Ozone exposure under exercising conditions is known to increase the severity of the observed responses mentioned above. Animal studies suggest that exposures to a combination of pollutants that include ozone may be more toxic than exposure to ozone alone. Although lung volume and resistance changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.

Carbon Monoxide (CO)

CO is a colorless, odorless gas produced by the incomplete combustion of carbon-containing fuels, such as gasoline or wood. CO concentrations tend to be the highest during the winter morning, when little to no wind and surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike O3, motor vehicles operating at slow speeds are the primary source of CO in the Basin. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of worsening oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs but exerts its effect on tissues by interfering with oxygen transport by competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb).

Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include patients with diseases involving heart and blood vessels, fetuses, and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes.

Reduction in birth weight and impaired neurobehavioral development has been observed in animals chronically exposed to CO resulting in COHb levels similar to those observed in smokers. Recent studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels. These include pre-term births and heart abnormalities. Additional research is needed to confirm these results.

Nitrogen Dioxide (NO_2)

NO_2 is a reddish-brown, highly reactive gas that is formed in the ambient air through the oxidation of nitric oxide (NO). NO_2 is also a byproduct of fuel combustion. The principle form of NO_2 population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposures to NO_2 at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO_2 in healthy individuals. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups.

In animals, exposure to levels of NO_2 considerably higher than ambient concentrations result in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of ozone exposure increases when animals are exposed to a combination of O_3 and NO_2.

A detailed discussion of the health effects of NO_2 is provided in the Final 2016 Air Quality Management Plan.[1]

Particulate Matter (PM_{10} and $PM_{2.5}$)

A consistent correlation between elevated ambient respirable and fine particulate matter (PM_{10} and $PM_{2.5}$) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks, and the number of hospital admissions has been observed in different parts of the US and various areas around the world. In recent years, some studies have reported an association between long-term

1 SCAQMD, *Final 2016 Air Quality Management Plan, Appendix I: Health Effects*, accessed May 2019, https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/appendix-i.pdf?sfvrsn=14.

exposure to air pollution dominated by fine particles and increased mortality, reduction in life span, and an increased mortality from lung cancer.

Daily fluctuations in fine-particulate-matter concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with long-term exposure to particulate matter. The elderly, people with pre-existing respiratory or cardiovascular disease, and children appear to be more susceptible to the effects of PM_{10} and $PM_{2.5}$.

Sulfur Dioxide (SO_2)

SO_2 is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal, as well as from chemical processes occurring at chemical plants and refineries. When SO_2 oxidizes in the atmosphere, it forms sulfates (SO_4). Collectively, these pollutants are referred to as sulfur oxides (SOx).

A few minutes of exposure to low levels of SO_2 can result in airway constriction in some asthmatics, all of whom are sensitive to its effects. Asthmatics' acute exposure to SO_2 increases their resistance to air flow and reduces their breathing capacity, which leads to severe breathing difficulties. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO_2.

Animal studies suggest that despite the fact that SO_2 is a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off cells lining the respiratory tract.

Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO_2 levels. In these studies, efforts to separate the effects of SO_2 from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically, or one pollutant alone is the predominant factor.

Most of the health effects associated with fine particles and SO_2 at ambient levels are also associated with SO_4. Thus, both mortality and morbidity effects have been observed with an increase in ambient SO_4 concentrations. However, efforts to separate the effects of SO_4 from the effects of other pollutants have generally not been successful. Clinical studies of asthmatics exposed to sulfuric acid suggest that adolescent asthmatics are possibly a subgroup susceptible to acid aerosol exposure. Animal studies suggest that acidic particles, such as sulfuric acid aerosol and ammonium bisulfate, are more toxic than

non-acidic particles like ammonium sulfate. Whether the effects are attributable to acidity or to particles remains unresolved.

Lead (Pb)

Pb occurs in the atmosphere as particulate matter. The combustion of leaded gasoline is the primary source of airborne Pb in the Basin. The use of leaded gasoline is no longer permitted for on-road motor vehicles, so the majority of such combustion emissions are associated with off-road vehicles, such as racecars. However, because leaded gasoline was emitted in large amounts from vehicles when leaded gasoline was used for on-road motor vehicles, Pb is present in many urban soils and can be resuspended in the air. Other sources of Pb include the manufacturing and recycling of batteries, paint, ink, ceramics, ammunition, and the use of secondary lead smelters. Pb is also found in lead-based paint, which is considered health hazard for people, especially children. From the turn of the century through the 1940s, paint manufacturers used lead as a primary ingredient in many oil-based paints. Use of lead in paint decreased, but was still used until 1978 when it was banned from residential use. Remodeling, renovations, or demolition activities in older buildings could disturb lead-based paint surfaces.

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence levels. In adults, increased lead levels are associated with increased blood pressure.

Lead poisoning can cause anemia, lethargy, seizures and death. It appears that there are no direct effects of lead on the respiratory system. Lead can be stored in the bone from early-age environmental exposure, and elevated blood lead levels can occur due to the breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland) and osteoporosis (breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of lead because of previous environmental lead exposure of their mothers.

Volatile Organic Compounds (VOCs)

VOC means any compound of carbon, excluding carbon monoxide, carbon dioxide (CO_2), carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions and thus, a precursor of ozone formation. VOC emissions often result from the evaporation of solvents in architectural coatings. Reactive organic gases (ROG) are any reactive compounds of carbon, excluding methane, CO, CO_2 carbonic acid, metallic carbides or carbonates, ammonium carbonate, and other exempt compounds. ROG emissions are generated from the exhaust of

mobile sources.[2] Both VOC and ROGs are precursors to ozone and the terms can be used interchangeably.[3]

Toxic Air Contaminants

TACs refer to a diverse group of "non-criteria" air pollutants that can affect human health but have not had ambient air quality standards established for them. This is not because they are fundamentally different from the pollutants discussed previously, but because their effects tend to be local rather than regional. TACs are classified as carcinogenic and noncarcinogenic, where carcinogenic TACs can cause cancer and noncarcinogenic TAC can cause acute and chronic impacts to different target organ systems (e.g., eyes, respiratory, reproductive, developmental, nervous, and cardiovascular).

The California Air Resources Board (CARB) and the Office of Environmental Health Hazard Assessment (OEHHA) determine if a substance should be formally identified, or "listed," as a TAC in California.[4] Diesel Particulate Matter (DPM), which is emitted in the exhaust from diesel engines, was listed by the State as a TAC in 1998. DPM has historically been used as a surrogate measure of exposure for all diesel exhaust emissions. DPM consists of fine particles (fine particles have a diameter less than 2.5 μm), including a subgroup of ultrafine particles (ultrafine particles have a diameter less than 0.1 μm). Collectively, these particles have a large surface area, which makes them an excellent medium for absorbing organics. The visible emissions in diesel exhaust include carbon particles or "soot." Diesel exhaust also contains a variety of harmful gases and cancer-causing substances.

Exposure to DPM may be a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. DPM levels and resultant potential health effects may be higher near heavily-traveled roadways with substantial truck traffic or near industrial facilities. According to CARB, DPM exposure may lead to the following adverse health effects: (1) aggravated asthma; (2) chronic bronchitis; (3) increased respiratory and cardiovascular hospitalizations; (4) decreased lung function in children; (5) lung cancer; and (6) premature deaths for people with heart or lung disease.[5]

To provide a perspective on the contribution that DPM has on the overall Statewide average ambient air toxics potential cancer risk, CARB evaluated risks from specific compounds using data from CARB's

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2 SCAQMD, Appendix A: Calculation Details for CalEEMod (October 2017), accessed May 2019, http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6.

3 Both VOC and ROGs are both precursors to ozone so they are summed in the CalEEMod report under the header ROG. For the purposes of comparing the ROG value to a VOC significance threshold, the terms can be used interchangeably.

4 The complete list of such substances is located at www.arb.ca.gov/toxics/id/taclist.htm.

5 California Air Resources Board (CARB), Diesel and Health Research, accessed May 2019, https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health.

ambient monitoring network. CARB maintains 21-site air toxics monitoring network that measures outdoor ambient concentration levels of approximately 60 air toxics. CARB has determined that, of the top ten inhalation risk contributors, DPM contributes approximately 68 percent of the total potential cancer risk.[6]

Regional

The Project Site lies within the SSAB, which spans the Coachella Valley portion of the County of Riverside and the entire County of Imperial. Air quality management of the Riverside County portion of the SSAB is overseen by SCAQMD. The Riverside County portion of the SSAB is bound by the San Jacinto Mountains to the west and spans eastward up to the Palo Verde Valley. The SSAB and the adjacent Mojave Desert Air Basin were previously included in a single large air basin known as the Southeast Desert Air Basin. However, CARB has subdivided this larger basin into the two separate air basins that are in place today.

The SSAB is classified as having a desert climate characterized by low precipitation, hot summers, mild winters, low humidity, and strong temperature inversions. The annual average temperature varies little throughout the SSAB, ranging from the low 40s to the low 100s, measured in degrees Fahrenheit (°F). The Western Regional Climate Center (WRCC) maintains historical climate information for the western US, including the City of Palm Springs which is the closest meteorological monitoring station to the Project Site (Station ID No. 046635). According to this Station, the annual maximum temperature in the local vicinity is 108.2°F in July, while the annual minimum temperature reported is 42.3°F in December and January. The average annual rainfall for the Project area ranges from 5 to 6 inches.[7]

Air pollutant emissions within the region are primarily generated by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at a specific location and are often identified by an exhaust vent or stack at a facility. Portable diesel generators and other similar equipment also are considered to be stationary sources of air emissions. Area sources are widely distributed and can include such sources as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, parking lots, and some consumer products.

Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment.

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6 SCAQMD, "Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES-IV)." (May 2015), accessed May 2019, http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf.

7 Western Regional Climate Center, "Palm Springs Station: Period of Record Monthly Climate Summary" (period of record 03/01/1906-06/10/2016), https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6635.

Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles. The main source of pollutants near the Project Site includes mobile emissions generated from both on-road and off-road vehicles.

In relation to other areas of southern California, the SSAB has good air quality. In the past few decades, however, noticeable deterioration of air quality has occurred due to transport of pollutants from coastal air basins, primarily ozone, and locally generated coarse inhalable particulate matter (PM_{10}) as a result of increased development and population growth, traffic, construction activity, and various site disturbances.

Local Air Quality

For evaluation purposes, SCAQMD has divided its territory into 36 Source Receptor Areas (SRA) with operating monitoring stations in most of the SRAs. These SRAs are designated to provide a general representation of the local meteorological, terrain, and air quality conditions within the particular geographical area.

The Project Site is located in the Coachella Valley (SRA 30) in the SSAB. SCAQMD maintains two permanent air quality monitoring locations in the Riverside County portion of the SSAB; one station is located in the City of Palm Springs, closer to the San Gorgonio Pass, predominantly downwind of the densely populated SSAB, and the other station is located in the City of Indio, further into the Coachella Valley and downwind of the main population areas of the Coachella Valley. More specifically, the closest monitoring station to the Project Site is located at 590 East Racquet Club Avenue, approximately nine miles to the northwest of the Project Site.[8] This station monitors pollutant concentrations of O3, NO2, CO, PM10 and PM2.5.

Table 5.2-2: Air Quality Monitoring Summary lists the ambient pollutant concentrations registered and the violations of State and federal standards that have occurred at the abovementioned monitoring stations from 2015 through 2017 the most recent years for which data are available. As shown, the monitoring stations have registered values above State and federal standards for O3 and PM10. Concentrations of CO and NO_2 have not been exceeded anywhere within the SSAB for several years.

Table 5.2-2
Air Quality Monitoring Summary

Air Pollutant	Average Time (Units)	2015	2016	2017
Ozone (O_3)	State Max 1 hour (ppm)	0.102	0.103	0.113

8 CARB, Quality Assurance Air Monitoring Site Information for Palm Springs-Fire Station, accessed May 2019, https://ww3.arb.ca.gov/qaweb/site.php?s_arb_code=33137.

Air Pollutant	Average Time (Units)	2015	2016	2017
	Days > CAAQS threshold (0.09 ppm)	3	6	18
	National Max 8 hour (ppm)	0.092	0.092	0.097
	Days > NAAQS threshold (0.070 ppm)	47	46	57
	State Max 8 hour (ppm)	0.093	0.092	0.097
	Days > CAAQS threshold (0.07 ppm)	51	48	63
Carbon Monoxide (CO)*	Max 1 hour (ppm)	2.0	3.1	1.0
	Days > CAAQS threshold (20 ppm)	N/A	N/A	N/A
	Days > NAAQS threshold (35 ppm)	N/A	N/A	N/A
	Max 8 hours (ppm)	0.7	1.5	0.5
	Days > CAAQS threshold (9.0 ppm)	N/A	N/A	N/A
	Days > NAAQS threshold (9.0 ppm)	N/A	N/A	N/A
Nitrogen dioxide (NO_2)	National Max 1 hour (ppm)	0.042	0.043	0.043
	Days > NAAQS threshold (0.100 ppm)	0	0	0
	State Max 1 hour (ppm)	0.041	0.042	0.042
	Days > CAAQS threshold (0.18 ppm)	0	0	0
Sulfur dioxide (SO_2)	Max 1 hour (ppb)	N/A	N/A	N/A
	Days > CAAQS threshold (250 ppb)	N/A	N/A	N/A
	Days > NAAQS threshold (0.075 ppm)	N/A	N/A	N/A
Particulate matter (PM_{10})	Annual Average ($\mu g/m^3$)	20.9	23.1	22.1
	24 hours ($\mu g/m^3$)	199.0	447.2	105.6
	Days > CAAQS threshold (50 $\mu g/m^3$)	2	3	1
	Days > NAAQS threshold (150 $\mu g/m^3$)	1	1	0
Fine particulate matter ($PM_{2.5}$)	National Max ($\mu g/m^3$)	22.7	14.7	14.5
	National Annual Average ($\mu g/m^3$)	N/A	5.4	6.0
	Days > NAAQS threshold (35 $\mu g/m^3$)	0	0	0

Source: California Air Resources Board, "Top 4 Summary," https://www.arb.ca.gov/adam/topfour/topfour1.php.

Notes:

** CO data from at SCAQMD, Historical Data By Year, https://www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year.*

> = exceeds; CAAQS = California Ambient Air Quality Standard; max = maximum; mean = annual arithmetic mean; µg/m3 = micrograms per cubic meter; N/A = no data; NAAQS = National Ambient Air Quality Standard; ppm = parts per million.

Individuals who are sensitive to air pollution include children, the elderly, and persons with preexisting respiratory or cardiovascular illness. For purposes of environmental analysis, SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities. Commercial and industrial facilities are not included in the definition because employees do not typically remain on-site for 24 hours. However, when assessing the impact of pollutants with 1-hour or 8-hour standards (such as nitrogen dioxide and carbon monoxide), commercial and/or industrial facilities would be considered sensitive receptors for those purposes.

Existing Project Site Emissions

The Project site is currently vacant and undeveloped, therefore there are no emissions currently generated.

Surrounding Land Uses

The Project Site is bound by four major surrounding intersections; Gerald Ford Drive to the north; Frank Sinatra Drive to the south; Monterey Avenue to the east; and Bob Hope Drive to the west. Land uses surrounding the four major intersections are as follows:

- Gerald Ford Drive: Single-family residential neighborhoods
- Frank Sinatra Drive: Single-family residential neighborhoods
- Monterey Avenue: Marriot Shadow Ridge Resort, which includes a golf course and multifamily resort housing.
- Bob Hope Drive: Sunnyland Estate, which include a 9-hole golf course, visitor center, and gardens.

Refer to **Figure 5.11-5** for locations of surrounding land uses.

Sensitive Receptors

Some receptors are considered more sensitive to air pollutants than others, because of preexisting health problems, proximity to the emissions source, or duration of exposure to air pollutants. Land uses such as primary and secondary schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because the very young, the old, and the infirm are more susceptible to respiratory infections and other air quality related health problems than the general public. Residential areas are also considered sensitive to poor air quality because people in residential areas are often at home for extended periods. Recreational land uses are moderately sensitive to air pollution because vigorous exercise associated with recreation places having a high demand on respiratory system function. CARB has identified the following people as most likely to be affected by air pollution: children less than

14 years of age, the elderly over 65 years of age, athletes, and those with cardiovascular and chronic respiratory diseases.

2. Regulatory Setting

Air quality within the Basin is addressed through the efforts of various federal, State, regional, and local government agencies. These agencies work jointly as well as individually to improve air quality through legislation, regulations, planning, policy making, enforcement, education, and a variety of programs. The agencies primarily responsible for improving the air quality within the Basin are discussed in the following paragraphs along with their individual responsibilities.

Federal

Clean Air Act

The United States Environmental Protection Agency (USEPA) is responsible for the implementation of portions of the CAA of 1970, which regulates certain stationary and mobile sources of air emissions and other requirements. Charged with handling global, international, national, and interstate air pollution issues and policies, the USEPA sets national vehicle and stationary source emission standards, oversees the approval of all State Implementation Plans,[9] provides research and guidance for air pollution programs, and sets NAAQS.[10] NAAQS for the six common air pollutants (ozone, PM_{10} and $PM_{2.5}$, NO_2, CO, Pb, and SO_2) are identified in the CAA.

The 1990 amendments to the CAA identify specific emission reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA that are most applicable to the Project include Title I, Nonattainment Provisions, and Title II, Mobile Source Provisions.

The NAAQS were also amended in July 1997 to include an 8-hour standard for ozone. The 8-hour ozone standard established by USEPA was challenged, and eventually upheld in March 2002. The portion of the SSAB under the SCAQMD's jurisdiction (Coachella Valley Planning Area) was classified as "serious", with an attainment date of June 2013. In May 2010, the USEPA granted the State's request to designate the Coachella Valley as "severe" with an attainment date of 2019. The federal 1-hour ozone standard was

9 A State Implementation Plan is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain National Ambient Air Quality Standards (NAAQS).

10 The NAAQS were established to protect public health, including that of sensitive individuals; for this reason, the standards continue to change as more medical research becomes available regarding the health effects of the criteria pollutants. The primary NAAQS defines the air quality considered necessary, with an adequate margin of safety, to protect the public health.

revoked, effective June 15, 2005, but "anti-backsliding" measures, including implementation of an approved attainment plan, remain in effect for areas that have not yet attained these standards. In addition, in contrast to PM_{10}, $PM_{2.5}$ concentrations were relatively low in the Coachella Valley area of the SSAB. PM_{10} concentrations are normally higher in the desert areas due to windblown and fugitive dust emissions; $PM_{2.5}$ is relatively low in the desert area due to fewer combustion-related emissions sources and less secondary aerosol formation in the atmosphere. The $PM_{2.5}$ federal standards were not exceeded in the Coachella Valley in 2015 and the highest 24-hour and annual average 2013–2015 design values (17 and 8.0 µg/m3), respectively, both at the Indio air monitoring station) are well below the $PM_{2.5}$ NAAQS.[11]

State

The California CAA, signed into law in 1988, requires all areas of the State to achieve and maintain the CAAQS by the earliest practicable date. CARB, a part of the California Environmental Protection Agency, California Clean Air Act

The California Clean Air Act, signed into law in 1988, requires all areas of the State to achieve and maintain the California AAQS by the earliest practicable date. CARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both State and federal air pollution control programs within California. In this capacity, CARB conducts research, sets State AAQS, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products, and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions and the CAAQS currently in effect for each of the criteria pollutants, as well as other pollutants recognized by the State. The CAAQS include more stringent standards than the NAAQS. Criteria pollutants that are in nonattainment under the CAAQS include O_3 and PM_{10}.

Air Quality and Land Use Handbook

CARB published the *Air Quality and Land Use Handbook*[12] on April 28, 2005, to serve as a general guide for considering health effects associated with siting sensitive receptors proximate to sources of toxic air contaminant (TAC) emissions. The recommendations provided therein are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts. The goal of the guidance

11 SCAQMD, "Final 2016 Air Quality Management Plan" (2017), accessed May 2019, http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf?sfvrsn=15.

12 CARB, Air Quality and Land Use Handbook: A Community Health Perspective (April 2005), https://www.arb.ca.gov/ch/handbook.pdf.

document is to protect sensitive receptors, such as children, the elderly, acutely ill, and chronically ill persons, from exposure to TAC emissions.

Some examples of CARB's siting recommendations include the following: (1) avoid siting sensitive receptors within 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural road with 50,000 vehicles per day; (2) avoid siting sensitive receptors within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 50 trucks with operating transport refrigeration units per day, or where transport refrigeration unit operations exceed 300 hours per week); and (3) avoid siting sensitive receptors within 300 feet of any dry cleaning operation using perchloroethylene and within 500 feet of operations with two or more machines.

California Motor Vehicle Code

The vehicle programs are a critical component in the State Implementation Plan (SIP) for achieving national ambient air quality standards in the South Coast and San Joaquin Valley.[13] They are also integral in CARB's Scoping Plan[14] to achieve the GHG reduction goals that were established through California legislation and Executive Orders.

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling (Title 13 of the California Code of Regulations, Section 2485)

The Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling[15] measure includes regulations that pertain to air quality emissions. Specifically, Section 2485 states that during construction, the idling of all diesel-fueled commercial vehicles weighing more than 10,000 pounds shall be limited to 5 minutes at any location. In addition, Section 93115 in Title 17 of the California Code of Regulations (CCR)[16] states that operation of any stationary, diesel-fueled, compression-ignition engines shall meet specified fuel and fuel additive requirements and emission standards.

California Air Resources Board (CARB)

CARB Rule 2449, General Requirements for In-Use Off-Road Diesel-Fueled Fleets

Requires off-road diesel vehicles to limit nonessential idling to no more than 5 consecutive minutes.[17]

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13 CARB, "California State Implementation Plans" (last reviewed September 21, 2018), https://www.arb.ca.gov/planning/sip/sip.htm.

14 CARB, "AB 32 Scoping Plan" (January 8, 2018), https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm.

15 CARB, Section 2485 in Title 13 of the CCR, https://www.arb.ca.gov/msprog/truck-idling/13ccr2485_09022016.pdf.

16 CARB, Final Regulation Order: Amendments to the Airborne Toxic Control Measure For Stationary Compression Ignition Engines (May 19, 2011), https://www.arb.ca.gov/diesel/documents/FinalReg2011.pdf.

CARB Rule 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

CARB Rule 2485 requires commercial vehicles weighing more than 10,001 pounds to limit nonessential idling to no more than 5 consecutive minutes.[17]

Regional and Local

South Coast Air Quality Management District

SCAQMD shares responsibility with CARB for ensuring that all State and federal AAQS are achieved and maintained over an area of approximately 10,743 square miles, including the Basin. This area includes all of Orange and Los Angeles counties except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County.

SCAQMD shares responsibility with CARB for ensuring that all State and federal ambient air quality standards are achieved and maintained over an area of approximately 10,743 square miles. This area includes the South Coast Air Basin and portions of the Salton Sea and Mojave Desert Air Basins, all of Orange County, and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. It does not include the Antelope Valley or the non-desert portion of western San Bernardino County.

SCAQMD is responsible for controlling emissions primarily from stationary sources. SCAQMD maintains air quality monitoring stations throughout the Air Basins. SCAQMD, in coordination with the SCAG, is also responsible for developing, updating, and implementing the AQMP for the Air Basins. An AQMP is a plan prepared and implemented by an air pollution district for a county or region designated as "nonattainment" of the national and/or California ambient air quality standards. The term "nonattainment area" is used to refer to an air basin in which one or more ambient air quality standards are exceeded.

SCAQMD approved the 2016 AQMP on March 3, 2017. The 2016 AQMP incorporates the latest scientific and technological information and planning assumptions, including the 2016 Regional Transportation Plan/Sustainable Communities Strategy and updated emission inventory methodologies for various source categories. The AQMP also includes an update on the current air quality status of the SSAB. The Coachella Valley Planning Area, the desert portion of Riverside County in the SSAB, is designated as a nonattainment area for the federal 2008 and 1997 8-hour ozone standards as well as the federal 2006 24-hour PM10 standard. The Coachella Valley monitored data also shows that it will meet the PM10 NAAQS, pending SCAQMD documentation submittal and subsequent USEPA approval of days flagged for high-

17 CARB, CARB Rule 2485, https://www.arb.ca.gov/msprog/truck-idling/13ccr2485_09022016.pdf.

wind exceptional events. However, USEPA has requested that SCAQMD conduct additional monitoring in the southeastern portion of the Coachella Valley before a re-designation can be considered.

The 2016 AQMP does not include new modeling efforts for PM10; since the mid-1990s, peak 24-hour average PM10 concentrations have not exceeded the current federal standard (150 µg/m3) other than on days with windblown dust from natural events, which can be excluded upon USEPA concurrence. Regardless, the USEPA has requested additional ambient monitoring prior to consideration of re-designation. With further implementation of cleaner technologies, the 2016 AQMP anticipates the Coachella Valley Planning area to be in attainment of the federal 1997 8-hour ozone standard by the end of 2018 and the 2008 8-hour ozone standard by 2023, as well as progress towards attainment of the 2015 8-hour ozone standard to be evaluated in a later AQMP.

SCAQMD is responsible for limiting the amount of emissions that can be generated throughout the Air Basins by various stationary, area, and mobile sources. Specific rules and regulations have been adopted by the SCAQMD Governing Board, which limit the emissions that can be generated by various uses/activities and that identify specific pollution reduction measures, which must be implemented in association with various uses and activities. These rules not only regulate the emissions of the federal and State criteria pollutants but also TACs and acutely hazardous materials. The rules are also subject to ongoing refinement by SCAQMD.

Among the SCAQMD rules applicable to the Project are Rule 403 (Fugitive Dust), Rule 403.1 (Supplemental Fugitive Dust Control Requirements For Coachella Valley Sources), and Rule 1113 (Architectural Coatings). Rule 403 requires the use of stringent best available control measures to minimize PM10 emissions during grading and construction activities. Rule 403.1 requires active operations within a Blowsand Zone stabilize new man-made deposits of bulk material and requires a fugitive dust control plan for construction projects. Rule 1113 will require reductions in the VOC content of coatings, with a substantial reduction in the VOC content limit for flat coatings to 50 grams per liter (g/L) in July 2008.[18] Additional details regarding these rules and other potentially applicable rules are presented as follows.

Rule 403 (Fugitive Dust). This rule requires fugitive dust sources to implement Best Available Control Measures for all sources and prohibits all forms of visible particulate matter from crossing any property line. This may include application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour (mph), sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites. SCAQMD Rule 403 is intended to reduce PM10 emissions from

18 SCAQMD, Rule 1113 Architectural Coating (amended September 6, 2013).

any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust (see also Rule 1186).

Rule 403.1 (Supplemental Fugitive Dust Control Requirements For Coachella Valley Sources). This rule requires the reduction or prevention of the amount of PM10 emitted in the ambient air from man-made fugitive dust sources. The provisions of this rule are supplemental to Rule 403 and apply only to fugitive dust sources in the Coachella Valley. In addition, this rule requires a fugitive dust control plan for construction projects with a disturbed surface area of more than 5,000 square feet.

Rule 1113 (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.

Rule 1121 (Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters). This rule prescribes NOx emission limits for natural gas-fired water heaters with heat input rates less than 75,000 British Thermal Unit (BTU) per hour. It applies to manufacturers, distributors, retailers, and installers of natural gas-fired water heaters. In lieu of meeting these NOx limits, this rule allows emission mitigation fees to be collected from water heater manufacturers to fund stationary and mobile source emission reduction projects targeted at offsetting NOx emissions from water heaters that do not meet Rule 1121 emission standards.

Rule 1146.2 (Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters). This rule requires manufacturers, distributors, retailers, refurbishers, installers, and operators of new and existing units to reduce NOx emissions from natural gas-fired water heaters, boilers, and process heaters as defined in this rule.

Rule 1186 (PM10 Emissions from Paved and Unpaved Roads, and Livestock Operations). This rule applies to owners and operators of paved and unpaved roads and livestock operations. The rule is intended to reduce PM10 emissions by requiring the cleanup of material deposited onto paved roads, use of certified street sweeping equipment, and treatment of high-use unpaved roads (see also Rule 403).

Stationary emissions sources subject to these rules are regulated through SCAQMD's permitting process. Through this permitting process, SCAQMD also monitors the amount of stationary emissions being generated and uses this information in developing AQMPs. The Project would be subject to SCAQMD rules and regulations to reduce specific emissions and to mitigate potential air quality impacts.

Coachella Valley PM10 State Implementation Plan

The 2003 PM10 Coachella Valley State Implementation Plan (CVSIP) was jointly developed by the SCAQMD, Coachella Valley Association of Governments (CVAG) and its member cities and was approved by the USEPA. The 2003 PM10 CVSIP updated the 1990 plan, which was drafted as a requirement of the federal Clean Air Act to demonstrate expeditious attainment of PM10 standards.[19] On April 18, 2003, the USEPA approved the updated CVSIP.

Historically, PM10 levels in the Coachella Valley are elevated due to fugitive dust emission from grading and construction activities, agricultural practices, and strong wind. The finer materials, including sand and silt, can be picked up and transported by the wind and are referred to as "blowsand." PM10 particles associated with blowsand are of two types: (1) natural PM10 produced by direct particle erosion and fragmentation, and (2) secondary PM10 whereby sand deposited on roadways is further pulverized by motor vehicles and then re-suspended in the air by those vehicles. The Project area is located in a PM10 non-attainment area for the state and federal PM10 standards.

The Coachella Valley was eligible for redesignation as attainment in 2009 – 2010 due to the annual average PM10 concentrations meeting the revoked federal standard. On February 25, 2010 the California Air Resources Board approved the Coachella Valley PM10 Redesignation Request and Maintenance Plan from serious non-attainment to attainment for the PM10 National Ambient Air Quality Standard under Federal CAA Section 107. However, the Coachella Valley began exceeding thresholds for PM10 shortly after the redesgination request and continues to exceed thresholds today. The Coachella Valley continues to be in non-attainment for PM10.

SCAQMD employs measures to reduce particulate matter in the basin, sets forth new measures that could further reduce particulate matter, and lists those new measures that need further evaluation prior to implementation. In addition, applicable State code and AQMD Rules, including Rule 403 (Fugitive Dust), enforce fugitive dust compliance for all activities within the SSAB.

SCAQMD Air Quality Analysis Guidance Handbook

In 1993, SCAQMD prepared its *CEQA Air Quality Handbook* to assist local government agencies and consultants in preparing environmental documents for projects subject to CEQA.[20] However, SCAQMD is in the process of developing its *Air Quality Analysis Guidance Handbook* to replace the *CEQA Handbook*.

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19 SCAQMD, Final 2003 Coachella Valley PM10 State Implementation Plan, August 1, 2003, accessed May 2019, https://www.aqmd.gov/docs/default-source/clean-air-plans/pm10-plans/final-2003-coachella-valley-pm10-state-implementation-plan.pdf?sfvrsn=2.

20 SCAQMD, Air Quality Analysis Guidance Handbook (2010), http://www.aqmd.gov/CEQA/hdbk.html.

The *CEQA Handbook* and the *Air Quality Analysis Guidance Handbook* describe the criteria that SCAQMD uses when reviewing and commenting on the adequacy of environmental documents. The *Air Quality Analysis Guidance Handbook* provides the most up-to-date recommended thresholds of significance in order to determine if a project will have a significant adverse environmental impact. Other important subjects covered in the *CEQA Handbook* and the *Air Quality Analysis Guidance Handbook* include methodologies for estimating project emissions and mitigation measures that can be implemented to avoid or reduce air quality impacts. Although the Governing Board of SCAQMD has adopted the *CEQA Handbook* and is in the process of developing the *Air Quality Analysis Guidance Handbook*, SCAQMD does not, nor does it intend to, supersede a local jurisdiction's CEQA procedures.[21]

While the *Air Quality Analysis Guidance Handbook* is being developed, supplemental information has been adopted by SCAQMD. These include revisions to the air quality significance thresholds and a procedure referred to as "localized significance thresholds," which has been added as a significance threshold under the Local Significance Threshold (LST) Methodology.[22] The applicable portions of the *CEQA Handbook*, the *Air Quality Analysis Guidance Handbook*, and other revised methodologies were used in preparing the air quality analysis in this Section, as discussed and referenced later in this Section.

SCAQMD Amicus Brief

In its Friant Ranch decision, the California Supreme Court conceded that an explanation of the connection between an individual project's pollutant emissions in excess of thresholds and human health effects may not be possible given the current state of environmental science modeling. However, the California Supreme Court concluded that the Friant Ranch Project EIR itself must explain, in a manner reasonably calculated to inform the public, the scope of what is and is not yet known about the effect of the Project's significant and unavoidable air quality impacts on human health. The specific language provided by the Court is provided below.

> *"The EIR fails to provide an adequate discussion of health and safety problems that will be caused by the rise in various pollutants resulting from the Project's development. At this point, we cannot know whether the required additional analysis will disclose that the Project's effects on air quality are less than significant or unavoidable, or whether that analysis will require reassessment of proposed mitigation measures. Absent an analysis that reasonably informs the public how anticipated air quality effects will adversely affect human health, an EIR may still be sufficient if it adequately explains why it is not scientifically feasible at the time of drafting to provide such an analysis."*

21 SCAQMD, Frequently Asked CEQA Questions (2010), http://www.aqmd.gov/ceqa/faq/html.
22 SCAQMD, Final Localized Significance Threshold Methodology (2008).

SCAQMD has provided amicus briefs explaining the difficulties in providing correlation between regional pollutant emissions and human health. With regard to the analysis of air quality-related health impacts, the SCAQMD, the air quality authority for the SSAB, has stated that "EIRs must generally quantify a project's pollutant emissions, but in some cases it is not feasible to correlate these emissions to specific, quantifiable health impacts (e.g., premature mortality; hospital admissions)." In such cases, a general description of the adverse health impacts resulting from the pollutants at issue may be sufficient.

The SCAQMD has further stated that from a scientific standpoint, it takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels over an entire region. SCAQMD further acknowledges that it may be feasible to analyze air quality related health impacts for projects on a regional scale with very high emissions of NOx and VOCs, where impacts are regional. The example SCAQMD provided was for proposed Rule 1315, which authorized various newly-permitted sources to use offsets from the District's "internal bank" of emission reductions. The CEQA analysis accounted for essentially all of the increases in emissions due to new or modified sources in the District between 2010 and 2030, or approximately 6,620 pounds per day of NOx and 89, 947 pounds per day of VOC, to expected health outcomes from ozone and particulate matter (e.g., 20 premature deaths per year and 89,947 school absences in the year 2030 due to ozone).[23]

Southern California Association of Governments (SCAG)

The Southern California Association of Governments (SCAG) is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties, and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG coordinates with various air quality and transportation stakeholders in Southern California to ensure compliance with the federal and State air quality requirements, including the Transportation Conformity Rule and other applicable federal, State, and air district laws and regulations. As the federally designated Metropolitan Planning Organization (MPO) for the six-county Southern California region, SCAG is required by law to ensure that transportation activities "conform" to, and are supportive of, the goals of regional and State air quality plans to attain the NAAQS. In addition, SCAG is a co-producer, with the SCAQMD, of the transportation strategy and transportation control measure sections of the AQMP for the Basin. With regard to future growth, SCAG's RTP provides population, housing, and employment projections for cities under its jurisdiction.

23 The SCAQMD was able to establish the location of future NOx and VOC and emissions by assuming that new projects would be built in the same locations and proportions as existing stationary sources. This CEQA document was upheld by the Los Angeles County Superior Court in Natural Res. Def. Council v. SCAQMD, Los Angeles Superior Court No. BS110792.

City of Rancho Mirage General Plan

Local governments have the authority and responsibility to reduce air pollution through their police power and land use decision-making authority. Specifically, local governments are responsible for the mitigation of emissions resulting from land use decisions and for the implementation of transportation control measures as outlined in the AQMP.[24] The AQMP assigns local governments certain responsibilities to assist the Basin in meeting air quality goals and policies. Air quality goals, policies, and implementation measures in the City's General Plan, adopted in November 16, 2017, provide the regulatory framework.[25] Through capital improvement programs, local governments can fund infrastructure that contributes to improved air quality for the preservation and enhancement of regional air quality for the protection of the health and welfare of the community as a whole.

The Air Quality Chapter coordinates the planning of land use, circulation, housing, and other City policies with their potential effects on air quality. The intent of this section is to assist the City and the region to meet ambient air standards set by the USEPA and CARB. Community air quality is one of the most essential issues associated with public health and safety. The Air Quality Element is directly related to the type and intensity of land uses established in the Land Use Element, and the number, length, and timing of traffic trips identified in the Circulation Element.

City of Rancho Mirage Municipal Code

Title 15, Building and Construction. Building and construction activities for the Project would be subject to the conditions and maintenance of all property, buildings, and structures within the City. This Title sets standards and regulation for construction activities, including the allowable days and hours of such activities to occur.

Title 15, Chapter 64, Grading. This Chapter of the City's Municipal Code establishes standards for design and construction of buildings and development of property by grading. This title sets standards for controlling dust and blowing sand during any earth-moving operations. These regulations are intended to minimize impacts as a result of grading in order to protect and preserve the public health, safety, general welfare, aesthetic value, and natural resources of the City.

24 SCAQMD, *CEQA Air Quality Handbook* (April 2003), p. 2-2.
25 City of Rancho Mirage, Rancho Mirage General Plan, Chapter 6: Air Quality (November 2017).

B. ENVIRONMENTAL IMPACTS

1. Thresholds of Significance

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. In order to assist in determining whether a project would have a significant effect on the environment, the City finds a project may be deemed to have a significant impact to air quality, if it would:

Threshold 5.2-1: **Conflict with or obstruct implementation of the applicable air quality plan?**

Threshold 5.2-2: **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 5.2-3: **Expose sensitive receptors to substantial pollutant concentrations?**

Under CEQA, SCAQMD is a commenting agency on air quality within its jurisdiction or impacting its jurisdiction. Under the Federal CAA, SCAQMD has adopted federal attainment plans for O3 and PM10. SCAQMD reviews projects to ensure that they would not: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emission reductions or other milestones of any federal attainment plan.

Daily Emissions Thresholds

SCAQMD has identified thresholds to determine the significance of both local air quality impacts and impacts to regional air quality for construction activities and project operation, as shown in **Table 5.2-3: Mass Daily Emissions Thresholds.**

Table 5.2-3
Mass Daily Emissions Thresholds

	Construction	Operational
Pollutant	**pounds/day**	
Volatile Organic Compounds (VOC)	75	75
Nitrogen dioxide (NOx)	100	100
Carbon monoxide (CO)	550	550
Sulfur dioxide (SOx)	150	150

Pollutant	Construction	Operational
	pounds/day	
Respirable particulate matter (PM_{10})	150	150
Fine particulate matter ($PM_{2.5}$)	55	55

Source: SCAQMD, CEQA Air Quality Handbook (November 1993), accessed May 2019, https://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf
For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.

Screening Risk Assessment

The localized significance threshold (LST) methodology uses lookup tables based on site acreage to determine the significance of emissions for CEQA purposes. The use of LST's is voluntary, to be implemented at the discretion of local public agencies acting as a lead agency pursuant to the California Environmental Quality Act (CEQA). LSTs would only apply to projects that must undergo an environmental analysis pursuant to CEQA or the National Environmental Policy Act (NEPA) and are five acres or less. It is recommended that proposed projects larger than five acres in area undergo air dispersion modeling to determine localized air quality.

The SCAQMD's health risk assessment screening spreadsheet was utilized to determine risk impacts associated with construction emissions of DPMs. It provides a conservative estimate of the Project health risk impacts from construction, based upon the distance to the nearest residential and commercial receptors.

Diesel combustion emissions contain a number of different toxic components. For purposes of health risk assessment, these components are aggregated into one single item called diesel particulate matter (DPM). By definition, DPM emissions are equivalent to the PM10 from diesel combustion sources.

The Project would expose sensitive receptors to substantial concentrations of toxic air contaminants if any of the following would occur:

- The Project would emit carcinogenic materials or TACs that exceed the maximum incremental cancer risk of ten in one million or a cancer burden greater than 0.5 excess cancer cases (in areas greater than or equal to 1 in 1 million) or an acute or chronic hazard index of 1.0

CO Hotspot

The significance of localized project impacts depends on whether ambient CO levels in the vicinity of the proposed project are above or below State and federal CO standards. If the project causes an exceedance

of either the State 1-hour or 8-hour CO concentrations, the project would be considered to have a significant local impact. If ambient levels already exceed a State or federal standard, then project emissions are considered significant if they increase 1-hour CO concentrations by 1.0 parts per million (ppm) or more, or 8-hour CO concentrations by 0.45 ppm or more pursuant to SCAQMD Rule 1303(b).

Cumulative

SCAQMD's *CEQA Air Quality Handbook* identifies several methods to determine the cumulative significance of land use projects (i.e., whether the contribution of a project is cumulatively considerable). However, SCAQMD no longer recommends the use of these methodologies. Instead, SCAQMD recommends that any construction-related emissions and operational emissions from individual development projects that exceed the project-specific mass daily emissions thresholds identified previously also can be considered cumulatively considerable.[26] SCAQMD neither recommends quantified analyses of the emissions generated by a set of cumulative development projects, nor provides thresholds of significance to be used to assess the impacts associated with these emissions.

2. Methodology

SCAQMD requires that emissions of air pollutants that will be generated by implementation of a proposed Plan are quantified and compared to applicable regulatory thresholds. Emissions of criteria air pollutants (CAPs) that will be generated by Project implementation were quantified using the California Emissions Estimator Model (CalEEMod) version 2016.3.2. Various assumptions are made within the modeling software based on land use type and project scale. Emissions were estimated for both construction and operation of the Project. It is anticipated that the Project would be developed over approximately 11 years. A summary of the distribution of the projected number of dwelling units and acreages for parks, public facilities, and shops/restaurants by phase are provided in detail in **Section 3.0: Project Description.** Default data contained in CalEEMod was used to supplement this Plan specific information where necessary. The following assumptions were made in the CalEEMod program:

Construction Emissions

Construction activities produce combustion emissions from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the site, loose dirt from paved site access roadways, and motor vehicles transporting the construction crew. Grading activities produce fugitive dust emissions (PM_{10} and $PM_{2.5}$) from soil-disturbing activities. Exhaust emissions from construction activities on site would vary daily as construction activity levels change. Short-term emissions of criteria air

26 White Paper on Regulatory Options for Addressing Cumulative Impacts from Air Pollution Emissions, SCAQMD Board Meeting, September 5, 2003, Agenda No. 29, Appendix D, D-3.

pollutants (e.g., CO, SOx, PM_{10}, and $PM_{2.5}$) generated by construction and ozone precursors (e.g., VOCs and NOx) were assessed in accordance with SCAQMD-recommended methods. These emissions were modeled using the CARB-approved CalEEMod computer program as recommended by SCAQMD. CalEEMod is designed to model construction emissions for land use development projects and allows for the input of project-specific information. The program contains default settings specific to the air district, county, air basin, or State level using approved vehicle emissions factors (EMFAC2014), established methodologies, and the latest survey data.

Construction of the Plan must comply with SCAQMD rules. Rule 201, Rule 402, Rule 403, Rule 1113, Rule 1186, and Rule 1403 are mandatory for all construction projects in SCAQMD jurisdiction within the Basin. The emission calculations take into account compliance with Rule 403 by incorporating the watering of exposed surfaces and unpaved roads three times daily, reducing speed on unpaved roads to less than 15 mph, and sweeping loose dirt from access roadways. CalEEMod also incorporates Rule 1113 by reducing the VOC content in the area coatings.

Development of the Project is designed for sequential construction in multiple phases, corresponding to the infrastructure and product designs for individual Planning Areas and use types. Therefore, the following are the construction scenario assumptions that are incorporated into the CalEEMod computer program:

Construction By Year

- Grading would take place prior to building construction and would last approximately 6 months. This phase also assumes the development of the Grand Oasis lagoon.
- Construction period would occur over an 11-year period. The proposed phased development is based on the following construction sequence:
  - Year 1: 113 Single-Family units
  - Year 2: 127 Single-Family Units, 114 Multifamily units, and 400 Hotel rooms
  - Year 3: 127 Single-Family Units and 82 Multifamily units
  - Year 4: 127 Single-Family Units, 92 Multifamily units, and 175,000 sq. ft. Mixed-Use retail
  - Year 5: 120 Single-Family Units and 93 Multifamily units
  - Year 6: 117 Single-Family Units and 93 Multifamily units
  - Year 7: 117 Single-Family Units and 93 Multifamily units
  - Year 8: 99 Single-Family Units and 91 Multifamily units
  - Year 9: 99 Single-Family Units and 74 Multifamily units

- Year 10: 27 Single-Family Units and 57 Multifamily units
- Year 11: 27 Single-Family Units and 43 Multifamily units

Each phase of construction would result in varying levels of intensity and the number of construction personnel. The peak construction workforce which would consist of approximately 73 worker trips/day during grading, 372 worker trips/day and 121 vendor trips/day during building construction, 74 worker trips during architectural coating, and 15 worker trips/day during paving.[27]

Concurrent Construction

The following assumptions were made in the CalEEMod computer program for concurrent construction.

- Construction period would occur over an 11-Year period. This scenario would build all land uses listed above, incrementally, over time.
- Construction would occur over three phases: (1) Building construction which would last approximately 11 years, (2) Architectural Coating which would last approximately 4 years, and (3) Paving for approximately 2 Years.
- Construction would occur over 5 days per weeks and 8-hour work days.

Each phase of construction would result in varying levels of intensity and the number of construction personnel. The construction workforce would consist of approximately 1,917 worker trips/day and 573 vendor trips/day during building construction, 383 worker trips/day during architectural coating, and 15 worker trips/day during paving.

Operational Emissions

Operational emissions generated by both stationary and mobile sources would result from normal day-to-day activities associated with the uses that would be permitted by the Project. Source emissions would be generated by the consumption of natural gas and landscape maintenance. Mobile emissions would be generated by the motor vehicles traveling to and from the Project Site.

Project-generated, regional area and mobile-source emissions of criteria air pollutants and ozone precursors were also modeled using the CalEEMod computer program. CalEEMod allows land use selections that include project location specifics and trip generation rates. CalEEMod accounts for area-

27 Peak construction trip data taken from Year 2 (2021) for building construction, architectural coating, and paving. The grading phase was run separately based on the total Project Site.

source emissions from the use of natural gas, landscape maintenance equipment, and consumer products and from mobile-source emissions associated with vehicle trip generation.

The analysis of daily operational emissions associated with the Project have been prepared using the data and methodologies identified in SCAQMD's *CEQA Air Quality Handbook*[28] and current motor vehicle emission factors in CalEEMod. Trip rates for these land uses were obtained from the Traffic Study for the Project (**Appendix I.1**).

3. Project Design Features

The following Project Design Features (PDFs) are incorporated as part of the Project and would reduce the potential air quality impacts of the Project. These features were taken into account in the analysis of potential impacts.

PDF 5.2-1**:** Dust control measures shall be implemented by the construction contractor in all unpaved areas in full compliance with applicable SCAQMD standards including Rule 403 and Rule 403.1.

PDF 5.2-2**:** The pursuit of already established sustainable best management practices, such as Leadership in Energy and Environmental Design (LEED) certification, ComfortWise and EnergyStar Home is strongly encouraged throughout the Specific Plan area. The comprehensiveness of these certification programs guarantees, for their respective types of development, the achievement of a high minimum standard. For maximum flexibility, however, developers and builders shall implement to the maximum extent feasible sustainable building and development practices most appropriate to the specific context within the Coachella Valley.

PDF 5.2-3: Building design to exceed Coachella Valley Water District (CVWD) water efficiency goals.

PDF 5.2-4: Builders shall, to the maximum extent feasible, participate in programs offered or sponsored by local utilities such as California EnergyStar New Homes Program, Residential Property Development Program, California Home Energy Efficiency Rating System (CHEERS) Program, and Savings by Design Program.

28 SCAQMD, CEQA Air Quality Handbook (November 1993), accessed May 2019, http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993)

PDF 5.2-5: Buildings shall be designed to facilitate and accommodate photovoltaic cells for solar power. Solar-heated water is another efficient way to reduce energy needed for household activities.

PDF 5.2-6: Builders shall, to the maximum extent feasible, use flooring and insulation products that are low-emitting in terms of volatile organic compounds (VOCs) and formaldehyde. Low- and zero-VOC paints, finishes, adhesives, caulks, and other substances are also recommended to improve indoor air quality and reduce the harmful health effects of off-gassing.

PDF 5.2-7: The use of light-colored roofing materials to reflect heat and reduce cooling requirements of buildings, particularly Energy Star-labeled roofing materials, shall be employed to the maximum extent feasible.

PDF 5.2-8: Energy Star-labeled appliances (e.g., water heaters—particularly tankless) shall be incorporated to the greatest feasible extent. Solar, electric (efficiency rating of at least 0.92), or lower-nitrogen oxide (as defined by the SCAQMD) gas-fired water heaters are strongly encouraged.

PDF 5.2-9: Buildings shall not be constructed primarily of materials that perform poorly in environments subject to blowsand, such as glass and wood.

4. Project Impacts

Threshold 5.2-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

The 2016 Final AQMP was prepared to accommodate growth, reduce the high levels of pollutants within the areas under the jurisdiction of SCAQMD, return clean air to the region, and to minimize the impact on the economy. Projects considered to be consistent with the AQMP do not interfere with attainment because this growth is included in the projections utilized in the formulation of the AQMP. Therefore, project, uses, and activities that are consistent with the applicable assumptions used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP.

Section 15125 of the CEQA Guidelines requires an analysis of project consistency with applicable governmental plans and policies. In accordance with the SCAQMD CEQA Air Quality Handbook, the following criteria were used to evaluate the Project's consistency with SCAQMD and SCAG regional plans and policies, including the AQMP:

1. Will the project result in any of the following:

   - An increase in the frequency or severity of existing air quality violations;
   - Cause or contribute to new air quality violations; or
   - Delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP?

2. Will the project exceed the assumptions utilized in preparing the AQMP?

   - Is the project consistent with the population and employment growth projections upon which AQMP forecasted emission levels are based;
   - Does the project include air quality mitigation measures; or
   - To what extent is project development consistent with the AQMP land use policies?

The SSAB is designated by the USEPA and CARB as nonattainment for O_3 and PM_{10}. SCAQMD developed regional emissions thresholds, as shown in **Table 5.2-3**, to determine whether a project would contribute to air pollutant violations. If a project exceeds the regional air pollutant thresholds, then it would significantly contribute to air quality violations in the SSAB.

Demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment), developed by SCAG for their 2016 RTP were used to estimate future emissions within the 2016 AQMP (refer to the 2016 AQMP, Chapter 3). Projects that are consistent with the growth projections are considered consistent with the AQMP. The Project would result in population growth for the region. The 2016 AQMP incorporates land use projections from the 2016 RTP/SCS and from the City for this portion of the SSAB. The 2016 AQMP incorporates land use projects from the 2016 RTP/SCS and from the City. As shown in **Section 5.12: Population and Housing**, the City has a population of 18,738 in 2018,[29] and approximately 12,444 employees as of 2017.[30] The City anticipates the potential total of approximately 30,048 residents and 34,497 employees by 2035.

It is important to note SCAG projections take into account current jurisdictional boundaries. As discussed in **Section 3.0: Project Description**, the Project includes 618 acres in the City. Further described in **Section 5.12: Population and Housing**, the Project proposes a total of 3,913 residents and 1,038 employees. This projected growth, when combined with the growth already forecast in the City, would account for

29 California Department of Finance (DOF), Demographic Research Unit, *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2018 with 2010 Census Benchmark*, May 1, 2018, accessed May 2019, available at http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/.

30 City of Rancho Mirage*, General Plan,* Chapter 2: Land Use, *Table 3: Potential Employees Based on Estimated Future Commercial Development*, 14, adopted November 16, 2017

approximately 57 percent in the overall population increase and 2 percent of the projected employment anticipated in the City's General Plan by 2035. Therefore, while development of the Project would result in a population and employment increase, this increase is consistent with City and regional growth projections.

As discussed above, the proposed Project would incorporate numerous energy efficiency measures and water conservation measures to reduce direct and indirect emissions (refer to **PDF: 5.2-1** through **PDF: 5.2-9**). The Project would incorporate energy and water efficiency design features to enhance efficiency in all aspects of a building's life-cycle. These designs would increase the structure's energy efficiency, water efficiency, and overall sustainability. The Project would also exceed Title 24 energy requirements by 15 percent, consistent with the Voluntary Green Building Program. The Project is also located in an urban area that would reduce vehicle trips and vehicles miles traveled due to the urban infill characteristics and proximity to public transit stops. These measures and features are consistent with existing recommendations to reduce air emissions. The Project would also develop a comprehensive system of pedestrian, neighborhood electric vehicle (NEV), golf cart, and bicycle travel throughout the Project Site and into the surrounding community to reduce vehicle miles traveled by personal vehicle use.

According to the 2016 AQMP, the most effective way to reduce air pollution impacts is to reduce emissions from mobile sources, the principal contributor to air quality challenges. As discussed in **Section 5.15: Traffic and Transportation**, the Project would be consistent with adopted plans and policies related to active travel in the area include measures and policies that support use of alternative modes of travel. In addition, the Project characteristics listed below are consistent with the California Air Pollution Control Officers Association (CAPCOA) guidance document, *Quantifying Greenhouse Gas Mitigation Measures*, which identifies the VMT and vehicle trips reductions for the site. Measures applicable to the Project include the following; a brief description of the Project's relevance to the measure is also provided.

- **CAPCOA Measure LUT-1 – Increase Density:** Increased density, measured in terms of persons, jobs, or dwelling units per unit area, reduced emissions associated with transportation as it reduces the distance people travel for work or services and provides a foundation for the implementation of other strategies, such as enhanced transit services.
- **CAPCOA Measure LUT-3 – Increase Diversity of Urban and Suburban Developments:** The Project would introduce new uses at the site, including high-quality, single-family neighborhoods with a range of housing opportunities that are compatible in character with the existing surrounding neighborhoods. The Project would improve access to the existing and future neighborhoods by promoting alternative forms of transportation including a multi-modal pathway that will serve pedestrians, bicyclists, and golf carts.

- **CAPCOA Measure SDT-1 – Provide Pedestrian Network Improvements:** The Project would improve access to the existing and future neighborhoods by promoting alternative forms of transportation through a multi-modal pathway that will serve pedestrians, bicyclists, and golf carts.
- **CAPCOA Measure SDT-3 – Implement a Project Specific Neighborhood Electric Vehicle Network:** The Section 31 Specific Plan takes a multi-modal approach to circulation system planning within the Project Site and encourages a balanced and safe mix of vehicular, pedestrian, bicycle, golf cart, and neighborhood electric vehicle (NEV) transit throughout the interior and perimeter of the Project Site.
- **CAPCOA Measure WUW-3 – Design Water-Efficient Landscapes:** The Landscape Plan included in the Section 31 Specific Plan draws from the natural desert context of the City using desert and low-water-use plant materials. The Landscape Plan is designed to maximize water efficiency while maintaining a pleasing environment for residents of and visitors to the community.

However, impacts with regard to regional emissions of VOC and NOx and localized concentrations of $PM_{2.5}$ during construction and regional concentrations of VOCs, NOx, and CO during operation of the Project would exceed SCAQMD significance thresholds (refer to **Table 5.2-5**, **Table 5.2-7**, and **Table 5.2-8** below). The determination of AQMP consistency is primarily concerned with the long-term influence of the Project on air quality in the SSAB. While development of the Project would result in short-term regional and localized impacts, Project development would not have a significant long-term impact on the region's ability to meet State and federal air quality standards. In addition, the Project would comply with SCAQMD Rules 403, 403.1, and 1113 and would implement Project Design Features and all feasible mitigation measures for control of VOCs, NOx, and CO. As previously discussed, the Project's long-term influence would also be consistent with the goals and policies of the AQMP and is, therefore, considered consistent with the SCAQMD's AQMP.

Construction Emissions

Construction By Year

The primary source of construction related NOx, CO, and SOx emissions is from construction equipment exhaust and on-road haul truck trips while the majority of particulate matter emissions would occur as a result of fugitive dust emissions generated during grading and excavation activities. Primary sources of PM_{10} and $PM_{2.5}$ emissions would be clearing activities, excavation and grading operations, construction vehicle traffic on unpaved ground, and wind blowing over exposed earth surfaces.

The estimated maximum daily emissions for the Project during the entire duration of construction are listed in **Table 5.2-4: Unmitigated Maximum Construction Emissions**. The analysis assumes that all of the construction equipment and activities would occur continuously over the day. In reality, this would not occur, as most equipment operates only a fraction of each workday and many of the activities would not overlap on a daily basis. In addition, the emission results provided below do not include implementation

of regulatory compliance measures such as SCAQMD Rule 402 and 403, which minimizes short-term emissions of dust and particulate. Therefore, this analysis of construction emissions is considered a worst-case analysis. As shown in **Table 5.2-4**, construction activity associated with the development of the Project would not exceed regional concentration thresholds for SOx, PM_{10}, and $PM_{2.5}$, but would exceed thresholds for VOC during Years 2 through 8 and NOX during grading.

Implementation of Mitigation Measure **MM 5.2-1** would require construction to occur concurrently over approximately 11 years simultaneously as described in **Section 3.0: Project Description.** As shown in **Table 5.2-5** below, concurrent construction emissions would not exceed regional construction concentration thresholds. In addition, based on the recommendation provided by the SCAQMD, implementation of Mitigation Measure **MM 5.2-2** would require the use of Tier 3 off-road diesel-powered construction equipment equipped with any emissions-control device such as a Level 3 Diesel Particulate Filter (DPF). The measure would be expected to reduce diesel particulate matter by approximately 85 percent or more.

Emissions of VOCs and NOx are precursors for the formation of O_3. Consequently, emissions of VOCs and NOx that exceed SCAQMD regional significance thresholds would contribute to the O_3 nonattainment designation. The primary source of VOC emissions is from off-gas emissions associated with architectural coating operations. Architectural coatings for the proposed Project would comply with SCAQMD Regulation XI, Rule 1113 – Architectural Coating. Rule 1113 provides specifications on painting practices as well as regulating the VOC content within paint. Mitigation Measure **MM 5.2-3** would require the use of low emission VOC paint and pre-painted construction materials where feasible.

The Project would comply with the applicable provisions of the CARB Air Toxics Control Measure regarding idling limitations for diesel trucks, including Mitigation Measure **MM 5.2-4**. However, even with implementation of Mitigation Measures **MM 5.2-1** through **MM 5.2-4**, regional concentration for NOx would exceed the concentration thresholds during the grading phase (refer to **Table 5.2-8** below).

Table 5.2-4
Unmitigated Maximum Construction Emissions

	VOC	NOx	CO	SOx	PM10	PM2.5
Source			**pounds/day**			
Grading	24	270	161	<1	28	17
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**No**	**Yes**	**No**	**No**	**No**	**No**
Year 1	62	36	37	<1	3	2

Source	VOC	NOx	CO	SOx	PM10	PM2.5
	pounds/day					
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**
Year 2	281	44	55	<1	6	3
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**Yes**	**No**	**No**	**No**	**No**	**No**
Year 3	90	30	39	<1	3	2
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**Yes**	**No**	**No**	**No**	**No**	**No**
Year 4	150	30	41	<1	3	2
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**Yes**	**No**	**No**	**No**	**No**	**No**
Year 5	91	26	38	<1	2	1
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**Yes**	**No**	**No**	**No**	**No**	**No**
Year 6	89	24	38	<1	2	1
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**Yes**	**No**	**No**	**No**	**No**	**No**
Year 7	89	24	37	<1	2	1
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**Yes**	**No**	**No**	**No**	**No**	**No**
Year 8	78	24	37	<1	2	1
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**Yes**	**No**	**No**	**No**	**No**	**No**
Year 9	75[a]	24	36	<1	2	1

Source	VOC	NOx	CO	SOx	PM10	PM2.5
	pounds/day					
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**
Year 10	33	23	35	<1	2	1
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**
Year 11	29	16	36	<1	1	1
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

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*Note: Refer to **Figure 3.0-8: Development Sequencing Plan** in **Section 3.0: Project Description**.*

*Source: Refer to **Appendix B.***

[a] Round up from 74.6 pounds/day.

Abbreviations: CO = carbon monoxide; NOx = nitrogen oxide; PM10 = particulate matter less than 10 microns; PM2.5 = particulate matter less than 2.5 microns; VOC = volatile organic compound; SCAQMD = South Coast Air Quality Management District; SOX = sulfur oxide.

Concurrent Construction

Table 5.2-5: Unmitigated Maximum Concurrent Construction, estimates regional construction emissions based on the expected location, size, and development of the Project if construction of all Phases were to occur concurrently. The analysis assumes implementation of Mitigation Measure **MM 5.2-1**, that all of the construction equipment activities would occur continuously over the data and that activities would overlap. As shown in **Table 5.2-5**, construction activities associated with concurrent development would not exceed regional concentration thresholds. As such, concurrent construction emission impacts would be less than significant.

Table 5.2-5
Unmitigated Maximum Concurrent Construction

Source	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
	pounds/day					
Concurrent Construction	73	82	119	<1	23	6
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

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Source	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
	pounds/day					

*Source: Refer to **Appendix B.***

Abbreviations: CO = carbon monoxide; NOx = nitrogen oxide; PM10 = particulate matter less than 10 microns; PM2.5 = particulate matter less than 2.5 microns; VOC = volatile organic compound; SCAQMD = South Coast Air Quality Management District; SOX = sulfur oxide.

Operational Emissions

Reduction from compliance with local and State standards are not reasonably quantifiable in the CalEEMod model and would provide additional emissions reductions that are not accounted for. The Project would be required to comply with California Building Code requirements for energy efficiency which would reduce natural gas emissions. The Project would be designed in accordance with applicable residential and non-residential sections of the CALGreen Building Code as designed by the City and required by Section 15.04 of the City's Municipal Code. The Project would be designed in accordance with the applicable Title 24 Energy Efficiency Standards for Residential and Nonresidential Buildings. These standards are updated, nominally every three years to incorporate improved energy efficiency technologies and methods. The current 2016 standards were effective January 1, 2017 with the 2019 standards to be effective January 1, 2020.

The estimated operational emissions are based on the development of the Project and presented in **Table 5.2-6: Maximum Operational Emissions**. As shown, operational emissions would exceed SCAQMD's regional thresholds of significance for VOCs, NOx, and CO. Operational emissions are comprised of area, energy and mobile source emissions. Area source emissions would result from the use of consumer products, natural gas fireplaces, landscaping equipment, and periodic repainting of buildings. Consumer products include cleaning supplies, kitchen aerosols, cosmetics and toiletries. Energy emissions come from the use of natural gas for heating and hot water. All fireplaces would be gas-fueled; in accordance with SCAQMD Rule 445, there would be no wood burning fireplaces. Mobile source emissions are based on project-related trip generation forecasts, as discussed further in **Section 5.15: Traffic and Transportation**. The Project would generate an estimated 22,764 net new trips per day, which includes both internal and external trips. The primary source of NOx and CO emissions would be from mobile sources emissions associated with the 22,764 net new trips per day. Consequently, impacts from VOC, NOx, and CO would remain significant and unavoidable.

Table 5.2-6
Maximum Operational Emissions

Source	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
	pounds/day					
Area	96	18	166	<1	2	2
Energy	2	21	13	<1	2	2
Mobile	32	329	403	2	107	29
Total	130	368	583	2	111	33
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**Yes**	**Yes**	**Yes**	**No**	**No**	**No**

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*Note: Refer to **Appendix B**.*
Abbreviations: CO = carbon monoxide; NOx = nitrogen oxide; PM10 = particulate matter less than 10 microns; PM2.5 = particulate matter less than 2.5 microns; VOC = volatile organic compound; SCAQMD = South Coast Air Quality Management District; SOX = sulfur oxide.

Air Quality and Impacts to Human Health

At the State level, CARB is primarily responsible for reducing emissions from motor vehicles and consumer products. SCAQMD has authority over most area sources and all point sources. Approximately 90 percent of NOx and 75 percent of VOC emissions from the 2012 inventory are from sources primarily under CARB and USEPA control. Conversely, 56 percent of SOx emissions and 66 percent of the directly emitted $PM_{2.5}$ emissions are from sources under SCAQMD control.[31] NOx and VOC are important precursors to zone and $PM_{2.5}$ formation, and SOx along with directly emitted $PM_{2.5}$, contribute to the region's $PM_{2.5}$ nonattainment challenges. This illustrates that actions at the local, State, and federal level are needed to ensure the region attains the federal ambient air quality standards.

The peak daily construction regional emissions for the Project would result in approximately 206 pounds per day of VOC, and 170 pounds per day of NOx over the SCAQMD's significance thresholds. Approximately 58 percent of VOC and 88 percent of NOx would be regional (e.g., emitted by mobile sources distributed across region's roadway network) and different than the identified stationary sources as modeled in SCAQMD's analysis of Rule 1315, which would add to the difficulties of modeling Project related emissions. To provide additional context to the Project's emissions, SCAQMD's 2016 AQMP provides 162.4 tons per day (324,800 pounds) of VOC, and 293.1 tons per day (586,200 pounds) of NOx

31 SCAQMD, *Final 2016 AQMP, Table 3-1a*, March 2017, accessed May 2019, https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf.

emissions basin-wide for the baseline year of 2012.[32] Consumer products remain as high-emitting categories over time, with consumer products accounting 87 percent of total VOC inventory in 2012 to 91 percent in 2031.

Since SCAQMD staff does not currently know of a way to accurately quantify ozone-related health impacts caused by criteria pollutant emissions, then a general description of the adverse health impacts resulting from the pollutants at issue is all that can be provided at this time. Therefore, consistent with the California Supreme Court's Friant Ranch decision, the above information provides details regarding the potential health effects from the Project's significant and unavoidable criteria pollutant emissions. The analysis adequately explains why it is not scientifically feasible at this time to substantively connect the Project's air quality impacts to likely health consequences.

Threshold 5.2-2: Would the 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?

According to SCAQMD, if an individual project results in air emissions of criteria pollutants that exceed SCAQMD's recommended daily thresholds for project-specific impacts, then the project would also result in a cumulatively considerable net increase of these criteria pollutants. As shown in **Table 5.2-1**, the Basin is currently nonattainment for federal and State O_3 and PM_{10}. By applying SCAQMD's cumulative air quality impact methodology, implementation of the Project would result in exceedance of regional VOC and NOx during construction, (refer to **Table 5.2-4**) and exceedance in regional VOC, NOx, and CO during operation (refer to **Table 5.2-6**). Emissions would contribute to existing violations of the criteria pollutants in exceedance and are considered significant for this reason.

Threshold AQ-3: Expose sensitive receptors to substantial pollutant concentrations?

As mentioned previously, the SCAQMD's health risk assessment screening spreadsheet was utilized to determine the risk impacts associated with construction emissions of DPMs. It provides a conservative estimate of the Project health risk impacts, based upon the distance to the nearest residential and commercial receptors. **Table 5.2-7: Construction Health Risk Impacts**, presents the result of the health risk screening assessment. As shown, acute and chronic risk assessment would be below the applicable

32 SCAQMD, *Final 2016 AQMP*, Figure 3-1, March 2017, accessed May 2019, http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.

significance thresholds. As such, localized impacts to off-site sensitive receptors would be less than significant.

Table 5.2-7
Construction Health Risk Impacts

	Cancer Burden	Cancer Risk	
		Residential	Commercial
Worst Case Risk	0.00304 (3.04E-03)	7.21 E-06	1.67E-06
Significant Thresholds	0.5	1.0	1.0
Threshold Exceeded?	**No**	**No**	**No**

Source: SCAQMD Screening Risk Assessment
*Note Refer to **Appendix B** for screening spreadsheet.*

Operation

Carbon Monoxide Hotspot

The SCAQMD recommends an evaluation of potential localized CO impacts when a project causes the LOS at a study intersection to worsen from C to D, or if a project increases the traffic volume (or demand) to capacity (V/C) ratio at any intersection rated D or worse by 2 percent or more. As discussed in **Section 5.15: Traffic and Transportation,** the Traffic Study (Refer to **Appendix I.1**), analyzed 37 studied intersections in and around the Project Site vicinity. The Project would add 26,408 total project trips to the region based on the proposed mixed land uses and consists of internal and external trips. These new trips would cause potentially significant impacts at various intersections for the existing plus project and future plus project scenarios. Implementation of Mitigation Measures **MM 5.15-1** through **MM 5.15-7** would improve intersection operations to either an acceptable LOS or to pre-Project conditions through better emergency vehicle access, better timed signalized timing during the AM and PM peak hours, and modifications of the existing roadway network for traffic improvement along these roadways. As such, none of the studied intersections would meet this criterion, and therefore, the Project would not result in the creation of a CO hotspot. Impacts would remain less than significant.

5. Cumulative Impacts

The cumulative significance methodologies contained in the *CEQA Air Quality Handbook*, SCAQMD staff has suggested that the emissions-based thresholds be used to determine if a project's contribution to regional cumulative emissions is cumulatively considerable. Individual projects that exceed SCAQMD-recommended daily thresholds for project-specific impacts would be considered to cause a cumulatively considerable increase in emissions for those pollutants for which the SSAB is in nonattainment. As

discussed in **Threshold: 5.2-2** and **Threshold: 5.2-4**, construction and operation of the Project would result in an increase of regional VOC, NOx, and CO, and localized $PM_{2.5}$. Contribution of these emission to air quality would be considered cumulatively considerable.

C. MITIGATION MEASURES

In addition to the Project Design Features identified above, the following mitigation measures, along with mitigation which are also identified in **Section 5.7: Greenhouse Gas Emissions**, would reduce air quality impacts:

MM 5.2-1 The Project shall be developed concurrently over approximately 11 years to minimize peak phased development.

MM 5.2-2 All off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet Tier 3 off-road emissions standards. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by the California Air Resources Board (CARB). Any emissions-control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 Diesel Particulate Filter (DPF) for a similarly sized engine as defined by CARB regulations.

MM 5.2-3 The contractor shall incorporate the following into development plans and specifications, which shall be implemented to reduce VOC emissions from application architectural coatings:

- Contractors shall use high-pressure, low volume (HPLV) pain applicators with a minimum transfer efficiency of at least 50 percent.
- Coatings and solvents with a VOC content lower than required under Rule 1113 shall be used.
- Construction and building materials that do not require painting shall be used to the extent feasible.
- Pre-painted construction materials shall be used to the extent feasible.

MM 5.2-4 Post signs requiring that trucks shall not be left idling for prolonged periods (i.e., in excess of 5 minutes).

- Post transit schedules in conspicuous areas.

D. LEVEL OF SIGNIFICANCE AFTER MITIGATION

The Project would incorporate Mitigation Measures **MM 5.2-1** through **5.2-4** to further reduce air emissions during construction. However, as shown in **Table 5.2-8: Mitigated Maximum Construction Emissions**, NOx emissions would be reduced but would exceed regional thresholds with mitigation implemented. Construction emissions during grading would be temporary, however, would remain significant and unavoidable.

Table 5.2-8
Mitigated Maximum Construction Emissions

	VOC	NOx	CO	SOx	PM10	PM2.5
Source	**pounds/day**					
Unmitigated (Grading)	24	270	161	<1	28	17
Mitigated (Grading)	9	167	193	<1	8	4
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**No**	**Yes**	**No**	**No**	**No**	**No**

*Note: Refer to **Figure 3.0-8: Development Sequencing Plan** in **Section 3.0: Project Description**.*
*Source: Refer to **Appendix B.***
Abbreviations: CO = carbon monoxide; NOx = nitrogen oxide; PM10 = particulate matter less than 10 microns; PM2.5 = particulate matter less than 2.5 microns; VOC = volatile organic compound; SCAQMD = South Coast Air Quality Management District; SOX = sulfur oxide.

Long-term operational criterial pollutant region emissions would remain significant and unavoidable for VOC, NOx, and CO. However, given the level of what is known about the Project, the precise quantification of emission reductions cannot be determined accurately. For this reason, the lead agency has determined that this impact would be considered to be significant and unavoidable.

The daily construction and operational VOC emissions generated by the Project cannot be feasibly mitigated to a less than significant level and the contribution of these emissions to the air quality within the Salton Sea and South Coast Air Basins is also considered to be cumulatively considerable, and thus a significant impact.