

IV. Environmental Impact Analysis

B. Air Quality

1. Introduction

This section of the Draft EIR addresses the air emissions generated by construction and operation of the Project. The analysis also addresses the consistency of the Project with the air quality policies set forth within the South Coast Air Quality Management District's (SCAQMD) Air Quality Management Plan (AQMP) and the City of Los Angeles General Plan. The analysis of Project-generated air emissions focuses on whether the Project would cause an exceedance of an ambient air quality standard or SCAQMD significance threshold. Calculation worksheets, assumptions, and model outputs used in the analysis are included in Appendix B of this Draft EIR.

2. Environmental Setting

a. Air Quality Background

The Project is located within the South Coast Air Basin (Air Basin), an approximately 6,745-square-mile area bounded by the Pacific Ocean to the west; the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east; and San Diego County to the south. The Air Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the Coachella Valley area in Riverside County. The regional climate within the Air Basin is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. The air quality within the Air Basin is primarily influenced by meteorology and a wide range of emissions sources, such as dense population centers, heavy vehicular traffic, and industry.

Air pollutant emissions within the Air Basin are generated primarily 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. Examples include boilers or combustion equipment that produce electricity or generate heat. Area sources are widely distributed and include such sources as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, 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. Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles.

Both the federal and state governments have established ambient air quality standards for outdoor concentrations of various pollutants in order to protect the public health and welfare. These pollutants are referred to as “criteria air pollutants” as a result of the specific standards, or criteria, which have been adopted for them. The national and state standards have been set at levels considered safe to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly with a margin of safety; and to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. The national and state criteria pollutants and the applicable ambient air quality standards are listed in Table IV.B-1 on page IV.B-3.

b. Air Pollution and Potential Health Effects

Ambient air pollution is a public health concern. Excess deaths and increases in illnesses associated with high air pollution levels have been documented in several episodes as early as 1930 in Meuse Valley, Belgium; 1948 in Donora, Pennsylvania; and 1952 in London. Although the levels of pollutants that occurred during these acute episodes are now unlikely in the United States, ambient air pollution continues to be linked to increases in respiratory illness (morbidity) and increases in death rates (mortality).

Air pollution has many effects on the health of both adults and children. Over the past several years, the incidence of a number of diseases has increased greatly. Asthma is perhaps the most important disease with an increasing incidence, but other diseases, such as allergic reactions, bronchitis and respiratory infections, also have been increasing. The cause of these increases may be due at least in part to the effects of air pollution.

The adverse health effects associated with air pollution are diverse and include:

- Increased mortality;
- Increased health care utilization (hospitalization, physician and emergency room visits);
- Increased respiratory illness (symptoms, infections, and asthma exacerbation);
- Decreased lung function (breathing capacity);

**Table IV.B-1
Ambient Air Quality Standards**

Pollutant	Averaging Period	California Standard ^{a,b}	Federal Standard ^{a,b}	SCAQMD Attainment Status ^c	
				California Standard ^d	Federal Standard ^d
Ozone (O ₃)	1 hour	0.09 ppm (180 µg/m ³)	—	Non-Attainment	—
	8 hour	0.07 ppm (137 µg/m ³)	0.070 ppm (137 µg/m ³)	Non-Attainment	Non-Attainment (Extreme)
Respirable Particulate Matter (PM ₁₀)	24 hour	50 µg/m ³	150 µg/m ³	Non-Attainment	Attainment
	Annual	20 µg/m ³	—		
Fine Particulate Matter (PM _{2.5})	24 hour	—	35 µg/m ³	Non-Attainment	Non-Attainment (Serious)
	Annual	12 µg/m ³	12 µg/m ³		
Carbon Monoxide (CO)	1 hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	Attainment	Attainment
	8 hour	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)		
Nitrogen Dioxide (NO ₂)	1 hour	0.18 ppm (339 µg/m ³)	0.10 ppm (188 µg/m ³)	Attainment	Unclassified/ Attainment
	Annual	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)		
Sulfur Dioxide (SO ₂)	1 hour	0.25 ppm (655 µg/m ³)	0.075 ppm (196 µg/m ³)	Attainment	Unclassified/ Attainment
	3 hour	—	0.5 ppm (1,300 µg/m ³)		
	24 hour	0.04 ppm (105 µg/m ³)	0.14 ppm (365 µg/m ³)		
	Annual	—	0.03 ppm (80 µg/m ³)		
Lead (Pb)	30-day average	1.5 µg/m ³	—	Attainment	Partial Non- Attainment ^e
	Rolling 3-month average	—	0.15 µg/m ³		
Sulfates	24 hour	25 µg/m ³	—	Attainment	—
Hydrogen Sulfide (H ₂ S)	1 hour	0.03 ppm (42 µg/m ³)	—	Unclassified	—

ppm = parts per million by volume

µg/m³ = micrograms per cubic meter

^a *An ambient air quality standard is a concentration level expressed in either parts per million or micrograms per cubic meter and averaged over a specific time period (e.g., 1 hour). The different averaging times and concentrations are meant to protect against different exposure effects. Some ambient air quality standards are expressed as a concentration that is not to be exceeded. Others are*

Table IV.B-1 (Continued)
Ambient Air Quality Standards

Pollutant	Averaging Period	California Standard ^{a,b}	Federal Standard ^{a,b}	SCAQMD Attainment Status ^c	
				California Standard ^d	Federal Standard ^d
<i>expressed as a concentration that is not to be equaled or exceeded.</i>					
^b <i>Ambient Air Quality Standards based on the 2016 AQMP.</i>					
^c <i>“Attainment” means that the regulatory agency has determined based on established criteria, that the Air Basin meets the identified standard. “Non-attainment” means that the regulatory agency has determined that the Air Basin does not meet the standard. “Unclassified” means there is insufficient data to designate an area, or designations have yet to be made.</i>					
^d <i>California and Federal standard attainment status based on SCAQMD’s 2016 AQMP.</i>					
^e <i>An attainment re-designation request is pending.</i>					
<i>Source: Eyestone Environmental, 2019.</i>					

- Lung inflammation;
- Potential immunological changes;
- Increased airway reactivity to a known chemical exposure—a method used in laboratories to evaluate the tendency of airways to have an increased possibility of developing an asthmatic response; and
- A decreased tolerance for exercise.

The evidence linking these effects to air pollutants is derived from population based observational and field studies (epidemiological) as well as controlled laboratory studies involving human subjects and animals. There have been an increasing number of studies focusing on the mechanisms (that is, on learning how specific organs, cell types, and biochemicals are involved in the human body’s response to air pollution) and specific pollutants responsible for individual effects. Yet the underlying biological pathways for these effects are not always clearly understood.

Although individuals inhale pollutants as a mixture under ambient conditions, the regulatory framework and the control measures developed are mostly pollutant-specific. This is appropriate, in that different pollutants usually differ in their sources, their times and places of occurrence, the kinds of health effects they may cause, and their overall levels of health risk. Different pollutants, from the same or different sources, may sometimes act together to harm health more than they would acting separately. Nevertheless, as a practical matter, health scientists, as well as regulatory officials, usually must deal with one pollutant at a time in determining health effects and in adopting air quality standards. To meet the air quality standards, comprehensive plans are developed such as the AQMP.

These plans examine multiple pollutants, cumulative impacts, and transport issues related to attaining healthful air quality.

Certain air pollutants have been recognized to cause notable health problems and consequential damage to the environment either directly or in reaction with other pollutants due to their presence in elevated concentrations in the atmosphere. Such pollutants have been identified and regulated as part of the overall endeavor to prevent further deterioration and facilitate improvement in air quality within the Air Basin. The criteria air pollutants for which national and state standards have been promulgated and which are most relevant to current air quality planning and regulation in the Air Basin include ozone (O₃), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead (Pb), sulfates, and hydrogen sulfide (H₂S). In addition, volatile organic compounds (VOCs) and toxic air contaminants (TACs) are of concern in the Air Basin. Each of these is briefly described below.

(1) Criteria Pollutants

(a) Ozone (O₃)

Ozone is a gas that is formed when volatile organic compounds and nitrogen oxides (NO_x)—both byproducts of internal combustion engine exhaust—undergo slow photochemical reactions in the presence of sunlight. O₃ concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable. An elevated level of O₃ irritates the lungs and breathing passages, causing coughing and pain in the chest and throat, thereby increasing susceptibility to respiratory infections and reducing the ability to exercise. Effects are more severe in people with asthma and other respiratory ailments. Long-term exposure may lead to scarring of lung tissue and may lower lung efficiency.

The Children's Health Study, conducted by researchers at the University of Southern California, followed a cohort of children that live in 12 communities in southern California with differing levels of air pollution for several years. A publication from this study found that school absences in fourth graders for respiratory illnesses were associated with ambient ozone levels. An increase of 20 parts per billion (ppb) ozone was associated with an 83-percent increase in illness related absence rates (Gilliland, 2001).¹

¹ Gilliland FD, Berhane K, Rappaport EB, Thomas DC, Avol E, Gauderman WJ, London SJ, Margolis HG, McConnell R, Islam KT, Peters JM. (2001). "The Effects of Ambient Air Pollution on School Absenteeism Due to Respiratory Illnesses." *Epidemiology*, 12(1):43-54.

The number of hospital admissions and emergency room visits for all respiratory causes (infections, respiratory failure, chronic bronchitis, etc.) including asthma show a consistent increase as ambient ozone levels increase in a community. These excess hospital admissions and emergency room visits are observed when hourly ozone concentrations are as low as 0.08 to 0.10 parts per million (ppm).

Numerous recent studies have found positive associations between increases in ozone levels and excess risk of mortality. These associations persist even when other variables, including season and levels of particulate matter, are accounted for. This indicates that ozone mortality effects are independent of other pollutants.²

Several population-based studies suggest that asthmatics are more adversely affected by ambient ozone levels, as evidenced by increased hospitalizations and emergency room visits. Laboratory studies have attempted to compare the degree of lung function change seen in age and gender-matched healthy individuals versus asthmatics and those with chronic obstructive pulmonary disease. While the degree of change evidenced did not differ significantly, that finding may not accurately reflect the true impact of exposure on these respiration-compromised individuals. Since the respiration-compromised group may have lower lung function to begin with, the same degree of change may represent a substantially greater adverse effect overall.

A publication from the Children's Health Study focused on children and outdoor exercise. In communities with high ozone concentrations, the relative risk of developing asthma in children playing three or more sports was found to be over three times higher than in children playing no sports.³ These findings indicate that new cases of asthma in children are associated with heavy exercise in communities with high levels of ozone. While it has long been known that air pollution can exacerbate symptoms in individuals with respiratory disease, this is among the first studies that indicate ozone exposure may be causally linked to asthma.

Some lung function responses (volume and airway resistance changes) observed after a single exposure to ozone exhibit attenuation or a reduction in magnitude with repeated exposures. Although it has been argued that the observed shift in response is evidence of a probable adaptation phenomenon, it appears that while functional changes may exhibit adaptation, biochemical and cellular changes which may be associated with

² Bell ML, McDermott A, Zeger SL, Samet JM, Dominici F. (2004). "Ozone and Short-Term Mortality in 95 US Urban Communities, 1987–2000." *JAMA* 292:2372-2378.

³ McConnell R, Berhane K, Gilliland F, London SJ, Islam T, Gauderman WJ, Avol E, Margolis HG, Peters JM. (2002). "Asthma in exercising children exposed to ozone: a cohort study." *Lancet*, 359:386-91.

episodic and chronic exposure effects may not exhibit similar adaptation. That is, internal damage to the respiratory system may continue with repeated ozone exposures, even if externally observable effects (chest symptoms and reduced lung function) disappear.

In a laboratory, exposure of human subjects to low levels of ozone causes reversible decrease in lung function as assessed by various measures such as respiratory volumes, airway resistance and reactivity, irritative cough and chest discomfort. Lung function changes have been observed with ozone exposure as low as 0.08 to 0.12 ppm for 6 to 8 hours under moderate exercising conditions. Similar lung volume changes have also been observed in adults and children under ambient exposure conditions (0.10 to 0.15 ppm). The responses reported are indicative of decreased breathing capacity and are reversible.

In laboratory studies, cellular and biochemical changes associated with respiratory tract inflammation have also been consistently reported in the airway lining after low level exposure to ozone. These changes include an increase in specific cell types and in the concentration of biochemical mediators of inflammation and injury such as cytokines and fibronectin. These inflammatory changes can be observed in healthy adults exposed to ozone in the range of 0.08 to 0.10 ppm.

The susceptibility to ozone observed under ambient conditions could be due to the combination of pollutants that coexist in the atmosphere or ozone may actually sensitize these subgroups to the effects of other pollutants. Some animal studies show results that indicate possible chronic effects including functional and structural changes of the lung. These changes indicate that repeated inflammation associated with ozone exposure over a lifetime may result in sufficient damage to respiratory tissue such that individuals later in life may experience a reduced quality of life in terms of respiratory function and activity level achievable. An autopsy study involving Los Angeles County residents provided supportive evidence of lung tissue damage (structural changes) attributable to air pollution. A study of birth outcomes in southern California found an increased risk for birth defects in the aortic and pulmonary arteries associated with ozone exposure in the second month of pregnancy.⁴ This is the first study linking ambient air pollutants to birth defects in humans. Confirmation by further studies is needed. In summary, acute adverse effects associated with ozone exposures have been well documented, although the specific causal mechanism is still somewhat unclear. Additional research efforts are required to evaluate the long-term effects of air pollution and to determine the role of ozone in influencing chronic effects.

⁴ Ritz B, Yu F, Chapa G, Fruin S. (2000). "Effect of Air Pollution on Preterm Birth Among Children Born in Southern California between 1989 and 1993." *Epidemiology*, 11(5)502-11.

(b) Particulate Matter (PM₁₀ and PM_{2.5})

The human body naturally prevents the entry of larger particles into the body. However, small particles, with an aerodynamic diameter equal to or less than 10 microns (PM₁₀) and even smaller particles with an aerodynamic diameter equal to or less than 2.5 microns (PM_{2.5}), can enter the body and are trapped in the nose, throat, and upper respiratory tract. These small particulates could potentially aggravate existing heart and lung diseases, change the body's defenses against inhaled materials, and damage lung tissue. The elderly, children, and those with chronic lung or heart disease are most sensitive to PM₁₀ and PM_{2.5}. Lung impairment can persist for two to three weeks after exposure to high levels of particulate matter. Some types of particulates could become toxic after inhalation due to the presence of certain chemicals and their reaction with internal body fluids.

(c) Carbon Monoxide (CO)

CO is primarily emitted from combustion processes and motor vehicles due to incomplete combustion of fuel. Elevated concentrations of CO weaken the heart's contractions and lower the amount of oxygen carried by the blood. It is especially dangerous for people with chronic heart disease. Inhalation of CO can cause nausea, dizziness, and headaches at moderate concentrations and can be fatal at high concentrations.

(d) Nitrogen Dioxide (NO₂)

NO₂ is a byproduct of fuel combustion and major sources include power plants, large industrial facilities, and motor vehicles. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), which reacts quickly to form NO₂, creating the mixture of NO and NO₂ commonly called NO_x. NO₂ absorbs blue light and results in a brownish-red cast to the atmosphere and reduced visibility. NO₂ also contributes to the formation of PM₁₀. Nitrogen oxides irritate the nose and throat, and increase one's susceptibility to respiratory infections, especially in people with asthma. The principal concern of NO_x is as a precursor to the formation of ozone.

The adverse effects of ambient nitrogen dioxide air pollution exposure on health were reviewed in the 2008 USEPA Integrated Science Assessment for Oxides of Nitrogen—Health Criteria,⁵ and more recently in the 2016 USEPA Integrated Science

⁵ U.S. EPA. (2008). *Integrated Science Assessment for Oxides of Nitrogen—Health Criteria (Final Report)*. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-08/071. <http://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=194645>.

Assessment for Oxides of Nitrogen—Health Criteria.⁶ The 2016 USEPA review noted the respiratory effects of NO₂, and evidence suggestive of impacts on cardiovascular health, mortality and cancer.

Experimental studies have found that NO₂ exposures increase responsiveness of airways, pulmonary inflammation, and oxidative stress, and can lead to the development of allergic responses. These biological responses provide evidence of a plausible mechanism for NO₂ to cause asthma. Additionally, results from controlled exposure studies of asthmatics demonstrate an increase in the tendency of airways to contract in response to a chemical stimulus (airway responsiveness) or after inhaled allergens. Animal studies also provide evidence that NO₂ exposures have negative effects on the immune system, and therefore increase the host's susceptibility to respiratory infections. Epidemiological studies showing associations between NO₂ levels and hospital admissions for respiratory infections support such a link, although the studies examining respiratory infections in children are less consistent.

The Children's Health Study in Southern California found associations of NO₂ with respiratory symptoms in asthmatics.⁷ Particles and NO₂ were correlated, and it was determined that NO₂ plays a stronger role. Ambient levels of NO₂ were also associated with a decrease in lung function growth in a group of children followed for eight years. In addition to NO₂, the decreased growth was also associated with particulate matter and airborne acids. The study authors postulated that these may be a measure of a package of pollutants from traffic sources.

Results from controlled exposure studies of asthmatics demonstrated an increase in the tendency of airways to contract in response to a chemical stimulus (bronchial reactivity). Effects were observed with an exposure to 0.3 ppm NO₂ for a period ranging from 30 minutes to 3 hours. A similar response is reported in some studies with healthy subjects at higher levels of exposure (1.5 - 2.0 ppm). Mixed results have been reported when people with chronic obstructive lung disease are exposed to low levels of NO₂. Despite the cited studies, there is no established quantifiable link between specific levels of NO₂ and specific health effects.

⁶ U.S. EPA. (2016). *Integrated Science Assessment for Oxides of Nitrogen—Health Criteria (Final Report)*. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-15/068. <https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=310879>.

⁷ McConnell R, Berhane K, Gilliland F, London SJ, Islam T, Gauderman WJ, Avol E, Margolis HG, Peters JM. (2002). "Asthma in exercising children exposed to ozone: a cohort study." *Lancet*, 359:386-91.

(e) Sulfur Dioxide (SO₂)

Major sources of SO₂ include power plants, large industrial facilities, diesel vehicles, and oil-burning residential heaters. Emissions of sulfur dioxide aggravate lung diseases, especially bronchitis. It also constricts the breathing passages, especially in asthmatics and people involved in moderate to heavy exercise. SO₂ potentially causes wheezing, shortness of breath, and coughing. High levels of particulates appear to worsen the effect of sulfur dioxide, and long-term exposures to both pollutants lead to higher rates of respiratory illness.

(f) Lead (Pb)

Lead is emitted from industrial facilities and from the sanding or removal of old lead-based paint. Smelting or processing the metal is the primary source of lead emissions, which is primarily a regional pollutant. Lead affects the brain and other parts of the body's nervous system. Exposure to lead in very young children impairs the development of the nervous system, kidneys, and blood forming processes in the body.

(g) Sulfates (SO₄²⁻)

Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized during the combustion process and subsequently converted to sulfate compounds in the atmosphere. Effects of sulfate exposure at levels above the state standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and, due to fact that they are usually acidic, can harm ecosystems and damage materials and property.

(h) Hydrogen Sulfide (H₂S)

H₂S is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas and can be emitted as the result of geothermal energy exploitation. Breathing H₂S at levels above the state standard could result in exposure to a very disagreeable odor.

(2) Volatile Organic Compounds (VOCs)

VOCs are typically formed from combustion of fuels and/or released through evaporation of organic liquids. Some VOCs are also classified by the state as toxic air contaminants. While there are no specific VOC ambient air quality standards, VOC is a

prime component (along with NO_x) of the photochemical processes by which such criteria pollutants as ozone, nitrogen dioxide, and certain fine particles are formed. They are, thus, regulated as “precursors” to formation of those criteria pollutants.

(3) Toxic Air Contaminants (TACs)

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 above 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)⁸ and the Office of Environmental Health Hazard Assessment (OEHHA) determine if a substance should be formally identified, or “listed,” as a TAC in California. A complete list of these substances is maintained on CARB’s website.⁹

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 micrometer (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 in close proximity to 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;

⁸ CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both state and federal air pollution control programs within California.

⁹ CARB, Toxic Air Contaminant Identification List, www.arb.ca.gov/toxics/id/taclist.htm, last reviewed by CARB July 18, 2011.

(4) decreased lung function in children; (5) lung cancer; and (6) premature deaths for people with heart or lung disease.^{10,11}

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 ambient monitoring network. CARB maintains a 21-site air toxics monitoring network, which 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.¹²

c. Regulatory Framework

The Project Site and vicinity are subject to federal, state, and local air quality laws and regulations. A number of plans and policies have been adopted by various agencies that address air quality concerns. Those laws, regulations, plans, and policies that are relevant to the Project are discussed below.

(1) Criteria Pollutants

(a) Federal

The Federal Clean Air Act (CAA) was first enacted in 1955 and has been amended numerous times in subsequent years, with the most recent amendments in 1990. At the federal level, the USEPA is responsible for implementation of some portions of the CAA (e.g., certain mobile source and other requirements). Other portions of the CAA (e.g., stationary source requirements) are implemented by state and local agencies.

The 1990 amendments to the CAA identify specific emission reduction goals for areas not meeting the National Ambient Air Quality Standard (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. Table IV.B-1 on page IV.B-3 shows the NAAQS currently in effect for each criteria pollutant and their relative attainment status. The Air Basin fails to meet national standards for O₃ and PM_{2.5} and, therefore, is considered a federal "non-attainment" area for

¹⁰ CARB, *Overview: Diesel Exhaust and Health*, www.arb.ca.gov/research/diesel/diesel-health.htm, last reviewed by CARB April 12, 2016.

¹¹ CARB, *Fact Sheet: Diesel Particulate Matter Health Risk Assessment Study for the West Oakland Community: Preliminary Summary of Results*, March 2008.

¹² SCAQMD, *MATES IV Final Report*, 2015.

these pollutants. In addition, Los Angeles County fails to meet the national standard for lead and, therefore, is considered a federal “non-attainment” area for lead.

(b) State

The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the California Ambient Air Quality Standards (CAAQS) 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 ambient air quality standards, 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. Table IV.B-1 on page IV.B-3 includes the CAAQS currently in effect for each of the criteria pollutants, as well as other pollutants recognized by the state. As shown in Table IV.B-1, the CAAQS include more stringent standards than the NAAQS.

(i) Air Quality and Land Use Handbook

CARB published the *Air Quality and Land Use Handbook* on April 28, 2005 (the CARB Handbook), to serve as a general guide for considering health effects associated with siting sensitive receptors proximate to sources of TAC emissions.¹³ 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 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 roads with 50,000 vehicles per day;¹⁴ (2) avoid siting sensitive receptors within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units 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

¹³ CARB, *Air Quality and Land Use Handbook, a Community Health Perspective*, April 2005.

¹⁴ In November 2012, the Los Angeles City Planning Commission (CPC) issued an advisory notice (Zoning Information 2427) regarding the siting of sensitive land uses within 1,000 feet of freeways. The CPC deemed 1,000 feet to be a conservative distance to evaluate projects that house populations considered to be more at-risk from the negative effects of air pollution caused by freeway proximity. The CPC advised that applicants of projects requiring discretionary approval, located within 1,000 feet of a freeway and contemplating residential units and other sensitive uses (e.g., hospitals, schools, retirement homes, etc.) perform a Health Risk Assessment (HRA). The Project Site is not within 1,000 feet of a freeway and, therefore, would not be subject to this notice and warrant the preparation of an HRA.

cleaning operation using perchloroethylene and within 500 feet of operations with two or more machines.

(ii) California Code of Regulations

The California Code of Regulations (CCR) is the official compilation and publication of regulations adopted, amended or repealed by the state agencies pursuant to the Administrative Procedure Act (APA). The CCR includes regulations that pertain to air quality emissions. Specifically, Section 2485 in Title 13 of the CCR states that the idling of all diesel-fueled commercial vehicles weighing over 10,000 pounds during construction shall be limited to five minutes at any location. In addition, Section 93115 in Title 17 of the CCR states that operation of any stationary, diesel-fueled, compression-ignition engines shall meet specified fuel and fuel additive requirements and emission standards.

(c) Regional

(i) South Coast Air Quality Management District (SCAQMD)

SCAQMD shares responsibility with CARB for ensuring that all state and federal ambient air quality standards are achieved and maintained throughout the Air Basin.

To meet the CAAQS and NAAQS, the SCAQMD has adopted a series of Air Quality Management Plans (AQMPs). The 2016 AQMP, which was released in March 2017, incorporates the latest scientific and technological information and planning assumptions, including the 2016 Regional Transportation Plan/Sustainable Communities Strategy (2016–2040 RTP/SCS) and updated emission inventory methodologies for various source categories.¹⁵ The 2016 AQMP also includes the new federal requirements, implementation of new technology measures, and the continued development of economically sound, flexible compliance approaches.

The AQMP provides emissions inventories, ambient measurements, meteorological episodes, and air quality modeling tools. The AQMP also provides policies and measures to guide responsible agencies in achieving federal standards for healthful air quality in the Air Basin. It also incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, on-road and off-road mobile sources, and area sources.

SCAQMD adopts rules and regulations to implement portions of the AQMP. Several of these rules may apply to project construction or operation. Although the SCAQMD is

¹⁵ SCAG, 2016–2040 RTP/SCS.

responsible for regional air quality planning efforts, it does not have the authority to directly regulate the air quality issues associated with new development projects within the Air Basin, such as the Project. Instead, SCAQMD published the *CEQA Air Quality Handbook* in November 1993 to assist lead agencies, as well as consultants, project proponents, and other interested parties, in evaluating potential air quality impacts of projects proposed in the Air Basin. The *CEQA Air Quality Handbook* provides standards, methodologies, and procedures for conducting air quality analyses in EIRs and was used extensively in the preparation of this analysis. SCAQMD is currently in the process of replacing the *CEQA Air Quality Handbook* with the *Air Quality Analysis Guidance Handbook*.¹⁶

In order to assist the CEQA practitioner in conducting an air quality analysis in the interim while the replacement *Air Quality Analysis Guidance Handbook* is being prepared, supplemental guidance/information is provided on the SCAQMD website (www.aqmd.gov/ceqa/hdbk.html) and includes: (1) Emission Factors (EMFAC) on-road vehicle emission factors; (2) background CO concentrations; (3) localized significance thresholds; (4) mitigation measures and control efficiencies; (5) mobile source toxics analysis; (6) off-road mobile source emission factors; (7) PM_{2.5} significance thresholds and calculation methodology; and (8) updated SCAQMD Air Quality Significance Thresholds. The SCAQMD also recommends using approved models to calculate emissions from land use projects, such as the California Emissions Estimator Model (CalEEMod). These recommendations were followed in the preparation of this analysis.

SCAQMD has also adopted land use planning guidelines in the *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*, which considers impacts to sensitive receptors from facilities that emit TAC emissions.¹⁷ SCAQMD's siting distance recommendations are the same as those provided by CARB (e.g., a 500-foot siting distance for sensitive land uses proposed in proximity of freeways and high-traffic roads, and the same siting criteria for distribution centers and dry cleaning facilities). The SCAQMD's document introduces land use-related policies that rely on design and distance parameters to minimize emissions and lower potential health risk. SCAQMD's guidelines are voluntary initiatives recommended for consideration by local planning agencies.

The following SCAQMD rules and regulations would be applicable to the Project:

¹⁶ SCAQMD, *Air Quality Analysis Handbook*, www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook, accessed February 11, 2019.

¹⁷ SCAQMD, *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*, May 6, 2005.

- SCAQMD Rule 403 required projects to incorporate fugitive dust control measures at least as effectively as the following measures:
 - Use watering to control dust generation during the demolition of structures;
 - Clean-up mud and dirt carried onto paved streets from the site;
 - Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site;
 - All haul trucks would be covered or would maintain at least 6 inches of freeboard;
 - All materials transported offsite shall be either sufficiently watered or securely covered to prevent excessive amounts of spillage or dust;
 - Suspend earthmoving operations or additional watering would be implemented to meet Rule 403 criteria if wind gusts exceed 25 mph;
 - The owner or contractor shall keep the construction area sufficiently dampened to control dust caused by construction and hauling, and at all times provide reasonable control of dust caused by wind. All unpaved demolition and construction areas shall be wetted at least twice daily during excavation and construction, and temporary dust covers shall be used to reduce dust emissions; and
- SCAQMD Rule 1113 limits the volatile organic compound content of architectural coatings.
- SCAQMD Regulation XIII, New Source Review, requires new on-site facility nitrogen oxide emissions to be minimized through the use of emission control measures (e.g., use of best available control technology for new combustion sources such as boilers and water heaters).

(ii) Southern California Association of Governments (SCAG)

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 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 SCAQMD, of the transportation strategy and transportation control measure sections of the 2016 AQMP.

(d) Local

Local jurisdictions, such as the City of Los Angeles, have the authority and responsibility to reduce air pollution through their police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions.

The City's General Plan was prepared in response to California law requiring that each city and county adopt a long-term comprehensive general plan. This plan must be integrated and internally consistent, and must present goals, objectives, policies, and implementation guidelines for decision makers to use. The General Plan includes an Air Quality Element, which was adopted on November 24, 1992, that serves to aid the City in attaining the state and federal ambient air quality standards at the earliest feasible date, while still maintaining economic growth and improving the quality of life. The planning area for the Air Quality Element covers the entire City, which encompasses an area of about 465 square miles. The Air Quality Element and the accompanying Clean Air Program acknowledge the inter-relationships between transportation and land use planning in meeting the City's mobility and clean air goals. With the City's adoption of the Air Quality Element and the accompanying Clean Air Program, the City is seeking to achieve consistency with regional air quality growth management, mobility, and congestion management plans. The Air Quality Element sets forth the goals, objectives, and policies, which guide the City in the implementation of its air quality improvement programs and strategies.

The Air Quality Element establishes six goals:

- Good air quality in an environment of continued population growth and healthy economic structure;
- Less reliance on single-occupant vehicles with fewer commute and non-work trips;
- Efficient management of transportation facilities and system infrastructure using cost-effective system management and innovative demand-management techniques;
- Minimal impacts of existing land use patterns and future land use development on air quality by addressing the relationship between land use, transportation and air quality;

- Energy efficiency through land use and transportation planning, the use of renewable resources and less-polluting fuels and the implementation of conservation measures including passive measures such as site orientation and tree planting; and
- Citizen awareness of the linkages between personal behavior and air pollution and participation in efforts to reduce air pollution.

In accordance with CEQA requirements, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation. The City uses the SCAQMD's *CEQA Air Quality Handbook* and SCAQMD's supplemental online guidance/information for the environmental review of plans and development proposals within its jurisdiction.

(2) Toxic Air Contaminants (TAC)

(a) State

The California Air Toxics Program¹⁸ was established in 1983, when the California Legislature adopted Assembly Bill (AB) 1807 to establish a two-step process of risk identification and risk management to address potential health effects from exposure to toxic substances in the air. In the risk identification step, CARB and OEHHA determine if a substance should be formally identified, or "listed," as a TAC in California. Since inception of the program, a number of such substances have been listed and include benzene, chloroform, formaldehyde, and particulate emissions from diesel-fueled engines, among others.¹⁹ In 1993, the California Legislature amended the program to identify the 189 federal hazardous air pollutants (HAPs) as TACs.

In the risk management step, CARB reviews emission sources of an identified TAC to determine whether regulatory action is needed to reduce risk. Based on results of that review, CARB has promulgated a number of airborne toxic control measures (ATCMs), both for mobile and stationary sources. In 2004, CARB adopted an ATCM to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel PM and other TACs. The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of

¹⁸ CARB, *California Air Toxics Program*, www.arb.ca.gov/toxics/toxics.htm, last reviewed by CARB June 8, 2018.

¹⁹ CARB, *Toxic Air Contaminant Identification List*, www.arb.ca.gov/toxics/id/taclist.htm, last reviewed by CARB July 18, 2011.

where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than five minutes at any given time.

In addition to limiting exhaust from idling trucks, CARB adopted regulations on July 26, 2007, for off-road diesel construction equipment such as bulldozers, loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles to reduce emissions by installation of diesel particulate filters and encouraging the replacement of older, dirtier engines with newer emission controlled models. Implementation is staggered based on fleet size, with the largest operators beginning compliance in 2014.²⁰

The AB 1807 program is supplemented by the AB 2588 Air Toxics “Hot Spots” program, which was established by the California Legislature in 1987. Under this program, facilities are required to report their air toxics emissions, assess health risks, and notify nearby residents and workers of significant risks if present. In 1992, the AB 2588 program was amended by Senate Bill (SB) 1731 to require facilities that pose a significant health risk to the community to reduce their risk through implementation of a risk management plan.

(b) Regional

SCAQMD has adopted two rules to limit cancer and non-cancer health risks from facilities located within its jurisdiction. Rule 1401 (New Source Review of Toxic Air Contaminants) regulates new or modified facilities, and Rule 1402 (Control of Toxic Air Contaminants from Existing Sources) regulates facilities that are already operating. Rule 1402 incorporates requirements of the AB 2588 program, including implementation of risk reduction plans for significant risk facilities.

d. Existing Conditions

(1) Regional Air Quality

The Southern California region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Air Basin is a function of the area’s natural physical characteristics (weather and topography), as well as man-made influences (development patterns and lifestyle).

²⁰ CARB, *In-Use Off-Road Diesel-Fueled Fleets Regulation*, www.arb.ca.gov/msprog/ordiesel/ordiesel.htm, last reviewed by CARB February 8, 2019.

Factors, such as wind, sunlight, temperature, humidity, rainfall, and topography, affect the accumulation and dispersion of pollutants throughout the Air Basin, making it an area of high pollution potential.

The greatest air pollution throughout the Air Basin occurs from June through September. This condition is generally attributed to the large amount of pollutant emissions, light winds, and shallow vertical atmospheric mixing. This frequently reduces pollutant dispersion, thus causing elevated air pollution levels. Pollutant concentrations in the Air Basin vary with location, season, and time of day. O₃ concentrations, for example, tend to be lower along the coast, higher in the near inland valleys, and lower in the far inland areas of the Air Basin and adjacent desert. Over the past 30 years, substantial progress has been made in reducing air pollution levels in Southern California. However, the Air Basin still fails to meet the national standards for O₃ and PM_{2.5}. In addition, Los Angeles County still fails to meet the national standard for lead.

The SCAQMD has the responsibility for ensuring that all national and state ambient air quality standards are achieved and maintained throughout the Air Basin. To meet the standards, the SCAQMD has adopted a series of AQMPs. The 2016 AQMP includes strategies to ensure that rapidly approaching attainment deadlines are met and that public health is protected to the maximum extent feasible. The most significant air quality challenge in the Air Basin is to reduce nitrogen oxide (NO_x) emissions²¹ sufficiently to meet the upcoming ozone standard deadlines. The 2016 AQMP provides a baseline year 2012 inventory of 512 tons per day (tpd) of NO_x and modeling results show that NO_x emissions are projected to be 214 tpd in the 8-hour ozone attainment year of 2031, due to continued implementation of already adopted regulatory actions ("baseline emissions"). The 2016 AQMP suggests that total Air Basin emissions of NO_x must be reduced to 96 tpd in 2031 to attain the 8-hour ozone standard. Although the existing air regulations and programs will continue to lower NO_x emissions in the region, an additional 55 percent in the year 2031 are necessary to attain the 8- hour ozone standard.^{22,23}

The overall control strategy is an integral approach relying on fair-share emission reductions from federal, state and local levels. The 2016 AQMP is composed of stationary and mobile source emission reductions from traditional regulatory control measures, incentive-based programs, co-benefits from climate programs, mobile source strategies

²¹ NO_x emissions are a precursor to the formation of both ozone and secondary PM_{2.5}.

²² Estimates are based on the inventory and modeling results and are relative to the baseline emission levels for each attainment year (see Final 2016 AQMP for detailed discussion).

²³ SCAQMD, Final 2016 AQMP, 2017 (p. ES-2). www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp.

and reductions from federal sources, which include aircraft, locomotives and ocean-going vessels. These strategies are to be implemented in partnership with the California Air Resources Board (CARB) and U.S. EPA. In addition, the Southern California Association of Governments (SCAG) recently approved their 2016–2040 Regional Transportation Plan/Sustainable Communities Strategies (2016–2040 RTP/SCS)²⁴ that include transportation programs, measures, and strategies generally designed to reduce vehicle miles traveled (VMT), which are contained in the AQMP.

Pursuant to California Health and Safety Code Section 40460, SCAG has the responsibility of preparing and approving the portions of the AQMP relating to the integration of regional land use programs, measures, and strategies. The SCAQMD combines its portion of the Plan with those prepared by SCAG. The Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and Transportation Control Measures (TCMs), included as Appendix IV-C of the 2016 AQMP/SIP for the Basin, are based on SCAG's 2016–2040 RTP/SCS.

The 2016 AQMP forecasts the 2031 emissions inventories “with growth” based on SCAG's 2016–2040 RTP/SCS. The region is projected to see a 12-percent growth in population, 16-percent growth in housing units, 23-percent growth in employment, and 8-percent growth in vehicle miles traveled between 2012 and 2031.

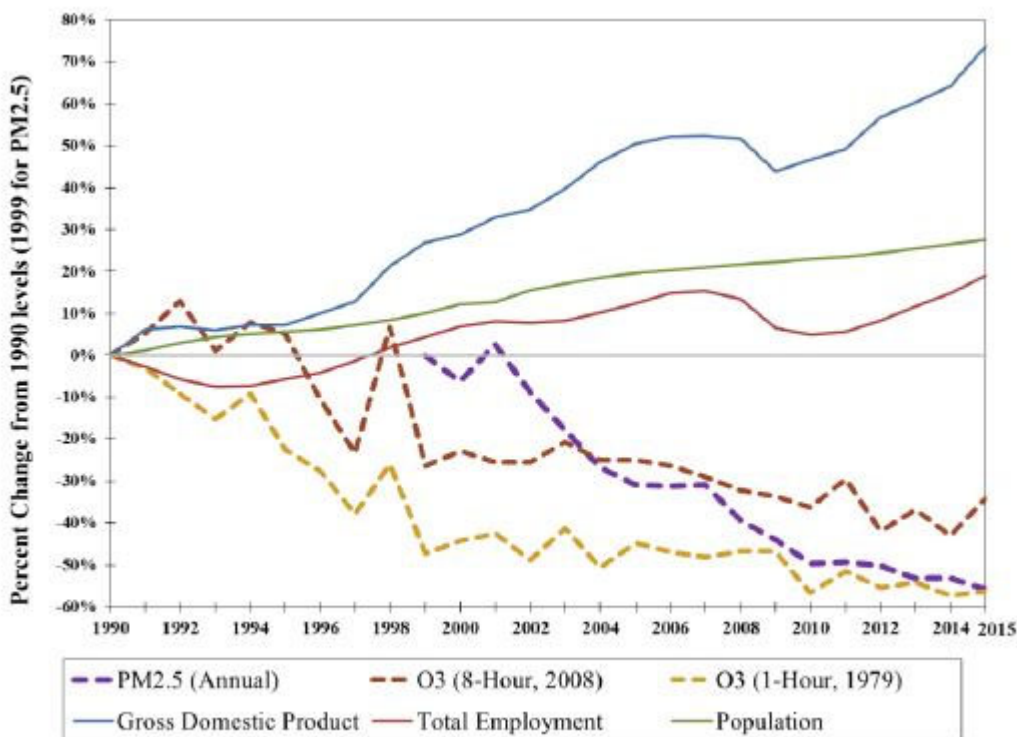
Despite this regional growth, air quality has improved substantially over the years, primarily due to the impacts of air quality control programs at the local, state and federal levels. The graphic below show the percent change in air quality along with demographic data for the 4-county region from the 2016 AQMP. In particular, the graphic illustrates the trends since 1990 of the 8-hour ozone levels, the 1-hour ozone levels, and annual average PM_{2.5} concentrations (since 1999), compared to the regional gross domestic product, total employment and population. Human activity in the region has an impact on achieving reductions in emissions. However, the ozone and particulate matter levels continue to trend downward as the economy and population increase, demonstrating that it is possible to maintain a healthy economy while improving public health through air quality improvements.²⁵

SCAQMD has released an Air Basin-wide air toxics study (MATES-IV).²⁶ The MATES-IV Study was aimed at estimating the cancer risk from toxic air emissions

²⁴ SCAG, *Final 2016 RTP/SCS*, <http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx>.

²⁵ SCAQMD, *Final 2016 AQMP*, 2017 (p. 1-6). www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp.

²⁶ SCAQMD, *Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES IV) Final Report*, May 2015.



Source: SCAQMD, Figure 1-4 of the Final 2016 AQMP.

throughout the Air Basin by conducting a comprehensive monitoring program, an updated emissions inventory of toxic air contaminants, and a modeling effort to fully characterize health risks for those living in the Air Basin. The MATES-IV Study concluded that the average carcinogenic risk from air pollution in the Air Basin is approximately 420 in one million over a 70-year duration. Mobile sources (e.g., cars, trucks, trains, ships, aircraft, etc.) represent the greatest contributors. Approximately 68 percent of the risk is attributed to diesel particulate emissions, approximately 21 percent to other toxics associated with mobile sources (including benzene, butadiene, and carbonyls), and approximately 11 percent of all carcinogenic risk is attributed to stationary sources (which include large industrial operations, such as refineries and metal processing facilities, as well as smaller businesses, such as gas stations and chrome plating).

As part of the MATES-IV Study, the SCAQMD prepared a series of maps that shows regional trends in estimated outdoor inhalation cancer risk from toxic emissions, as part of an ongoing effort to provide insight into relative risks. The maps' estimates represent the number of potential cancers per million people associated with a lifetime of breathing air toxics (24 hours per day outdoors for 70 years) in parts of the area. The MATES-IV map is the most recently available map to represent existing conditions near the Project area. The

estimated cancer risk for the vast majority of the urbanized area within the Air Basin ranges from 200 to over 1,200 cancers per million over a 70-year duration.²⁷ Generally, the risk from air toxics is lower near the coastline and higher risks concentrated near large diesel sources (e.g., freeways, airports, and ports).

(2) Local Air Quality

Air pollutant emissions are generated in the local vicinity by stationary and area-wide sources, such as commercial and industrial activity, space and water heating, landscape maintenance, consumer products, and mobile sources primarily consisting of automobile traffic. Motor vehicles are the primary source of pollutants in the local vicinity.

(a) Existing Pollutant Levels at Nearby Monitoring Stations

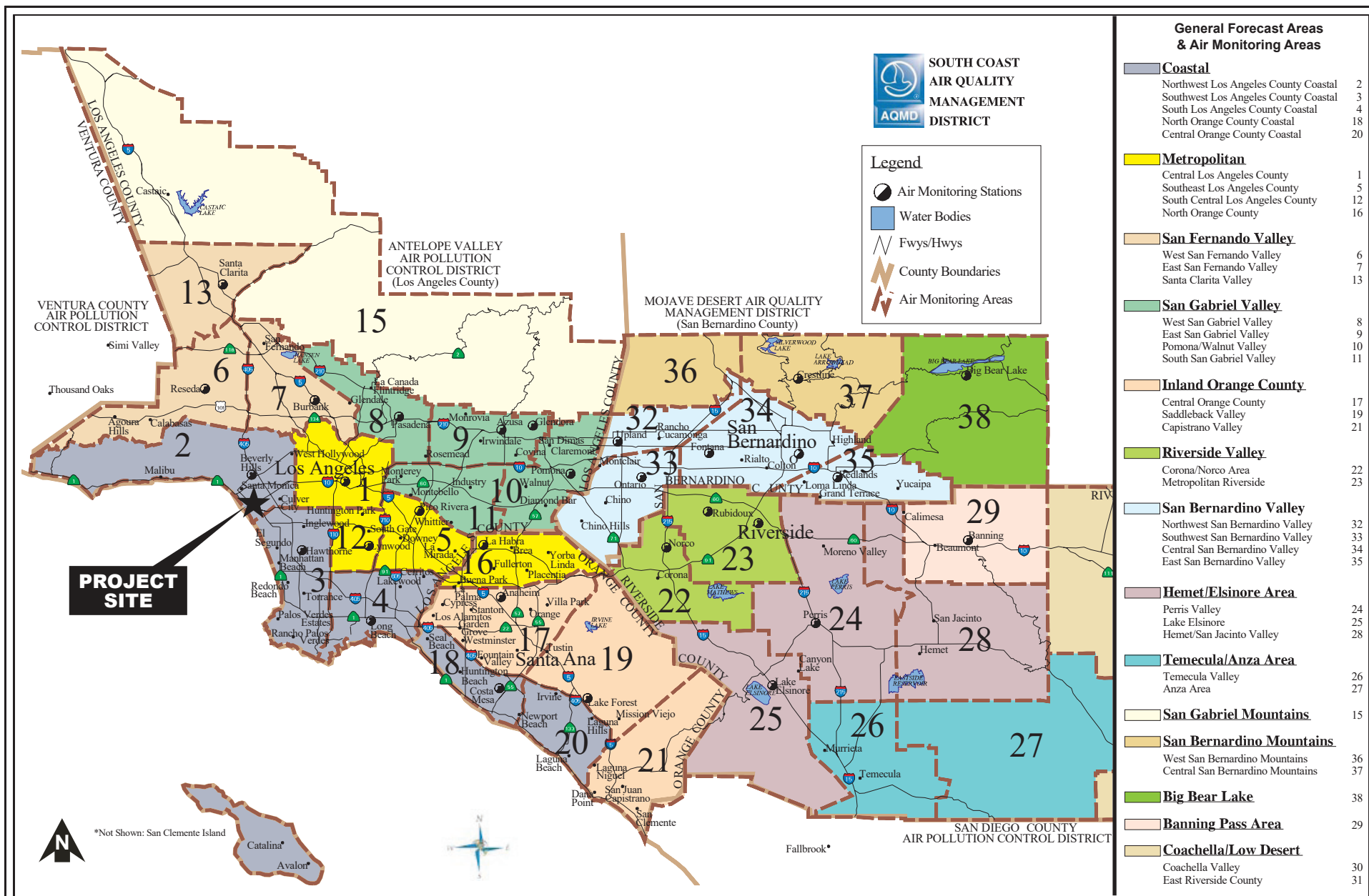
The SCAQMD maintains a network of air quality monitoring stations located throughout the Air Basin and has divided the Air Basin into 38 source receptor areas (SRAs) in which 31 monitoring stations operate. Figure IV.B-1 on page IV.B-24 shows the locations of the SRAs located in Los Angeles County. The Project Site is located within SRA 2, which covers the Northwest Coastal Los Angeles area. The monitoring station most representative of the Project Site is the Los Angeles–VA Hospital Station, located at the site of the West Los Angeles Medical Center (a veterans hospital) along Wilshire Boulevard, 4.5 miles northeast of the Project Site. Criteria pollutants monitored at this station include O₃, CO, and NO₂. Criteria pollutants not monitored at this station include PM₁₀, PM_{2.5}, SO₂, and lead. The second most representative monitoring stations for these pollutants is the Los Angeles–LAX Station, located approximately 3.1 miles south of the Project Site (for PM₁₀, SO₂, lead) and North Main Street Station, located approximately 13.4 miles northeast of the Project Site (for PM_{2.5}). Table IV.B-2 on page IV.B-25 identifies the national and state ambient air quality standards for relevant air pollutants along with the ambient pollutant concentrations that have been measured in SRA 2 through the period of 2015–2017.

(b) Existing Health Risk in the Surrounding Area

As shown in Figure IV.B-2 on page IV.B-27, based on the MATES-IV model, the calculated cancer risk in the Project area is approximately 953 in a million.²⁸ The cancer

²⁷ SCAQMD, *Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES-IV)*, *MATES IV Interactive Carcinogenicity Map*, 2015, <https://scaqmd-online.maps.arcgis.com/apps/webappviewer/index.html?id=470c30bc6daf4ef6a43f0082973ff45f>, accessed February 11, 2019.

²⁸ SCAQMD, *Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES-IV)*, *MATES IV Interactive Carcinogenicity Map*, 2015, <https://scaqmd-online.maps.arcgis.com/apps/webappviewer/index.html?id=470c30bc6daf4ef6a43f0082973ff45f>, accessed February 11, 2019.



Source: Sierra Wade Associates, 2010.

**Table IV.B-2
Summary of Ambient Air Quality in the Project Vicinity**

Pollutant	Year		
	2015	2016	2017
Ozone (O₃)			
Maximum 1-hour Concentration (ppm)	0.102	0.085	0.099
Days exceeding NAAQS (0.12 ppm)	0	0	0
Days exceeding CAAQS (0.09 ppm)	2	0	1
Maximum 8-hour Concentration (ppm)	0.072	0.073	0.077
Days exceeding NAAQS (0.075 ppm)	0	0	1
Days exceeding CAAQS (0.07 ppm)	3	2	3
Respirable Particulate Matter (PM₁₀)			
Maximum 24-hour Concentration (µg/m ³)	42	43	46
Days exceeding NAAQS (150 µg/m ³)	0	0	0
Days exceeding CAAQS (50 µg/m ³)	0	0	0
Annual Arithmetic Mean (µg/m ³)	21.2	21.6	19.8
Does Measured AAM exceed NAAQS (50 µg/m ³)?	No	No	No
Does measured AAM exceed CAAQS (20 µg/m ³)?	Yes	Yes	No
Fine Particulate Matter (PM_{2.5})			
Maximum 24-hour Concentration (µg/m ³)	56.4	44.39	49.2
Days exceeding NAAQS (35 µg/m ³)	7	2	5
Annual Arithmetic Mean (µg/m ³)	12.38	11.83	11.94
Does measured AAM exceed NAAQS (15 µg/m ³)?	No	No	No
Does measured AAM exceed CAAQS (12 µg/m ³)?	No	No	No
Carbon Monoxide (CO)			
Maximum 1-hour Concentration (ppm)	1.6	2.2	2.0
Days exceeding NAAQS (35.0 ppm)	0	0	0
Days exceeding CAAQS (20.0 ppm)	0	0	0
Maximum 8-hour Concentration (ppm)	1.4	1.1	1.2
Days exceeding NAAQS and CAAQS (9 ppm)	0	0	0
Nitrogen Dioxide (NO₂)			
Maximum 1-hour CAAQS Concentration (ppm)	0.07	0.06	0.06
Days exceeding CAAQS (0.25 ppm)	0	0	0
Maximum 1-hour NAAQS Concentration (98 th %) (ppm)	0.05	0.05	0.05
Days exceeding NAAQS (0.10 ppm)	No	No	No
Annual Arithmetic Mean (ppm)	0.012	0.012	0.010
Does measured AAM exceed NAAQS (0.0534 ppm)?	No	No	No
Does measured AAM exceed CAAQS (0.03 ppm)?	No	No	No
Sulfur Dioxide (SO₂)			
Maximum 1-hour Concentration (ppm)	0.01	0.01	0.01
Days exceeding CAAQS (0.25 ppm)	0	0	0

Table IV.B-2 (Continued)
Summary of Ambient Air Quality in the Project Vicinity

Pollutant	Year		
	2015	2016	2017
Lead (Pb)			
Maximum 30-day Average Concentration ($\mu\text{g}/\text{m}^3$)	0.008	0.006	0.005
Does measured concentration exceed NAAQS ($1.5 \mu\text{g}/\text{m}^3$)	No	No	No
Maximum Calendar Quarter Concentration ($\mu\text{g}/\text{m}^3$)	0.01	0.01	0
Does measured concentration exceed CAAQS ($1.5 \mu\text{g}/\text{m}^3$)	No	No	No
Sulfate			
Maximum 24-hour Concentration ($\mu\text{g}/\text{m}^3$)	5.6	6.2	5.2
Does measured concentration exceed CAAQS ($25 \mu\text{g}/\text{m}^3$)	No	No	No
<p>ppm = parts per million by volume $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter AAM = annual arithmetic mean — = not available</p> <p>Source: South Coast Air Quality Management District Ambient, Historical Data by Year (2015–2017); California Air Resources Board Air Quality Data Statistics (2015–2017), www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year, accessed January 25, 2019.</p>			

risk in this area is predominately related to nearby sources of diesel particulate (e.g., the Marina Expressway [SR-90]). In general, the risk at the Project Site is comparable with other urbanized areas in Los Angeles.

(c) Surrounding Uses

As shown in Figure IV.B-3 on page IV.B-28, the Project Site is located in a highly urbanized area and includes a mix of low- to high-rise buildings containing a variety of land uses. Predominantly mid- to high-rise, high-density commercial, office, and multi-family residential uses line Lincoln Boulevard/Pacific Coast Highway, generally transitioning to lower density multi-family neighborhoods to the east and west of Lincoln Boulevard/Pacific Coast Highway. Land uses surrounding the Project Site specifically include commercial, retail, and residential uses to the north-northeast, along Maxella Avenue; multi-family residential uses to the east, along Glencoe Avenue; additional Marina Marketplace shopping center-related commercial and retail uses and associated parking to the south; the six-story multi-family Stella apartment complex to the west; and the Hotel MdR and associated parking located southwest of the Project Site.

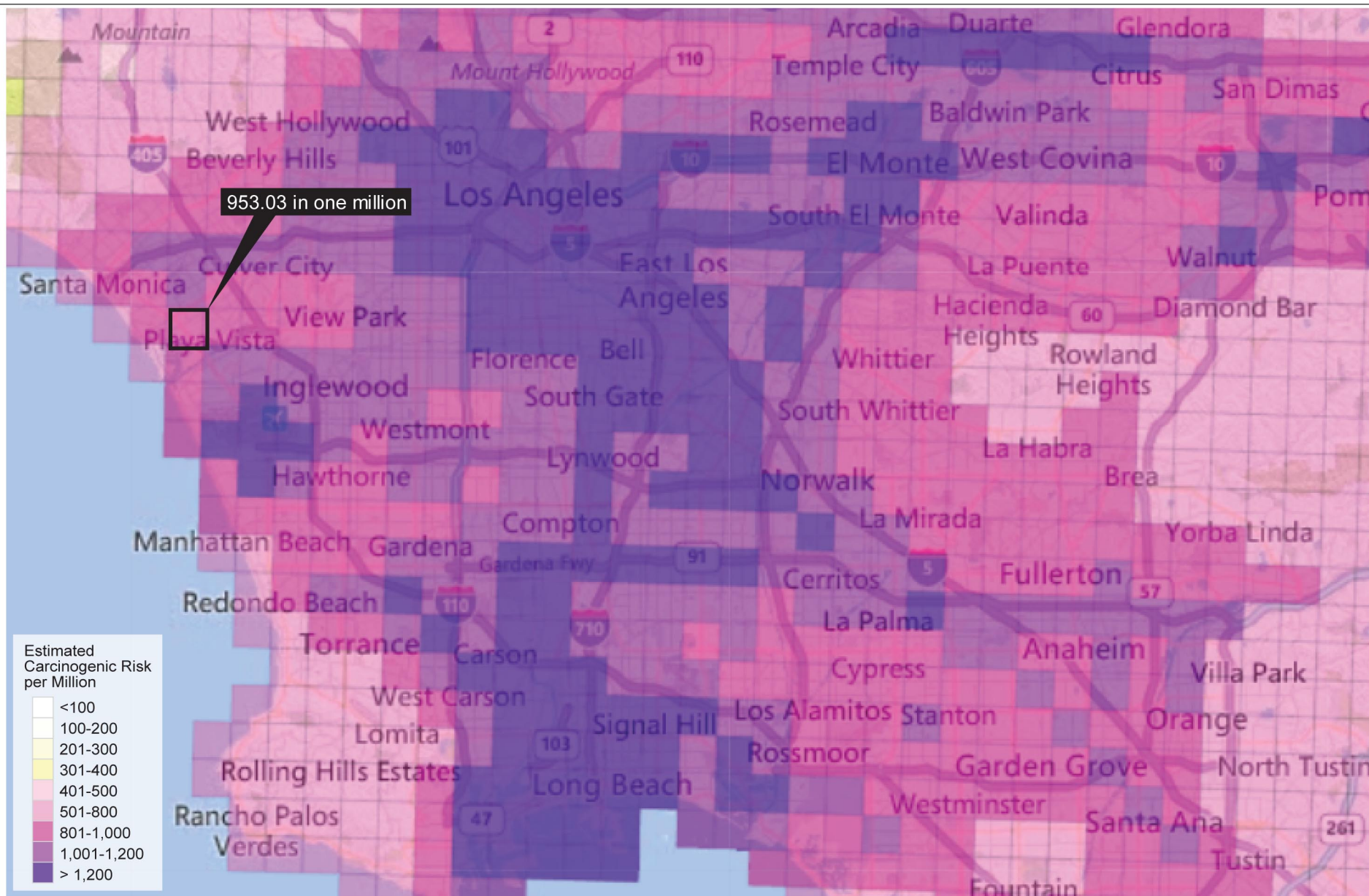


Figure IV.B-2
MATES IV Total Cancer Risk for Project Area



Figure IV.B-3
Air Quality Sensitive Receptor Locations

Some population groups, including children, elderly, and acutely and chronically ill persons (especially those with cardio-respiratory diseases), are considered more sensitive to air pollution than others. As shown in Figure IV.B-3 on page IV.B-28, the closest sensitive land uses to the Project Site are residential uses associated with the Stella apartment complex located west of and directly adjacent to the Project Site.

(d) Existing Project Site Emissions

The Project Site is currently occupied by three structures, including a two-story Barnes & Noble bookstore located along the northeast corner of the Project Site, near the Maxella Avenue and Glencoe Avenue intersection; a single-story building providing a variety of retail uses located generally within the southern portion of the Project Site, along Glencoe Avenue; a two-story commercial and retail building located generally within the western portion of the Project Site; and surface parking and circulation areas. Vehicular access to the Project Site is currently available via driveways on Maxella Avenue and Glencoe Avenue. Pedestrian access is available from the vehicular access points and from other areas along Maxella Avenue and Glencoe Avenue.

Area source emissions are generated by maintenance equipment, landscape equipment, and use of products that contain solvents. In addition, energy source emissions are associated with building natural gas usage at the Project Site. Mobile source emissions from the existing uses are generated by motor vehicle trips to and from the Project Site. Table IV.B-3 below presents an estimate of the existing emissions within the Project Site.

Table IV.B-3
Estimated Daily Regional Operational Criteria Pollutant Emissions—Baseline

Emission Source	Pollutant Emissions (pounds per day) ^a					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area	2	<1	<1	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile	8	28	69	<1	10	3
Stationary	<1	<1	<1	<1	<1	<1
Total Existing Emissions	10	28	69	<1	10	3
<p><i>Numbers may not add up exactly due to rounding.</i></p> <p>^a Pollutant emissions are calculated using the CalEEMod emissions model.</p> <p>Source: Eyestone Environmental, 2019.</p>						

3. Project Impacts

a. Thresholds of Significance

(1) State CEQA Guidelines Appendix G

In accordance with Appendix G of the State CEQA Guidelines, the Project would have a significant impact related to air quality if it would:

Threshold (a): Conflict with or obstruct implementation of the applicable air quality plan.

Threshold (b): Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Threshold (c): 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Threshold (d): Expose sensitive receptors to substantial pollutant concentrations.

Threshold (e): Create objectionable odors affecting a substantial number of people.

To assist in answering the Appendix G Threshold questions above and the thresholds provided by AQMD, this analysis utilizes factors and considerations identified below from the 2006 L.A. CEQA Thresholds Guide, as appropriate. The L.A. CEQA Thresholds Guide identifies the following criteria to evaluate air quality impacts:

(a) Construction

(i) Combustion Emissions from Construction Equipment

- Type, number of pieces and usage for each type of construction equipment;
- Estimated fuel usage and type of fuel (diesel, natural gas) for each type of equipment; and
- Emission factors for each type of equipment.

(ii) Fugitive Dust—Grading, Excavation and Hauling

- Amount of soil to be disturbed on-site or moved off-site;

- Emission factors for disturbed soil;
- Duration of grading, excavation and hauling activities;
- Type and number of pieces of equipment to be used; and
- Projected haul route.

(iii) Fugitive Dust—Heavy-Duty Equipment Travel on Unpaved Roads

- Length and type of road;
- Type, number of pieces, weight and usage of equipment; and
- Type of soil.

(iv) Other Mobile Source Emissions

- Number and average length of construction worker trips to Project Site, per day; and
- Duration of construction activities.

(b) Operation

- Operational emissions exceed 10 tons per year of volatile organic gases or any of the daily thresholds presented below (as reprinted from the CEQA Air Quality Handbook):

Pollutant	Significance Threshold (lbs/day)
ROG	55
NO _x	55
CO	550
PM ₁₀	150
SO _x	150

- Either of the following conditions would occur at an intersection or roadway within one-quarter mile of a sensitive receptor:
 - The proposed project causes or contributes to an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9.0 parts per million (ppm), respectively; or

- The incremental increase due to the project is equal to or greater than 1.0 ppm for the California 1-hour CO standard, or 0.45 ppm for the 8-hour CO standard.
- The project creates an objectionable odor at the nearest sensitive receptor.

(c) Toxic Air Contaminants

The determination of significance shall be made on a case-by-case basis, considering the following factors:

- The regulatory framework for the toxic material(s) and process(es) involved;
- The proximity of the toxic air contaminants to sensitive receptors;
- The quantity, volume and toxicity of the contaminants expected to be emitted;
- The likelihood and potential level of exposure; and
- The degree to which project design will reduce the risk of exposure.

(2) SCAQMD's CEQA Air Quality Handbook

To assist in answering the Appendix G Threshold questions and thresholds provided by SCAQMD, the City of Los Angeles utilizes SCAQMD's CEQA Air Quality Handbook and the thresholds of significance below as the guidance documents for the environmental review of development proposals within the Air Basin. Table IV.B-4 on page IV.B-33 shows the currently recommended supplemental thresholds by the SCAQMD in the CEQA Air Quality Handbook, which is intended to translate the CEQA Guidelines thresholds into numerical values or performance standards.

(a) Construction

Based on the criteria set forth in the SCAQMD's *CEQA Air Quality Handbook*,²⁹ the Project may have a significant impact with regard to construction emissions if any of the following would occur:

- Regional emissions from both direct and indirect sources would exceed any of the following SCAQMD prescribed threshold levels identified in Table IV.B-4.

²⁹ SCAQMD, *CEQA Air Quality Handbook*, 1993.

**Table IV.B-4
SCAQMD Air Quality Significance Thresholds**

Mass Daily Thresholds ^a		
Pollutant	Construction ^b	Operation ^c
NO _x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM ₁₀	150 lbs/day	150 lbs/day
PM _{2.5}	55 lbs/day	55 lbs/day
SO _x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs) and Odor Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality Standards for Criteria Pollutants		
NO₂ 1-hour average Annual Arithmetic Mean	SCAQMD is in attainment; project is significant if It causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
PM₁₀ 24-hour average Annual Average	10.4 µg/m3 (construction) ^e & 2.5 µg/m3 (operation) 1.0 µg/m3	
PM_{2.5} 24-hour average	10.4 µg/m3 (construction) ^e & 2.5 µg/m3 (operation)	
SO₂ 1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal—99th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	25 µg/m3 (state)	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
Lead 30-day average Rolling 3-month average	1.5 µg/m3 (state) 0.15 µg/m3 (federal)	
<hr/>		
<i>lbs/day = pounds per day</i>		
^a SCAQMD CEQA Handbook (SCAQMD, 1993)		
^b Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).		
^c For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.		
Source: South Coast Air Quality Management District, 2015 (see www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf).		

- Maximum on-site daily localized emissions exceed the Localized Significance Thresholds (LST), resulting in predicted ambient concentrations in the vicinity of the Project Site greater than the most stringent ambient air quality standards for CO (20 ppm [23,000 $\mu\text{g}/\text{m}^3$] over a 1-hour period or 9.0 ppm [10,350 $\mu\text{g}/\text{m}^3$] averaged over an 8-hour period) and NO₂ (0.18 ppm [339 $\mu\text{g}/\text{m}^3$] over a 1-hour period, 0.1 ppm [188 $\mu\text{g}/\text{m}^3$] over a three-year average of the 98th percentile of the daily maximum 1-hour average, or 0.03 ppm [57 $\mu\text{g}/\text{m}^3$] averaged over an annual period).
- Maximum on-site localized PM₁₀ or PM_{2.5} emissions during construction exceed the applicable LSTs, resulting in predicted ambient concentrations in the vicinity of the Project Site to exceed the incremental 24-hour threshold of 10.4 $\mu\text{g}/\text{m}^3$ or 1.0 $\mu\text{g}/\text{m}^3$ PM₁₀ averaged over an annual period.

(b) Operation

Based on the criteria set forth in the SCAQMD's *CEQA Air Quality Handbook*,³⁰ the Project may have a significant impact with regard to operational emissions if any of the following would occur:

- Regional emissions from both direct and indirect sources would exceed any of the SCAQMD prescribed threshold levels identified in Table IV.B-4 on page IV.B-33.
- Maximum on-site daily localized emissions exceed the Localized Significance Thresholds (LST), resulting in predicted ambient concentrations in the vicinity of the Project Site greater than the most stringent ambient air quality standards for CO (20 parts per million (ppm) over a 1-hour period or 9.0 ppm averaged over an 8-hour period) and NO₂ (0.18 ppm over a 1-hour period, 0.1 ppm over a 3-year average of the 98th percentile of the daily maximum 1-hour average, or 0.03 ppm averaged over an annual period).³¹
- Maximum on-site localized operational PM₁₀ and PM_{2.5} emissions exceed the incremental 24-hour threshold of 2.5 $\mu\text{g}/\text{m}^3$ or 1.0 $\mu\text{g}/\text{m}^3$ PM₁₀ averaged over an annual period.³²
- The Project causes or contributes to an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9.0 ppm, respectively; or

³⁰ SCAQMD, *CEQA Air Quality Handbook*, 1993.

³¹ SCAQMD, *LST Methodology*.

³² SCAQMD, *Final—Methodology to Calculate Particulate Matter (PM) 2.5 and PM_{2.5} Significance Thresholds*, October 2006.

- The Project creates an odor nuisance pursuant to SCAQMD Rule 402 (i.e., objectionable odor at the nearest sensitive receptor).

(c) *Toxic Air Contaminants*

Based on the criteria set forth in the SCAQMD's *CEQA Air Quality Handbook*, the Project may have a significant toxic air contaminant impact, if:³³

- The Project emits carcinogenic or toxic air contaminants that exceed the maximum incremental cancer risk as provided in Table IV.B-4 on page IV.B-33.

(d) *Consistency with Applicable Air Quality Plans*

Section 15125 of the State CEQA Guidelines requires an analysis of project consistency with applicable governmental plans and policies. In accordance with the SCAQMD's *CEQA Air Quality Handbook*,³⁴ the following criteria were used to evaluate the Project's consistency with SCAQMD and SCAG regional plans and policies, including the AQMP:

- Criterion 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?
- Criterion 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 control measures?

³³ SCAQMD, *CEQA Air Quality Handbook*, Chapter 6 (Determining the Air Quality Significance of a project) and Chapter 10 (Assessing Toxic Air Pollutants), April 1993.

³⁴ SCAQMD, *CEQA Air Quality Handbook*, April 1993, p. 12-3.

The Project's impacts with respect to these criteria are discussed to assess the consistency with the SCAQMD's AQMP and SCAG regional plans and policies. In addition, the Project's consistency with the City of Los Angeles General Plan Air Quality Element is discussed.

b. Methodology

This analysis focuses on the potential change in the air quality environment due to implementation of the Project. Air pollutant emissions would result from both construction and operation of the Project. Specific methodologies used to evaluate these emissions are discussed below.

(1) Construction

(a) Regional Emissions

Daily regional emissions during construction were forecasted based on the proposed construction schedule and applying the mobile-source and fugitive dust emissions factors derived from the SCAQMD recommended California Emissions Estimator Model (CalEEMod). Details of the modeling assumptions and emission factors are provided in Appendix B of this Draft EIR. The calculations of the emissions generated during construction activities reflect the types and quantities of construction equipment that would be used to remove the existing pavement and structures, grade and excavate the Project Site, construct the proposed building and related improvements, and plant new landscaping within the Project Site. Construction tasks were aggregated to reflect overlapping tasks and identify the maximum construction emissions occurring over the course of Project construction.

(b) Localized Emissions

The localized effects from the on-site portion of daily emissions were evaluated at sensitive receptor locations potentially impacted by the Project according to the SCAQMD's localized significance thresholds (LST) methodology, which uses on-site mass emissions rate look-up tables and Project-specific modeling, where appropriate.³⁵ SCAQMD provides LSTs applicable to the following criteria pollutants: NO_x, CO, PM₁₀, and PM_{2.5}. SCAQMD does not provide an LST for SO₂ since land use development projects typically result in negligible construction and long-term operation emissions of this pollutant. Since VOCs are not a criteria pollutant, there is no ambient standard or SCAQMD LST for VOCs. Due

³⁵ SCAQMD, *LST Methodology Appendix C-Mass Rate LST Look-Up Table*, October 2009.

to the role VOCs play in O₃ formation, it is classified as a precursor pollutant, and only a regional emissions threshold has been established.

LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor. The mass rate look-up tables were developed for each source receptor area and can be used to determine whether or not a project may generate significant adverse localized air quality impacts. SCAQMD provides LST mass rate look-up tables for projects with active construction areas that are less than or equal to 5 acres. For projects that exceed 5 acres, the 5-acre LST look-up values can be used as a screening tool to determine which pollutants require detailed analysis.³⁶ This approach is conservative as it assumes that all on-site emissions would occur within a 5-acre area and would over predict potential localized impacts (i.e., more pollutant emissions occurring within a smaller area and within closer proximity to potential sensitive receptors). If the project exceeds the LST look-up values, then the SCAQMD recommends that project specific air quality modeling be performed.

(2) Operation

(a) Regional Emissions

Analysis of the Project's likely impact on regional air quality during long-term Project operations (i.e., after construction is complete) takes into consideration four types of sources: (1) area; (2) energy; (3) mobile; and (4) stationary. Area source emissions are generated by, among other things, landscape equipment, fireplaces, and the use of consumer products. Energy source emissions are generated as a result of activities in buildings for which natural gas is used (e.g., natural gas for heat or cooking). Mobile source emissions are generated by the increase in motor vehicle trips to and from the Project Site associated with operation of the Project. Stationary source emissions are generated from proposed emergency generators during routine maintenance/testing.

Similar to construction, SCAQMD's CalEEMod software was used for the evaluation of Project emissions during operation. CalEEMod was used to calculate on-road fugitive dust, architectural coatings, landscape equipment, energy use, mobile source, and stationary source emissions. To determine if a significant air quality impact would occur,

³⁶ Telephone Conversation, Ian MacMillan, SCAQMD CEQA Program Supervisor, November 10, 2011.

the net increase in regional operational emissions generated by the Project was compared against the SCAQMD's significance thresholds.³⁷

(b) Localized Emissions

(i) On-Site Emissions

Localized impacts from Project operations include calculation of on-site emissions (e.g., combustion from natural gas usage) using SCAQMD's recommended CalEEMod and evaluation of these emissions consistent with the SCAQMD's LST methodology.

(ii) Off-Site Emissions

Potential localized CO concentrations from induced traffic at nearby intersections are addressed consistent with the methodologies and assumptions used in the consistency analysis provided in the 2003 AQMP (discussed below).

It has long been recognized that CO exceedances are caused by vehicular emissions,³⁸ primarily when idling at intersections.^{39,40} Accordingly, vehicle emissions standards have become increasingly more stringent. Before the first vehicle emission regulations, cars in the 1950s were typically emitting about 87 grams of CO per mile.⁴¹

Since the first regulation of CO emissions from vehicles (model year 1966) in California, vehicle emissions standards for CO applicable to light duty vehicles have decreased by 96 percent for automobiles,^{42,43} and new cold weather CO standards have been implemented, effective for the 1996 model year.⁴⁴ Currently, the CO standard in California is a maximum of 3.4 grams/mile for passenger cars (with provisions for certain

³⁷ SCAQMD, *SCAQMD Air Quality Significance Thresholds*, revised March 2015. SCAQMD based these thresholds, in part, on the federal Clean Air Act and, to enable defining "significant" for CEQA purposes, defined the setting as the South Coast Air Basin. (See SCAQMD, *CEQA Air Quality Handbook*, April 1993, pp. 6-1-6-2.).

³⁸ USEPA, *Air Quality Criteria for Carbon Monoxide*, 2000, EPA 600/P-099/001F.

³⁹ SCAQMD, *CEQA Air Quality Handbook*, 1993, Section 4.5.

⁴⁰ SCAQMD, *Air Quality Management Plan*, 2003.

⁴¹ USEPA, *Milestone in Auto Emissions Control*, August 1994.

⁴² National Academy Board on Energy and Environmental Systems, *Review of the 21st Century Truck Partnership*, 2008, Appendix D: Vehicle Emission Regulations [excerpt from http://books.nap.edu/openbook.php?record_id=12258&page=107].

⁴³ Kavanagh, Jason, *Untangling U.S. Vehicle Emissions Regulations*, 2008.

⁴⁴ Title 13, *California Code of Regulations*, Section 1960.1(f)(2) [for 50,000 mile half-life].

cars to emit even less).⁴⁵ With the turnover of older vehicles, introduction of cleaner fuels and implementation of control technology on industrial facilities, CO concentrations in the Air Basin have steadily declined.

The analysis prepared for CO attainment in the Air Basin by the SCAQMD can be used to assist in evaluating the potential for CO exceedances in the Air Basin. CO attainment was thoroughly analyzed as part of the 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan).⁴⁶ As discussed in the 1992 CO Plan, peak carbon monoxide concentrations in the Air Basin are due to unusual meteorological and topographical conditions, and not due to the impact of particular intersections. Considering the region's unique meteorological conditions and the increasingly stringent CO emissions standards, CO modeling was performed as part of the 1992 CO Plan and subsequent plan updates and air quality management plans.

In the 1992 CO Plan, a CO hot spot analysis was conducted for four busy intersections in the Los Angeles area at the peak morning and afternoon time periods. The intersections evaluated included: Long Beach Boulevard and Imperial Highway (Lynwood); Wilshire Boulevard and Veteran Avenue (Westwood); Sunset Boulevard and Highland Avenue (Hollywood); and La Cienega Boulevard and Century Boulevard (Inglewood). These analyses did not predict a violation of CO standards. The busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which had a daily traffic volume of approximately 100,000 vehicles per day. The 2003 AQMP estimated that the 1-hour concentration for this intersection was 4.6 ppm, which indicates that the most stringent 1-hour CO standard (20.0 ppm) would likely not be exceeded until the daily traffic at the intersection exceeded more than 400,000 vehicles per day.⁴⁷ The Los Angeles County Metropolitan Transportation Authority evaluated the level of service (LOS) in the vicinity of the Wilshire Boulevard/Veteran Avenue intersection and found it to be Level E at peak morning traffic and Level F at peak afternoon traffic.⁴⁸ If a project intersection does not exceed 400,000 vehicles per day, then the project does not need to prepare a detailed CO hot spot analysis using California LINE Source Dispersion Model, version 4 (CALINE4), which is a model used to assess air quality impacts near transportation facilities (i.e., roadways, intersections, street canyons, and parking facilities).

⁴⁵ CARB, *California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-duty Trucks, and Medium-duty Vehicles*, amended September 27, 2010.

⁴⁶ SCAQMD, *Federal Attainment Plan for Carbon Monoxide*, 1992.

⁴⁷ Based on the ratio of the CO standard (20.0 ppm) and the modeled value (4.6 ppm).

⁴⁸ Metropolitan Transportation Authority, *Congestion Management Program for Los Angeles County, 2004*, Exhibit 2-6 and Appendix A.

(3) Toxic Air Contaminants Impacts (Construction and Operations)

Potential TAC impacts are evaluated by conducting a qualitative analysis consistent with the CARB Handbook followed by a more detailed analysis (i.e., dispersion modeling), as necessary. The qualitative analysis consists of reviewing the Project to identify any new or modified TAC emissions sources. If the qualitative evaluation does not rule out significant impacts from a new source, or modification of an existing TAC emissions source, a more detailed analysis is conducted. For the detailed analysis, downwind sensitive receptor locations are identified, and site-specific dispersion modeling is conducted to estimate Project impacts.

c. Analysis of Project Impacts

(1) Project Design Features

The following Project Design Feature is proposed with regard to air quality:

Project Design Feature AIR-PDF-1: During plan check, the Project representative shall make available to the lead agency and the South Coast Air Quality Management District a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of construction for the Project. The inventory shall include the horsepower rating, engine production year, and certification of the specified Tier standard. A copy of each unit's certified tier specification, Best Available Control Technology documentation, and California Air Resources Board or Air Quality Management District operating permit shall be available onsite at the time of mobilization of each applicable unit of equipment to allow the Construction Monitor to compare the on-site equipment with the inventory and certified Tier specification and operating permit. Off-road diesel-powered equipment within the construction inventory list described above shall meet the Tier 3 standards.

The Project would also incorporate project design features to support and promote environmental sustainability as discussed under Section IV.D, Greenhouse Gas Emissions, of this Draft EIR. While these features are designed primarily to reduce greenhouse gas emissions, they would also serve to reduce criteria air pollutants discussed herein.

(2) Project Impacts

Threshold (a): Would the Project conflict with or obstruct implementation of the applicable air quality plan?

(a) SCAQMD CEQA Air Quality Handbook Policy Analysis

The following analysis addresses the Project's consistency with applicable SCAQMD and SCAG policies, inclusive of regulatory compliance and the project design features discussed above and in Section IV.D, Greenhouse Gas Emissions, of this Draft EIR. In accordance with the procedures established in the SCAQMD's *CEQA Air Quality Handbook*, the following criteria are required to be addressed in order to determine the Project's consistency with applicable SCAQMD and SCAG policies:

- Would the project result in any of the following:
 - An increase in the frequency or severity of existing air quality violations; or
 - 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.
- Would 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 control measures?

(i) Criterion 1

With respect to the first criterion, as discussed under the analysis for Threshold (d) below, localized concentrations of NO₂ as NO_x, CO, PM₁₀, and PM_{2.5} have been analyzed for the Project. SO₂ emissions would be negligible during construction and long-term operations, and, therefore, would not have the potential to cause or affect a violation of the SO₂ ambient air quality standard. Since VOCs are not a criteria pollutant, there is no ambient standard or localized threshold for VOCs. Due to the role VOCs play in O₃ formation, it is classified as a precursor pollutant and only a regional emissions threshold has been established.

Particulate matter is the primary pollutant of concern during construction activities, and therefore, the Project's PM₁₀ and PM_{2.5} emissions during construction were analyzed:

(1) to ascertain potential effects on localized concentrations; and (2) to determine if there is a potential for such emissions to cause or affect a violation of the ambient air quality standards for PM₁₀ and PM_{2.5}. As shown in Table IV.B-7 on page IV.B-55, **the increases in PM₁₀ and PM_{2.5} emissions during construction would not exceed the SCAQMD-recommended significance thresholds at sensitive receptors in proximity to the Project Site.**

Additionally, the Project's maximum potential NO_x and CO daily emissions during construction were analyzed to ascertain potential effects on localized concentrations and to determine if there is a potential for such emissions to cause or affect a violation of an applicable ambient air quality standard. As shown in Table IV.B-7, NO_x and CO would not exceed the SCAQMD-recommended localized significance threshold. **Therefore, Project construction would not result in a significant impact with regard to localized air quality.**

Because the Project would not introduce any substantial stationary sources of emissions, CO is the preferred benchmark pollutant for assessing local area air quality impacts from post-construction motor vehicle operations.⁴⁹ As indicated below, under the analysis for Threshold (d), no intersections would require a CO hotspot analysis, and impacts would be less than significant. **Therefore, the Project would not increase the frequency or severity of an existing CO violation or cause or contribute to new CO violations.**

As discussed above, an analysis of potential localized operational impacts from on-site activities was conducted. As shown in Table IV.B-8 on page IV.B-56, localized NO₂ as NO_x, CO, PM₁₀, and PM_{2.5} operational impacts would be less than significant. **Therefore, the Project would not increase the frequency or severity of an existing violation or cause or contribute to new violations for these pollutants. As the Project would not exceed any of the state and federal standards, the Project would also not delay timely attainment of air quality standards or interim emission reductions specified in the AQMP.**

(ii) Criterion 2

With respect to the second criterion for determining consistency with SCAQMD and SCAG air quality policies, the projections in the AQMP for achieving air quality goals are based on assumptions in SCAG's 2016–2040 RTP/SCS regarding population, housing, and growth trends. Thus, the SCAQMD's second criterion for determining project

⁴⁹ SCAQMD, *CEQA Air Quality Handbook*, Chapter 12, *Assessing Consistency with Applicable Regional Plans*, 1993.

consistency focuses on whether or not the Project exceeds the assumptions utilized in preparing the forecasts presented in the AQMP. Determining whether or not a project exceeds the assumptions reflected in the AQMP involves the evaluation of three criteria: (1) consistency with applicable population, housing, and employment growth projections; (2) Project mitigation measures; and (3) appropriate incorporation of AQMP control measures. The following discussion provides an analysis with respect to each of these three criteria.

- Is the project consistent with the population, housing, and employment growth projections upon which AQMP forecasted emission levels are based?

A project is consistent with the AQMP, in part, if it is consistent with the population, housing, and employment assumptions that were used in the development of the AQMP. In the case of the 2016 AQMP, two sources of data form the basis for the projections of air pollutant emissions: the City of Los Angeles General Plan and SCAG's 2016–2040 RTP/SCS.

As described in Section IV.G, Land Use, of this Draft EIR, the General Plan of the City of Los Angeles serves as a comprehensive, long-term plan for future development of the City. In April 2016, SCAG adopted the 2016–2040 RTP/SCS, which is included in the 2016 AQMP. The 2016–2040 RTP/SCS provides socioeconomic forecast projections of regional population growth. The population, housing, and employment forecasts, which are adopted by SCAG's Regional Council, are based on the local plans and policies applicable to the specific area; these are used by SCAG in all phases of implementation and review.

According to the 2016–2040 RTP/SCS, the forecasted population for the City of Los Angeles Subregion in 2016 is approximately 3,954,629 persons.⁵⁰ In 2023 the projected occupancy year of the Project, the City of Los Angeles Subregion is anticipated to have a population of approximately 4,145,604 persons.⁵¹ Based on a household size factor of 2.43 persons per household for multi-family housing units, the Project is estimated to generate a residential population of 1,599 persons at full buildout.^{52,53} The estimated

⁵⁰ Based on a linear interpolation of 2012–2040 data. The 2016 extrapolated value is calculated using SCAG's 2012 and 2040 values to find the average increase between years and then applying that annual increase to 2016: $((4,609,400 - 3,845,500) \div 28) * 4 + 3,845,500 = 3,954,629$.

⁵¹ Based on a linear interpolation of 2012–2040 data. The 2023 extrapolated value is calculated using SCAG's 2012 and 2040 values to find the average increase between years and then applying that annual increase to 2023 $((4,609,400 - 3,845,500) \div 28) * 11 + 3,845,500 = 4,145,604$.

⁵² Based on a 2.43 persons per household rate for multi-family units based on the 2016 American Community Survey 5-Year Average Estimate (2012–2016) per correspondence with Jack Tsao, Los Angeles Department of City Planning Demographics Unit, March 8, 2018. The Initial Study prepared for the Project and included as Appendix A of this Draft EIR used a rate of 2.44 persons per unit based on a (Footnote continued on next page)

1,599 residents generated by the Project would represent approximately 0.84 percent of the population growth forecasted by SCAG in the City of Los Angeles Subregion between 2016 and 2023. With regard to employment, the Project's 27,300 square feet of commercial uses would generate approximately 74 employees, based on employee generation rates promulgated by the Los Angeles Unified School District.⁵⁴ According to the 2016–2040 RTP/SCS, the employment forecast for the City of Los Angeles Subregion in 2016 is approximately 1,763,929 employees.⁵⁵ In 2023, the projected occupancy year of the Project, the City of Los Angeles Subregion is anticipated to have approximately 1,882,104 employees.⁵⁶ Thus, the Project's 74 estimated employees would constitute approximately 0.06 percent of the employment growth forecasted between 2016 and 2023.

Although the Project would result in construction emissions in excess of SCAQMD's regional significance thresholds, the Project would be consistent with both the growth projections in the AQMP and 2016–2040 RTP/SCS, meaning the AQMP and 2016–2040 RTP/SCS took into account development such as the Project in its modeling and analysis, and the 2016–2040 RTP/SCS vehicle trip and VMT reduction goals and policies. Since these growth assumptions are built into the 2016 Final AQMP attainment demonstration of national and state standards,⁵⁷ it is also expected that the Project would not delay the attainment of national and state standards. SCAQMD guidance provides that projects whose growth is included in the projections used in the formulation of the AQMP are considered to be consistent with the AQMP and not to interfere with its attainment, even if a project results in emissions of air pollutants that exceed applicable significance thresholds.⁵⁸ **Because similar projections form the basis of the 2016 AQMP, it can be concluded that the Project would be consistent with the projections in the AQMP.**

average household size for 2010-2014 in the 2015 American Community Survey. The Department of City Planning subsequently confirmed the 2.43 average was the factor to be used.

⁵³ $658 * 2.43 = \sim 1,599$ persons

⁵⁴ *Los Angeles Unified School District, 2012 Developer Fee Justification Study, February 9, 2012, Table 11. Based on the employee generation rate of 0.00271 employee per average square foot for "Neighborhood Shopping Center" (retail and restaurant uses).*

⁵⁵ *Based on a linear interpolation of 2012–2040 data. The 2016 extrapolated value is calculated using SCAG's 2012 and 2040 values to find the average increase between years and then applying that annual increase to 2016: $((2,169,100 - 1,696,400) \div 28) * 4 + 1,696,400 = 1,736,929$.*

⁵⁶ *Based on a linear interpolation of 2012–2040 data. The 2023 extrapolated value is calculated using SCAG's 2012 and 2040 values to find the average increase between years and then applying that annual increase to 2023: $((2,169,100 - 1,696,400) \div 28) * 11 + 1,696,400 = 1,882,104$.*

⁵⁷ *SCAQMD, NAAQS/CAAQS and Attainment Status for South Coast Air Basin, 2016, www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=2. Accessed November 2018.*

⁵⁸ *SCAQMD, CEQA Air Quality Handbook, p. 12-1.*

- Does the project implement feasible air quality mitigation measures?

The Project would comply with all applicable regulatory standards (e.g., SCAQMD Rule 403, etc.) as required by the SCAQMD, as summarized above. The Project also would incorporate project design features to support and promote environmental sustainability as discussed in Section IV.C, Greenhouse Gas Emissions, of this Draft EIR as well and Project Design Feature AIR-PDF-1. In addition, implementation of feasible mitigation measures would reduce air quality impacts. As discussed further below in Section 5, Mitigation Measures, the Project would incorporate Mitigation Measures AIR-MM-1 through AIR-MM-3, which include requirements to properly tune and maintain construction equipment and discontinuing construction activities during second-stage smog alerts, among others. **As such, the Project meets this AQMP consistency criterion since feasible mitigation measures, which would reduce air quality impacts, would be implemented.**

- To what extent is project development consistent with the control measures set forth in the AQMP?

With regard to land use developments, such as the Project, air quality policies focus on the reduction of vehicle trips and vehicle miles traveled (VMT). As discussed in detail in Section IV.D, Greenhouse Gas Emissions, of the Draft EIR, the 2016–2040 RTP/SCS includes, for the SCAG region as a whole, a daily 22.8 Total VMT per capita for the 2012 Base Year, and a daily 20.5 Total VMT per capita for the 2040 Plan Year. For Los Angeles County, the 2012 Base Year projected daily Total VMT per capita is 21.5 and 18.4 daily Total VMT per capita for the 2040 Plan Year. To analyze the Project's consistency with this aspect of the 2016–2040 RTP/SCS, the Project's Total Daily VMT was divided by the Project's service population to arrive at the Daily VMT per capita. As shown in Table IV.D-7 on page IV.D-70 of Section IV.D, Greenhouse Gas Emissions, of this Draft EIR, the Project results in 6.1 Daily VMT per capita and is less than the Los Angeles County goals provided in the 2016–2040 RTP/SCS.

The Project represents an infill development within an existing urbanized area that would concentrate new residential and commercial retail uses within a HQTa. Therefore, the Project would be consistent with SCAG's 2016–2040 RTP/SCS, as it is located within a HQTa. The Project would be designed and constructed with sustainability and transit orientation as guiding principles. The Project is based on principles of smart growth and environmental sustainability, as evidenced in its mixed-use nature, the accessibility of public transit, and the availability of existing infrastructure to service the proposed uses. In addition, the Project would provide approximately 724 bicycle parking spaces (658 long-term spaces and 66 short-term spaces) for the proposed residential uses and approximately 28 bicycle parking spaces to support the retail uses, which would encourage biking to the Project Site. Furthermore, with the various commercial businesses adjacent

to residential neighborhoods of the Palms–Mar Vista–Del Rey community, the walkability of the study area is approximately 81 points out of 100 points, which is considered very walkable.⁵⁹ The Project would also incorporate project design features to support and promote environmental sustainability as discussed under Section IV.D, Greenhouse Gas Emissions, of this Draft EIR. Specifically, the Project would implement project design features to provide at least 20 percent of the total code-required parking spaces to be capable of supporting future electric vehicle supply equipment (EVSE) (Project Design Feature GHG-PDF-3) and at least 5 percent of the total code-required parking spaces to be equipped with EV charging stations (Project Design Feature GHG-PDF-4).

As discussed under Section IV.D, Greenhouse Gas Emissions, of this Draft EIR, the Project design includes characteristics that would reduce trips and VMT as compared to a standard project within the air basin as measured by the air quality model (CalEEMod). While these Project characteristics primarily reduce greenhouse gas emissions, they would also reduce criteria air pollutants discussed herein. These relative reductions in vehicle trips and VMT compared to a standard project within the air basin help quantify the criteria air pollutant emissions reductions achieved by locating the Project in an infill area that promotes alternative modes of transportation. Specifically, the Project characteristics listed below are consistent with the California Air Pollution Control Officers Association (CAPCOA) guidance document, *Quantifying Greenhouse Gas Mitigation Measures*,⁶⁰ which identifies the VMT and vehicle trips reductions for the Project Site relative to the standard trip and VMT rates in CalEEMod, which corresponds to reduction relative criteria pollutant emissions. Measures applicable to the Project include the following:

- **CAPCOA Measure LUT-1—Increase Density:** Increased density, measured in terms of persons, jobs, or dwelling units per unit area, reduces 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. The Project would increase the site density from zero dwelling units per acre and 45 jobs per acre to approximately 109 dwelling units per acre and 12 jobs per acre.
- **CAPCOA Measure LUT-3—Increase Diversity of Urban and Suburban Developments (Mixed-Uses):** The Project would introduce new uses on the Project Site, including new residential uses. The Project would co-locate complementary residential, retail, and restaurant land uses in proximity to other existing off-site residential and commercial uses. The increases in land use

⁵⁹ *WalkScore.com (www.walkscore.com) rates the Project Site with a score of 81 of 100 possible points (scores accessed on May 17, 2017). Walk Score calculates the walkability of specific addresses by taking into account the ease of living in the neighborhood with a reduced reliance on automobile travel.*

⁶⁰ *CAPCOA, Quantifying Greenhouse Gas Mitigation Measures, 2010.*

diversity and mix of uses on the Project Site would reduce vehicle trips and VMT by encouraging walking and non-automotive forms of transportation, which would result in corresponding reductions in transportation-related emissions.

- **CAPCOA Measure LUT-5—Increase Transit Accessibility:** The Project would be located approximately 0.25 mile from the several Metro, LADOT Transit Commuter Express, Culver CityBus, and City of Santa Monica Big Blue Bus routes. The Project would also provide adequate bicycle parking spaces for residential and commercial uses to encourage utilization of alternative modes of transportation.
- **CAPCOA Measure LUT-9—Improve Design of Development:** The Project would include improved design elements including developing ground floor retail and restaurant uses and paved plazas with seating, landscaped paseos, and landscaped open space which would enhance walkability in the vicinity of the Project Site. The Project would also locate a development in an area with approximately 107 intersections per square mile which improves street accessibility and connectivity.
- **CAPCOA Measure SDT-1—Provide Pedestrian Network Improvements:** Providing pedestrian access that minimizes barriers and links the Project Site with existing or planned external streets encourages people to walk instead of drive. The Project would provide an internal pedestrian network that links to the existing off-site pedestrian network including existing off-site sidewalks, to encourage and increase pedestrian activities in the area, which would further reduce VMT and associated transportation-related emissions.

The Project results in a VMT reduction of approximately 60 percent (see Appendix B of this Draft EIR) compared to a Project without Reduction Features. This reduction in VMT is substantially better than the goals of the 2016–2040 RTP/SCS with an estimated 18-percent decrease in per capita GHG emissions from passenger vehicles by 2035 and 21-percent decrease in per capita GHG emissions from passenger vehicles by 2040.⁶¹ Implementation of these features would contribute to a reduction in air quality emissions via a reduction in VMT. Accordingly, as the Project would support SCAG's and SCAQMD's objectives of reducing VMT and the related vehicular air emissions, the Project would be consistent with the 2016-204 RTP/SCS (control measures of the AQMP).

In conclusion, the determination of AQMP consistency is primarily concerned with the long-term influence of the Project on air quality in the Air Basin. The Project represents

⁶¹ CARB updated the SB 375 targets for the SCAG region, requiring a 19-percent decrease in VMT by 2035. Implementation of the 2016 RTP/SCS or the next plan is expected to fulfill and exceed the region's obligations under SB 375 with respect to meeting the State's VMT and related GHG emission reduction goals.

an infill development within an existing urbanized area that would concentrate new residential and commercial retail uses within an HQTAs, thus reducing VMT. The Project would not have a significant long-term impact on the region's ability to meet state and federal air quality standards. The Project would comply with SCAQMD Rule 403 and would implement measures for control of NO_x. Also, the Project would be consistent with the goals and policies of the AQMP for the control of fugitive dust. As discussed above, the Project's would be consistent with the goals and policies of the AQMP and, therefore, is considered consistent with SCAQMD's AQMP.

(b) City of Los Angeles Policies

As discussed above, the Air Quality Element of the City's General Plan was adopted on November 24, 1992, and sets forth the goals, objectives, and policies, which guide the City in the implementation of its air quality improvement programs and strategies. The Air Quality Element acknowledges the interrelationships among transportation and land use planning in meeting the City's mobility and air quality goals.

To achieve these goals, performance-based standards have been adopted to provide flexibility in implementation of the policies and objectives of the Air Quality Element. The following Air Quality Element goals, objectives, and policies are relevant to the Project:

Goal 4—Minimize impacts of existing land use patterns and future land use development on air quality by addressing the relationship between land use, transportation, and air quality.

Objective 4.1—It is the objective of the City of Los Angeles to include regional attainment of ambient air quality standards as a primary consideration in land use planning.

Policy 4.1.1—Coordinate with all appropriate regional agencies in the implementation of strategies for the integration of land use, transportation, and air quality policies.

Objective 4.2—It is the objective of the City of Los Angeles to reduce vehicle trips and vehicle miles traveled associated with land use patterns.

Policy 4.2.2—Improve accessibility for the City's residents to places of employment, shopping centers, and other establishments.

Policy 4.2.3—Ensure that new development is compatible with pedestrians, bicycles, transit, and alternative fuel vehicles.

Policy 4.2.4—Require that air quality impacts be a consideration in the review and approval of all discretionary projects.

Policy 4.2.5—Emphasize trip reduction, alternative transit and congestion management measures for discretionary projects.

The Project would promote these goals, objectives, and policies. In particular, the Project includes approximately 724 bicycle parking spaces (658 long-term spaces and 66 short-term spaces) and approximately 28 bicycle parking spaces would be provided to support the retail uses. In addition, with the various commercial businesses adjacent to residential neighborhoods of the Palms–Mar Vista–Del Rey community, the walkability of the study area is approximately 81 points out of 100 points, which is considered very walkable. The Project is also located in an area well-served by public transit provided by Los Angeles County Metropolitan Transit Authority, Los Angeles Department of Transportation Transit Commuter Express, Culver City Bus, and City of Santa Monica Big Blue Bus. Specifically, the Project Site is currently served by a total of 12 bus routes. As such, the Project would provide opportunities for the use of alternative modes of transportation, including convenient access to public transit and opportunities for walking and biking, thereby facilitating a reduction in VMT. Furthermore, the Project includes neighborhood-serving commercial uses, including retail and restaurant uses that would primarily serve Project residents, thereby reducing VMT that would otherwise be required to travel to similar retail uses elsewhere in the community. Additionally, the Project would be consistent with the existing land use pattern in the vicinity that concentrates urban density along major arterials and near transit options. The Project also includes entrances for pedestrians and bicyclists that would be safe, easily accessible, and a short distance from transit stops.

Based on the above, the Project would serve to implement applicable policies of the City of Los Angeles pertaining to air quality. Specifically, development of the Project would include implementation of certain features that would serve to reduce vehicular trips, reduce VMT, and encourage use of alternative modes of transportation.

Refer to Section IV.G, Land Use, of this Draft EIR, for an analysis of the Project's consistency with the City's General Plan. As concluded therein, the Project would serve to implement applicable policies of the City of Los Angeles pertaining to air quality. Specifically, development of the Project would include implementation of certain features that would serve to reduce vehicular trips, reduce VMT, and encourage use of alternative modes of transportation.

(c) Conclusion

In conclusion, analysis of Threshold (a) was based on the Project's consistency with the AQMP as well as the City of Los Angeles policies. With regard to AQMP consistency, which is primarily concerned with the long-term influence of the Project on air quality in the Air Basin, the Project would not increase the

frequency or severity of an existing violation or cause or contribute to new violations for these pollutants. As the Project would not exceed any of the state and federal standards, the Project would also not delay timely attainment of air quality standards or interim emission reductions specified in the AQMP. In addition, because the Project includes similar projections that form the basis of the 2016 AQMP, it can be concluded that the Project would be consistent with the projections in the AQMP. Furthermore, as the Project implements feasible air quality mitigation measures, which would reduce air quality impacts, the Project meets this AQMP consistency criterion. Additionally, as the Project would support the City's and SCAQMD's objectives of reducing VMT and the related vehicular air emissions, the Project would be consistent with AQMP control measures. Thus, the Project would not conflict with or obstruct implementation of the AQMP. With regard to the City policies, as discussed above, the Project would serve to implement applicable policies pertaining to air quality. Based on the above, impacts to Threshold (a) would be less than significant.

Threshold (b): Would the Project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

(a) Regional Emissions

(i) Construction

As described in Section II, Project Description, of this Draft EIR, construction of the Project is anticipated to occur in one phase and be completed in 2023. Construction of the Project, which would be approximately 37 months, would commence with removal of the existing buildings and the existing surface parking areas, followed by grading and excavation for the subterranean parking garages. Building foundations would then be laid, followed by building construction, paving/concrete installation, and landscape installation. It is estimated that approximately 220,000 cubic yards of soil would be hauled from the Project Site during the excavation phase. For additional construction assumptions, see Appendix B of this Draft EIR.

Construction of the Project has the potential to create air quality impacts through the use of heavy-duty construction equipment and through vehicle trips generated from construction workers traveling to and from the Project Site. In addition, fugitive dust emissions would result from demolition and construction activities. Mobile source emissions, primarily NO_x, would result from the use of construction equipment, such as dozers, loaders, and cranes. During the finishing phase of a building, paving and the application of architectural coatings (e.g., paints) would potentially release VOCs. The assessment of construction air quality impacts considers each of these potential sources. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions.

The emissions levels in Table IV.B-5 on page IV.B-52 represent the highest daily emissions projected to occur during each year of construction. As presented in Table IV.B-5, construction-related daily maximum regional construction emissions (i.e., combined on-site and off-site emissions) would not exceed the SCAQMD daily significance thresholds for VOC, CO, SO_x, PM₁₀ and PM_{2.5}. However, maximum construction emissions would exceed the SCAQMD daily NO_x significance threshold.⁶² **Therefore, regional construction emissions resulting from the Project would result in a significant short-term impact. Further, as discussed below in Section 5, Mitigation Measures, would not reduce impacts to a less than significant level. Therefore, impacts would remain significant and unavoidable after implementation of feasible mitigation.**

(ii) Operation

As discussed above, SCAQMD's CalEEMod was used to calculate regional area, energy, mobile source, and stationary emissions. The Project would incorporate project design features to support and promote environmental sustainability, as discussed in Section IV.D, Greenhouse Gas Emissions, of this Draft EIR. While these features are designed primarily to reduce greenhouse gas emissions, they would also serve to reduce criteria air pollutants discussed herein. Project design features incorporated in this analysis include the Project Site's accessibility to job centers and transit, increase in diversity of uses and density, and walkability. These project design features are explained further in Section IV.D, Greenhouse Gas Emissions, of this Draft EIR.

As shown in Table IV.B-6 on page IV.B-53, regional emissions resulting from operation of the Project would not exceed any of the SCAQMD's daily regional operational thresholds. **Therefore, regional operational emissions resulting from the Project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Air quality impacts from Project operational emissions would be less than significant.**

(b) Localized Emissions

As previously discussed, the SCAQMD recommends the evaluation of localized air quality impacts to sensitive receptors in the immediate vicinity of the Project Site as a result of Project construction and operations. The thresholds are based on applicable short-term state and federal ambient air quality standards.

⁶² Implementation of Project Design Feature B-1 is accounted for in Table IV.B-5 and results in a 14 percent reduction in regional NO_x emissions.

Table IV.B-5
Estimate of Regional Project Construction Emissions^a
(pounds per day)

Construction Year	VOC^b	NO_x	CO	SO_x	PM₁₀	PM_{2.5}
2020	8	162	141	<1	14	8
2021	8	156	140	<1	21	9
2022	23	90	116	<1	11	6
2023	22	61	80	<1	9	5
Maximum Construction Emissions	23	162	141	<1	21	9
SCAQMD Daily Significance Thresholds	75	100	550	150	150	55
Over/(Under)	(52)	62	(409)	(150)	(129)	(46)
Exceed Threshold?	No	Yes	No	No	No	No
<p><i>Numbers may not add up exactly due to rounding.</i></p> <p>^a The CalEEMod model printout sheets and/or calculation worksheets are presented in Appendix B (CalEEMod Output) of this document.</p> <p>^b Please note that the SCAQMD significance threshold is in terms of VOC while CalEEMod calculates reactive organic compounds (ROG) emissions. For purposes of this analysis, VOC and ROG are used interchangeably since ROG represents approximately 99.9 percent of VOC emissions.</p> <p>Source: Eyestone Environmental, 2019.</p>						

(i) Construction

Project-related localized construction impacts are evaluated based on SCAQMD LST methodology which takes into account ambient pollutant concentrations. Based on SCAQMD methodology, localized emissions which exceed LSTs would also cause an exceedance of ambient air quality standards. As analyzed in Threshold (d) below, Project-related construction emissions would not exceed localized thresholds. Therefore, localized construction emissions resulting from the Project would result in a less-than-significant air quality impact.

(ii) Operation

Project-related operational emissions were also evaluated based on SCAQMD LST methodology. While SCAQMD LST methodology evaluates emissions from on-site sources (e.g. water heaters, cooking appliances, HVAC), off-site sources such as Project-related vehicle trips were also evaluated for potential exceedances of ambient air quality standards. As analyzed in Threshold (d) below, Project-related operational emissions from on-site and off-site sources would not exceed localized thresholds. Therefore, localized operational emissions resulting from the Project would result in a less-than-significant air quality impact.

**Table IV.B-6
Project Regional Operational Emissions— At Project Buildout
(pounds per day)**

Emission Source	VOC	NO_x	CO	SO_x	PM₁₀	PM_{2.5}
Area	14	1	54	<1	<1	<1
Energy (Natural Gas)	<1	3	1	<1	<1	<1
Mobile	3	12	27	<1	7	2
Stationary	<1	<1	2	<1	<1	<1
Total Project Emissions	18	16	85	<1	7	2
SCAQMD Significance Threshold	55	55	550	150	150	55
Over/(Under)	(37)	(39)	(465)	(150)	(143)	(53)
Exceed Threshold?	No	No	No	No	No	No
<p><i>Numbers may not add up exactly due to rounding.</i> <i>Source: Eystone Environmental, 2019.</i></p>						

Based on the above, impacts to Threshold (b) would remain significant and unavoidable after implementation of feasible mitigation as the Project would exceed the SCAQMD daily significance threshold for NO_x.

Threshold (c): Would the Project result in 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

With respect to the Project's construction-related air quality emissions and cumulative Air Basin-wide conditions, the SCAQMD has developed strategies (e.g., SCAQMD Rule 403) to reduce criteria pollutant emissions outlined in the AQMP pursuant to federal CAA mandates. The Project would comply with regulatory requirements, including the SCAQMD Rule 403 requirements listed above. Per SCAQMD rules and mandates as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, all construction projects Air Basin-wide would comply with these same regulatory requirements (e.g., SCAQMD Rule 403 compliance), and would also implement all feasible mitigation measures when significant impacts are identified.

According to the SCAQMD, individual projects that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would cause a cumulatively considerable increase in emissions for those pollutants for which the Air Basin is in non-attainment. As shown in Table IV.B-5 on page IV.B-52, maximum construction emissions would exceed the SCAQMD daily NO_x. Consequently, the Project would have a

cumulative impact due to construction-related regional NO_x emissions. In terms of localized air quality impacts, construction of the Project would have a less-than-significant cumulative impact as impacts from NO_x, CO, PM₁₀ and PM_{2.5} emissions would be less than significant, as shown in Table IV.B-7 on page IV.B-55. With regard to operation, as shown in Table IV.B-6 on page IV.B-53, operational daily emissions at the Project Site would not exceed any of the SCAQMD's regional thresholds. In addition, operational emissions from the Project would not exceed any of the SCAQMD's localized significance thresholds at Project buildout as shown in Table IV.B-8 on page IV.B-56. Therefore, the Project's contribution to cumulative regional and localized emissions would not be cumulatively considerable for operation.

Based on the above, impacts to Threshold (c) would remain significant and unavoidable after implementation of feasible mitigation as the Project would exceed the SCAQMD daily significance threshold for NO_x.

Threshold (d): Would the Project expose sensitive receptors to substantial pollutant concentrations?

(a) Construction

(i) On-Site Construction Activities (Criteria Pollutants)

As discussed above in the methodology subsection, the localized construction air quality analysis was conducted using the methodology promulgated by the SCAQMD. Look-up tables provided by the SCAQMD were used to determine localized construction emissions thresholds for the Project.⁶³ LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard and are based on the most recent background ambient air quality monitoring data (2015–2017) for the Project area presented in Table IV.B-2 on page IV.B-25. Although the trend shown in Table IV.B-2 demonstrates that ambient air quality is improving in the area, the localized construction emissions analysis conservatively did not apply a reduction in background pollutant concentrations for subsequent years of construction (i.e., 2020–2023). By doing so, the allowable pollutant increment to not exceed an ambient air quality standard is more stringent. The analysis is based on existing background ambient air quality monitoring data (2015–2017).

Maximum on-site daily construction emissions for NO_x, CO, PM₁₀, and PM_{2.5} were calculated using CalEEMod and compared to the applicable SCAQMD LSTs for SRA 2

⁶³ SCAQMD, *LST Methodology Appendix C-Mass Rate LST Look-up Table*, revised October 2009.

**Table IV.B-7
Estimate of Localized Project Construction Emissions
(pounds per day)**

Construction Year	NO_x	CO	PM₁₀	PM_{2.5}
2020	107	119	5	5
2021	106	119	5	5
2022	83	99	5	5
2023	58	67	3	5
Maximum Daily Localized Emissions	107	119	5	5
SCAQMD Localized Significance Thresholds^a	121	1,531	13	6
Over/(Under)	(14)	(1,412)	(8)	(1)
Exceed Threshold?	No	No	No	No
<p><i>Numbers may not add up exactly due to rounding.</i></p> <p>^a <i>Potential localized construction impacts were evaluated using SCAQMD's LSTs for Source Receptor Area 2. Maximum active construction activities would occur on approximately 5 acres at a distance of approximately 25 meters from sensitive land uses (the shortest distance available for LSTs).</i></p> <p><i>Source: Eyestone Environmental, 2019.</i></p>				

based on a construction site of 5 acres.⁶⁴ Potential impacts were evaluated at the closest sensitive receptor, which are residential uses west of and directly adjacent to the Project Site. As stated on page 3-3 of the LST methodology, "[T]he closest receptor distance on the mass rate LST lookup tables is 25 meters. It is possible that a project may have receptors closer than 25 meters. Projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters."^{65,66} Based on this guidance, potential impacts at the residential uses were evaluated using the 25-meter mass rate LST lookup tables.⁶⁷

The maximum daily localized emissions from Project construction and LSTs are presented in Table IV.B-7 on page IV.B-55. As presented in Table IV.B-7, maximum localized construction emissions for offsite sensitive receptors would not exceed SCAQMD-recommended localized screening thresholds for NO_x, CO, PM₁₀ and PM_{2.5}.

⁶⁴ As discussed above, for projects that exceed 5 acres, the 5-acre LST look-up values can be used as a screening tool to determine which pollutants require detailed analysis.

⁶⁵ SCAQMD, *Final Localized Significance Threshold Methodology*, June 2003, revised July 2008.

⁶⁶ Twenty-five (25) meters = approximately 82 feet.

⁶⁷ SCAQMD, *Appendix C (Mass Rate LST Look-up Table) of the Final Localized Significance Threshold Methodology*, June 2003, revised October 2009.

**Table IV.B-8
Project Localized Operational Emissions—At Project Buildout
(pounds per day)**

Emission Source	NO_x	CO	PM₁₀	PM_{2.5}
Area	1	54	<1	<1
Energy (Natural Gas)	3	1	<1	<1
Stationary	<1	2	<1	<1
On-Site Total	4	58	<1	<1
SCAQMD Significance Threshold^a	121	1,531	3	2
Over/(Under)	(117)	(1,473)	(3)	(2)
Exceed Threshold?	No	No	No	No
<p><i>Numbers may not add up exactly due to rounding.</i></p> <p>^a <i>Potential localized construction impacts were evaluated using SCAQMD's LSTs for Source Receptor Area 2. Maximum active operational activities would occur on approximately 5 acres at a distance of approximately 25 meters from sensitive land uses (the shortest distance available for LSTs).</i></p> <p><i>Source: Eyestone Environmental, 2019.</i></p>				

The Project's on-site construction activities, including the generation of criteria pollutants, would not expose sensitive receptors to substantial pollutant concentrations. As a result, Project-related construction activities would result in a less-than-significant impact with regard to localized emissions.

(ii) Off-Site Construction Activities (Toxic Air Contaminants)

The greatest potential for TAC emissions during construction would be from diesel particulate emissions associated with heavy equipment operations during grading and excavation activities. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of TACs over a 70-year lifetime will contract cancer based on the use of standard risk-assessment methodology. Because the construction schedule estimates that the phases which require the most heavy-duty diesel vehicle usage, such as site grading/excavation, would last for a much shorter duration (e.g., approximately nine months), construction of the Project would not result in a substantial, long-term (i.e., 70-year) source of TAC emissions. Additionally, the SCAQMD CEQA guidance does not require a HRA for short-term construction emissions. It is, therefore, not necessary to evaluate long-term cancer impacts from construction activities which occur over a relatively short duration. In addition, there would be no residual emissions or corresponding individual cancer risk after construction. **The Project's off-site construction activities, including generation of TACs, would not expose sensitive receptors to substantial pollutant concentrations. Project-related TAC impacts during construction would be less than significant.**

(b) Operation

(i) On-Site Operational Activities (Criteria Pollutants)

Operation of the Project would not introduce any major new sources of air pollution within the Project Site. Emissions estimates for criteria air pollutants from on-site sources are presented in Table IV.B-8 on page IV.B-56. The SCAQMD LST mass rate look-up tables, which apply to projects that have active areas that are less than or equal to 5 acres in size, were used to evaluate potential localized impacts. As shown in Table IV.B-8, on-site operational emissions would not exceed any of the LSTs. **The Project's on-site operational activities, including generation of criteria pollutants, would not expose sensitive receptors to substantial pollutant concentrations. Therefore, localized operational emissions resulting from the Project would result in a less-than-significant air quality impact.**

(ii) Off-Site Operational Activities (CO "Hot Spots" Analysis)

Consistent with the CO methodology above, if a project intersection does not exceed 400,000 vehicles per day, the project does not need to prepare a detailed CO hot spot analysis.

At buildout of the Project, the highest average daily trips at an intersection would be approximately 23,120 trips at the Lincoln Boulevard and Fiji Way intersection,⁶⁸ which is significantly below the daily traffic volumes that would be expected to generate CO exceedances as evaluated in the 2003 AQMP. This daily trip estimate is based on the peak hour conditions of the intersection. There is no reason unique to the Air Basin meteorology to conclude that the CO concentrations at the Lincoln Boulevard and Fiji Way intersection would exceed the 1-hour CO standard if modeled in detail, based on the studies undertaken for the 2003 AQMP.⁶⁹ Therefore, the Project does not trigger the need for a detailed CO hotspots model and would not cause any new or exacerbate any existing CO hotspots. As a result, impacts related to localized mobile-source CO emissions are considered less than significant. The supporting data for this analysis is included in Appendix B of this Draft EIR. **The Project's off-site operational activities, including the highest average daily trips, would not expose sensitive receptors to substantial pollutant concentrations. As a result, impacts related to localized mobile-source CO emissions are considered less than significant.**

⁶⁸ Linscott, Law, and Greenspan Engineers, *Transportation Impact Study: Paseo Marina Project*, October 30, 2017.

⁶⁹ It should be noted that CO background concentrations within the vicinity of the modeled intersection have substantially decreased since preparation of the 2003 AQMP. In 2003, the 1-hour background CO concentration was 5 ppm and has decreased to 2 ppm in 2014.

(iii) *Toxic Air Contaminants*

When considering potential air quality impacts under CEQA, consideration is given to the location of sensitive receptors within close proximity of land uses that emit TACs. CARB has published and adopted the *Air Quality and Land Use Handbook: A Community Health Perspective*, which provides recommendations regarding the siting of new sensitive land uses near potential sources of air toxic emissions (e.g., freeways, distribution centers, rail yards, ports, refineries, chrome plating facilities, dry cleaners, and gasoline dispensing facilities).⁷⁰ The SCAQMD adopted similar recommendations in its *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*.⁷¹ Together, the CARB and SCAQMD guidelines recommend siting distances for both the development of sensitive land uses in proximity to TAC sources and the addition of new TAC sources in proximity to existing sensitive land uses.

The primary sources of potential air toxics associated with operation of the Project include DPM from delivery trucks associated with the Project's commercial component (e.g., truck traffic on local streets and idling on adjacent streets). However, these activities, and the land uses associated with the Project, are not considered land uses that generate substantial TAC emissions based on review of the air toxic sources listed in SCAQMD's and CARB's guidelines.

Typical sources of acutely and chronically hazardous TACs include industrial manufacturing processes (e.g., chrome plating, electrical manufacturing, petroleum refinery). The Project would not include these types of potential industrial manufacturing process sources. It is expected that quantities of hazardous TACs generated on-site (e.g., cleaning solvents, paints, landscape pesticides, etc.) for the types of proposed land uses would be below thresholds warranting further study under California Accidental Release Program.

As the Project would not contain substantial TAC sources and is consistent with the CARB and SCAQMD guidelines, the Project would not result in the exposure of off-site sensitive receptors to carcinogenic or toxic air contaminants that exceed the maximum incremental cancer risk of 10 in one million or an acute or chronic hazard index of 1.0, and potential TAC impacts would be less than significant.

Based on the above, impacts to Threshold (d) would be less than significant.

⁷⁰ CARB, *Air Quality and Land Use Handbook, a Community Health Perspective*, April 2005.

⁷¹ SCAQMD, *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*, May 6, 2005.

Threshold (e) Would the Project create objectionable odors affecting a substantial number of people?

As discussed in Section VI, Other CEQA Considerations, of this Draft EIR, and in the Initial Study prepared for the Project, which is included as Appendix A of this Draft EIR, the Project would not create objectionable odors impacting a substantial number of people. **Thus, the Project would have a less than significant impact with respect to Threshold (e). No impacts from objectionable odors would occur and no further analysis is required.**

4. Cumulative Impacts

The following cumulative impacts analysis is based on the recommendations included in the SCAQMD's *CEQA Air Quality Handbook*. According to SCAQMD, individual projects that exceed SCAQMD's recommended daily thresholds for project-specific impacts would cause a cumulatively considerable increase in emissions for those pollutants for which the Air Basin is in non-attainment.

As identified in Section III, Environmental Setting, of this Draft EIR, a total of 39 related projects are located in the vicinity of the Project Site. A map of the related project locations is provided in Figure III-1 in Section III, Environmental Setting, of this Draft EIR.

a. Construction

With respect to the Project's construction-period air quality emissions and cumulative Air Basin-wide conditions, the SCAQMD has developed strategies (e.g., SCAQMD Rule 403) to reduce criteria pollutant emissions outlined in the AQMP pursuant to Federal CAA mandates. As such, the Project would comply with regulatory requirements, including SCAQMD Rule 403 requirements, as discussed above. In addition, the Project would comply with adopted AQMP emissions control measures. Per SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, all construction projects Air Basin-wide would comply with these same requirements (i.e., SCAQMD Rule 403 compliance) and would also implement feasible mitigation measures when significant impacts are identified.

According to the SCAQMD, individual construction projects that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would cause a cumulatively considerable increase in emissions for those pollutants for which the Air Basin is in non-attainment. Construction-related daily emissions at the Project Site would exceed the SCAQMD's regional significance threshold for NO_x during grading/excavation of the Project. **Consequently, the Project would have a cumulative impact due to**

construction-related regional NO_x emissions. In terms of localized air quality impacts, construction of the Project would have a less-than-significant cumulative impact due to NO_x, CO, PM₁₀ and PM_{2.5}.

Similar to the Project, the greatest potential for TAC emissions with respect to each related project would generally involve DPM emissions associated with heavy equipment operations during demolition and grading/excavation activities. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of TACs over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. Construction activities with respect to each related project would not result in a long-term (i.e., 70-year) substantial source of TAC emissions. In addition, the SCAQMD's *CEQA Air Quality Handbook* and SCAQMD's supplemental online guidance/information do not require a health risk assessment for short-term construction emissions. It is, therefore, not required or meaningful to evaluate long-term cancer impacts from construction activities which occur over relatively short durations. **As such, cumulative toxic emission impacts during construction would be less than significant.**

b. Operation

According to the SCAQMD, if an individual project results in air emissions of criteria pollutants that exceed the 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. **Operational emissions from the Project would not exceed any of the SCAQMD's regional or localized significance thresholds at Project buildout. Therefore, the emissions of non-attainment pollutants and precursors generated by Project operation would not be cumulatively considerable.**

With respect to TAC emissions, neither the Project nor any of the related projects (which primarily include residential, retail/commercial, office, and hotel uses), would represent a substantial source of TAC emissions, which are more typically associated with large-scale industrial, manufacturing, and transportation hub facilities. The Project and related projects would be consistent with the recommended screening level siting distances for TAC sources, as set forth in CARB's Land Use Guidelines, and the Project and related projects would not result in a cumulative impact requiring further evaluation. However, the Project and each of the related projects would likely generate minimal TAC emissions related to the use of consumer products and landscape maintenance activities, among other things. Pursuant to California Assembly Bill 1807, which directs CARB to identify substances as TACs and adopt ATCMs to control such substances, the SCAQMD has adopted numerous rules (primarily in Regulation XIV) that specifically address TAC emissions. These SCAQMD rules have resulted in and will continue to result in substantial

Air Basin-wide TAC emissions reductions. As such, cumulative TAC emissions during long-term operations would be less than significant. In addition, the Project would not result in any substantial sources of TACs that have been identified in CARB's Land Use Guidelines and, thus, would not result in a cumulatively considerable impact or a cumulatively significant impact.

In conclusion, during construction, the Project would have a cumulative impact to regional NO_x emissions); however, regional VOC, CO, SO_x, PM₁₀ and PM_{2.5}, localized, and TAC emissions would not be cumulatively considerable. During operation, the Project would not result in cumulative impacts to air quality as the Project's contributions to regional, localized, and TAC emissions would not be cumulatively considerable.

5. Mitigation Measures

The following mitigation measures set forth a program of air pollution control strategies designed to reduce the Project's air quality impacts to the extent feasible during construction.

Mitigation Measure AIR-MM-1: All construction equipment shall be properly tuned and maintained in accordance with the manufacturer's specifications. The contractor shall keep documentation on-site demonstrating that the equipment has been maintained in accordance with the manufacturer's specifications.

Mitigation Measure AIR-MM-2: Contractors shall maintain and operate construction equipment so as to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues shall have their engines turned off after five minutes when not in use, to reduce vehicle emissions.

Mitigation Measure AIR-MM-3: To the extent possible, petroleum-powered construction activity shall utilize electricity from power poles rather than temporary diesel power generators and/or gasoline power generators. If stationary petroleum-powered construction equipment, such as generators, must be operated continuously, such equipment shall be located at least 100 feet from sensitive land uses, whenever possible.

6. Level of Significance After Mitigation

a. Construction

Implementation of the mitigation measures described above would reduce construction emissions for all pollutants. In addition, Project Design Feature AIR-PDF-1 results in a 11-percent reduction in regional NO_x emissions and is accounted for in Table IV.B-5 on page IV.B-52. However, regional NO_x emissions during construction would not be reduced to a less than significant level. As such, Project construction would result in significant and unavoidable Project-level and cumulative regional impacts even with incorporation of feasible mitigation measures.

Mitigated peak daily regional construction NO_x emissions were concluded to exceed the SCAQMD regional significance threshold for NO_x. It should be noted that the analysis assumed that heavy-duty construction equipment would be operating constantly at peak loads. However, use of heavy-duty construction equipment on the Project Site would typically be operated at reduced rates in comparison to the peak daily rate. In addition, construction emissions would be temporary in nature which would not likely affect regional pollutant concentrations.

No significant impacts related to localized emissions and TAC emissions during construction are anticipated to occur as a result of the Project. As such, potential Project-level and cumulative localized and TAC impacts would be less than significant.

b. Operation

Project operation would not require implementation of mitigation measures. Project-level and cumulative impacts with regard to operational air quality would be less than significant.

From an operational standpoint, Project buildout would not result in an exceedance SCAQMD regional operational significance thresholds for criteria pollutants. Project-related mobile emissions would decline over time and the analysis assumed all mobile emissions are new to the region when in fact many mobile emissions may already exist within the Air Basin but simply be reallocated. For all these reasons, actual impacts would likely be lower than if the maximum daily impacts are assumed. Moreover, because the Project emissions are within the AQMP growth assumptions, it is reasonable to assume that the Project's actual impact will decline over time as the projected basin-wide pollutant levels will decline.

c. Quantitative Analysis Connecting the Project's Significant Regional Pollutant Emissions and Human Health is Not Feasible

The California Supreme Court decision on December 24, 2018, *Sierra Club v. County of Fresno* (Friant Ranch), requires projects with significant air quality impacts to “relate the expected adverse air quality impacts to likely health consequences or explain why it is not feasible at the time of drafting to provide such an analysis, so that the public may make informed decisions regarding the costs and benefits of the project.” (Friant Ranch at p. 6.)

In requiring a health risk type analysis for criteria air pollutants, it is important to understand how ozone is formed, dispersed and regulated. Ground level ozone (smog) is not directly emitted into the air, but is instead formed when precursor pollutants such as VOCs or NO_x are emitted into the atmosphere and undergo complex chemical reactions in the process of sunlight.⁷² Once formed, ozone can be transported long distances by wind.⁷³ Because of the complexity of ozone formation, a specific tonnage amount of VOCs or NO_x emitted in a particular area does not equate to a particular concentration of ozone in that area.⁷⁴ In fact, even rural areas that have relatively low tonnages of emissions of VOCs or NO_x can have high levels of ozone concentrations simply due to wind transport and other meteorological conditions such as temperature inversion and high pressure systems. Conversely, areas that have substantially more VOCs or NO_x emissions could experience lower concentrations of ozone simply because sea breezes disperse the emissions.⁷⁵

The lack of linkbetween the tonnage of precursor pollutants and the concentration of ozone formed is important because it is not necessarily the tonnage of precursor pollutants that causes human health effects; rather, it is the concentration of resulting ozone that causes these effects.⁷⁶ Indeed, the ambient air quality standards, which are statutorily

⁷² SJVUAPCD, *Application for Leave to File Amicus Curiae Brief of SJVUAPCD in Support of Defendant and Respondent, County of Fresno and Real Party in Interest and Respondent, Friant Ranch, L.P.*, p. 4, April 13, 2015.

⁷³ U.S. EPA, *Ground-level Ozone: Basic Information*, www.epa.gov/airquality/ozonepollution/basic.html.

⁷⁴ SJVUAPCD, *Application for Leave to File Amicus Curiae Brief of SJVUAPCD in Support of Defendant and Respondent, County of Fresno and Real Party in Interest and Respondent, Friant Ranch, L.P.*, p. 4, April 13, 2015.

⁷⁵ SJVUAPCD, *2007 Ozone Plan, Executive Summary p. ES-6*. www.valleyair.org/Air_Quality_Plans/AQ_Final_Adopted_Ozone2007.htm.

⁷⁶ SJVUAPCD, *Application for Leave to File Amicus Curiae Brief of SJVUAPCD in Support of Defendant and Respondent, County of Fresno and Real Party in Interest and Respondent, Friant Ranch, L.P.*, p. 5, April 13, 2015.

required to be set by USEPA at levels that are requisite to protect the public health, are established as concentrations of ozone and not as tonnages of their precursor pollutants.⁷⁷ Because the ambient air quality standards are focused on achieving a particular concentration region-wide, the tools and plans for attaining the ambient air quality standards are regional in nature.

The computer models (e.g., Community Multiscale Air Quality (CMAQ) modeling platform)⁷⁸ used to simulate and predict an attainment date for ozone are based on regional inventories of precursor pollutants and meteorology within an air basin. At a very basic level, the models simulate future ozone levels based on predicted changes in precursor emissions basin-wide. These computer models are not designed to determine whether the emissions generated by an individual development project will affect the date that the air basin attains the ambient air quality standards. Instead, the models help inform regional planning strategies based on the extent that all of the emission-generating sources within the air basin must be controlled in order to reach attainment.⁷⁹

The SCAQMD and the San Joaquin Valley Air Pollution Control District (SJVUAPCD) have indicated that it is not feasible to quantify project-level health impacts based on existing modeling.^{80,81} Even if a metric could be calculated, it would not be reliable because the models are equipped to model the impact of all emission sources in an air basin on attainment and would likely not yield valid information or a measurable increase in ozone concentrations sufficient to accurately quantify ozone-related health impacts for an individual project.

In the case of the Project, regional construction emissions exceed the SCAQMD's recommended daily significance thresholds for NO_x. However, this does not mean that one can determine the concentration of ozone that will be created at or near the Project Site on a particular day or month of the year, or the specific human health impacts that may occur

⁷⁷ U.S. EPA, *Table of Ozone National Ambient Air Quality Standards*, www.epa.gov/ground-level-ozone-pollution/table-historical-ozone-national-ambient-air-quality-standards-naaqs.

⁷⁸ The SCAQMD 2016 AQMP ozone attainment demonstration was developed using the U.S. EPA recommended CMAQ (version 5.0.2) modeling platform with SAPRC07 chemistry, and the Weather Research and Forecasting Model (WRF) (version 3.6) meteorological fields.

⁷⁹ SJVUAPCD, *Application for Leave to File Amicus Curiae Brief of SJVUAPCD in Support of Defendant and Respondent, County of Fresno and Real Party in Interest and Respondent, Friant Ranch, L.P.*, p. 6-7, April 13, 2015.

⁸⁰ SCAQMD, *Application of the SCAQMD for Leave to File Brief of Amicus Curiae in Support of Neither Party and Brief of Amicus Curiae*, April 6, 2015.

⁸¹ SJVUAPCD, *Application for Leave to File Amicus Curiae Brief of SJVUAPCD in Support of Defendant and Respondent, County of Fresno and Real Party in Interest and Respondent, Friant Ranch, L.P.*, April 13, 2015.

from such exceedance. Meteorology, the presence of sunlight, and other complex chemical factors all combine to determine the ultimate concentrations and locations of ozone. This is especially true for a project like the Project, where most of the criteria pollutant emissions derive not from a single “point source,” but from area wide sources (consumer products, paint, etc.) or mobile sources (cars and trucks) driving to, from and around the Project Site.

In addition, it would not be feasible to model the impact on attainment of the ambient air quality standards that these over-regional thresholds emissions from the Project may have with any degree of reliability or certainty. As discussed above, the currently available tools are equipped to model the impact of all emission sources in an air basin on attainment. According to the most recent EPA-approved SCAQMD basin wide emissions inventory, the VOC inventory is 162.4 tons per day (324,800 pounds) and 293.1 tons per day (586,200 pounds) of NO_x emissions for the baseline year of 2012.⁸² 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. As an example, the SCAQMD’s 2012 AQMP showed that reducing baseline year 2008 NO_x by 432 tons per day and reducing VOC by 187 tons per day would only reduce ozone levels at the SCAQMD’s monitor site with the highest levels by only 9 parts per billion.⁸³ SCAQMD also conducted pollutant modeling for proposed Rule 1315 in which the CEQA analysis accounted for essentially all of the increases in emissions due to new or modified sources in the SCAQMD between 2010 and 2030, or approximately 6,620 pounds per day of NO_x and 89,947 pounds per day of VOC. The results of the analysis showed that this increase of regional pollutant emissions would contribute to a small increase in the Air Basin wide ozone concentrations in 2030 by 2.6 ppb and less than 1 ppb of NO₂.⁸⁴ Based on these results, current modeling methods are only able to provide results on a large scale and lack the resolution to model smaller sources such as individual projects. Therefore, ozone modeling for individual projects would not be feasible or provide meaningful data to assess health impacts.

Based on the above information, at the project level, the Project would represent a relatively small project, since peak daily construction regional emissions of 62 pounds per

⁸² SCAQMD, *Final 2016 AQMP, Figure 3-1, March 2017*, 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.

⁸³ SCAQMD, *Final 2012 AQMP, February 2013*, www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan; then follow “Appendix V: Modelling & Attainment Demonstrations” hyperlink, pp. v-4-2, v-7-4, v-7-24.

⁸⁴ SCAQMD, *Final Program Environmental Assessment for Re-Adoption of Proposed Rule 1315, 2011* (p. 1-11), www.aqmd.gov/home/research/documents-reports/lead-agency-scaqmd-projects/aqmd-projects--year-2011/re-adoption-of-proposed-rule-1315.

day of NO_x over the SCAQMD's significance threshold represent approximately 0.9 percent of the emissions analyzed by SCAQMD related to Rule 1315. Furthermore, approximately 46 percent of the Project's construction NO_x emissions 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.

Running the regional-scale photochemical grid model used for predicting ozone attainment with the emissions from the Project (which equates to approximately two-tenths of 1 percent of the VOC and NO_x in the air basin) is not likely to yield valid information regarding a measurable increase in ozone concentrations sufficient to accurately quantify the Project's ozone-related health impacts. Any identified modeled increase in ozone concentrations would not be accurate, as it would be well within the error margins of such models. Similarly, it would also not be feasible to identify the Project's impact on the days of nonattainment per year. Based on this information, a general description of the adverse health impacts resulting from the pollutants at issue is all that can be meaningfully provided at this time. Please see the above description of general adverse health impacts resulting from NO_x.