3.2 Air Quality

This section describes and evaluates the pollutant emission and related air quality impacts that could result from construction and operation of the Proposed Project. The section contains: (1) a description of the existing land uses as they pertain to air emissions, as well as a description of the Adjusted Baseline Environmental Setting; (2) a summary of the federal, State, and local regulations related to air quality, including those set forth within the South Coast Air Quality Management District's (SCAQMD) Air Quality Management Plan (AQMP), and applicable City of Inglewood (City) plans; and (3) an analysis of the potential impacts related to air quality associated with the implementation of the Proposed Project, as well as identification of potentially feasible measures that could mitigate significant impacts.

Comments received in response to the NOP for the EIR regarding air quality can be found in Appendix B. Any applicable issues and concerns regarding potential impacts related to air quality that were raised in comments on the NOP are analyzed within this section.

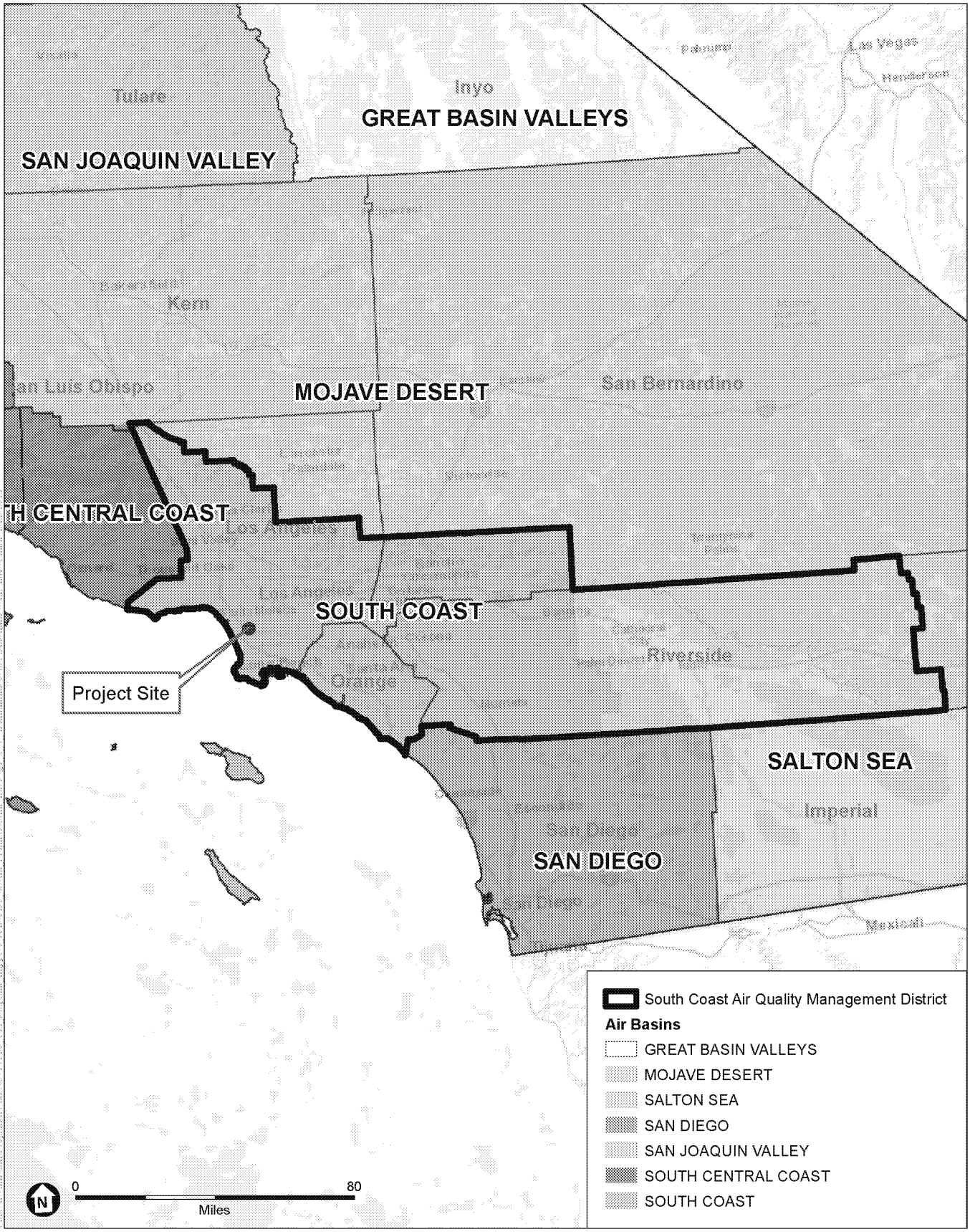
The analysis included in this section was developed based on project-specific construction and operational characteristics of the Proposed Project described in Chapter 2, Project Description, project-specific information included in the Assembly Bill (AB) 987 application,[1] and information provided by the project applicant.

3.2.1 Environmental Setting

The Project Site is located within the South Coast Air Basin (Air Basin). The Air Basin covers approximately 6,745 square miles and is bounded by the Pacific Ocean to the west and south and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east (see **Figure 3.2-1**). The air basin includes all of Orange County; the non-desert portions of Los Angeles, Riverside, and San Bernardino counties; and the San Gorgonio Pass area in Riverside County.

The Air Basin has some of the worst air pollution in the country. The air pollution problems are a consequence of the combination of emissions from the nation's second largest urban area, meteorological conditions unfavorable to the dispersion of those emissions, and mountainous terrain surrounding the Air Basin that traps pollutants as they are pushed inland with the sea breeze. Southern California also has abundant sunshine, which drives the photochemical reactions that form pollutants such as ozone (O_3) and a significant portion of particulate matter with an aerodynamic diameter less than or equal to 2.5 (PM2.5).[2]

[1] AECOM, 2019. AB 987 Application for the Inglewood Basketball and Entertainment Center Project; Exhibits to Supplemental AB 987 Submittal. January 2019.
[2] South Coast Air Quality Management District, 2017. *Final 2016 Air Quality Management Plan*. March 2017.



SOURCE: California Air Resources Board, March 2004

Inglewood Basketball and Entertainment Center

Figure 3.2-1
Boundaries of the South Coast Air Quality Management District

ESA

Pollutants and Related Health Effects

Criteria Air Pollutants

Elevated concentrations of certain air pollutants in the atmosphere have been recognized to cause notable health problems and consequential damage to the environment either directly or in reaction with other pollutants. In the United States, such pollutants have been identified and are regulated as part of the overall endeavor to prevent further deterioration and facilitate improvement in air quality. The following pollutants are regulated by the United States Environmental Protection Agency (US EPA) and are subject to emissions control requirements adopted by federal, State and local regulatory agencies. These pollutants are referred to as "criteria air pollutants" as a result of the specific standards, or criteria, which have been adopted pertaining to them. The EPA established the National Ambient Air Quality Standards (NAAQS) to "provide public health protection, including protecting the health of 'sensitive' populations such as asthmatics, children, and the elderly,"[3] allowing "an adequate margin of safety."[4] California Ambient Air Quality Standards (CAAQS) were "established to protect the health of the most sensitive groups in our communities" and "defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without any harmful effects on people or the environment".[5] NAAQS and CAAQS for each of the monitored pollutants and their effects on health are discussed below.

Ozone (O_3): Ozone is a secondary pollutant formed by the chemical reaction of volatile organic compounds (VOCs) and nitrogen oxides (NO_X) in the presence of sunlight under certain meteorological conditions, such as high temperature and stagnation episodes. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable.

According to the US EPA, ozone can cause the muscles in the airways to constrict potentially leading to wheezing and shortness of breath.[6] Ozone can make it more difficult to breathe deeply and vigorously; cause shortness of breath and pain when taking a deep breath; cause coughing and sore or scratchy throat; inflame and damage the airways; aggravate lung diseases such as asthma, emphysema and chronic bronchitis; increase the frequency of asthma attacks; make the lungs more susceptible to infection; continue to damage the lungs even when the symptoms have disappeared; and cause chronic obstructive pulmonary disease.[7]

Long-term exposure to ozone is linked to aggravation of asthma and is likely to be one of many causes of asthma development. Long-term exposures to higher concentrations of ozone may also be

[3] US Environmental Protection Agency, Criteria Air Pollutants, NAAQS Table, https://www.epa.gov/criteria-air-pollutants/naaqs-table. Accessed August 12, 2019.
[4] 42 U.S.C. § 7409; CAA § 109
[5] California Air Resources Board, California Ambient Air Quality Standards, https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards. Accessed August 12, 2019.
[6] US Environmental Protection Agency, Health Effects of Ozone Pollution, https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution, last updated October 10, 2018. Accessed March 27, 2019.
[7] US Environmental Protection Agency, Health Effects of Ozone Pollution, https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution, last updated October 10, 2018. Accessed March 27, 2019.

linked to permanent lung damage, such as abnormal lung development in children.[8] According to the California Air Resources Board (CARB), inhalation of ozone causes inflammation and irritation of the tissues lining human airways, causing and worsening a variety of symptoms, and exposure to ozone can reduce the volume of air that the lungs breathe in and cause shortness of breath.[9]

The US EPA states that people most at risk from breathing air containing ozone include people with asthma, children, older adults, and people who are active outdoors, especially outdoor workers.[10] Children are at greatest risk from exposure to ozone because their lungs are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure.[11] According to CARB, studies show that children are no more or less likely to suffer harmful effects than adults; however, children and teens may be more susceptible to ozone and other pollutants because they spend nearly twice as much time outdoors and engaged in vigorous activities compared to adults.[12] Children breathe more rapidly than adults and inhale more pollution per pound of their body weight than adults and are less likely than adults to notice their own symptoms and avoid harmful exposures.[13] Further research may be able to better distinguish between health effects in children and adults.[14]

Volatile Organic Compounds (VOCs): VOCs are organic chemical compounds of carbon and are not "criteria" air pollutants themselves; however, in combination with NO_X they form ozone, and are regulated to prevent the formation of ozone.[15] According to CARB, some VOCs are highly reactive and play a critical role in the formation of ozone. Potential health effects of ozone exposure are discussed above. Other VOCs can result in adverse health effects from direct exposure and are classified by the State of California as toxic air contaminants (TACs) or Hazardous Air Pollutants (HAPs) by the USEPA.[16] The health effects of VOCs, as TACs/HAPs, are discussed more thoroughly below.

VOCs are typically formed from combustion of fuels and/or released through evaporation of organic liquids. Fuel combustion can occur in internal combustion sources, such as motor vehicle usage, landscape and other portable equipment, and stationary generators, or external combustion,

---

8 US Environmental Protection Agency, Health Effects of Ozone Pollution, https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution, last updated October 10, 2018. Accessed March 27, 2019.

9 California Air Resources Board, Ozone & Health, Health Effects of Ozone, https://ww2.arb.ca.gov/resources/ozone-and-health. Accessed January 8, 2018.

10 US Environmental Protection Agency, Health Effects of Ozone Pollution, https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution, last updated October 10, 2018. Accessed March 27, 2019.

11 US Environmental Protection Agency, Health Effects of Ozone Pollution, https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution, last updated October 10, 2018. Accessed March 27, 2019.

12 California Air Resources Board, Ozone & Health, Health Effects of Ozone, https://ww2.arb.ca.gov/resources/ozone-and-health. Accessed January 8, 2018.

13 California Air Resources Board, Ozone & Health, Health Effects of Ozone, https://ww2.arb.ca.gov/resources/ozone-and-health. Accessed January 8, 2018.

14 California Air Resources Board, Ozone & Health, Health Effects of Ozone, https://ww2.arb.ca.gov/resources/ozone-and-health. Accessed January 8, 2018.

15 US Environmental Protection Agency, Technical Overview of Volatile Organic Compounds, https://www.epa.gov/indoor-air-quality-iaq/technical-overview-volatile-organic-compounds, last updated April 12, 2017. Accessed March 27, 2019.

16 California Air Resources Board, Common Air Pollutants, https://ww2.arb.ca.gov/resources/common-air-pollutants. Accessed September 6, 2019.

such as for water and space heating. Evaporation sources include fueling operations, consumer products (e.g., cleaning solutions), and architectural coatings.[17]

Nitrogen Dioxide (NO_2) and Nitrogen Oxides (NO_X): NO_X is a term that refers to a group of compounds containing nitrogen and oxygen. As mentioned above, NO_X combines with VOCs to form ozone. The health effects associated with the formation of ozone were discussed above under Ozone. The primary compounds of air quality concern include NO_2 and nitric oxide (NO). Ambient air quality standards have been promulgated for NO_2, which is a reddish-brown, reactive gas.[18]

The principal form of NO_X produced by combustion is NO, but NO reacts quickly in the atmosphere to form NO_2, creating the mixture of NO and NO_2 referred to as NO_X. Major sources of NO_X include emissions from cars, trucks and buses, power plants, and off-road equipment. The terms NO_X and NO_2 are sometimes used interchangeably. However, the term NO_X is typically used when discussing emissions, usually from combustion-related activities, and the term NO_2 is typically used when discussing ambient air quality standards. Where NO_X emissions are discussed in the context of the thresholds of significance or impact analyses, the discussions are based on the conservative assumption that all NO_X emissions would oxidize in the atmosphere to form NO_2.

According to the US EPA, short-term exposures to NO_2 can potentially aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing), hospital admissions and visits to emergency rooms while longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections.[19] According to CARB, controlled human exposure studies that show that NO_2 exposure can intensify responses to allergens in allergic asthmatics.[20]

In addition, a number of epidemiological studies have demonstrated associations between NO_2 exposure and premature death, cardiopulmonary effects, decreased lung function growth in children, respiratory symptoms, emergency room visits for asthma, and intensified allergic responses.[21] Infants and children are particularly at risk from exposure to NO_2 because they have disproportionately higher exposure to NO_2 than adults due to their greater breathing rate for their body weight and their typically greater outdoor exposure duration while in adults, the greatest

[17] US Environmental Protection Agency, Volatile Organic Compounds Impact on Indoor Air Quality, https://www.epa.gov/indoor-air-quality-iaq/volatile-organic-compounds-impact-indoor-air-quality. Accessed September 6, 2019.
[18] California Air Resources Board, Nitrogen Dioxide & Health, https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health, 2019.
[19] US Environmental Protection Agency, Nitrogen Dioxide (NO_2) Pollution, https://www.epa.gov/no2-pollution/basic-information-about-no2, last updated September 8, 2016. Accessed March 16, 2018.
[20] California Air Resources Board, Nitrogen Dioxide & Health, https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health. Accessed March 27, 2019.
[21] California Air Resources Board, Nitrogen Dioxide & Health, https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health. Accessed March 27, 2019.

risk is to people who have chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease.[22]

CARB states that much of the information on distribution in air, human exposure and dose, and health effects is specifically for NO_2 and there is only limited information for NO and NO_X, as well as large uncertainty in relating health effects to NO or NO_X exposure.[23]

Carbon Monoxide (CO): CO is primarily emitted from combustion processes and motor vehicles due to the incomplete combustion of fuel, such as natural gas, gasoline, or wood, with the majority of outdoor CO emissions from mobile sources.[24]

According to the US EPA, breathing air with a high concentration of CO reduces the amount of oxygen that can be transported in the blood stream to critical organs like the heart and brain and at very high levels, which are possible indoors or in other enclosed environments, CO can cause dizziness, confusion, unconsciousness and death.[25] Very high levels of CO are not likely to occur outdoors; however, when CO levels are elevated outdoors, they can be of particular concern for people with some types of heart disease since these people already have a reduced ability for getting oxygenated blood to their hearts and are especially vulnerable to the effects of CO when exercising or under increased stress.[26] In these situations, short-term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain also known as angina.[27]

According to CARB, the most common effects of CO exposure are fatigue, headaches, confusion, and dizziness due to inadequate oxygen delivery to the brain.[28] For people with cardiovascular disease, short-term CO exposure can further reduce their body's already compromised ability to respond to the increased oxygen demands of exercise, exertion, or stress; inadequate oxygen delivery to the heart muscle leads to chest pain and decreased exercise tolerance.[29] Unborn

---

22 California Air Resources Board, Nitrogen Dioxide & Health, https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health. Accessed March 27, 2019.
23 California Air Resources Board, Nitrogen Dioxide & Health, https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health. Accessed March 27, 2019.
24 California Air Resources Board, Carbon Monoxide & Health, https://ww2.arb.ca.gov/resources/carbon-monoxide-and-health. Accessed March 27, 2019.
25 US Environmental Protection Agency, Carbon Monoxide (CO) Pollution in Outdoor Air, https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution, last updated September 8, 2016. Accessed March 27, 2019.
26 US Environmental Protection Agency, Carbon Monoxide (CO) Pollution in Outdoor Air, https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution, last updated September 8, 2016. Accessed June 24, 2019.
27 US Environmental Protection Agency, Carbon Monoxide (CO) Pollution in Outdoor Air, https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution, last updated September 8, 2016. Accessed June 24, 2019.
28 California Air Resources Board, Carbon Monoxide & Health, https://ww2.arb.ca.gov/resources/carbon-monoxide-and-health. Accessed June 24, 2019.
29 California Air Resources Board, Carbon Monoxide & Health, https://ww2.arb.ca.gov/resources/carbon-monoxide-and-health. Accessed June 24, 2019.

babies, infants, elderly people, and people with anemia or with a history of heart or respiratory disease are most likely to experience health effects with exposure to elevated levels of CO.[30]

Sulfur Dioxide (SO_2): According to the US EPA, the largest source of SO_2 emissions in the atmosphere is the burning of fossil fuels by power plants and other industrial facilities while smaller sources of SO_2 emission include industrial processes such as extracting metal from ore; natural sources such as volcanoes; and locomotives, ships and other vehicle and heavy equipment that burn fuel with a high sulfur content.[31] In 2006, California phased-in the ultra-low-sulfur diesel regulation limiting vehicle diesel fuel to a sulfur content not exceeding 15 parts per million, down from the previous requirement of 500 parts per million, substantially reducing emissions of sulfur from diesel combustion.[32]

According to the US EPA, short-term exposures to SO_2 can harm the human respiratory system and make breathing difficult.[33] According to CARB, health effects at levels near the State one-hour standard are those of asthma exacerbation, including bronchoconstriction accompanied by symptoms of respiratory irritation such as wheezing, shortness of breath and chest tightness, especially during exercise or physical activity and exposure at elevated levels of SO_2 (above 1 parts per million [ppm]) results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality.[34] Children, the elderly, and those with asthma, cardiovascular disease, or chronic lung disease (such as bronchitis or emphysema) are most likely to experience the adverse effects of SO_2.[35,36]

Particulate Matter (PM10 and PM2.5): Particulate matter air pollution is a mixture of solid particles and liquid droplets found in the air.[37] Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye while other particles are so small they can only be detected using an electron microscope.[38] Particles are defined by their diameter for air quality regulatory purposes: inhalable particles with diameters that are generally 10 micrometers

30 California Air Resources Board, Carbon Monoxide & Health, https://ww2.arb.ca.gov/resources/carbon-monoxide-and-health. Accessed June 24, 2019.
31 US Environmental Protection Agency, Sulfur Dioxide (SO_2) Pollution, https://www.epa.gov/so2-pollution/sulfur-dioxide-basics, last updated June 28, 2018. Accessed March 27, 2019.
32 California Air Resources Board, 2004. Final Regulation Order, Amendments to the California Diesel Fuel Regulations, July 15, 2004.
33 US Environmental Protection Agency, Sulfur Dioxide (SO_2) Pollution, https://www.epa.gov/so2-pollution/sulfur-dioxide-basics, last updated June 28, 2018. Accessed March 27, 2019.
34 California Air Resources Board, Sulfur Dioxide & Health, https://ww2.arb.ca.gov/resources/sulfur-dioxide-and-health. Accessed March 27, 2019.
35 California Air Resources Board, Sulfur Dioxide & Health, https://ww2.arb.ca.gov/resources/sulfur-dioxide-and-health. Accessed March 27, 2019.
36 US Environmental Protection Agency, Sulfur Dioxide (SO_2) Pollution, https://www.epa.gov/so2-pollution/sulfur-dioxide-basics, last updated June 28, 2018. Accessed March 27, 2019.
37 US Environmental Protection Agency, Particulate Matter (PM) Pollution, https://www.epa.gov/pm-pollution/particulate-matter-pm-basics, last updated November 14, 2018. Accessed March 27, 2019.
38 US Environmental Protection Agency, Particulate Matter (PM) Pollution, https://www.epa.gov/pm-pollution/particulate-matter-pm-basics, last updated November 14, 2018. Accessed March 27, 2019.

and smaller (PM10); inhalable particles with diameters that are 2.5 micrometers or less (PM2.5).[39] Thus, PM2.5 comprises a portion or a subset of PM10.

Sources of PM10 emissions include dust from construction sites, landfills and agriculture, wildfires and brush/waste burning, industrial sources, and wind-blown dust from open lands.[40] Sources of PM2.5 emissions include combustion of gasoline, oil, diesel fuel, or wood.[41] PM10 and PM2.5 may be either directly emitted from sources (primary particles) or formed in the atmosphere through chemical reactions of gases (secondary particles) such as SO_2, NO_X, and certain organic compounds.[42]

According to CARB, both PM10 and PM2.5 can be inhaled, with some depositing throughout the airways; PM10 is more likely to deposit on the surfaces of the larger airways of the upper region of the lung, while PM2.5 is more likely to travel into and deposit on the surface of the deeper parts of the lung, which can induce tissue damage, and lung inflammation.[43] Short-term (up to 24 hours duration) exposure to PM10 has been associated primarily with worsening of respiratory diseases, including asthma and chronic obstructive pulmonary disease, leading to hospitalization and emergency department visits.[44] The effects of long-term (months or years) exposure to PM10 are less clear, although studies suggest a link between long-term PM10 exposure and respiratory mortality. The International Agency for Research on Cancer published a review in 2015 that concluded that particulate matter in outdoor air pollution causes lung cancer.[45]

Short-term exposure to PM2.5 has been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days. Long-term exposure to PM2.5 has been linked to premature death, particularly in people who have chronic heart or lung diseases, and reduced lung function growth in children.[46] According to CARB, populations most likely to experience adverse health effects with exposure to PM10 and PM2.5 include older adults with chronic heart or lung disease, children, and asthmatics. Children and infants are more susceptible to harm from inhaling pollutants such as PM10 and PM2.5 compared to healthy adults because

39 US Environmental Protection Agency, Particulate Matter (PM) Pollution, https://www.epa.gov/pm-pollution/particulate-matter-pm-basics, last updated November 14, 2018. Accessed March 27, 2019.
40 California Air Resources Board, Inhalable Particulate Matter and Health (PM2.5 and PM10), https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm, last reviewed August 10, 2017. Accessed January 2, 2019.
41 California Air Resources Board, Inhalable Particulate Matter and Health (PM2.5 and PM10), https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm, last reviewed August 10, 2017. Accessed January 2, 2019.
42 California Air Resources Board, Inhalable Particulate Matter and Health (PM2.5 and PM10), https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm, last reviewed August 10, 2017. Accessed January 2, 2019.
43 California Air Resources Board, Inhalable Particulate Matter and Health (PM2.5 and PM10), https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm, last reviewed August 10, 2017. Accessed January 2, 2019.
44 California Air Resources Board, Inhalable Particulate Matter and Health (PM2.5 and PM10), https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm, last reviewed August 10, 2017. Accessed January 2, 2019.
45 California Air Resources Board, Inhalable Particulate Matter and Health (PM2.5 and PM10), https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm, last reviewed August 10, 2017. Accessed January 2, 2019.
46 California Air Resources Board, Inhalable Particulate Matter and Health (PM2.5 and PM10), https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm, last reviewed August 10, 2017. Accessed January 2, 2019.

they inhale more air per pound of body weight than do adults, spend more time outdoors, and have developing immune systems.[47]

Lead (Pb): Major sources of lead emissions include ore and metals processing, piston-engine aircraft operating on leaded aviation fuel, waste incinerators, utilities, and lead-acid battery manufacturers.[48] In the past, leaded gasoline was a major source of lead emissions; however, the removal of lead from gasoline has resulted in a decrease of lead in the air by 98 percent between 1980 and 2014.[49]

Lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems and the cardiovascular system, and affects the oxygen carrying capacity of blood.[50] The lead effects most commonly encountered in current populations are neurological effects in children, such as behavioral problems and reduced intelligence, anemia, and liver or kidney damage.[51] Excessive lead exposure in adults can cause reproductive problems in men and women, high blood pressure, kidney disease, digestive problems, nerve disorders, memory and concentration problems, and muscle and joint pain.[52,53]

Air Toxics

Toxic Air Contaminants

TACs, or HAPs as defined by the US EPA, are defined as those contaminants that are known or suspected to cause serious health problems, but do not have a corresponding ambient air quality standard.[54] For consistency within this document they will be referred to as TACS. TACs are also defined as an air pollutant that may increase a person's risk of developing cancer and/or other serious health effects. TACs are emitted by a variety of industrial processes such as petroleum refining, electric utility and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. TACs may exist as PM10 and PM2.5 or as vapors (gases).[55] TACs include metals, other particles, gases absorbed by particles, and certain vapors from fuels and other sources. The emission of a TAC does not automatically create a

47 California Air Resources Board, Inhalable Particulate Matter and Health (PM2.5 and PM10), https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm, last reviewed August 10, 2017. Accessed January 2, 2019.
48 US Environmental Protection Agency, Lead Air Pollution, https://www.epa.gov/lead-air-pollution/basic-information-about-lead-air-pollution, last updated November 29, 2017. Accessed March 27, 2019.
49 US Environmental Protection Agency, Lead Air Pollution, https://www.epa.gov/lead-air-pollution/basic-information-about-lead-air-pollution, last updated November 29, 2017. Accessed March 27, 2019.
50 US Environmental Protection Agency, Lead Air Pollution, https://www.epa.gov/lead-air-pollution/basic-information-about-lead-air-pollution, last updated November 29, 2017. Accessed March 27, 2019.
51 California Air Resources Board, Lead & Health, https://ww2.arb.ca.gov/resources/lead-and-health. Accessed March 27, 2019.
52 California Air Resources Board, Lead & Health, https://ww2.arb.ca.gov/resources/lead-and-health. Accessed March 27, 2019.
53 While the SCAQMD CEQA Air Quality Handbook contains numerical indicators of significance for lead, project construction and operation would not include sources of lead emissions and would not exceed the numerical indicators for lead. Unleaded fuel and unleaded paints have virtually eliminated lead emissions from commercial land use projects such as the Project. As a result, lead emissions are not further evaluated in this Draft EIR.
54 US Environmental Protection Agency, Hazardous Air Pollutants, https://www.epa.gov/haps. Accessed April 25, 2019.
55 US Environmental Protection Agency, Hazardous Air Pollutants: Sources and Exposure, https://www.epa.gov/haps/hazardous-air-pollutants-sources-and-exposure, Accessed April 25, 2019.

health hazard. Other factors, such as the amount of the TAC, its toxicity, how it is released into the air, the weather, and the terrain, all influence whether the emission could be hazardous to human health. Emissions of TACs into the air can be damaging to human health and to the environment. Human exposure to TACs at sufficient concentrations and durations can result in cancer, poisoning, and rapid onset of sickness, such as nausea or difficulty in breathing. Other less measurable effects include immunological, neurological, reproductive, developmental, and respiratory problems. TACs deposited onto soil or into lakes and streams affect ecological systems and eventually human health through consumption of contaminated food. The carcinogenic potential of TACs is a particular public health concern because many scientists currently believe that there is no "safe" level of exposure to carcinogens. Any exposure to a carcinogen poses some risk of contracting cancer.[56]

The public's exposure to TACs is a significant public health issue in California. The Air Toxics "Hotspots" Information and Assessment Act is a State law requiring facilities to report emissions of TACs to air districts.[57] The program is designated to quantify the amounts of potentially HAPs released, the location of the release, the concentrations to which the public is exposed, and the resulting health risks. The State Air Toxics Program (AB 2588) identified over 200 TACs, including the 188 TACs identified in the Clean Air Act (CAA).[58]

The US EPA has assessed this expansive list and identified 21 TACs as Mobile Source Air Toxics (MSATs).[59] MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline. US EPA also extracted a subset of these 21 MSAT compounds that it now labels as the nine priority MSATs: 1,3-butaidene, acetaldehyde, acrolein, benzene, diesel particulate matter (DPM)/diesel exhaust organic gases, ethylbenzene, naphthalene, and polycyclic organic matter (POM). While these nine MSATs are considered the priority transportation toxics, US EPA stresses that the lists are subject to change and may be adjusted in future rules.[60]

Diesel Exhaust

According to the California Almanac of Emissions and Air Quality, the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being

---

56 US Environmental Protection Agency, Hazardous Air Pollutants, https://www.epa.gov/haps, Accessed April 25, 2019.
57 California Air Resources Board. *General Information About "Hot Spots."* https://www.arb.ca.gov/ab2588/general.htm. Accessed April 2, 2019.
58 California Air Resources Board. *AB 25188 Air Toxics "Hot Spots" Program.* https://www.arb.ca.gov/ab2588/ab2588.htm. Accessed April 2, 2019.
59 US Environmental Protection Agency. *Air Toxics Risk Assessment Reference Library, Volume 1 Technical Resource Manual.* April 2004. p. 2-1.
60 US Department of Transportation Federal Highway Administration, 2016. Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents. October 18, 2016.

particulate matter from the exhaust of diesel-fueled engines, i.e., DPM.[61] DPM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances.

Diesel exhaust is composed of two phases, gas and particle, and both phases contribute to the health risk. The gas phase is composed of many of the urban HAPs, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde and polycyclic aromatic hydrocarbons. The particle phase is also composed of many different types of particles by size or composition. Fine and ultra-fine diesel particulates are of the greatest health concern and may be composed of elemental carbon with adsorbed compounds such as organic compounds, sulfate, nitrate, metals and other trace elements. Diesel exhaust is emitted from a broad range of diesel engines; the on-road diesel engines of trucks, buses and cars and the off-road diesel engines that include locomotives, marine vessels and heavy-duty equipment. Although DPM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present.

The most common exposure to DPM is breathing air that contains diesel exhaust. The fine and ultra-fine particles are respirable (similar to PM2.5), which means that they can avoid many of the human respiratory system defense mechanisms and enter deeply into the lung. Exposure to DPM comes from both on-road and off-road engine exhaust that is either directly emitted from the engines or lingering in the atmosphere.

Diesel exhaust causes health effects from long-term chronic exposures. The type and severity of health effects depends upon several factors including the amount of chemical exposure and the duration of exposure. Individuals also react differently to different levels of exposure. There is limited information on exposure to only DPM, but there is enough evidence to indicate that inhalation exposure to diesel exhaust causes chronic health effects as well as having cancer-causing potential.

Because it is part of PM2.5, DPM also contributes to the same non-cancer health effects as PM2.5 exposure. These effects include premature death, hospitalizations and emergency department visits for exacerbated chronic heart and lung disease, including asthma, increased respiratory symptoms, and decreased lung function in children. Several studies suggest that exposure to DPM may also facilitate development of new allergies. Those most vulnerable to non-cancer health effects are children whose lungs are still developing and the elderly who often have chronic health problems.[62]

Gasoline Exhaust

Similar to diesel exhaust, gasoline is composed of two phases, gas and particle, and both phases contribute to the health risk. The gas phase is composed of the same HAPs, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde and polycyclic aromatic hydrocarbons. The

[61] California Air Resources Board. *The California Almanac of Emissions and Air Quality.* https://www.arb.ca.gov/aqd/almanac/almanac.htm. Accessed April 25, 2019.

[62] California Air Resources Board, Overview: Diesel Exhaust & Health. https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health. Accessed January 2, 2019.

particle phase is also composed of many different types of particles by size or composition. Fine and ultra-fine diesel particulates are of the greatest health concern and may be composed of elemental carbon with adsorbed compounds such as organic compounds, sulfate, nitrate, metals and other trace elements. Gasoline exhaust is primarily emitted from light-duty passenger vehicles. The compounds in the gas and particles phases can cause health effects from short- and long-term exposures.

Visibility Reducing Particles

Visibility-reducing particles are any particles in the atmosphere that obstruct the range of visibility by creating haze.[63] These particles vary in shape, size and chemical composition, and come from a variety of natural and manmade sources including windblown metals, soil, dust, salt, and soot. Other haze-causing particles are formed in the air from gaseous pollutant (e.g., sulfates, nitrates, organic carbon particles) which are the major constituents of fine PM, such as PM2.5 and PM10, and are caused from the combustion of fuel. CARB's standard for visibility reducing particles is not based on health effects, but rather on welfare effects, such as reduced visibility and damage to materials, plants, forests, and ecosystems. The health impacts associated with PM2.5 and PM10 are discussed above under Particulate Matter.

Existing Conditions

Regional Air Quality

The Air Basin's meteorological conditions, in combination with regional topography, are conducive to the formation and retention of ozone. Pollutant concentrations in the Air Basin vary with location, season, and time of day. Concentrations of ozone, 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.[64] The worst air pollution conditions throughout the Air Basin typically occur from June through September.

Attainment Status

California Health and Safety Code section 39607(e) requires CARB to establish and periodically review area designation criteria. **Table 3.2-1** provides a summary of the attainment status of the Los Angeles County portion of the Air Basin with respect to the federal and State standards. As shown in Table 3.2-1, the Air Basin is designated under federal or State ambient air quality standards as nonattainment for ozone, PM10, and fine particulate matter PM2.5. It is noteworthy to mention that air quality in the Air Basin has improved substantially over the years, primarily due to the impacts of air quality control programs at the federal, State and local levels. The ozone and PM levels have fallen significantly compared to the worst years and are expected to continue to trend downward in the future despite increases in the economy and population in the Air Basin.[65]

[63] California Air Resources Board, Visibility Reducing Particles and Health, https://ww2.arb.ca.gov/resources/vinyl-chloride-and-health. Accessed May 29, 2019.
[64] South Coast Air Quality Management District, 2017. *Final 2016 Air Quality Management Plan*. March 2017.
[65] South Coast Air Quality Management District, 2017. *Final 2016 Air Quality Management Plan*. March 2017, p. 1-6.

With respect to the State-identified criteria air pollutants (sulfates, hydrogen sulfide, visibility reducing particles, and vinyl chloride) present in Table 3.2-1, the Proposed Project would either not use these pollutants in the day to day operations or during construction and therefore would not have emissions of those pollutants (hydrogen sulfide, vinyl chloride, and lead), or such emissions would be accounted for as part of the pollutants estimated in this analysis (visibility reducing particles are associated with particulate matter emissions, and sulfates are associated with SO_2). Vinyl chloride is used in the process of making polyvinyl chloride (PVC) plastic and

TABLE 3.2-1
SOUTH COAST AIR BASIN ATTAINMENT STATUS (LOS ANGELES COUNTY)

Pollutant	Federal Standards	California Standards
O_3 (1-hour standard)	N/A[a]	Non-attainment
O_3 (8-hour standard)	Non-attainment – Extreme	Non-attainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
PM10	Attainment	Non-attainment
PM2.5	Non-attainment	Non-attainment
Lead	Non-attainment (Partial, Los Angeles County)[b]	Attainment
Visibility Reducing Particles	N/A	Unclassified
Sulfates	N/A	Attainment
Hydrogen Sulfide	N/A	Unclassified
Vinyl Chloride	N/A	N/A[c]

NOTES:
N/A = not applicable
a The NAAQS for 1-hour ozone was revoked on June 15, 2005, for all areas except Early Action Compact areas.
b Partial Nonattainment designation – Los Angeles County portion of the Air Basin only for near-source monitors.
c In 1990, CARB identified vinyl chloride as a TAC and determined that it does not have an identifiable threshold. Therefore, CARB does not monitor or make status designations for this pollutant.

SOURCE: US EPA, The Green Book Non-Attainment Areas for Criteria Air Pollutants, https://www.epa.gov/green-book; CARB, Area Designations Maps/State and National, http://www.arb.ca.gov/desig/adm/adm.htm. Accessed April 2019.

vinyl products and is primarily emitted from industrial processes.[66] Vinyl chloride would not be emitted directly during operations or during construction; therefore, there would be no project emissions of vinyl chloride. In addition, CARB determined there is not sufficient scientific evidence available to support the identification of a threshold exposure level for vinyl chloride, therefore, CARB does not monitor or make status designations for this pollutant.[67]

66 California Air Resources Board, Vinyl Chloride & Health, https://ww2.arb.ca.gov/resources/vinyl-chloride-and-health. Accessed May 29, 2019.
67 California Air Toxics Board, Toxic Air Contaminant Board, Toxic Air Contaminant Identification List, https://www.arb.ca.gov/toxics/id/taclist.htm, last reviewed July 18, 2011. Accessed April 3, 2019.

Types of Sources

As detailed in the AQMP, the major sources of air pollution in the Air Basin are divided into four major source classifications: point and area stationary sources, and on-road and off-road mobile sources. Point and area sources are the two major subcategories of stationary sources.[68] Point sources are permitted facilities that contain one or more emission sources at an identified location (e.g., power plants, refineries, emergency generator exhaust stacks). Area sources consist of many small emission sources (e.g., residential water heaters, architectural coatings, consumer products, restaurant charbroilers and permitted sources such as large boilers), which are distributed across the region. Mobile sources consist of two main subcategories: On-road sources (such as cars and trucks) and off-road sources (such as heavy construction equipment).

Local Area Conditions

Existing Ambient Air Quality in the Surrounding Area

In order to measure and establish ambient pollutant concentrations, SCAQMD maintains a network of air quality monitoring stations located throughout the Air Basin. The monitoring station most representative of the Project Site is the LAX-Hastings Monitoring Station, located at 7201 West Westchester Parkway, Los Angeles (LAX-Hastings). Since PM2.5 data are not available at the LAX-Hastings station, the monitoring data collected at the station located at 3648 N Long Beach Blvd Long Beach (Long Beach North) are used for it being relatively close to and having similar surroundings as the Proposed Project. The most recent data available from SCAQMD for these two monitoring stations are from years 2015 to 2017.[69] The pollutant concentration data for ozone, NO_2, CO, SO_2, PM10, and PM2.5 for these years are summarized in **Table 3.2-2**. As shown in Table 3.2-2, the CAAQS and NAAQS were exceeded in the vicinity of the Project Site for O_3 and PM2.5 and the CAAQS exceeded for PM10 between 2015 and 2017.

TABLE 3.2-2
AMBIENT AIR QUALITY IN THE PROJECT VICINITY

Pollutant/Standard[a,b,c]	2015	2016	2017	2018
Ozone, O_3 (1-hour)				
Maximum Concentration (ppm)	0.096	0.087	0.086	0.074
Days > CAAQS (0.09 ppm)	1	0	0	0
Ozone, O_3 (8-hour)				
Maximum Concentration (ppm)	0.077	0.080	0.070	0.065
Days > CAAQS (0.070 ppm)	3	3	0	0
Days > NAAQS (0.070 ppm)	3	2	0	0
Nitrogen Dioxide, NO_2 (1-hour)				
Maximum Concentration (ppm)	0.087	0.082	0.072	0.060
Days > CAAQS (0.18 ppm)	0	0	0	0
98th Percentile Concentration (ppm)	0.058	0.055	0.055	0.050
Days > NAAQS (0.100 ppm)	0	0	0	0

[68] South Coast Air Quality Management District, 2017. *Final 2016 Air Quality Management Plan*, p. 3-32. March 2017.
[69] South Coast Air Quality Management District, Historical Data by Year, (2014-2016). http://www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year. Accessed January 2, 2019.

TABLE 3.2-2
AMBIENT AIR QUALITY IN THE PROJECT VICINITY

Pollutant/Standard[a,b,c]	2015	2016	2017	2018
Nitrogen Dioxide, NO_2 (Annual)				
Annual Arithmetic Mean (0.030 ppm)	0.011	0.010	0.009	0.009
Carbon Monoxide, CO (1-hour)				
Maximum Concentration (ppm)	1.7	1.6	2.1	1.8
Days > CAAQS (20 ppm)	0	0	0	0
Days > NAAQS (35 ppm)	0	0	0	0
Carbon Monoxide, CO (8-hour)				
Maximum Concentration (ppm)	1.4	1.3	1.6	1.5
Days > CAAQS (9.0 ppm)	0	0	0	0
Days > NAAQS (9 ppm)	0	0	0	0
Sulfur Dioxide, SO_2 (1-hour)				
Maximum Concentration (ppm)	0.015	0.010	0.010	0.012
Days > CAAQS (0.25 ppm)	0	0	0	0
99th Percentile Concentration (ppm)	0.007	0.006	0.007	0.005
Days > NAAQS (0.075 ppm)	0	0	0	0
Sulfur Dioxide, SO_2 (24-hour)				
Maximum Concentration (ppm)	0.002	0.002	0.001	0.001
Days > CAAQS (0.04 ppm)	0	0	0	0
Respirable Particulate Matter, PM10 (24-hour)				
Maximum Concentration (µg/m^3)	42.0	43.0	46	45
Samples > CAAQS (50 µg/m^3)	0	0	0	0
Samples > NAAQS (150 µg/m^3)	0	0	0	0
Respirable Particulate Matter, PM10 (Annual)				
Annual Arithmetic Mean (20 µg/m^3)[d]	21.2	21.6	19.8	20.5
Fine Particulate Matter, PM2.5 (24-hour)				
Maximum Concentration (µg/m^3)	54.6	29.7	55.3	N/A
98th Percentile Concentration (µg/m^3)	32.1	23.6	32	N/A
Samples > NAAQS (35 µg/m^3)	3	0	4	N/A
Fine Particulate Matter, PM2.5 (Annual)				
Annual Arithmetic Mean (12 µg/m^3)[e]	10.8	10.4	10.9	N/A

NOTE:
[a] ppm = parts per million; µg/m^3 = micrograms per cubic meter
[b] The monitoring station most representative of the Project Site is the LAX-Hastings Monitoring Station, which is used to establish ambient NO_2, CO, SO_2, and PM10 levels. Since PM2.5 data are not available at the LAX-Hastings station, the monitoring data collected at the station Long Beach North monitoring station are used. The most recent data available from SCAQMD for these two monitoring stations are from years 2015 to 2017.
[c] CAAQS are based on a not to exceed standard. NAAQS are based on a 3-year average of the annual 4th highest daily maximum 8 hour concentration for ozone; 98th percentile of 1-hour daily maximum concentrations averaged over 3 years for 1-hr NO_2; and not to be exceeded more than once per year on average over 3 years for 24-hr PM.
[d] State annual average (AAM) PM10 standard is > 20 µg/m^3. Federal annual PM10 standard (AAM > 50 µg/m3) was revoked in 2006.
[e] Both Federal and State standards are annual average (AAM) > 12.0 µg/m^3.

SOURCE: South Coast Air Quality Management District, Historical Data by Year, www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year; US Environmental Protection Agency, AirData, www.epa.gov/airdata/ad_rep_mon.html. Accessed April 2019.

Existing Health Risk in the Surrounding Area

As discussed above, EPA and CARB recognize that exposure to elevated levels of ground-level ozone and PM can be a cause of respiratory and cardiovascular health effects. Respiratory health impacts include throat irritation, reduced lung function, emphysema, bronchitis, chronic obstructive pulmonary disease (COPD), and possibly lung cancer. A strong correlation between

long-term exposure to air pollutants, such as ozone and NO_2, to the aggravation of asthma is widely recognized, and these pollutants are believed to be one of many causes of asthma development. Other common asthma triggers include indoor and outdoor allergens and irritants, such as tobacco smoke, mold, pets, dust, dust mites, oxides of nitrogen and wood smoke, chemicals and cleaning solvents.[70,71]

The Los Angeles County Department of Public Health tracks many health indicators, such as cancer, diabetes, heart disease and stroke, infectious diseases, and respiratory diseases, such as COPD.[72] This data represents occurrence rates and does not attribute causation to the incidence rate. Regardless of cause, the latest data indicate that public health in Los Angeles County is largely at the same or slightly better than national and state-wide norms for health indices such as adults with heart disease, lung and bronchus cancer rates, emergency room (ER) visits due to COPD, death rate due to lung cancer, death rate due to heart attack, and death rate due to stroke. Los Angeles County hospitalization rates due to heart failure and heart attacks exceed State rates, as do ER visits and hospitalization rates due to asthma in adults and children.[73]

A subset of these health indices is tracked at the sub-regional level. For example, according to health surveys conducted in 2016-2017, the rate of asthma in the adult population is 13.2 percent in Los Angeles County, and 13.9 percent in Service Planning Area (SPA) 8, which includes Inglewood and other South Bay cities. The same survey reports the State adult asthma incidence rate to be 15 percent and the national rate to be 14 percent;[74] however, the CDC, relying on a different survey, reports the rate of asthma in adults to be approximately 12 percent nationwide.[75]

In 2015, SCAQMD issued the Multiple Air Toxics Exposure Study (MATES IV),[76] which estimated long-term inhalation carcinogenic exposure risks from more than 30 air pollutants, including both gases and particulates, for the Air Basin. The monitoring study was accompanied by a computer modeling study in which SCAQMD estimated the risk of cancer from breathing toxic air pollution throughout the region based on emissions and weather data. The predictive study based on computer modeling concluded a background cancer risk of approximately 1,023 in one million. A population-weighted average risk was determined to be approximately 997 in one million based on actual monitored data measured throughout the Air Basin.

---

70 USEPA, Asthma, URL: https://www.epa.gov/asthma/asthma-triggers-gain-control. Accessed February 19, 2019.
71 AAFA, URL: https://www.aafa.org/air-pollution-smog-asthma/. Accessed February 20, 2019.
72 Los Angeles County Department of Public Health, Think Health LA, https://www.thinkhealthla.org/indicators. Accessed February 20, 2019.
73 Los Angeles County Department of Public Health, Think Health LA, https://www.thinkhealthla.org/indicators. Accessed February 20, 2019
74 Los Angeles County Department of Public Health, Think Health LA, https://www.thinkhealthla.org/indicators/index/view?indicatorId=78&localeId=256. Accessed February 20, 2019.
75 Centers for Disease Control and Prevention, 2011 National Health Interview Survey (NHIS) Data, January 2013. https://www.cdc.gov/asthma/nhis/2011/table4-1.htm. Accessed August 12, 2019.
76 South Coast Air Quality Management District, 2015. *Final Report – Multiple Air Toxics Exposure Study in the South Coast Air Basin*, p. 2-11. May 2015.

These estimates used the cancer risk calculation methods adopted by the California Environmental Protection Agency (Cal/EPA) Office of Environmental Health Hazard Assessment (OEHHA) in 2015. This methodology supersedes the 2003 guidelines and takes into account the sensitivity of children to TAC emissions, breathing rates, and time spent at home since children have higher breathing rates compared to adults and would likely spend more time at home resulting in longer exposure durations.[77]

Under the updated OEHHA methodology, the relative reduction in the overall cancer risk from the MATES IV results compared to MATES III would be about 65 percent and 57 percent, respectively. Based on the online MATES IV Carcinogenic Risk Interactive Map, the background increase in cancer risk due to exposure to airborne TACs in the vicinity of the Project Site to be 1,000 in one million.[78] The factors that lead to the development of cancer are complex, and include age, genetics, lifestyle (obesity, tobacco use, alcohol use, etc.), and exposure to carcinogens. According to recent studies, approximately 38.4 percent of American men and women will be diagnosed with cancer from all causes at some point during their lifetimes (based on 2013–2015 data).[79] For comparison sake, this can be expressed as a 384,000 in one million cancer risk, and the incremental increase in an individual's lifetime cancer risk due to airborne TACs in the Basin to be an increase of approximately 0.0002 percent.

According to the MATES IV, approximately 68 percent of the airborne carcinogenic risk in the Air Basin is attributed to DPM emissions, approximately 22 percent is attributed to other toxics associated with mobile sources (including benzene, butadiene, and formaldehyde), and approximately 10 percent is attributed to stationary sources (which include industries and certain other businesses, such as dry cleaners and chrome plating operations).[80] Generally, the risk from air toxics is lower near the coastline and increases inland, with higher risks concentrated near large diesel sources (e.g., freeways, airports, and ports).

Existing Project Site Emissions

The Project Site is comprised of approximately 28 acres of land. All but six of the parcels (approximately 25.2 acres) that make up the Project Site are currently vacant, undeveloped or are streets. The six developed parcels, approximately 54,098 sf (1.24 acres) all within the Arena Site, include a fast food restaurant, a motel, a warehouse and light manufacturing facility, a commercial catering business, and a groundwater well and related facilities that would be relocated on site during Proposed Project operations.

---

77 California Environmental Protection Agency, Office of Health Hazard Assessment, 2015. Air Toxics Hot Spots Program, Guidance Manual for Preparation of Health Risk Assessments. February 2015.

78 South Coast Air Quality Management District, 2015. *Final Report – Multiple Air Toxics Exposure Study in the South Coast Air Basin*, MATES IV Carcinogenic Risk Interactive Map. May 2015.

79 National Cancer Institute, Cancer Statistics, 2018. https://www.cancer.gov/about-cancer/understanding/statistics. Accessed on September 4, 2019.

80 South Coast Air Quality Management District, 2015. *Final Report – Multiple Air Toxics Exposure Study in the South Coast Air Basin*, p. ES-2. May 2015.

Operation of these existing on-site businesses result in the emission of air pollutants associated with vehicle trips to and from the Project Site, on-site combustion of natural gas for heating and cooking, and fugitive emissions of VOCs from the use of aerosol products and coatings and landscaping. However, data with respect to the exact activity level (i.e., utility consumptions) at each business may not be obtainable, so existing emissions were based on default values form the California Emissions Estimator software (CalEEMod®).[81] CalEEMod was developed for the California Air Pollution Officers Associated (CAPCOA) in collaboration with the California Air Districts, which is a Statewide land use emission computer model designed to provide a uniform platform for government agencies, land us planners, and environmental professionals to quantify potential criteria air pollutant and GHG emissions from a variety of land use project. CalEEMod is the SCAQMD-recommended model for quantifying air quality and GHG impacts from land use projects throughout California.[82]

CalEEMod was used to estimate the existing on-site emissions from natural gas appliances and equipment, and fugitive VOC emissions. Defaults were used for area sources with a historical (pre-2005) electricity and natural gas usage rate base on building land use and square footage since the existing buildings on the Project Site were built before 2005.[83] Mobile source emissions associated with existing Project Site operations were calculated outside of CalEEMod using EMFAC2017 emission factors and estimated VMT for existing uses as presented in Section 3.14, Transportation and Circulation. Emissions modeling was conducted using the vehicle fleet mix for the Air Basin as provided in the EMFAC model, and Air Basin-specific vehicle fleet emission factors for 2024. **Table 3.2-3** presents the regional and localized (which excludes mobile) emissions from the existing development on the Project Site.

TABLE 3.2-3
EXISTING PROJECT SITE EMISSIONS (POUNDS PER DAY)

Source	VOC	NO_X	CO	SO_2	PM10	PM2.5
Existing Project Site Regional Emissions						
Area (Consumer Products, Landscaping)	1	<1	<1	0	<1	<1
Energy (Natural Gas)	<1	<1	<1	<1	<1	<1
Motor Vehicles	1	3	13	<1	4	1
Total Regional Existing Emissions	**3**	**3**	**14**	**<1**	**4**	**1**

NOTES:
Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix D.

SOURCE: ESA, 2019.

[81] California Emissions Estimator Model. Available at: http://www.caleemod.com/

[82] South Coast Air Quality Management District, Air Quality Modeling, https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-modeling. Accessed June 24, 2019.

[83] California Air Pollution Control Officers Association, California Emissions Estimator Model User's Guide, 2017. http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, Accessed April 25, 2019.

Existing Off-Site Uses Relocating to Project Site

In addition to the existing Project Site uses, there are existing off-site activities to be relocated to the Project Site which result in existing emissions of air pollutants. Off-site operational uses include the existing LA Clippers team offices, located in downtown Los Angeles at 1212 South Flower Street, and the existing LA Clippers practice and athletic training facility, located in Playa Vista at 6854 South Centinela Avenue. Operation of these off-site activities also result in the emission of air pollutants at their current location.

As with existing Project Site emissions, data with respect to the exact activity level (i.e., utility consumptions) associated with each existing off-site activity may not be obtainable, therefore existing emissions for the relocated uses were based on CalEEMod default values. Defaults were used for area sources with a historical (pre-2005) electricity and natural gas usage rates base on building land use and square footage since the off-site team offices and practice and athletic training facility were built before 2005.[84] Mobile source emissions associated with the existing off-site team offices and practice and athletic training facility were calculated outside of CalEEMod using EMFAC2017 emission factors and the estimated VMT for existing uses as presented in Section 3.14, Transportation and Circulation. Emissions modeling was conducted using the vehicle fleet mix for the Air Basin as provided in the EMFAC models, and Air Basin-specific vehicle fleet emission factors for 2024. **Table 3.2-4** presents the regional and localized emissions from the existing uses relocating to the Project Site.

TABLE 3.2-4
EXISTING OFF-SITE USES RELOCATING TO PROJECT SITE (POUNDS PER DAY)

Source	VOC	NO_X	CO	SO_2	PM10	PM2.5
Existing Off-Site Regional Emissions						
Area (Consumer Products, Landscaping)	1	<1	<1	0	<1	<1
Energy (Natural Gas)	<1	<1	<1	<1	<1	<1
Motor Vehicles	2	3	17	<1	6	2
Total Regional Existing Emissions	**3**	**4**	**18**	**<1**	**6**	**2**

NOTES:
Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix D.

SOURCE: ESA, 2019.

Air Quality Sensitive Receptors and Locations

Certain population groups, such as children, elderly, and acutely and chronically ill persons (especially those with cardio-respiratory diseases), are considered more sensitive to the potential effects of air pollution than others.[85] As a result, certain land uses that are occupied by these population groups, such as residences, schools, playgrounds and childcare center, hospitals,

[84] California Air Pollution Control Officers Association, California Emissions Estimator Model User's Guide, 2017. http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, Accessed April 25, 2019.

[85] South Coast Air Quality Management District, 1993. *CEQA Air Quality Handbook*. November 1993.

rehabilitation centers, convalescent centers, and retirement homes are considered to be air quality sensitive land uses, i.e., air quality sensitive receptors.

The Proposed Site encompasses four subareas where different features of the Proposed Project will be located: Arena Site, West Parking Garage Site, East Transportation and Hotel Site, and Well Relocation Site. The Project Site is primarily surrounded by sensitive receptors to the south, west, and north, as shown in **Figure 3.2-2**. Land uses and the nearest air quality sensitive receptors surrounding the Project Site are described below.

Arena Site

To the north of the Arena Site and across West Century Boulevard is the Hollywood Park Specific Plan (HPSP) project. Residential uses will be located within the HPSP project approximately 900 feet north of the Arena Site. Additional residential uses are located adjacent to the Arena Site, to the west, as well as on the west side of South Prairie Avenue. Adjacent to the Arena Site to the south is a religious facility with a childcare center as well as residential uses.

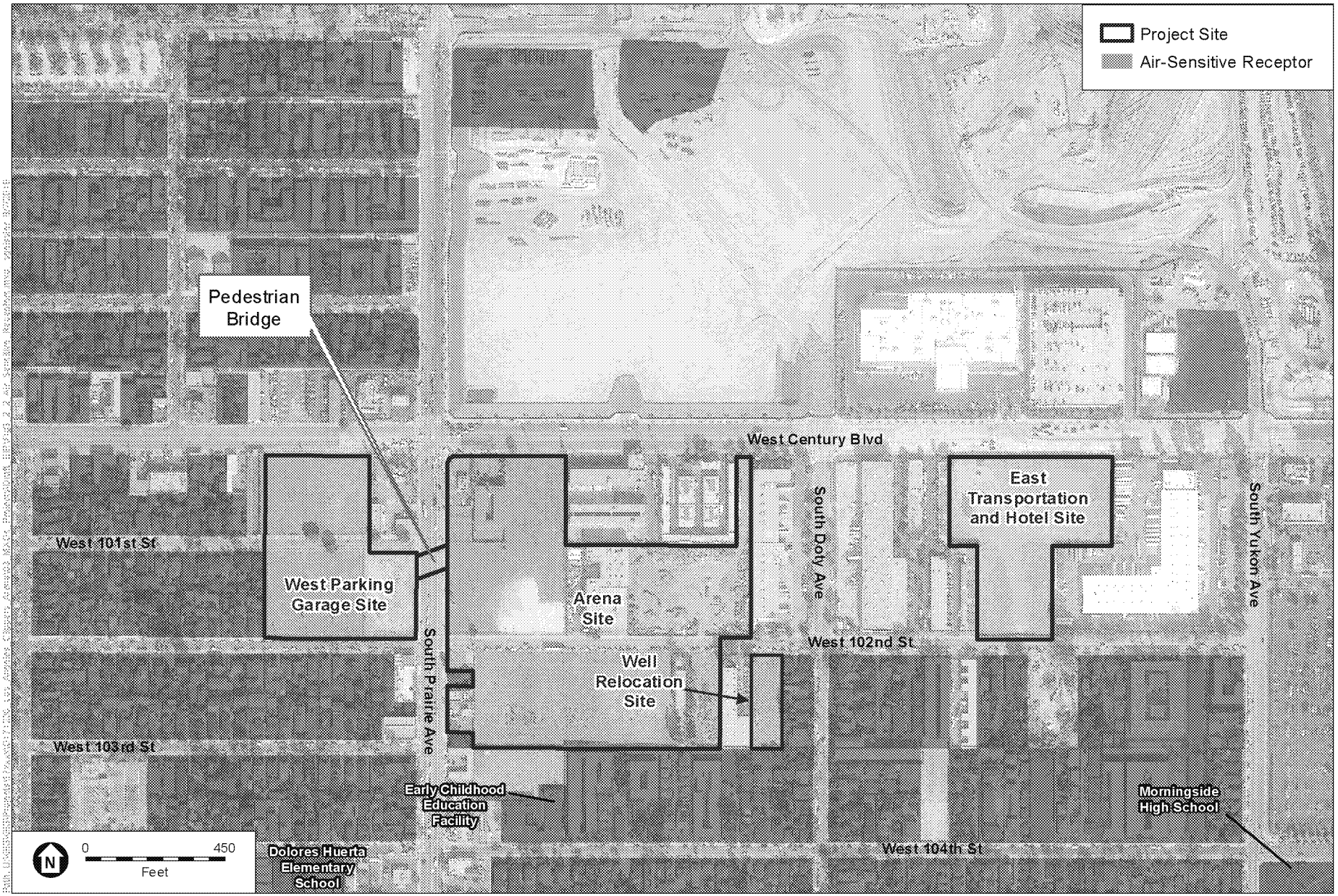
The nearest air quality sensitive receptors to the Arena Site would be the residential uses located along the east side of South Prairie Avenue between West 102nd Street and West 103rd Street to the west (adjacent to the site) and the Inglewood Southside Christian Church and residential uses along West 104th Street to the south (adjacent to the site). Typically places of worship like the Inglewood Southside Christian Church are not considered air quality sensitive receptors; however, an early childhood education use that provides other family support services is located on the Inglewood Southside Christian Church site, where children between the ages of 3 years of age and 5 years of age attend.

West Parking Garage Site

To the north of the West Century Boulevard are commercial uses, Holly Crest Hotel, and Motel 6. Commercial uses are located immediately to the east, a religious facility and residential uses are located to the south, and a motel, religious facility, and residential uses are located to the west. The nearest air quality sensitive receptors to the West Parking Garage Site would be residential uses to the west (adjacent to the site) and south (approximately 50 feet) of the site.

East Transportation and Hotel Site

The Hollywood Park Casino is located to the north of the East Transportation and Hotel Site, north of West Century Boulevard. To the west is an aquarium/pet store. To the south of the site are residential and commercial uses. A United Parcel Service (UPS) facility is located to the east of the East Transportation and Hotel Site. The nearest air quality sensitive receptors would be the residential uses located approximately 50 feet to the south of the Project Site on the south side of West 102nd Street.



SOURCE: TerraServer, 2018; ESA, 2019.

Inglewood Basketball and Entertainment Center

Figure 3.2-2

Air-Sensitive Receptors

ESA

Well Relocation Site

To the north of the Well Relocation Site is an occupied warehousing and shipping company. To the east of the site are residential uses. A vacant lot and residential uses are located to the south. To the west of the site is an occupied commercial use. The nearest air quality sensitive receptors would be the residential uses to the east and south, adjacent and approximately 60 feet from the site, respectively.

3.2.2 Adjusted Baseline Environmental Setting

Section 3.2, Air Quality, assumes the Adjusted Baseline Environmental Setting as described in Section 3.0, Introduction to the Analysis. Related to air quality, the changes associated with the HPSP Adjusted Baseline projects, currently under development and anticipated to be operational prior to construction of the Proposed Project, include operational air emissions associated with new uses on the HPSP project.

The HPSP Adjusted Baseline projects would emit air pollutants associated with vehicle trips, maintenance operations, energy consumption, etc., from all of its operational land uses. Specifically, vehicle trips associated with activities at the HPSP would begin taking place during mid-2020 when the NFL Stadium begins operations and uses are operating on the site and would have an impact on local and regional air quality. Accordingly, the air pollutant emissions associated with this development within the HPSP area are considered as part of the HPSP Adjusted Baseline. The nearest air quality sensitive receptors in the HPSP area under the Adjusted Baseline would be residences located approximately 950 feet north of the Project Site. No other changes to the existing environmental setting related to air quality would occur under the Adjusted Baseline.

3.2.3 Regulatory Setting

This section provides a summary of pertinent federal, State, and local statutes, regulations, plans, and policies that have been adopted that address air quality.

Federal

The 1963 CAA was the first federal legislation regarding air pollution control and has been amended numerous times in subsequent years, with the most recent amendments occurring in 1990. At the federal level, US EPA is responsible for implementation of certain portions of the CAA including mobile source requirements.

The CAA establishes federal air quality standards and specifies future dates for achieving compliance. The CAA also mandates that the State submit and implement a State Implementation Plan (SIP) for areas not meeting these standards. SIPs must include pollution control measures that demonstrate how the NAAQS will be met. The 1990 amendments to the CAA identify specific emission reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of

additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA that are most applicable to the Proposed Project include Title I (Nonattainment Provisions).

Title I requirements are implemented for the purpose of attaining NAAQS for the following criteria air pollutants: O_3; NO_2; CO; SO_2; PM10; and lead. The NAAQS were amended in July 1997 to include an 8-hour standard for O_3 and to adopt a NAAQS for PM2.5. The NAAQS were also amended in September 2006 to include an established methodology for calculating PM2.5 as well as revoking the annual PM10 threshold. **Table 3.2-5** shows the NAAQS currently in effect for each criteria air pollutant.

TABLE 3.2-5
AMBIENT AIR QUALITY STANDARDS

Pollutant	Average Time	California Standards[a]		National Standards[b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary[c,f]	Method[g]
O_3[h]	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.070 ppm (137 µg/m³)		
NO_2[i]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemi-luminescence	100 ppb (188 µg/m³)	None	Gas Phase Chemi-luminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		53 ppb (100 µg/m³)	Same as Primary Standard	
CO	1 Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	None	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10mg/m³)		9 ppm (10 mg/m³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—	—	
SO_2[j]	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)[j]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[j]	—	
PM10[k]	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		—		
PM2.5[k]	24 Hour	No Separate State Standard		35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12.0 µg/m³ [k]	15 µg/m³	

TABLE 3.2-5
AMBIENT AIR QUALITY STANDARDS

Pollutant	Average Time	California Standards[a]		National Standards[b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary[c,f]	Method[g]
Lead[l,m]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3(for certain areas)[m]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles[n]	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of 10 miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70%. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates (SO_4)	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[l]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

NOTES:
[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in section 70200 of Title 17 of the California Code of Regulations.
[b] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 micrograms/per cubic meter (µg/m^3) is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
[d] Any equivalent procedure which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.
[e] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
[f] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
[g] Reference method as described by the US EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the US EPA.
[h] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
[i] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb.
[j] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated non-attainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
[k] On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3.
[l] CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
[m] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated non-attainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
[n] In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

SOURCE: CARB, Ambient Air Quality Standards (10/1/15), Accessed April 2019.

State

California Clean Air Act

The CCAA, signed into law in 1988, requires all areas of the State to achieve and maintain the CAAQS by the earliest practical date. The CAAQS are established to protect the health of the most sensitive groups and apply to the same criteria air pollutants as the federal CAA and also includes State-identified criteria air pollutants, which are sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride.[86] Table 3.2-5, provided above, shows the CAAQS currently in effect for each of the federally identified criteria air pollutants as well as state recognized pollutants, such as sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride.

Mobile Source Regulations

Mobile sources are a significant contributor to the air pollution in California. CARB has established exhaust emission standards for automobiles, which are more stringent than the federal emissions standards.

Through its Mobile Sources Program, CARB has developed programs and policies to reduce emissions from on-road heavy-duty diesel vehicles. Specifically, the On-Road Heavy-Duty Diesel Vehicle Regulation requires diesel trucks and buses that operate in the State to be upgraded to reduce emissions. By January 1, 2023, nearly all vehicles must have engines certified to 2010 model year engines or equivalent. The Innovative Clean Transit Program (ICT) sets emissions reduction standards for new public transit vehicles and requires major transit agencies to only purchase zero emission (ZE) buses after 2029. The Solid Waste Collection Vehicle Regulation requires solid waste collection vehicles and heavy diesel-fueled on-road single engine cranes to be upgraded. The Rule for On-Road Heavy-Duty Diesel-Fueled Public and Utility Fleets requires fleets to install emission control devices on vehicles or purchase vehicles that run on alternative fuels or use advanced technologies to achieve emissions requirements by specified implementation dates. CARB also established an In-Use Off-Road Diesel-Fueled Fleets Regulation to impose limits on idling and require fleets to retrofit or replace older engines.

California Air Resources Board On-Road and Off-Road Vehicle Rules

In 2004, CARB adopted an Airborne Toxic Control Measure (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 where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given time.

In 2008 CARB approved the Truck and Bus Regulation to reduce NO_X, PM10, and PM2.5 emissions from existing diesel vehicles operating in California. The requirements were amended in December 2010 and apply to nearly all diesel fueled trucks and busses with a gross vehicle

[86] California Air Resources Board, California Ambient Air Quality Standards (CAAQS), https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards. Accessed June 24, 2019.

weight rating greater than 14,000 pounds. For the largest trucks in the fleet (i.e., those with a gross vehicle weight rating greater than 26,000 pounds), there are two methods to comply with the requirements. The first method is for the fleet owner to retrofit or replace engines, starting with the oldest engine model year, to meet 2010 engine standards, or better. This is phased over eight years, starting in 2015 and would be fully implemented by 2023, meaning that all trucks operating in the State subject to this option would need to meet or exceed the 2010 engine emission standards for NO_X and PM by 2023. The second option, if chosen, requires fleet owners, starting in 2012, to retrofit a portion of their fleet with diesel particulate filters achieving at least 85 percent removal efficiency, so that by January 1, 2016, their entire fleet is equipped with diesel particulate filters. However, diesel particulate filters do not typically lower NO_X emissions. Thus, fleet owners choosing the second method must still comply with the 2010 engine emission standards for their trucks and busses by 2020. Beginning January 1, 2020, this requirement will be enforced by the California Department of Motor Vehicles (DMV). Senate Bill 1 (SB1), the Road Repair and Accountability Act of 2017, was signed into law on April 28, 2017. SB1 authorizes the DMV to check that vehicles are compliant with or exempt from CARB's Truck and Bus Regulation. If a vehicle is not compliant with the rule, DMV will no longer register that vehicle starting January 1, 2020.

In addition to limiting exhaust from idling trucks, CARB promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation adopted by CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. Implementation is staggered based on fleet size (which is the total of all off-road horsepower under common ownership or control), with the largest fleets to begin compliance by January 1, 2014. Each fleet must demonstrate compliance through one of two methods. The first option is to calculate and maintain fleet average emissions targets, which encourages the retirement or repowering of older equipment and rewards the introduction of newer cleaner units into the fleet. The second option is to meet the Best Available Control Technology (BACT) requirements by turning over or installing Verified Diesel Emission Control Strategies (e.g., engine retrofits) on a certain percentage of its total fleet horsepower. The compliance schedule requires that BACT turn overs or retrofits be fully implemented by 2023 in all equipment in large and medium fleets and across 100 percent of small fleets by 2028.

Sustainable Communities and Climate Protection Act of 2008 (SB 375)

Senate Bill 375 (SB 375) directs CARB to set regional targets for reducing greenhouse gas emissions from cars and light trucks.[87] As part of the transportation planning process, each region's Metropolitan Planning Organization (MPO) is responsible for preparing a Sustainable Communities Strategies (SCS) that integrates transportation, land-use, and housing policies to plan for achievement of the emissions target for their region. Specifically, SB 375 focuses on reducing vehicle miles traveled (VMT) and encouraging more compact, complete, and efficient

[87] Office of Planning and Research, 2011. Senate Bill 375 CEQA Provision Flow Charts. February 2011.

communities. Further, SB 375 established CEQA streamlining and relevant exemptions for projects that are determined to be consistent with the land use assumptions and other relevant policies of an adopted SCS.

Assembly Bill 987 (AB 987)

AB 987 was signed by Governor Jerry Brown on September 30, 2018. The bill added section 21168.6.8 to the California Public Resources Code (PRC) and provides for expedited judicial review in the event that the adequacy of this EIR is challenged, so long as certain requirements are met. The discussion of AB 987 below is focused on the provisions of PRC section 21168.6.8 that addresses air emission, specifically criteria air pollutants and TACs. A full description of AB 987 is provided in Chapter 1, Introduction.

AB 987 is described in this chapter under Regulatory Setting because it potentially applies to the Proposed Project and addresses issues related to air pollutant emissions. However, it is not a regulatory statute, per se, in that the Proposed Project is not required to comply with the provisions of PRC 21168.6.8. Rather, AB 987 established provisions by which the project applicant for the Proposed Project may voluntarily decide to attempt to qualify under the provisions of the statute, and if certified as qualified by the Governor's Office, then it would be afforded certain benefits of expedited judicial review for any action brought to challenge the certification of this EIR or the approval of the Proposed Project. In the event that the Proposed Project does not qualify under the provisions of AB 987, the Proposed Project could still be reviewed and approved by the City, but judicial review would occur under the standard provisions of CEQA.

The provisions of PRC section 21168.6.8 are similar to the provisions of the Jobs and Economic Improvement through Environmental Leadership Act of 2011 (AB 900; PRC sections 21178–21189.3), as subsequently amended, which established expedited judicial review of certified Environmental Leadership Development Projects. In order to qualify for expedited judicial review under AB 987, the Proposed Project would have to achieve certain vehicle trip reduction goals and achieve a "no net new" greenhouse gas emissions standard, both of which would also result in reductions in criteria air pollutants and TACs.[88] Further, as a condition of approval of the Proposed Project, the lead agency must require the project applicant, in consultation with SCAQMD, to implement measures that will achieve criteria air pollutant and TAC reductions over and above any reductions required by other laws or regulations in communities surrounding the Project Site, consistent with emission reduction measures that may be identified for those communities pursuant to Health and Safety Code section 44391.2. At a minimum, these measures must reduce NO_X emissions by 400 tons and PM2.5 emissions by 10 tons over 10 years following the commencement of construction of the Proposed Project, with a minimum reduction of 130 tons of NO_X and 3 tons of PM2.5 achieved within the first year following commencement of construction. If the project applicant can demonstrate and verify to SCAQMD that it has invested at least thirty million dollars

[88] Office of the Governor, 2018. Assembly Bill 987 Signing Message. September 30, 2018.

($30,000,000) to achieve the requirements of this subdivision, the requirements of this subdivision shall be deemed met, so long as one-half of the reductions are met.

Regional

South Coast Air Quality Management District

SCAQMD has jurisdiction over air quality planning for all of Orange County, Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. The Air Basin is a subregion within SCAQMD jurisdiction. While air quality in the Air Basin has improved, the Air Basin requires continued diligence to meet the air quality standards.

Air Quality Management Plan

SCAQMD has adopted a series of AQMPs to meet the CAAQS and NAAQS, the 2012 and the 2016 AQMPs. While the 2016 AQMP is the most recent and was adopted by SCAQMD and CARB, it has not received full US EPA approval for inclusion in the SIP. Therefore, until such time as the 2016 AQMP is completely approved by the US EPA, the 2012 AQMP remains the applicable AQMP; however, this analysis considers both the 2012 and 2016 AQMPs as appropriate.

The 2012 AQMP includes a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, and on-road and off-road mobile sources. It highlights the significant amount of emission reductions needed and the urgent need to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria air pollutant standards within the timeframes allowed under the CAA.[89]

The key undertaking of the 2012 AQMP is to bring the Air Basin into attainment with the NAAQS for the 24-hour PM2.5 standard. It also intensifies the scope and pace of continued air quality improvement efforts toward meeting the 2024 8-hour O3 standard deadline with new measures designed to reduce reliance on the CAA section 182(e)(5) long-term measures for NOX and VOC reductions. SCAQMD expects exposure reductions to be achieved through implementation of new and advanced control technologies as well as improvement of existing technologies.

The SCAQMD Governing Board adopted the 2016 AQMP on March 3, 2017.[90] CARB approved the 2016 AQMP on March 23, 2017. Key elements of the 2016 AQMP include implementing fair-share emissions reductions strategies at the federal, state, and local levels; establishing partnerships, funding, and incentives to accelerate deployment of ZE and near-zero-emissions (NZE) technologies; and taking credit from co-benefits from greenhouse gas, energy, transportation and other planning efforts.[91] The strategies included in the 2016 AQMP are

[89] South Coast Air Quality Management District, 2013. *Final 2012 Air Quality Management Plan*. February 2013.
[90] South Coast Air Quality Management District, 2017. *Final 2016 Air Quality Management Plan*. March 2017.
[91] South Coast Air Quality Management District, 2017. *Final 2016 Air Quality Management Plan*. March 2017.

intended to demonstrate attainment of the NAAQS for the national non-attainment pollutants ozone and PM2.5.[92]

South Coast Air Quality Management District CEQA Guidelines

SCAQMD's CEQA guidelines are voluntary initiatives recommended for consideration by local planning agencies. The *CEQA Air Quality Handbook* (Handbook) published by SCAQMD provides local governments with guidance for analyzing and mitigating project-specific air quality impacts.[93] SCAQMD is currently updating some of the information and methods in the Handbook, such as the screening tables for determining the air quality significance of a project and the on-road mobile source emission factors. While this process is underway, SCAQMD recommends using other approved models to calculate emissions from land use projects, such as CalEEMod.[94]

The SCAQMD *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning* considers impacts to air quality sensitive receptors from TAC-emitting facilities.[95] SCAQMD's siting distance recommendations are the same as those provided by CARB (e.g., a 500-foot siting distance for air quality sensitive receptors proposed in proximity to freeways and high-traffic roads, and the same siting criteria for distribution centers and dry cleaning facilities).

The SCAQMD Final Localized Significance Threshold Methodology and Final Methodology to Calculate Particulate Matter (PM) 2.5 and PM2.5 Significance Thresholds provides guidance when evaluating the localized effects of emissions in the CEQA evaluation.[96,97] These guidance documents were promulgated by the SCAQMD Governing Board as a tool to assist lead agencies to analyzed localized impacts associated with project-specific level proposed projects. The guidance documents establish mass emission rate "look up tables" as significance thresholds for projects that are five acres or less. For projects that are larger than five acres, such as the Proposed Project, it is recommended that project-specific air quality dispersion modeling is completed to determine localized air quality (see the discussion on *Air Dispersion Modeling*, below, for more details).

---

92 South Coast Air Quality Management District, 2016. *NAAQS/CAAQS and Attainment Status for South Coast Air Basin*. 2016.
93 South Coast Air Quality Management District, 1993. *CEQA Air Quality Handbook*. November 1993.
94 South Coast Air Quality Management District, Air Quality Modeling, https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-modeling. Accessed June 24, 2019.
95 South Coast Air Quality Management District, 2005. *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*. May 06, 2005.
96 South Coast Air Quality Management District, 2008. *Final Localized Significance Threshold Methodology*. June 2003, Revised July 2008.
97 South Coast Air Quality Management District, 2006. *Final – Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds*. October 2006.

South Coast Air Quality Management District Rules and Regulations

Several SCAQMD rules adopted to implement portions of the 2012 and 2016 AQMPs may apply to the Proposed Project. The Proposed Project may be subject to the following SCAQMD rules and regulations:

Regulation IV – Prohibitions: This regulation sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air emissions, fuel contaminants, start-up/ shutdown exemptions and breakdown events. The following is a list of rules which apply to the Proposed Project:

- ***Rule 401 – Visible Emissions***: This rule states that a person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated No. 1 on the Ringelmann Chart or of such opacity as to obscure an observer's view.
- ***Rule 402 – Nuisance:*** This rule states that a person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
- ***Rule 403 – Fugitive Dust:*** This rule requires projects to prevent, reduce or mitigate fugitive dust emissions from a site. Rule 403 restricts visible fugitive dust to a project property line, restricts the net PM10 emissions to less than 50 micrograms per cubic meter ($\mu g/m^3$) and restricts the tracking out of bulk materials onto public roads. Additionally, projects must utilize one or more of the best available control measures, which may include adding freeboard to haul vehicles, covering loose material on haul vehicles, watering, using chemical stabilizers and/or ceasing all activities.

Regulation XI – Source Specific Standards: Regulation XI sets emissions standards for specific sources. The following is a list of rules which may apply to the Proposed Project:

- ***Rule 1113 – Architectural Coatings:*** This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.
- ***Rule 1138 – Control of Emissions from Restaurant Operations:*** This rule specifies PM and VOC emissions and odor control requirements for commercial cooking operations that use chain-driven charbroilers to cook meat.
- ***Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters:*** This rule requires manufacturers, distributors, retailers, refurbishers, installers, and operators of new and existing units to reduce NO_X emissions from natural gas-fired water heaters, boilers, and process heaters as defined in this rule.
- ***Rule 1186 – PM10 Emissions from Paved and Unpaved Roads, and Livestock Operations:*** This rule applies to owners and operators of paved and unpaved roads and livestock operations. The rule is intended to reduce PM10 emissions by requiring the cleanup of material deposited onto paved roads, use of certified street sweeping equipment, and treatment of high-use unpaved roads (see also Rule 403).

Regulation XIII – New Source Review (NSR): Regulation XIII sets requirements for preconstruction review required under both federal and state statutes for new and modified sources located in areas that do not meet the Clean Air Act standards ("non-attainment" areas). NSR applies to both individual permits and entire facilities. Any permit that has a net increase in emissions is required to apply BACT. Facilities with a net increase in emissions are required to offset the emission increase by use of Emission Reduction Credits (ERCs). The regulation provides for the application, eligibility, registration, use and transfer of ERCs. For low emitting facilities, SCAQMD maintains an internal bank that can be used to provide the required offsets. In addition, certain facilities are subject to provisions that require public notice and modeling analysis to determine the downwind impact prior to permit issuance.

Regulation XIV – Toxics and Other Non-Criteria Air Pollutants: Regulation XIV sets requirements for new permit units, relocations, or modifications to existing permit units which emit toxic air contaminants or other non-criteria air pollutants. The following is a list of rules which may apply to the Proposed Project:

- ***Rule 1401 – New Source Review of Toxic Air Contaminants:*** This rule regulates new or modified facilities to limit cancer and non-cancer health risks from facilities located within SCAQMD jurisdiction.
- ***Rule 1402 – Control of Toxic Air Contaminants from Existing Sources:*** This rule regulates facilities that are already operating in order to limit cancer and non-cancer health risks. Rule 1402 incorporates the requirements and methodology of the AB 2588 Air Toxics "Hot Spots" program.
- ***Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities:*** This rule requires owners and operators of any demolition or renovation activity and the associated disturbance of asbestos-containing materials, any asbestos storage facility, or any active waste disposal site to implement work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (see Section 3.8, Hazards and Hazardous Materials).
- ***Rule 1470 – Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines:*** This rule applies to stationary compression ignition (CI) engine greater than 50 brake horsepower and sets limits on emissions and operating hours. In general, new stationary emergency standby diesel-fueled engines greater than 50 brake horsepower are not permitted to operate more than 50 hours per year for maintenance and testing.

SCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)

The Southern California Association of Governments (SCAG) is the Metropolitan Planning Organization for the region in which the City of Inglewood is located. In April 2016, SCAG adopted the *2016 Regional Transportation Plan/Sustainable Communities Strategy: A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life* (RTP/SCS), which is an update to the previous 2012 RTP/SCS.[98]

[98] Southern California Association of Governments, 2016. *2016 Regional Transportation Plan/Sustainable Communities Strategy*. April 2016.

The 2016 RTP/SCS considers the role of transportation in the broader context of economic, environmental, and quality-of-life goals for the future, identifying regional transportation strategies to address mobility needs. The 2016 RTP/SCS describes how the region can attain the GHG emission-reduction targets set by CARB by achieving an 8 percent reduction in passenger vehicle GHG emissions on a per capita basis by 2020, 18 percent reduction by 2035, and 21 percent reduction by 2040 compared to the 2005 level. Although the focus of the 2016 RTP/SCS is on GHG emission-reduction, compliance with and implementation of 2016 RTP/SCS policies and strategies would also have co-benefits of reducing per capita criteria air pollutant and TAC emissions associated with reduced per capita vehicle miles traveled (VMT). Improved air quality with implementation of the 2016 RTP/SCS policies would decrease reactive organic gases (ROG) by 8 percent, CO by 9 percent, NO_X by 9 percent, and PM2.5 by 5 percent.[99]

SCAG's 2016 RTP/SCS builds on the land use policies that were incorporated into the 2012 RTP/SCS, and provides specific strategies for successful implementation. These strategies include development of "complete communities," defined as mixed-use districts that concentrate housing, employment, and a mix of retail and services in close proximity to each other; encouraging employment development around current and planned transit stations and neighborhood commercial centers; encouraging the implementation of a "complete streets" policy that meets the needs of all users of the streets, roads and highways including bicyclists, children, persons with disabilities, motorists, electric vehicles, movers of commercial goods, pedestrians, users of public transportation, and seniors; and supporting alternative fueled vehicles. The 2016 RTP/SCS overall land use pattern reinforces the trend of focusing new housing and employment in infill areas well served by transit.

In addition, the 2016 RTP/SCS includes goals and strategies to promote active transportation and improve transportation demand management (TDM). The 2016 RTP/SCS strategies support local planning and projects that serve short trips, increase access to transit, expand understanding and consideration of public health in the development of local plans and projects, and support improvements in sidewalk quality, local bike networks, and neighborhood mobility areas. The 2016 RTP/SCS proposes to better align active transportation investments with land use and transportation strategies, increase competitiveness of local agencies for federal and state funding, and to expand the potential for all people to use active transportation.

In June 2016, CARB accepted SCAG's quantification of GHG emission reductions from the 2016 RTC/SCS and the determination that the 2016 RTP/SCS would, if implemented, achieve the 2020 and 2035 GHG emission reduction targets established by CARB.[100]

As described in Section 3.14, Transportation and Circulation, the Proposed Project would include shuttles to and from Metro stations during major Project events to reduce vehicle trips by

[99] Southern California Association of Governments, 2016. *2016 Regional Transportation Plan/Sustainable Communities Strategy*. April 2016.
[100] California Air Resources Board, 2016. *Southern California Association of Governments' (SCAG) 2016 Sustainable Communities Strategy (SCS) ARB Acceptance of GHG Quantification Determination*. June 2016.

spectators, event-day staff, and employees through the use of alternate modes of transportation including transit, shuttles, ridesharing, walking, and biking.

The consistency of the Proposed Project with the 2016 RTP/SCS is evaluated in more detail in Section 3.5, Energy Demand and Conservation, and Section 3.7, Greenhouse Gas Emissions.

Local

City of Inglewood General Plan

The City of Inglewood General Plan sets forth goals, objectives, and policies for the future development of the City and designates the location of desired future land uses within the City.

The following goal from the Land Use Element[101] of the City of Inglewood General Plan are relevant to air pollutant emissions.

> **Circulation Goal:** Promote and support adequate public transportation within the City and the region.
>
> **Circulation Goal:** Develop a safe and adequate pedestrian circulation system which is barrier free for the handicapped.

As described in Chapter 2, Project Description, the Proposed Project constitutes a large-scale development integrating commercial, office, hotel, entertainment uses that supports public transportation. The Proposed Project would include provisions that would promote the use of public transportation as a means of travel to and from the Proposed Project, including a Transportation Hub at the East Transportation and Hotel Site, shuttle stops on South Prairie Avenue, and a shuttle system for large events that would connect the Proposed Project to nearby Metro stations.

The consistency of the Proposed Project with the City of Inglewood General Plan is discussed under Impact 3.2-1 in Section 3.2.4, Analysis, Impacts and Mitigation.

City of Inglewood Energy and Climate Action Plan

The Inglewood Energy and Climate Action Plan (ECAP) presents the City's community and municipal inventories, emission forecasts, and recommended reduction targets for emissions to mitigate the City's impact on air quality and climate change.[102] Although the strategies within the ECAP are primarily directed towards GHG emission-reductions, as are discussed in further detail in Section 3.7, Greenhouse Gas Emissions, the measures in the ECAP would also achieve co-benefits of reducing criteria air pollutants and TACs. The ECAP's reduction strategies focus on actions within, or associated with activity in, the City that can result in a break from business-as-usual energy us and/or emissions. The City's GHG emission reduction targets are 15 percent below 2005 levels by 2020 and 32.5 percent below 2005 levels by 2035. The ECAP quantifies GHG reductions

[101] City of Inglewood, Department of Community Development and Housing, 1980. Land Use Element of the Inglewood General Plan. January 1980. Amended September 14, 2016.
[102] City of Inglewood, 2013. Inglewood Energy and Climate Action Plan. March 2013.

from five implementation strategies and actions: leading by example, increasing energy efficiency, supporting renewable energy generation, improving transportation options, and reducing consumption and waste, all of which are described in detail in the Local Regulatory Setting under Section 3.7, Greenhouse Gas Emissions. The following two of the five strategies and their related actions also have the potential for co-benefits of reducing criteria air pollutants and TACs:

Strategy 1 – Lead by Example with Municipal Government Actions

- Accelerate city vehicle fleet replacement
- Continue commute trip reduction program
- Planning for electric vehicle infrastructure

Strategy 4: Improve Transportation Options and Manage Transportation Demand

- Make roadways more efficient
- Improve transit
- Improve bicycle facilities
- Make parking more efficient
- Reduce commute trips
- Encourage land use intensification and diversity

The consistency of the Proposed Project with the ECAP is discussed under Impact 3.2-1 in Section 3.2.4, Analysis, Impacts and Mitigation, as well as in Impact 3.7-2 of Chapter 3, Greenhouse Gas Emissions.

3.2.4 Analysis, Impacts and Mitigation

Significance Criteria

The City has not adopted thresholds of significance for analysis of impacts from emissions of air pollutants. The following threshold of significance is consistent with CEQA Guidelines Appendix G. A significant impact would occur if the Proposed Project would:

1. Conflict with or obstruct implementation of the applicable air quality plan;
2. Result in a cumulatively considerable net increase of any criteria air pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;[103]
3. Expose sensitive receptors to substantial pollutant concentrations; or
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

[103] For the purposes of this Draft EIR, the City has included analysis of all regulated criteria pollutants, regardless of attainment status, for exceedances of applicable federal or state ambient air quality standards.

Regional Criteria Air Pollutant Emissions Thresholds

SCAQMD has established numerical significance thresholds for regional emissions during construction and operation. The numerical significance thresholds are based on the recognition that the Air Basin is a distinct geographic area with a critical air pollution problem for which ambient air quality standards have been promulgated to protect public health.[104]

Given that construction impacts are temporary, SCAQMD has established significance thresholds specific to construction activity. Based on the indicators in the SCAQMD CEQA Air Quality Analysis Handbook,[105] the Proposed Project would potentially cause or contribute to an exceedance of an ambient air quality standard if the following would occur:

Regional construction emissions from both direct and indirect sources would exceed any of the following SCAQMD prescribed daily emissions thresholds:[106]

- 75 pounds a day for VOC
- 100 pounds per day for NO_X
- 550 pounds per day for CO
- 150 pounds per day for SO_X
- 150 pounds per day for PM10
- 55 pounds per day for PM2.5

SCAQMD has also established numeric significance thresholds for operations. SCAQMD has established significance thresholds in part based on CAA section 182(e), which identifies 10 tons per year of VOC and NO_X as a significance level for stationary source emissions in extreme non-attainment areas for ozone. The numeric significance thresholds for other pollutants are also based on federal major source thresholds, which vary depending on regional attainment status. For example, the Air Basin is in attainment for carbon monoxide, which yields a corresponding major source threshold of 100 tons per year, or 550 pounds per day.[107] These "major source" significance thresholds were developed under the Federal Title V Operating Permit Program.[108] SCAQMD converted these significance levels to pounds per day. The attainment status

[104] South Coast Air Quality Management District, 1993. CEQA Air Quality Handbook, November 1993.
[105] South Coast Air Quality Management District, Air Quality Analysis Handbook. http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook. Accessed April 16, 2019.
[106] South Coast Air Quality Management District, SCAQMD Air Quality Significance Thresholds, http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf, revised April 2019. Accessed July 2019.
[107] US Environmental Protection Agency, Title V Operating Permits, https://www.epa.gov/title-v-operating-permits/who-has-obtain-title-v-permit. Accessed June 25, 2019.
[108] South Coast Air Quality Management District, What is Title V?, http://www.aqmd.gov/home/permits/title-v/what-is-title-v-. Accessed June 24, 2019.

designation is based on the healthfulness of air quality and the corresponding significance thresholds are intended to be health protective.[109]

A similar approach is applied to PM2.5, where the daily limit of 55 pounds per day is based on the US EPA proposed rule to implement a PM2.5 NAAQS, with a significant emission rate of 10 tons per year.[110]

The Proposed Project would potentially cause or contribute to an exceedance of an ambient air quality standard if regional operational emissions exceed any of the following SCAQMD prescribed daily emissions thresholds:[111]

- 55 pounds a day for VOC,
- 55 pounds per day for NO_X,
- 550 pounds per day for CO,
- 150 pounds per day for SO_X,
- 150 pounds per day for PM10, and
- 55 pounds per day for PM2.5.

SCAQMD has set its CEQA significance threshold for NO_X and VOC at 10 tons per year (expressed as 55 lb/day). because the federal CAA defines a major stationary source for extreme ozone nonattainment areas such as SCAQMD as one emitting 10 tons/year.[112] Under the federal CAA, such sources are subject to enhanced control requirements,[113] so SCAQMD determined that 55 lb/day was an appropriate threshold for making a CEQA significance finding and requiring feasible mitigation. As, SCAQMD has stated:

> "… a project source that emits 10 tons/year of NO_X or VOC is small enough that its regional impact on ambient ozone levels may not be detected in the regional air quality models that are currently used to determine ozone levels. Thus, in this case it would not be feasible to directly correlate project emissions of VOC or NO_X with specific health impacts from ozone."[114]

Therefore, lead agencies that use SCAQMD thresholds of significance may determine that projects have a significant air quality impact and correspondingly are required to implement all feasible mitigation measures, yet are not able to correlate the project impact to quantifiable health effects.

---

[109] California Air Resources Board, Air Quality Standards and Area Designations, https://www.arb.ca.gov/desig/desig.htm. Accessed June 25, 2019.
[110] South Coast Air Quality Management District, 2006. *Final – Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds*, October 2006.
[111] South Coast Air Quality Management District, SCAQMD Air Quality Significance Thresholds, http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf, revised April 2019. Accessed July 2019.
[112] 42 U.S.C. §§ 75lla(e), 7511a(f); CAA §§ 182(e), 182(f)
[113] 42 U.S.C. §§ 7502(c)(5), 7503; CAA §§ 172(c)(5), 173
[114] South Coast Air Quality Management District, Amicus Brief in Support of Neither Party, *Sierra Club v. County of Fresno*, 2015.

Localized Significance Thresholds

SCAQMD published its Final Localized Significance Threshold Methodology in June 2003, (revised July 2008) and Final Methodology to Calculate Particulate Matter (PM) 2.5 and PM2.5 Significance Thresholds in October 2006, recommending that all air quality analyses include a localized assessment of both construction and operational impacts on the air quality of nearby air quality sensitive receptors.[115,116] LSTs represent the maximum emissions from a project site that are not expected to result in an exceedance of a NAAQS or CAAQS. LSTs are based on the ambient concentrations of that pollutant within the Source Receptor Area (SRA) where a project is located and the distance to the nearest air quality sensitive receptor. LSTs are only applicable to the following criteria air pollutants: NO_X, CO, PM10, and PM2.5. The Project Site is located in the central portion of SRA 3 (Southwest Los Angeles County Coastal).[117]

The Basin is in attainment for NO_2 and CO, meaning their ambient concentrations are below their respective air quality standards. When evaluating localized impacts for NO_2 and CO, the local ambient concentrations and the Proposed Project related concentrations are summed and then compared to the NAAQS and CAAQS. If the sum of the ambient concentrations and Proposed Project concentrations are greater than the air quality standard, this would result in a significant impact.

The Basin is in nonattainment for PM10 and PM2.5, meaning their ambient concentrations are above their respective air quality standards. If ambient levels already exceed a NAAQS or CAAQS, then project impacts may be considered significant if they increase ambient concentrations in excess of the allowable increase established by SCAQMD. This would apply to PM10 and PM2.5, both of which are nonattainment pollutants in the Basin. For these latter two pollutants, the significance criteria are the pollutant concentration thresholds presented in SCAQMD Rules 403 and 1301. The Rule 403 threshold of 10.4 $\mu g/m^3$ applies to construction emissions (and may apply to operational emissions at aggregate handling facilities). The Rule 1301 threshold of 2.5 $\mu g/m^3$ applies to non-aggregate handling operational activities.

SCAQMD recommends that sites larger than 5 acres perform air dispersion modeling to determine localized air quality.[118] Because the Project Site exceeds 5 acres, dispersion modeling was performed to determine if the pollutant concentrations from Proposed Project emissions would exceed relevant significance thresholds established by SCAQMD.

For the evaluation of localized impacts of the Proposed Project, SCAQMD has established air quality significance thresholds on a concentration basis. For attainment pollutants NO_2 and CO, a

[115] South Coast Air Quality Management District, 2008. *Final Localized Significance Threshold Methodology.* June 2003, revised July 2008.
[116] South Coast Air Quality Management District, 2008. *Final Localized Significance Threshold Methodology.* June 2003, revised July 2008.
[117] South Coast Air Quality Management District, Map of Monitoring Areas, http://www.aqmd.gov/docs/default-source/default-document-library/map-of-monitoring-areas.pdf. Accessed April 25, 2019.
[118] South Coast Air Quality Management District, Localized Significance Thresholds, http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/localized-significance-thresholds. Accessed June 25,2019.

project is significant if, in combination with existing or future ambient concentrations, it causes or contributes to an exceedance of the standards listed in Table 3.2-5, above.

For PM2.5 and PM10, a project is significant if the emissions result in exceedance of the following incremental increase thresholds:[119,120]

- 10.4 μg/m^3 (24-hour) and 1 μg/m^3 of PM10 (Annual) for construction,
- 10.4 μg/m^3 (24-hour) of PM2.5 for construction,
- 2.5 μg/m^3 (24-hour) and 1.0 μg/m^3 (Annual) of PM10 for operations, and
- 2.5 μg/m^3 (24-hour) of PM2.5 for operation.

Toxic Air Contaminants Health Risk Thresholds

Based on the criteria set forth by SCAQMD, the Proposed Project would expose air quality sensitive receptors to substantial concentrations of TACs if the Proposed Project emits carcinogenic materials or TACs that exceed the maximum incremental cancer risk of ten in one million or an acute or chronic hazard index of 1.0. Similarly, the Proposed Project would result in a potentially significant impact if cancer burden corresponds to an increase in more than 0.5 excess cancer cases in areas where the Project-related increase in individual cancer risk exceeds 1 in 1 million.[121]

Currently, the health impact of a particular criteria air pollutant is analyzed by air districts on a regional scale based on how close the area is to attaining the NAAQS. Such an analysis has generally not been performed at the project level. In this instance, however, an HIA was conducted to estimate the extent to which the Proposed Project would result in an increase in the criteria air pollutant concentrations, and to analyze whether such an increase in criteria air pollutant concentrations could be correlated with specific health impacts.

Methodology and Assumptions

Regional Construction Emissions Methodology

Construction of the Proposed Project would have the potential to temporarily emit criteria air pollutant emissions through the use of heavy-duty construction equipment, such as excavators, cranes, and forklifts, and through vehicle trips generated from workers and haul trucks traveling to and from the Project Site. In addition, fugitive dust emissions would result from demolition and various soil-handling activities. As previously described, emissions of VOC, NO_X, CO, SO_2, PM10, and PM2.5 emissions are included in this analysis. Construction emissions can vary substantially from day to day, depending on the intensity and specific type of construction activity. The maximum daily regional emissions are predicted values for the worst-case day and do not represent

[119] South Coast Air Quality Management District, Rule 403 Dust Control Information, https://www.aqmd.gov/home/rules-compliance/compliance/rule-403-dust-control-information. Accessed April 24, 2019.
[120] South Coast Air Quality Management District, 1995. Rule 1301. December 7, 1995.
[121] South Coast Air Quality Management District, SCAQMD Air Quality Significance Thresholds, http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2, revised March 2015. Accessed March 21, 2018.

the emissions that would actually occur during every day of construction. The maximum daily regional mass emissions of pollutants were compared to the respective SCAQMD thresholds.

According to the Proposed Project construction schedule, as presented in **Table 3.2-6**, construction will begin July 2021 and be completed October 2024. Emission calculations assumed all construction occurs at the earliest feasible dates. If the onset of construction were to be delayed to a later year, construction emissions would be less than those presented. This would result from cleaner construction equipment and vehicle fleet mix expected as a result of State regulations that require cleaner construction equipment to be phased-in for heavy-duty equipment.[122] Thus, should the Proposed Project commence construction on a later year than modeled in this air quality impact analysis, air quality impacts would be less than the impacts disclosed herein.

TABLE 3.2-6
MODELED CONSTRUCTION SCHEDULE

Phase and Subphase	Start Date	End Date
Arena Site		
Demolition	7/1/2021	10/31/2021
Site Preparation and Sound Walls	7/1/2021	9/30/2021
Drainage/Utilities/Trenching	9/1/2021	10/31/2021
Grading/Excavation	11/1/2021	2/28/2022
Foundations/Concrete Pour	12/1/2021	1/1/2023
Building Construction	3/1/2022	6/30/2024
Exterior Enclosure/Architectural Coatings	7/1/2022	5/31/2024
Paving	2/1/2024	5/31/2024
West Parking Garage Site		
Site Preparation and Sound Walls	7/1/2021	7/31/2021
Drainage/Utilities/Trenching	7/1/2021	9/30/2021
Grading/Excavation	7/1/2021	9/30/2021
Foundations/Concrete Pour	9/1/2021	11/30/2021
Building Construction	10/1/2021	2/28/2023
Exterior Enclosure/Architectural Coatings	9/1/2021	2/28/2023
Paving	11/1/2021	2/28/2023

[122] California Air Resources Board, 2010. 13 CCR, Section 2449, Final Regulation Order: Regulation for In-Use Off-Road Diesel Vehicles, December 16, 2010.

TABLE 3.2-6
MODELED CONSTRUCTION SCHEDULE

Phase and Subphase	Start Date	End Date
East Transportation and Hotel Site		
Site Preparation and Sound Walls	7/1/2021	8/30/2021
Drainage/Utilities/Trenching	9/1/2021	10/31/2021
Grading/Excavation	10/1/2023	10/31/2023
Foundations/Concrete Pour – Transportation Hub	2/1/2024	2/29/2024
Building Construction – Transportation Hub	3/1/2024	6/30/2024
Exterior Enclosure/Architectural Coatings – Transportation Hub	3/1/2024	6/30/2024
Paving – Transportation Hub	4/1/2024	6/30/2024
Building Construction – Hotel Site	2/1/2024	9/23/2024
Paving – Hotel Site	9/16/2024	10/8/2024
Architectural Coatings – Hotel Site	8/1/2024	10/8/2024
Well Relocation Site		
Demolition	7/1/2021	7/31/2021
Sound Walls	7/1/2021	7/31/2021
Drilling and Casing	8/1/2021	12/23/2021
Utilities	1/1/2022	5/31/2022
Paving/Fencing	6/1/2022	6/30/2022

NOTE:
The emissions were estimated assuming construction begins at the earliest possible date (July 2021). This provides for a conservative emissions estimate as emission factors decline in future years. Construction of the Proposed Project may commence at a later date, which would generally result in similar or reduced emissions, primarily due to vehicles meeting more stringent emissions standards. If construction starts at a later date, emissions could occur in later calendar years; however, the emissions would be similar or reduced compared to the emissions disclosed herein.

SOURCE: ESA, 2019.

Construction activities would include demolition of any existing structures or improvements on site, site preparation, excavation and grading, building construction and interior finishing work, structure enclosure and architectural coating, and paving and exterior landscaping. Demolition activities are anticipated to generate approximately 7,607 tons of demolition debris (asphalt and general construction debris). The Proposed Project would export approximately 296,915 cubic yards of soil during grading and excavation activities. Heavy-duty equipment, vendor supply trucks and concrete trucks would be used during construction of foundations, parking structures, and buildings.

Daily regional criteria air pollutant emissions for the different phases of construction were forecasted based on construction activities, on-road and off-road mobile sources, and fugitive dust emission factors associated with the specific construction activity. Over the course of the construction schedule, the length of workdays would vary in range from 8 hours to 24 hours. Over the course of a day or shift, usage would vary depending on the equipment and type of work being performed. For example, during each 8-hour shift, equipment would be operating for seven hours per shift since the workday would include equipment downtime for lunch breaks and safety meetings. During the building construction phase of the Arena Structure, a majority of the

construction days would be 16-hour workdays, but periodically days could also require 24-hour workdays. The 24-hour workdays would be required during a variety of activities, including but not limited to construction such as foundation concrete pours, well-drilling, and assembly of large components of steel framing of the Arena Structure. The 24-hour workdays would be required for a number of reasons, including technical requirements of certain construction techniques, worker safety, labor rules, and avoidance of conflicts on City streets and highways in the vicinity. Details regarding workday assumptions can be found in Appendix D.

Off-road mobile source emissions would result from the use of heavy-duty construction equipment such as bulldozers, loaders, and cranes. These off-road mobile sources emit VOC, NO_X, CO, SO_2, PM10, and PM2.5. The emissions were estimated using CalEEMod (Version 2016.3.2) software, an emissions inventory software program recommended by SCAQMD. CalEEMod is based on outputs from the OFFROAD model and EMission FACtor (EMFAC) model, which are emissions estimation models developed by CARB and used to calculate emissions from construction activities, heavy-duty off-road equipment, and on-road vehicles. Activities parameters, such as number of equipment and equipment usage hours were provided by the applicant.

Fugitive dust emissions (using PM10 as a surrogate) during construction activities were estimated in CalEEMod, which are based on the methods described in the US EPA AP-42 Compilation of Air Pollutant Emission Factors.[123] During the application of architectural coatings, evaporation of solvents contained in surface coatings result in VOC emissions. CalEEMod was used to calculate VOC emissions based on the building surface area and the default VOC content provided by the air district or CARB's statewide limits. Asphalt paving of parking areas are another source of VOC emissions. CalEEMod was used to calculate VOC off-gassing emissions based on the parking lot size and SCAQMD default emission factor.

On-road mobile sources also have the potential to generate temporary criteria air pollutant emissions through workers and haul trucks traveling to and from the Project Site during construction. Daily truck trips and trip lengths were based on information provided by the project applicant. Emission factors for passenger vehicles and heavy-duty trucks used the regional emission factors generated from the EMFAC model 2017 (EMFAC2017), the most recently approved version by the US EPA. EMFAC2017 "represents [California Air Resources Board's] current understanding of motor vehicle travel activities and their associated emission levels."[124] Mobile emission factors vary by speed where vehicles traveling at low speeds have higher emission rates, as seen in the EMFAC2017 data. Additional information is provided in Appendix D. On-road mobile sources related to project construction activities were conservatively assumed to travel at 5 miles per hour (mph) within the local study area (refer to section below, Localized Emissions and Analysis Methodology, for a discussion of the local study area). The 5 mph corresponds to the slowest speeds and the highest emission rates, as seen

[123] US Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emissions Factors, Chapter 13: Miscellaneous Sources, https://www3.epa.gov/ttn/chief/ap42/ch13/index.html. Accessed April 25, 2019.
[124] California Air Resources Board, Mobile Source Emissions Inventory, https://www.arb.ca.gov/emfac/2017/. Accessed April 25, 2019.

in the EMFAC2017 data. On-road mobile sources outside of the local study area were assumed to travel at an average speed for all vehicle travel as calculated through the EMFAC2017 model for the SCAQMD region. The total mobile source emissions from traveling to and from the Project Site were calculated using the trip rates, trip length, and emission factors. Although CARB restricts idling times to no more than 5 minutes at any one location, it was conservatively assumed that truck idling activities would total 15 minutes per trip, representing three separate 5-minute idling occurrences: check-in to the Project Site or queuing at the site boundary upon arrival, on-site idling during loading/unloading, and check-out of the Project Site or queuing at the site boundary upon departure.[125]

Regional Operational Emissions Methodology

Operation of the Proposed Project would generate criteria air pollutant emissions from Project-generated vehicle trips traveling to and from the Project Site, energy sources such as natural gas combustion, and area sources such as operation of landscaping equipment and use of consumer products, including solvents used in non-industrial applications which emit VOCs during their product use, such as cleaning supplies, kitchen aerosols, cosmetics and toiletries. The Proposed Project would also produce criteria air pollutant emissions from on-site diesel-fueled emergency generators, charbroilers, cooling tower, delivery trucks, and transport refrigeration units (TRUs) used in delivery trucks. Operational impacts were assessed for the full Proposed Project buildout year of 2024, as well as the existing uses.[126] Daily maximum criteria air pollutant emissions were compared with SCAQMD thresholds for operation to determine the operational impacts of the Proposed Project. Regional operational air quality impacts of the Proposed Project air emissions were assessed based on the incremental increase in emissions compared to existing conditions. While air pollutant emissions from the demolition of the existing groundwater well and related facilities on site and the construction of the relocated groundwater well and related facilities was calculated and included as net new, the operational emissions of the relocated groundwater well and related facilities "net out" since operations will not change once relocated.

The on-road mobile sources related to the operation of the Proposed Project would include passenger and employee vehicles, Transportation Network Company (TNC) vehicles, shuttles for event attendees, employees, players and supporting staff, delivery trucks, media vans, charter buses, micro-transit vehicles, and paratransit vehicles, and vehicles associated with the ancillary land uses, including the hotel and restaurant/retail land uses.

VMT data, which takes into account mode (vehicle trip types including private attendee vehicles, transportation network company vehicles, employees, shuttles, and miscellaneous vehicles), ridership (occupancy per vehicle), and trip lengths, was developed for the transportation analysis presented in Section 3.14, Transportation and Circulation, and is provided in Appendix K. Emissions from motor vehicles are dependent on vehicle type. Thus, the emissions were

[125] California Air Resources Board, 13 CCR Section 2485, 2016. Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, September 2016.
[126] Proposed Project operations would begin July 2024 resulting in approximately six months of Arena operations during 2024.

calculated using a representative motor vehicle fleet mix for the Proposed Project based on information provided in Appendix K and EMFAC default fuel type.

For vehicle trips associated with the proposed Arena, the vehicle trips associated with spectators, event-day staff, and employees would be primarily passenger vehicles, so the default SCAQMD fleet mix was adjusted for a passenger fleet mix of light-duty autos, motorcycles, light duty trucks, and medium-duty vehicles to estimate passenger fleet-average emission factors. For trips associated with TNC vehicles, the default SCAQMD fleet mix was adjusted for a TNC vehicle fleet mix of light-duty autos, light duty trucks, and medium-duty vehicles to estimate TNC fleet-average emission factors. For vehicle trips associated with shuttles used to transport attendees and employees, the default SCAQMD fleet mix was adjusted for a shuttle fleet mix of light-heavy duty trucks to estimate shuttle fleet-average emission factors. For vehicle trips associated with miscellaneous vehicles, the default SCAQMD fleet mix was adjusted for a miscellaneous vehicle fleet mix of medium-heavy duty and heavy-heavy duty trucks to estimate miscellaneous vehicle fleet-average emission factors. For ancillary land uses, including the hotel and restaurant/retail land uses, the default SCAQMD fleet mix was used to estimate fleet-average emission factors.

For the Proposed Project Arena and associated events, trips lengths were also separated into three trip length segments with different vehicle speeds. As stated above, vehicles traveling at low speeds have higher emission rates on a gram per mile basis.

The first trip length segment was defined as the distance each vehicle trip travelled on residential and business district roadways to and from freeways from the point of the trip origin to the nearest freeway. These vehicles were modeled traveling at a speed of 25 mph, the lowest (and most conservative for emissions) posted speed limit typical on these roadways.[127] This length was modeled as 5 miles because Los Angeles County census data and Geographic Information System mapping shows that 98 percent of the Los Angeles county population lives within 5 miles of a freeway.[128]

The second trip length segment was defined as the distance each event-related vehicle trip travelled on freeways to the Arena. Emissions were modeled based on freeway speed data from the California Department of Transportation (Caltrans) Performance Measurement System (PeMS) for the freeways closest to the Project Site. These vehicles were calculated to travel at a

[127] California Department of Motor Vehicles, California Driver Handbook-Laws and Rules of the Road, https://www.dmv.ca.gov/portal/dmv/detail/pubs/hdbk/speed_limits+. Accessed June 25, 2019.

[128] The average distance used for the first trip length segment was determined by ESA using GIS where it was determined that 98 percent of the Los Angeles County population lives within 5 miles of a freeway. Los Angeles County Enterprise GIS, Los Angeles County GIS Data Portal, 2019, http://egis3.lacounty.gov/egis/. Accessed July 22, 2019. US Census Bureau, American Fact Finder, 2019, https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_SF1_P1&prodType=table. Accessed July 22, 2019.

speed of approximately 40 mph.[129] This trip length varied since it was the total trip lengths of the various trip types (attendee vehicles/attendee TNC vehicles, employee vehicles/employee TNC vehicles, attendee shuttles/employee shuttles, and miscellaneous vehicles) minus the first trip length segment of 5 miles and the last trip segment lengths of 1.3 miles. The 1.3-mile segment trip length is defined as the distance within the local study area and is further described in the next paragraph. Both the first segment of 5 miles and the last segment of 1.3 miles are the same for all trip types for every Proposed Project event type, except for attendee/employee shuttles (based on information in Appendix K).[130] This method was applied to all 40 mph trip length segments (e.g., for an NBA game event, attendee vehicles/attendee TNC vehicle trip types have a total trip length of 22.2 miles and subtracting the first segment of 5 miles and last segment of 1.3 miles, results in a second segment trip length of 15.9 miles). The trip length segment derivations for the other trip types analyzed are detailed in Appendix D.

The third trip length segment was defined as the distance each vehicle would travel in the local study area (refer to section below, Localized Emissions and Analysis Methodology, for a discussion of the local study area), where vehicles were conservatively assumed to travel at 5 mph corresponding to slowest speeds and the highest emission rates, as seen in the EMFAC2017 dataset, conservatively representing pre-event traffic congestion conditions. This length was modeled as 1.3 miles and is based on the distribution of vehicles travelling on roads from the east west, north, and south directions from the Arena.

To account for round trips, the same logic is applied to the three segment types, starting with the Local Study Area and ending with the 5 miles from freeway to the final destination. Vehicles emissions from the Proposed Project non-arena land uses were modeled using the average speed for all vehicle travel in the SCAQMD region as determined through EMFAC2017 (see Appendix K).

CARB's EMFAC2017 was used to generate emissions factors for all operational mobile sources based on speed. The model was run in the emissions mode (also referred to as the "Burden" mode) to generate SCAQMD-specific vehicle fleet emission factors in units of grams per mile. The speed-specific emission factors were then applied to the project-specific daily VMT to obtain daily mobile source emissions in grams per day.

The operational area and energy emissions from the Proposed Project were estimated using the CalEEMod software. Energy source emissions were based on natural gas (building heating and

[129] The average speed for the third trip length was determined by averaging the vehicle speeds on the closest freeways (I-405-N, I-405-S and I-105-E) to the Project Site at the peak rush hour of 5 to 6 P.M hour to account for slower freeway hour traffic for the 2018 year based on Caltrans Performance Measurement System (PeMS) data. Caltrans, PeMs, I-405-N Post Mile 22.68, I-405-N Post Mile 29.5, I-105-E Post Mile 2.82, I-405-S Post Mile 20.3, I-405-S Post Mile 29.5, I-105-E Post Mile 7.2. In addition, the average speed for travel on freeways around Downtown Los Angeles was also evaluated (I-110 N, I-110-S and I-10-E and I-10-W) at the peak rush hour of 5 to 6 P.M hour to account for slower freeway hour traffic for the 2018 year based on Caltrans PeMs data. Caltrans, PeMS, I-110-N Post Mile 15.1 to 24.46, I-110-S Post Mile 15.36 to Post Mile 23.8, I-10-E Post Mile 12.95 to 17.6, I-10-W Post Mile 12.95 to Post Mile 17.57. http://pems.dot.ca.gov/. Accessed June 27 and July 27, 2019.

[130] Events types at the Proposed Project include NBA Games, Concerts (small, medium, and large), Family Shows, Corporate/Community Events, Other Events and Plaza Events (see Appendix K).

water heaters) and area source emissions are based on architectural coatings, landscaping equipment, and consumer product usage rates provided in CalEEMod. Natural gas usage factors in CalEEMod were based on the California Energy Commission California Commercial End Use Survey (CEUS) data set, which provides energy demand by building type and climate zone.[131] However, since the data from the CEUS is from 2002, correction factors were incorporated into CalEEMod to account for the most recent 2019 Title 24 Building Energy Efficiency Standards that would be applicable to the Proposed Project.[132] Default parameters were used when Project-specific data was not available. Because lighting and air handling will be controlled by zone within the Arena, it is estimated that large events (12,000 or more attendees) required full arena energy demand and generate 100 percent of the area emissions of a full Arena, medium events (between 5,000 and 10,000 attendees) required 80 percent of the full arena energy demand and generate 80 percent of the area emissions of a full Arena, and small events (less than 5000 attendees) required 25 percent of the full arena energy demand and generate 25 percent of the area emissions of a full Arena. For plaza events, the Arena would not be in use, and such events would only include a plaza activity.

Stationary-source emissions were estimated separately outside of the CalEEMod software as certain stationary sources such as restaurant charbroilers are not accounted for in CalEEMod. Charbroiling emissions were calculated based on emissions factors available from SCAQMD. In order to provide a conservative analysis, it was assumed that the restaurant uses would charbroil meat with relatively high emission factors (i.e., hamburger meat and chicken). The quantity of meat charbroiled in the restaurant uses were based on survey data from SCAQMD and San Joaquin Valley Air Pollution Control District. The estimated emissions account for reductions from compliance with emissions control requirements consistent with SCAQMD Rule 1138.

Stationary sources would also include an on-site cooling towers to assist in dissipating heat from commercial processes of the Proposed Project, and would utilize 4,800,000 gallons annually (refer to the Water Supply Assessment prepared for the Proposed Project and Appendix M). Emissions from the cooling tower occur as a result of air containing chemical impurities passing through the cooling water in the tower where some of the liquid water is entrained into the air stream and carried out of the tower as "drift" droplets where the particulate matter constituent of the drift droplets may be classified as an emission. Large drift droplets often settle out of the tower exhaust air stream and deposit near the tower, while other drift droplets may evaporate before being deposited in the area surrounding the tower, and they also can produce PM emissions. To estimate daily emissions, particulate matter emission factors for wet cooling towers calculated by the US EPA were used, conservatively assuming it would operate 24 hours a day, every day of the year using the above-mentioned daily flow rate.[133]

[131] California Energy Commission, California Commercial End-Use Survey, http://capabilities.itron.com/CeusWeb/Chart.aspx. Accessed March 22, 2018.
[132] California Energy Commission, 2018. 2019 Building Energy Efficiency Standards, March 2018.
[133] U.S. EPA, Air Pollutant Factors (AP-42), Fifth Edition, Volume I – Chapter 13.4: Wet Cooling Towers, https://www3.epa.gov/ttn/chief/ap42/ch13/final/c13s04.pdf. Accessed December 2018.

Additionally, the Arena Site would include up to two stationary emergency generators with an estimated total capacity rated at approximately 2,400 kilowatts (kW) to provide emergency power primarily for lighting and other emergency building systems and two emergency fire pumps with an estimated total capacity rated of 300 kW to provide water for the fire suppressant system. Emergency generator and fire pump emissions were calculated based on compliance with applicable federal emissions standards and compliance with SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines) mandated emission limits and operating hour constraints. This analysis also assumed that the emergency generators and fire pumps would operate up to two hours per day and 50 hours per year for testing and maintenance (per SCAQMD Rule 1470 limit).

Delivery truck emissions generated from traveling to and from the Project Site, as well as on-site idling were based on the proposed loading dock capacity at the Arena and emission factors from EMFAC2017. The maximum number of delivery trucks were assumed with half of the delivery trucks consisting of TRUs to account for trucks transporting goods that require refrigeration. Delivery trucks emissions were based on one hour of operation per truck per day and emission factors from CARB.[134,135]

Localized Emissions and Analysis Methodology

Localized construction and operations related NO_X, CO, PM10, and PM2.5 emissions concentrations were estimated to determine if the Proposed Project would generate significant localized air quality impacts that could substantially affect air quality sensitive receptors in the vicinity of the Project Site.

The localized off-site emissions analysis focused on an approximately 1.3 mile radius from the Project Site, which is referred to in this analysis as the local study area, rather than the full trip length assumed under the regional construction and operational emission calculations.[136] The local study area was the focus of this analysis because it would result in the highest incremental increase in ambient air pollutant concentration due to capturing the emissions from the Proposed Project on-site site construction, on-site operations, and the four intersections experiencing the maximum traffic volumes surrounding the Project Site. The local study area was assumed to capture the maximum localized emissions because vehicles associated with construction and operations tend to dissipate the farther they travel from the Project Site while increasing speed, thus reducing emission rates with increased distance.

Similar to the regional impact analysis, CARB's EMFAC2017 was used to generate emissions factors for construction and operational mobile sources for the localized impact analyses. The mobile emissions associated with the Proposed Project in the local study area were calculated using

[134] California Air Resources Board, 2011. Staff Report: 2011 Amendments for the Airborne Toxic Control Measure for In-USE Diesel Fueled TRUs and TRU Generator Sets, and Facilities where TRUs Operate, August 2011.
[135] California Air Resources Board, 2012. Final Regulation Order, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets, and Facilities where TRUs Operate, October 2012.
[136] In compliance with PRC § 21151.8 (a)(2).

the fleet mix information provided in Appendix K and the average vehicle speed assumption of 5 mph to account for reduced vehicle speeds due to traffic congestion.[137] The mobile source emissions from the post-event hour were assumed to be the highest based on the expected number of vehicles on the road, increased traffic congestion, and associated low vehicle speeds. As previously mentioned, vehicles traveling at low speeds have higher emission rates. Detailed information regarding vehicle fleet mix and emission factors by speed is provided in Appendix D.

The Proposed Project localized construction and operations emissions were then apportioned into the US EPA AMS/EPA Regulatory Model (AERMOD) model to generate concentrations of NO_X, CO, PM10, and PM2.5 at receptor locations surrounding the Project Site (see *Air Dispersion Modeling*, below, for more details). In addition, to evaluate the contribution to future localized levels of CO and NO_2 from future traffic activity associated with the HPSP Adjusted Baseline projects (including events at the NFL Stadium) and events at The Forum, emissions were calculated generally following the methodology presented above for the Proposed Project-related mobile sources assumed to operate in the local study area.

The ambient pollutant concentrations of NO_X, CO, PM10, and PM2.5 surrounding the Project Site are listed in Table 3.2-2, above, for years 2015-2017, and were established based on measurements from the most representative SCAQMD Monitoring stations in the SRA 2 receptor area. As mentioned above, the LAX-Hastings Monitoring Station is the most representative of the air quality conditions surrounding the Project Site and was used to determine ambient levels of NO_X and CO.

As described in Section 3.2.1, since the Air Basin is non-attainment for the PM10 and PM2.5 standards, SCAQMD has established incremental increase thresholds of 10.4 $\mu g/m^3$ (for construction) and 2.5 $\mu g/m^3$ (for operations), and ambient background levels are not required.

As described in Section 3.2.1, ambient levels for CO and NO_X at the Project Site are below the NAAQS and CAAQS. The Proposed Project is considered to have a significant impact if local levels of these pollutants from future Project-related emissions in addition to ambient concentrations of CO and NO_X under Adjusted Baseline conditions result in an exceedance of one or more of the CO and NO_X NAAQS and CAAQS. Details regarding the modeling methodology can be found in *Intersection Hotspot Analysis*, below.

During construction of the Proposed Project, the highest localized air quality impacts were assumed to occur when the NFL Stadium and The Forum would experience full-capacity events overlapping with construction of the Proposed Project. To estimate the highest potential impacts from the Proposed Project, construction was assumed to occur simultaneously with a major event at the NFL Stadium and a concert at The Forum on the same day (i.e., on a Saturday). This infrequent but potential occurrence would be expected to result in the highest construction localized air quality impacts. As discussed in Project Design Feature-3.2-1, heavy duty construction trucks (import,

[137] City/County Association of Government of San Mateo County, 2014. Appendix B-Traffic Level of Service Calculation Methods, 2014.

export, delivery, etc.) would be prohibited from traveling to and from the Project Site during the pre-and post-event hours on days with major events at Hollywood Park and/or The Forum.

During operation of the Proposed Project, the potentially highest localized air quality impacts are expected to occur when the Project Site hosts a major event (i.e., sold-out concert) and the NFL Stadium and The Forum experience full-capacity events on the same day (i.e., on a Saturday). This scenario was analyzed by applying the maximum peak hour volumes for a major event at the Project Site, major events at The Forum and NFL Stadium, and maximum peak hour volumes for the ancillary uses at the HPSP. It was assumed these maximum peak hour volumes would occur simultaneously within the local study area. This scenario is expected to represent the highest operational localized air quality impacts from event attendees and normal traffic.

For pollutants with annual concentration standards—NO_2 and PM10—annual Proposed Project construction and operations were modeled concurrently with the presumed annual event schedules for the NFL Stadium and The Forum as described in Section 3.14, Transportation and Circulation. The analyses listed in **Table 3.2-7** were conducted for localized construction and operational impacts.

Air Dispersion Modeling

To evaluate local impacts for construction and operation of the Proposed Project, air dispersion modeling was completed using the AERMOD model with five years of meteorological data from the Hawthorne Airport (SCAQMD Station ID KHHR), the closest and most representative meteorological monitoring station. The AERMOD model was used to simulate the movement of Proposed Project-related air pollutants from construction and operation activities through the air, and to generate concentrations of those pollutants at numerous receptor locations surrounding the Project Site. Similarly, the AERMOD model was used to simulate the movement of vehicle trips associated with Adjusted Baseline CO and NO_X emissions and generate air concentrations at the receptor locations surrounding the Project Site. The estimated concentrations provide conservative estimates and tend to overestimate actual impacts and therefore may not represent

TABLE 3.2-7
MODELED CONSTRUCTION AND OPERATIONAL SCENARIOS

Pollutant	Construction Scenarios	Operational Scenarios[c]	Analysis Details	Threshold
NO_X[d]	Peak Daily Proposed Project Construction + Full-capacity NFL game at NFL Stadium and concert at The Forum	Proposed Project Major Event + Full-capacity NFL game at NFL Stadium and concert at The Forum[a]	NO_2 1-hr ambient concentration + NO_2 1-hr concentration associated with the Proposed Project	NO_2 1-hr NAAQS/CAAQS
			NO_2 1-hr ambient concentration + NO_2 1-hr future activity concentration (Adjusted Baseline)[b] + NO_2 1-hr concentration associated with the Proposed Project	NO_2 1-hr NAAQS/CAAQS
	Annual Proposed Project construction and annual schedule of events at the HPSP, including the NFL Stadium, and The Forum	Annual Proposed Project operations and annual schedule of events at the HPSP, including the NFL Stadium, and The Forum	NO_2 annual ambient concentration + NO_2 annual concentration associated with the Proposed Project	NO_2 annual NAAQS/CAAQS
			NO_2 annual ambient concentration + NO_2 annual future activity concentration (Adjusted Baseline)[b] + NO_2 annual concentration associated with the Proposed Project	NO_2 annual NAAQS/CAAQS
CO[d]	Peak Hour Proposed Project Construction + Full-capacity NFL game at NFL Stadium and concert at The Forum	Proposed Project Major Event + Full-capacity NFL game at NFL Stadium and concert at The Forum[a]	CO 1-hr ambient concentration + CO 1-hr concentration associated with the Proposed Project	CO 1-hr NAAQS/CAAQS
			CO 1-hr ambient concentration + CO 1-hr future activity concentration (Adjusted Baseline)[b] + CO 1-hr concentration associated with the Proposed Project	CO 1-hr NAAQS/CAAQS
	Peak Hour Proposed Project Construction + Full-capacity NFL game at NFL Stadium and concert at The Forum	Proposed Project Major Event + Full-capacity NFL game at NFL Stadium and concert at The Forum[a]	CO 8-hr ambient concentration + CO 8-hr concentration associated with the Proposed Project	CO 8-hr NAAQS/CAAQS
			CO 8-hr ambient concentration + CO 8-hr future activity concentration (Adjusted Baseline)[b] + CO 8-hr concentration associated with the Proposed Project	CO 8-hr NAAQS/CAAQS
PM10	Peak Daily Proposed Project Construction	Proposed Project Major Event[a]	PM10 24-hr concentration associated with the Proposed Project	PM10 24-hr SCAQMD air quality standards for construction and operation
	Annual Proposed Project construction	Annual Proposed Project operational event schedule	PM10 annual baseline + PM10 annual concentration associated with the Proposed Project	PM10 annual SCAQMD air quality standards for construction and operation
PM2.5	Peak Daily Proposed Project Construction	Annual Proposed Project operational event schedule[a]	PM2.5 24-hr concentration associated with the Proposed Project	—

NOTES:
[a] This scenario was analyzed by applying the maximum peak hour volumes for a major event at the Project Site, major events at The Forum and NFL Stadium, and maximum peak hour volumes for the ancillary uses at the HPSP. It was assumed these maximum peak hour volumes would occur simultaneously within the local study area. The day of the three concurrent events is expected to result in highest concentrations of local 1-hr, 8-hr, or 24-hr air pollution.
[b] Adjusted Baseline Environmental Setting: baseline plus the impacts from other venues.
[c] Regular facility operation emissions are included and the same among all the scenarios.
[d] Hot spot analysis will be conducted separately.

SOURCE: ESA, 2019

actual occurrences.[138] The modeled concentration values were compared to the regional and localized thresholds, as discussed above in *Localized Emissions and Analysis Methodology*, as well as the health risk assessment calculations that are discussed below.

The AERMOD model requires the placement of receptors, which represent the geographic locations where impacts from the Proposed Project emissions were calculated. **Figure 3.2-3** shows the receptor network used in the localized significance threshold analysis. Receptors were located outside of the Proposed Project boundaries. A dense receptor grid was generated pursuant to Table B in the *SCAQMD Modeling Guidance for AERMOD* and the *Transportation Project-Level Carbon Monoxide Protocol (CO Protocol)* in order to adequately characterize the Proposed Project off-site impacts.[139]

The methodology follows SCAQMD modeling guidance for AERMOD.[140] **Table 3.2-8** lists the general model assumptions used in the localized significance threshold assessment.

TABLE 3.2-8
GENERAL AIR DISPERSION MODELING ASSUMPTIONS FOR LOCALIZED AIR QUALITY ASSESSMENT

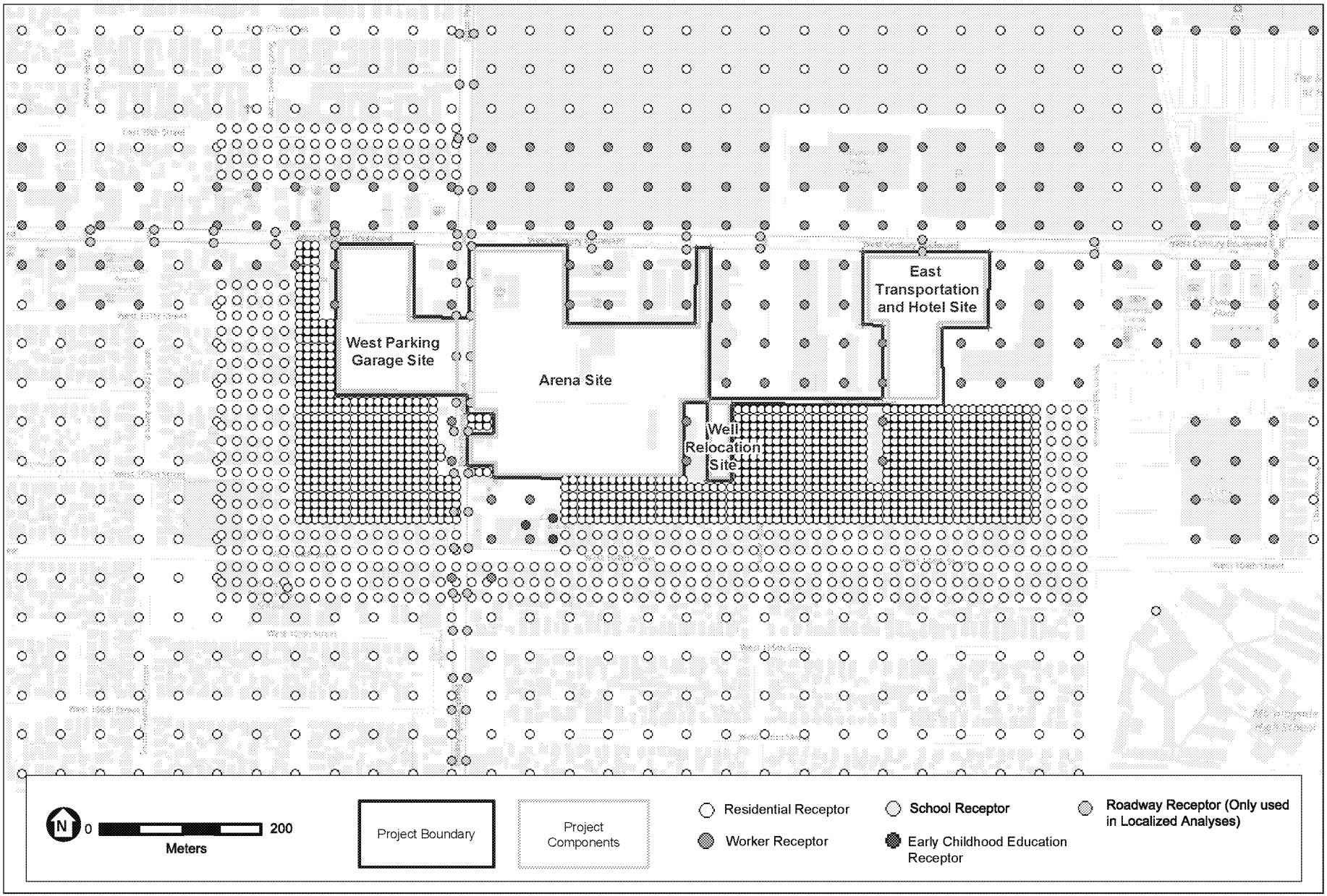
Feature	Assumption
Terrain processing	Complex terrain; elevations were obtained for the Project Site using the US EPA AERMAP terrain data pre-processor
Emission source configuration	See Table 3.2-9 and Table 3.2-10 (next two tables)
Land Use	Urban: County of Los Angeles, population of 9,818,605 provided by SCAQMD
Coordinate System	Universal Transverse Mercator
Meteorological Data	SCAQMD Hawthorne Data for 2012-2016
NO_2 Assessment Methodology	Tier 3: Ozone Limiting Method (OLM). The NO_2/NO_X In-Stack Ratio and NO_2/NO_X Equilibrium Ratio should use US EPA default values (0.5 and 0.9, respectively) Background ozone data obtained from the LAX-Hastings monitoring site.
Receptor Height	0 meters, as recommended by SCAQMD methodology
Receptor Location	Receptor locations were defined outside of the Proposed Project boundaries

SOURCE: ESA, 2019.

Each of the emission sources that were included in the AERMOD air dispersion model consist of a particular emission source representation. The following definitions were used in defining the emission source representations referred to in **Table 3.2-9** and **Table 3.2-10**.

- Line area source: a series of area sources along a path (example: vehicular traffic along a street or freeway);

[138] South Coast Air Quality Management District, 2008. Final Localized Significance Thresholds, June 2003, revised July 2008.
[139] University of California, Davis, Transportation Project-Level Carbon Monoxide Protocol (CO Protocol), http://www.dot.ca.gov/env/air/co-protocol.html. Accessed April 25, 2019.
[140] South Coast Air Quality Management District, SCAQMD Modeling Guidance for AERMOD, http://www.aqmd.gov/home/air-quality/meteorological-data/modeling-guidance. Accessed April 25, 2019.



SOURCE: ESA, 2019

Inglewood Basketball and Entertainment Center

Figure 3.2-3

Air Dispersion Modeling Receptor Grid

ESA

- Point source: a single identifiable local source of emissions; it is approximated in the AERMOD air dispersion model as a mathematical point in the modeling region with a location and emission characteristics such as height of release, temperature, etc. (example: a stack from a standby generator or a stack from a motor vehicle such as a truck);
- Area source: a large area where emissions are assumed to be uniformly distributed in the horizontal and vertical directions (example: parking area).

TABLE 3.2-9
EMISSION SOURCE ASSUMPTIONS FOR LOCALIZED CONSTRUCTION ASSESSMENT

Emission Source Type	Air Dispersion Model Emission Source Description	Relevant Assumptions
On-Site: Off-Road Construction Equipment	Polygon Area/Area	• Release height: 5.0 meters • Emissions derived from the CalEEMod land use emission model • Polygon area sources and area sources were used to characterize the construction equipment activities. The size of the sources is dependent on the size of the construction area.
On-Site: Fugitive Dust	Polygon Area/Area	• Release height: surface release with a one-meter initial vertical dimension • Emissions derived from the CalEEMod land use emission model • Area sources were used to characterize the fugitive dust generated from the construction equipment.
Off-Site: Proposed Project construction diesel truck idling	Line Area	• Release height: 10 feet • Idle time: Total 15 minutes per truck visit (unmitigated) • Vehicle type: heavy duty delivery trucks • Emission factor: ARB 2017 model
Off-Site: Proposed Project Construction Vehicle Traffic, Adjusted Baseline Environmental Setting Vehicle Traffic	Line Area	• Line area source width equal to the width of the roadway plus 3 meters on both sides. • Vehicle speeds: ○ Heavy duty trucks: 5 mph ○ All other vehicles: 5 mph

SOURCE: ESA, 2019.

Construction Modeling Assumptions – Local Air Quality Assessment

Table 3.2-9 summarizes the emission source characteristics during construction. For the unmitigated scenario, it was assumed that construction equipment would be in the "on" position for 8 hours or less, but ranged from 4 hours to 21 hours per day per day to conservatively estimate the Proposed Project maximum emissions.[141] The construction was assumed to occur six days per week. Construction worker, hauling, and vendor truck trip rates are based on information provided by the applicant.

[141] Construction equipment would not operate in the "on" position for the full duration of a workday. Equipment would not be operating during safety meetings, breaks, and lunch hours. Details on the types of workdays and equipment usage hours are found in Appendix D.

TABLE 3.2-10
EMISSION SOURCE ASSUMPTIONS FOR LOCALIZED OPERATIONAL ASSESSMENT

Emission Source Type	Air Dispersion Model Emission Source Description	Relevant Assumptions

On-Site: Proposed Project Operations Traffic	Area Source	• Stack release height: 2 meters for all passenger vehicles
		• Vehicle speed: 5 mph
		• Represent passenger vehicles queueing to enter and exit parking lots and garages.
		  ○ Arena
		  ▪ Parking Structure
		  ▪ Media Parking Lot
		  ○ West Parking Garage
		  ○ East Transportation and Hotel Site
		  ▪ East Parking Garage
		  ▪ Transportation Network Drop-off
		  ▪ Hotel Surface Parking Lot
		• Vehicle types: passenger cars
		• Emission factor: CARB 2017 model

On-Site: Proposed Project Operations diesel truck idling/TRUs	Area source	• Release height: 10 feet • Truck Idle time: Total 15 minutes per truck visit (unmitigated) • TRU operation: 2 hours per delivery truck • Vehicle type: heavy duty delivery trucks • Emission factor: CARB2017 model

Off-Site: Proposed Project Operations Vehicle Traffic, Adjusted Baseline Environmental Setting Vehicle Traffic	Line Area	• Line source width equal to the width of the roadway plus 3 meters on both sides.
		• Vehicle speeds:
		  ○ Heavy duty trucks: 5 mph
		  ○ All other vehicles: 5 mph

Charbroiler	Area	• Release height: Ground level (0.0 meters) • The Proposed Project was assumed to contain a charbroiler in an ancillary restaurant use. • Assumed to operate 7 days a week.

Standby Diesel Electric Generators and Fire Pumps	Point	• Emergency generators: The Proposed Project was assumed to contain 2 (1200 kW) emergency standby diesel generators and 2 emergency fire pumps (198 kw and 101 kw) at full build out
		  ○ Emergency Generator Total Rated Capacity: 2,400 kW electrical output
		  ○ Emergency Fire Pump Total Rated Capacity: 300 kW electrical output
		  ○ Projected testing and maintenance assumed to be 2 hours per day and 50 hours per year
		  ○ Height of emission release assumed to be 12 feet based on estimates of the generator's temperature, gas flow rate, and influence of building downwash on plume rise
		  ○ Emissions based on applicable federal emission standards for diesel generators
		  ○ It was assumed emergency generators and fire pumps would not operate for maintenance on the day of an event, therefore generator and fire emission are only included in the annual analysis.

SOURCE: ESA, 2019.

Operational Model Assumptions – Local Air Quality Assessment

The Project-specific operational information used in the AERMOD air dispersion model are provided in the Table 3.2-10. The facility operations assumed were represented in the model to demonstrate worst-case conditions.

Intersection Hotspot Analysis

Operation of the Proposed Project has the potential to generate traffic congestion and increase delay times at intersections within the local study area. The pollutant of primary concern when assessing the Proposed Project impacts at local intersections is CO because elevated concentrations of this pollutant tends to accumulate near areas of heavy traffic congestion and where average vehicle speeds are low. Tailpipe emissions are of concern when assessing localized impacts of CO along paved roads.

An adverse concentration of CO, known as a "hotspot," would occur if there was an exceedance of the NAAQS or CAAQS. SCAQMD does not currently have guidance for conducting intersection hot spot analysis. However, Caltrans has guidance for evaluating CO hot spots in their Transportation Project-Level Carbon Monoxide Protocol (CO Protocol) (Caltrans, 1997). Detailed guidance discussing which modeling programs to use, calculating emission rates, receiver placement, calculating 1-hour and 8-hour concentrations, and utilizing background concentrations are provided in the Caltrans' CO Protocol.

As recommended in the CO Protocol, hotspot modeling utilized Caltrans' CALINE4 model and emission rates obtained from CARB's EMFAC2017 to determine the maximum potential pollutant concentrations generated by the Proposed Project. Hotspot modeling was conducted for the Adjusted Baseline and three scenarios with the Proposed Project.

A detailed review of the traffic data presented in Section 3.14, Transportation and Circulation, identified the four intersections in the vicinity of the Project Site that demonstrated the most degraded Level of Service (LOS) and highest vehicle volumes associated with the Proposed Project. Logically, if these four intersections demonstrate CO concentrations less than the required thresholds, all other affected intersections would also be below the thresholds and thus not create hotspots. Additionally, SCAQMD conducted CO modeling for the 2003 AQMP for the four worst-case intersections in the Air Basin: (1) Wilshire Boulevard and Veteran Avenue; (2) Sunset Boulevard and Highland Avenue; (3) La Cienega Boulevard and West Century Boulevard; and (4) Long Beach Boulevard and Imperial Highway. The evidence provided in the 2003 AQMP shows that the peak modeled CO concentration due to vehicle emissions at these four intersections would not exceed the NAAQS.

As previously stated, CO emission rates increase, and ground-level concentrations tend to accumulate when speeds are low. Therefore, three speed bins were analyzed (5, 10, and 15 miles per hour) extending out for a total distance of 500 feet from each intersection. As the CO Protocol states, "[t]he recommended length for approach and departure links is 150 meters [approximately 500 feet]." Existing background concentrations obtained from the nearest monitoring station were

included within the modeling input parameters. Additionally, the CO Protocol recommends the following, "receptor locations for a 1-hour analysis should be 3 meters [approximately 10 feet]." Therefore, receptors were placed around intersections at worst-case curbside locations, approximately 10 feet from the edge of roadway, and within locations accessible to the public.

The results of the hotspot modeling were compared to the applicable NAAQS and CAAQS to determine if the operation of the Proposed Project in addition to background concentrations and mobile sources assumed to operate in the local study area (i.e., traffic generated from neighboring NFL games and other events at The Forum) would create a hotspot at intersections.

Health Risk Assessment

The Proposed Project would emit TACs during construction and operation, exposure to which may result in an increase in carcinogenic and non-carcinogenic health risks on the residents and other air quality sensitive receptors in the vicinity. An HRA was prepared to evaluate the risk of potential negative health outcomes (cancer, or other acute or chronic conditions) related to TACs exposure from airborne emissions during Proposed Project construction and operation. Non-cancer health risks are shorter-term in nature, and were assessed separately for construction and operation. However, the incremental increase in lifetime cancer risk is assessed over longer exposure time periods (i.e., 30-year for residential receptors). Thus, the potential effects of Project-related carcinogenic TACs included the combination of exposure to construction-related activities and those from the exposure of operation-related activities.

The HRA followed the procedure and methods provided in the *Guidance Manual for Preparation of Health Risk Assessments* issued by Office of Environmental Health Hazard Assessment (OEHHA) in 2015. as well as the methods the SCAQMD's *Risk Assessment Procedures for Rule 1401, 1401.1, and 212, version 8.1*, used in conjunction with the associated *SCAQMD Permit Application Package "N."*[142,143,144] The procedure involved emission quantification, modeling of environmental transport, evaluation of environmental fate, identification of exposure routes, identification of exposed populations, and estimation of short-term (e.g., 1-hour maximum), 8-hour average, and long-term (annual) exposure levels. The revised 2015 OEHHA Guidance takes into account the sensitivity of children to TAC emissions, breathing rates, and time spent at home since children have higher breathing rate compared to adults and would likely spend more time at home resulting in longer exposure durations.

The TAC emissions of the Proposed Project were generated from mobile sources including gasoline powered passenger vehicles and diesel-powered heavy-duty trucks, emergency generators, and emergency fire pumps. These sources generate total organic gases (TOG) and PM10 from combustion of gasoline and diesel fuels. Gasoline and diesel TOG and PM10 emissions are composed of MSATs in varying distributions resulting in a speciation profile. The

[142] Office of Environmental Health Risk Assessment, 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, February 2015.
[143] South Coast Air Quality Management District, 2017. Risk Assessment Procedures for Rule 1401, 1401.1, and 212, Version 8.1, September 1, 2017.
[144] South Coast Air Quality Management District, 2017. Permit Application Package "N", September 1, 2017.

speciation profile represents the MSAT's weight fraction of TOG and PM10. In order to determine a MSAT's contribution to health impacts, the weight fraction of an MSAT is multiplied by the total TOG or PM10 emissions. For example, diesel exhaust PM10 emissions (DPM) contain arsenic and arsenic has a weight fraction of 5×10^{-6}. Therefore, the total arsenic emissions equal total DPM emissions multiplied by the weight fraction of arsenic. All MSAT emissions were derived using this method. Weight fractions for MSATs were based on information from Caltrans' CT-EMFAC and CARB speciation profiles.[145,146]

For construction, the potential emission sources of MSATs and DPM were diesel-fueled heavy-duty equipment, on-road travel and idling emissions from diesel-fueled haul trucks, and on-road travel emissions from gasoline-fueled worker vehicles. For operation, the potential emission sources were on-site diesel-fueled emergency generators and fire pumps, diesel-fueled delivery trucks, diesel-fueled delivery truck TRUs, and gasoline-fueled passenger vehicles travelling to and from the Project Site. Since MSATs and DPM have cancer and non-cancer health effects, the impacts of being exposed to these emissions during construction and operation were evaluated on a short term and annual basis.

As described in detail above in *Localized Emissions and Analysis Methodology*, air dispersion model runs were conducted to simulate annual air concentrations at air quality sensitive receptors for the duration of construction and for the following years of operation of the Proposed Project. Annual air concentrations were compared to OEHHA's Cancer Potency Factor (CPF) to evaluate the incremental increase in lifetime cancer risk and Recommended Exposure Level (REL) to evaluate acute and chronic health effects. The receptor with the highest annual concentration was identified and the associated incremental increase in lifetime cancer risk and hazard index was calculated as described below. The maximum incremental increase in lifetime cancer risk is compared to the SCAQMD threshold of 10 in one million and the maximum hazard index is compared to the SCAQMD threshold for Acute and Chronic Hazard Indices (1.0). The cancer burden is compared to the SCAQMD threshold of 0.5 excess cancer cases in areas where the project-related incremental increase in lifetime cancer risk equals or exceeds 1 in one million. The SCAMD's thresholds for incremental increases in lifetime cancer risk and Hazard Indices apply to all regions of the Basin, regardless of the existing risks posed by exposure to ambient levels of airborne TACs. For example, as discussed above, the individual increase in cancer risk due to TAC exposure in the project vicinity is 1,000 in one million and the lifetime risk of cancer, regardless of cause, to the general population is 384,000 in one million.

The incremental increase in lifetime cancer risk values for TAC emissions consider exposure via the inhalation pathway. The potential exposure through other pathways (e.g., ingestion) requires substance and site-specific data, and the specific parameters for DPM are not known for these

[145] California Air Resources Board, Speciation Profiles Used in ARB Modeling, January 2018, https://www.arb.ca.gov/ei/speciate/speciate.htm#specprof. Accessed June 23, 2019.
[146] California Department of Transportation, Project Level Air Quality Analysis, http://www.dot.ca.gov/env/air/aq-analysis.html. Accessed June 23, 2019.

pathways.[147] The OEHHA Guidance recommends the incorporation of several factors to quantify the carcinogenic compound dose via the inhalation pathway. Once determined, the dose is multiplied by the compound-specific inhalation cancer potency factor to derive the incremental increase in lifetime cancer risk estimate. The dose takes into account the concentration at an air quality sensitive receptor. The cancer potency factor is compound specific. In performing health risk calculations, carcinogenic compounds are not considered to have threshold levels (i.e., dose levels below which there are no risks). Any exposure, therefore, will have some associated risk.

Incremental health risks associated with exposure to carcinogenic compounds is defined in terms of the probability of developing cancer as a result of exposure to a chemical at a given concentration. Under a deterministic approach (i.e., point estimate methodology), the incremental increase in lifetime cancer risk probability is determined by multiplying the chemical's annual concentration by its unit risk factor (URF). For example, the URF for DPM recommended by the Scientific Review Panel[148] is 3.0 x 10^{-4} per microgram per cubic meter ($\mu g/m^3$). This value corresponds to a Cancer Potency Factor (CPF) of 1.1 per milligram/kilogram (body weight) per day (mg/kg(bw)-day). The URF for DPM means that for receptors with an annual average concentration of 1 $\mu g/m^3$ in the ambient air, the probability of contracting cancer over a lifetime of exposure is 300 in one million. This approach for calculating the incremental increase in lifetime cancer risk is intended to result in conservative (i.e., health protective) estimates of health impacts and is used for assessing risks to air quality sensitive receptors. The estimation of health risks is calculated as follows:

Equation 1: $Dose_{RESIDENT}$ (mg/kg/day) = $C_{AIR} \times DBR \times A \times EF \times CF$ where:

- C_{air}= concentration in air ($\mu g/m^3$)
- DBR= daily breathing rate normalized to body weight (L/kg body weight-day)
- A= inhalation absorption factor (1 for DPM, unitless)
- EF= exposure frequency (unitless) (days/365 days)
- CF= 10^{-6}, correction factor, micrograms to milligrams conversion, liters to cubic meters conversion

Equation 2: $Risk_{INH\text{-}RESIDENT}$ (in one million) = $Dose_{AIR} \times CPF \times ASF \times ED/AT \times FAH \times CCF$ where:

- $Dose_{AIR}$= daily inhalation dose (mg/kg-day)
- CPF= cancer potency factor $(mg/kg\text{-}day)^{-1}$
- ASF= age sensitivity factor (unitless)
- ED= exposure duration (years)

[147] California Air Resources Board, 1998. Report to the Air Resources Board on the Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, April 22, 1998.

[148] The Scientific Review Panel is charged with evaluating the risk assessments of substances proposed for identification as TACs by CARB, OEHHA, and the Department of Pesticide Regulation (DPR), and the review of guidelines prepared by OEHHA.

- AT= averaging time for lifetime cancer risk (years)
- FAH= fraction of time spent at home (unitless)
- CCF= 10^6, cancer conversion factor to represent risk in chances per million

Equation 3: $Dose_{WORKER\text{-}STUDENT}$ (mg/kg/day) = [C_{AIR} × WAF] × DBR × A × EF × CF where:

- C_{air}= concentration in air (µg/m^3)
- WAF= worker adjustment factor (unitless), WAF = ($H_{residential}$ / H_{source}) x ($D_{residential}$ / D_{source}) = (24/8) x (7/6) = 3.5
- DBR= daily breathing rate normalized to body weight (L/kg body weight-day)
- A= inhalation absorption factor (1 for DPM, unitless)
- EF= exposure frequency (unitless) 0.68 (250 days / 365 days). Equivalent to workdays per year
- CF= 10^{-6}, correction factor, micrograms to milligrams conversion, liters to cubic meters conversion

Equation 4: $Risk_{INH\text{-}WORKER\text{-}STUDENT}$ (in one million) = $Dose_{AIR}$ × CPF × ASF × ED/AT × CCF where:

- $Dose_{AIR}$= daily inhalation dose (mg/kg-day)
- CPF= cancer potency factor (mg/kg-day^{-1})
- ASF= age sensitivity factor (unitless)
- ED= exposure duration (years)
- AT= averaging time for lifetime cancer risk (years)
- CCF= 10^6, cancer conversion factor to represent risk in chances per million

A summary of the exposure parameters used under this methodology are shown in **Table 3.2-11**.

Age Sensitivity Factors

The estimated excess incremental increase in lifetime cancer risks for residential receptors (including the early-in-life exposure) were adjusted using the ASFs recommended in Cal/EPA OEHHA Technical Support Document and 2015 OEHHA guidance. This approach accounts for an "anticipated special sensitivity to carcinogens" of infants and children. The incremental increase in lifetime cancer risk estimates were weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to two years of age and by a factor of three for exposures that occur from 2 to 15 years of age. No weighting factor (i.e., an ASF equal to one, which is equivalent to no adjustment) was applied to ages 16 to 30 years.

TABLE 3.2-11
CANCER RISK EXPOSURE PARAMETERS

Parameter	Residential				School (Child)	Early Childhood Education (Child)	Worker (Adult)
	3rd Trimester	0 < 2 years	2 < 16 years	16 < 30			
C_{AIR} (ug/m^3)	Based on AERMOD dispersion modeling results						
DBR[a] (L/kg BW-day)	361	1090	572	261	631	631	230
A[b] (unitless)	1	1	1	1	1	1	1
EF[b] (unitless)	0.96	0.96	0.96	0.96	0.68	0.68	0.68
CF[b] (unitless)	10^{-6}	10^{-6}	10^{-6}	10^{-6}	10^{-6}	10^{-6}	10^{-6}
CPF[b] (mg/kg/day)$^{-1}$	Pollutant Specific						
ASF[b] (unitless)	10	10	3	1	3	3	1
ED[b,c] (years)	0.25	2	14	14	7	7	25
AT[b] (years)	70	70	70	70	70	70	70
FAH[a] (unitless)	1	1	1	0.73	N/A	N/A	N/A
WAF[a,c] (unitless)	N/A	N/A	N/A	N/A	3.5	3.5	3.5
CCF[b] (unitless)	10^6	10^6	10^6	10^6	10^6	10^6	10^6

NOTES:
[a] SCAQMD 2017 Risk Assessment Procedures, Permit Application N, Use in conjunction with the Risk Assessment Guideline 1401,1401.1, and 212.
[b] OEHHA 2015 Guidance Manual.
[c] WAF is based on construction emissions occurring 6 days per week for 8 hours per day. This analysis treats students at schools and early childhood education as workers at work for an 8-hour day.

SOURCE: ESA, 2019

Cancer Risk Calculation

Excess incremental increase in lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to carcinogens. The risk is expressed as a unitless probability and was calculated as the number of cancer incidences per million individuals in the HRA. The incremental increase in lifetime cancer risk for each chemical was calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the CPF. The OEHHA-recommended CPFs are provided in **Table 3.2-12**.

For incremental increase in lifetime cancer risk, SCAQMD guidance identifies a significant impact if a project would result in an incremental increase in lifetime cancer risk that is greater than 10 per million for any receptor.

TABLE 3.2-12
MSAT CANCER POTENCY FACTORS

Pollutant	Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$
DPM	1.1
Acetaldehyde	0.01
Arsenic	12
Benzene	0.1
1,3,-Butadiene	0.6
Formaldehyde	0.021
Nickel	0.91

SOURCE: OEHHA 2015

Chronic and Acute Health Impacts

Non-cancer effects of chronic (i.e., long- term) TAC exposures were evaluated using the Hazard Index (HI) approach consistent with the OEHHA guidance. The chronic HI was calculated by dividing the modeled annual average concentration by the Reference Exposure Level (REL). The REL is the concentration at or below which no adverse health effects are anticipated. The RELs for MSATs were obtained from OEHHA. The OEHHA-recommended chronic and acute RELs are provided in **Table 3.2-13**. SCAQMD guidance identifies a significant impact if a project would result in an incremental chronic and acute HI that is greater than 1.0.

The process of assessing health risks and impacts includes a degree of uncertainty. The level of uncertainty depends on the availability of data and the extent to which assumptions must be relied upon in cases where the data are incomplete or unknown. All HRAs rely upon scientific studies to reduce the level of uncertainty; however, it is not possible to eliminate uncertainty from the analysis. Where assumptions are used to substitute for incomplete or unknown data, it is standard practice in performing HRAs to err on the side of health protection to avoid underestimating or underreporting the risk to the public. In general, sources of uncertainty that may lead to an overestimation or an underestimation of the risk include extrapolation of toxicity data in animals to humans and uncertainty in the exposure estimates. In addition to uncertainty, there exists "a natural range or variability in measured parameters defining the exposure scenario," and that "the greatest quantitative impact is variation among the human population in such properties as height, weight, food consumption, breathing rates, and susceptibility to chemical toxicants."[149] As mentioned previously, it is typical to err on the side of health protection by assessing risk on the most sensitive populations, such as children and the elderly, by modeling potential impacts based on high-end breathing rates, by incorporating age sensitivity factors, and by not taking into account exposure reduction measures, such as mechanical air filtration building systems.

[149] Office of Environmental Health Risk Assessment, 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, February 2015.

TABLE 3.2-13
MSAT REFERENCE EXPOSURE LEVELS

Pollutant	Annual Chronic REL (µg/m^3)	8-Hour Chronic (µg/m^3)	Acute REL (µg/m^3)
DPM	5.0	—	—
Acetaldehyde	140	300	470
Acrolein	0.35	0.7	2.5
Arsenic	0.015	0.015	0.2
Benzene	3.0	3.0	27
1,3,-Butadiene	2.0	9.0	660
Chlorine	0.2	—	210
Copper	—	—	100
Formaldehyde	9.0	9.0	55
Mercury	0.03	0.06	0.6
Methanol	4000	—	28,000
Methyl Ethyl Ketone (MEK)	—	—	13,000
Nickel	0.014	0.06	0.2
Styrene	900	—	21,000
Toluene	300	—	37,000
m-Xylene	700	—	22,000
o-Xylene	700	—	22,000
p-Xylene	700	—	22,000

SOURCE: Office of Environmental Health Risk Assessment, 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. February 2015.

These conservative assumptions were implemented in the analysis contained within this Draft EIR and as detailed in Appendix D.

Population-Wide Risks (Cancer Burden)

If an incremental increase in a lifetime cancer risk from the Proposed Project exceeds the SCAQMD regulatory threshold of an incremental increase of 1 in one million, then an estimate of population level cancer burden is required.[150] This is distinct from the cancer risk, which is the risk probability for an exposed individual. The burden calculations are conservative estimates of the number of cancer cases that could occur in the exposed populations. The impacts are considered significant if more than 0.5 cases are calculated for the Proposed Project.[151]

[150] South Coast Air Quality Management District. 2017. Risk Assessment Procedures for Rule 1401, 1401.1, and 212, Version 8.1, September 1, 2017.
[151] South Coast Air Quality Management District, SCAQMD Air Quality Significance Thresholds, http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2, revised March 2015. Accessed March 21, 2018.

Proposed Project risks for construction and operation impacts were evaluated for a 70-year residential scenario in order to determine population-wide risks.[152] The zone of impact is the area surrounding the Project Site that encompasses cancer risk values greater than or equal to 1 in one million and would be determined by modeling. The population-wide risks would be estimated for persons living within the zone of impact.

A census block group is a statistical area within a census tract that is assigned a population number. The 2019 population by block group was based on the 2010 census population available from the U.S. Census and then cross-referenced with the calculated cancer risks.[153] When multiple grid points were located within a block group, cancer risk was calculated as the average within the block group. The total cancer burden for the Proposed Project was determined as the sum of the individual census block group cancer burdens.

Health Impact Assessment (HIA)

Typically, the health impact of a particular criteria pollutant is analyzed by air districts on a regional scale based on how close the area is to attaining the NAAQS. Because air districts' attainment plans and supporting air model tools are regional in nature, they are not typically used to evaluate the impacts to ambient concentrations of criteria air pollutants, or to correlate those impacts to the potential resultant impacts to public health effects, from an individual project. The complex nature of criteria air pollutant dispersion and the complex atmospheric chemistry that occurs (especially in the case of ozone and fine particulate matter) limit the usefulness of applying the available models to predict health impacts on a project-level.

Nonetheless, it is recognized, for example, that health effects from ozone are correlated with increases in the ambient level of ozone in the air a person breathes.[154] Thus, to correlate the project-related change in regional air emissions of the Proposed Project to specific types of health effects, regional-level tools, like the US EPA's Community Multiscale Air Quality (CMAQ) model and the US EPA's Environmental Benefits Mapping and Analysis Program – Community Edition (BenMAP-CE) model, were integrated into a quantitative health impact assessment (HIA), where feasible, to provide information on possible health effects that may result from Proposed Project criteria air pollutants emissions.[155,156] The current version of the US EPA BenMAP-CE model only has health impact functions associated with ozone and PM2.5; therefore, the quantitative HIA only analyzed those two pollutants quantitatively and addressed the other criteria pollutants qualitatively. For this reason, it was infeasible to perform a quantitative analysis of other criteria air pollutant emissions based on existing modeling tools.

---

[152] South Coast Air Quality Management District. 2017. Risk Assessment Procedures for Rule 1401, 1401.1, and 212, Version 8.1, September 1, 2017.
[153] US Census Bureau. https://census.gov/. Accessed July 22, 2019.
[154] https://www.epa.gov/ozone-pollution-and-your-patients-health/health-effects-ozone-general-population, Figure 9
[155] US Environmental Protection Agency, CMAQ: The Community Multiscale Air Quality Modeling System, https://www.epa.gov/cmaq, last updated March 18, 2019. Accessed July 22, 2019.
[156] US Environmental Protection Agency, Environmental Benefits Mapping and Analysis Program – Community Edition (BenMAP-CE), https://www.epa.gov/benmap/benmap-ce-manual-and-appendices, last updated August 17, 2017. Accessed July 22, 2019.

In order to determine the potential health impacts, mass emission rates from operation of the Proposed Project were distributed spatially and temporally. The dispersion of these pollutants was predicted using a photochemical grid model and meteorological data for a representative year to evaluate "worst case" dispersion of criteria pollutant emissions. A "baseline" model was run using SCAQMD emissions inventory data from their AQMP efforts to represent pollutant dispersion and corresponding health effects (like asthma-related or respiratory-related hospital admissions, etc.) without contribution from the Proposed Project. The criteria pollutant emissions from the Proposed Project were then combined spatially and temporally with the SCAQMD emission inventory data and run in a second model run. The two sets of results were then compared to analyze the difference in health impacts and the corresponding contribution from the operation of the Proposed Project.

The quantitative HIAs were performed for emissions of ozone (including precursor pollutants, NO_X and VOC) and PM2.5 (primary and secondary). These analyses used CMAQ, a photochemical grid model (PGM), to predict the potential increases in the regional ambient air concentrations of ozone and PM2.5 due to implementation of the Proposed Project. The modeling effort included developing meteorology, emissions, a chemical transport model, and other environmental conditions using third-party models and processing tools in order to model impacts in CMAQ. For meteorology, a regional model – the weather research and forecasting (WRF) model – and a chemistry interface processors (MCIP) was used in conjunction with CMAQ. Additional emissions and initial and boundary conditions models were used with CMAQ to calculate resulting ozone and PM2.5 concentrations. Proposed Project construction emissions were less than operation emissions on an average annual basis, localized and very small over the life of the Proposed Project (e.g., total construction emissions as compared to 30-year operation emissions is about 12 percent for NO_X and VOC, and less than 2 percent for PM), and therefore not included in the quantitative HIAs.

Daily PM2.5, NO_X, and VOC emissions profile for an annual period were established by analyzing the estimated normal operational scenarios and schedule at the Project Site. To conservatively generate the worst-case incremental concentrations that could be induced by the Proposed Project, the HIA used the existing baseline sources instead of Adjusted Baseline Environmental Setting sources (i.e., the HPSP Adjusted Baseline projects). Contributions from the Adjusted Baseline would yield higher concentrations of NO_2 and VOC in the region of the Project Site, which could reduce the rate of formation of ozone from the Proposed Project. Studies, like that performed by the University of Michigan, have demonstrated that ozone formation increases with increasing NO_X emissions when ambient NO_2 is lower, and ozone can decrease with increasing NO_X emissions when ambient NO_2 is high.[157] Therefore, including the contribution from the Adjusted Baseline to background ambient concentrations could produce a less conservative analysis (i.e., smaller incremental ozone emissions than if using Existing Baseline sources).

[157] University of Michigan, Overview: Tropospheric ozone, smog and ozone-NO_X-VOC sensitivity, http://www-personal.umich.edu/~sillman/ozone.htm. Accessed July 22, 2019.

This analysis required comprehensive traffic data as provided in Appendix K for the Proposed Project. Regional emission inventories used for SIP purposes, which include spatial and temporal allocations of emissions, were provided by SCAQMD to represent background regional emissions. The inventory was provided for planning year 2025 and applied to the first year of Proposed Project operation, year 2024. This approach is conservative because regional concentrations of precursors NO_2 and VOC are expected to be reduced over time. As discussed above, an environment with lower ambient NO_2 concentrations could potentially result in increased ozone formation due to emissions from the Proposed Project. Proposed Project operation year 2024 is expected to observe the highest levels of emissions because emissions are expected to reduce over time as vehicle emission rates reduce. Emissions from the Proposed Project were allocated spatially and temporally and then added to the SCAQMD inventories.

Meteorological year 2014 was used for WRF modeling because it aligns with available data and the highest background regional concentrations of ozone; therefore, it was assumed to represent the most conservative meteorological year.

Next, the analyses used the US EPA's BenMAP-CE (version 1.5.0) model to estimate the resulting health impacts from minor changes in regional ambient PM2.5 and ozone concentrations. BenMAP-CE outputs included ozone- and PM- related health endpoints such as mortality, hospital admissions, and emergency room visits. As there are currently no guidance or thresholds for significance determination regarding health effects, the analysis compared the BenMAP-CE results to background (or baseline) health incident rates. Thus, the analyses do not conclude whether the predicted health effects are significant for CEQA purposes; rather, the predicted health effects are provided for informational purposes so as to enhance the understanding of the effects of impacts determined to be significant (e.g., Impacts 3.2-1 and 3.2-2) based on other measureable criteria.

The BenMAP-CE modeling used air quality grids that match the CMAQ modeling grids, and used BenMAP-CE – ready population datasets (generated using the EPA's PopGrid software based on the 2010 United Stated Census data) corresponding to these modeling grids. Besides the model's default parameters, datasets, and EPA standard health impact functions, southern California region-specific data were used to the extent possible to obtain health endpoint results that reflect the population and demographic characteristics of the region around the Project Site. In addition, the default pooling method was applied to synthesize the estimated incidence changes predicted by several studies for the same pollutant-health endpoint group combination. The quantitative HIA results are presented in Appendix D.

Project Design Features

The Proposed Project would include several project design features to reduce air pollutant emissions from Project construction and Project operations. Although these features are part of the Proposed Project, these features are expected to be incorporated as conditions of approval so that they will be enforceable by the City:

Construction Project Design Feature 3.2-1

The project applicant will implement the following construction equipment features for equipment operating at the Project Site, as well as the following construction protocols. These features and protocols would be included in applicable bid documents, and successful contractor(s) must demonstrate the ability to supply such equipment and comply with such protocols. Construction features would include the following:

- *The Project shall utilize off-road diesel-powered construction equipment that meets or exceeds the California Air Resources Board (CARB) and United States Environmental Protection Agency (US EPA) Tier 4 Final off-road emissions standards or equivalent for all equipment rated at 50 horsepower (hp) or greater. Such equipment shall be outfitted with Best Available Control Technology (BACT) which means a CARB certified Level 3 Diesel Particulate Filter or equivalent.*
- *During plan check, the Project representative will make available to the lead agency and South Coast Air Quality Management District (SCAQMD) a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used during construction. The inventory will include the horsepower rating, engine production year, and certification of the specified Tier standard. A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be maintained on site at the time of mobilization for each applicable piece of construction equipment.*
- *Equipment such as concrete/industrial saws, pumps, aerial lifts, material hoist, air compressors, and forklifts must be electric or alternative-fueled (i.e., non-diesel). Pole power shall be utilized at the earliest feasible point in time, and shall be used to the maximum extent feasible in lieu of generators. If stationary construction equipment, such as diesel- or gasoline-powered generators, must be operated continuously, such equipment must be located at least 100 feet from air quality sensitive land uses (e.g., residences, schools, childcare centers, hospitals, parks, or similar uses), whenever possible.*
- *To control dust emissions during soil disturbing phases such as demolition, site preparation, and grading and excavation, the Project shall apply water at least every 2 hours per day on active areas of disturbance and paved roads.*
- *Contractors will maintain and operate construction equipment to minimize exhaust emissions. All construction equipment must be properly tuned and maintained in accordance with the manufacturer's specifications and documentation demonstrating proper maintenance, in accordance with the manufacturer's specifications, shall be maintained on site. Tampering with construction equipment to increase horsepower or to defeat emission control devices must be prohibited.*
- *Construction activities must be discontinued during second-stage smog alerts. Records of discontinued construction activities due to second stage smog alerts will be maintained on site by the contractor.*
- *Heavy duty construction trucks (import, export, delivery, etc.) would be prohibited from traveling to and from the Project Site during the pre-and post-event hours on major event days at Hollywood Park and/or The Forum.*
- *All haul truck trips would be prohibited from leaving the site after 3:00 PM.*

Operations Project Design Feature 3.2-2

The project applicant will implement the following operational equipment requirements and operation protocols for equipment operating at the Project Site. These features would be included in applicable bid documents, and successful contractor(s) must demonstrate the ability to supply such equipment and comply with such protocols. Operation features would include the following:

- *All emergency generators used for Project operations shall be selected from the SCAQMD certified generators list and meet applicable federal standards for diesel emissions. For after-treatment of engine exhaust air, a diesel particulate filter shall be provided to meet the emission level requirements of SCAQMD. The Project would have two emergency generators and two fire pumps, each could operate up to two hours per day and 50 hours per year for testing and maintenance (per SCAQMD Rule 1470 limit) to ensure reliability in the case of a power outage. Testing of the generators for maintenance and operations purposes would be permitted only during non-event days.*
- *Heavy-duty delivery trucks would be prohibited from traveling to and from the Project Site during the two hours before and one hour after an event at the IBEC of more than 9,500 attendees, and during pre-and post-event hours during major event days at the Hollywood Park and/or The Forum.*

Impacts and Mitigation Measures

Impact 3.2-1: Construction and operation of the Proposed Project would conflict with implementation of the applicable air quality plan. (Significant and Unavoidable)

The following analysis addresses consistency of the Proposed Project with applicable plans and policies that regulate air quality. In particular, the analysis addresses consistency with SCAQMD's AQMP, which, as discussed above, is an air quality plan that includes strategies for achieving attainment of applicable ozone, PM10, and PM2.5 standards. In addition, consistency with the air quality related policies in the City of Inglewood General Plan Land Use Element are also addressed. Finally, this analysis addresses consistency with the City's ECAP, which includes strategies to mitigate the City's impacts on air quality and climate change.

Air Quality Management Plan

As discussed above, SCAQMD has adopted a series of AQMPs to lead the Air Basin into compliance with several criteria air pollutant standards and other federal requirements, while taking into account construction and operational emissions associated with population and economic growth projections provided by SCAG's 2016 RTP/SCS.[158] SCAQMD recommends that, when determining whether a project is consistent with the relevant AQMPs, the lead agency should assess whether the project would directly obstruct implementation of the plans by impeding SCAQMD's efforts to achieve attainment with respect to any criteria air pollutant for which it is currently not in attainment of the NAAQS and CAAQS (e.g., ozone, PM10, and

[158] Southern California Association of Governments, 2016. *2016 Regional Transportation Plan/Sustainable Communities Strategy*. April 2016.

PM2.5) and whether it is consistent with the demographic and economic assumptions (typically land use related, such as employment and population/residential units) upon which the plan is based.[159] SCAQMD guidance indicates that projects whose growth is included in the projections used in the formulation of the AQMP are considered to be consistent with the plan and would not interfere with its attainment.[160]

Construction

Control Strategies

During construction, the Proposed Project would comply with CARB's requirements to minimize short-term emissions from on-road and off-road diesel equipment, including the ATCM to limit heavy duty diesel motor vehicle idling to no more than 5 minutes at any given time, and with SCAQMD's regulations such as Rule 403 for controlling fugitive dust and Rule 1113 for controlling VOC emissions from architectural coatings. Furthermore, the Proposed Project would comply with fleet rules to reduce on-road truck emissions (i.e., 13 CCR section 2025, CARB Truck and Bus regulation). In addition, as included in Project Design Feature 3.2-1, the Proposed Project would require the use of off-road diesel-powered construction equipment that meets or exceeds CARB and US EPA Tier 4 Final off-road emissions standards or equivalent for all equipment rated at 50 horsepower (hp) or greater. Compliance with these measures and requirements would be consistent with and meet or exceed the AQMP requirements for control strategies intended to reduce emissions from construction equipment and activities. Nonetheless, as discussed further below in the analysis for Impact 3.2-2, even though the Proposed Project would be consistent with applicable strategies in the AQMP, local and state regulations, and other voluntary measures designed to reduce non-attainment pollutants, regional emissions during construction of the Proposed Project would exceed the significance threshold for NO_X. Emissions of VOCs, PM10, and PM2.5 during construction of the Proposed Project are not predicted to exceed regional mass emission thresholds.

Growth Projections

The Proposed Project would result in an increase in short-term employment compared to existing conditions. Although the Proposed Project would generate construction workers on the Project Site during the construction process, it would not create new construction jobs as construction-related jobs generated by the Proposed Project would likely be filled by employees within the construction industry within the City of Inglewood and the greater Los Angeles County region. Construction industry jobs generally have no regular place of business, as construction workers commute to job sites throughout a given region, which may change several times a year. Moreover, these jobs would be temporary in nature. Therefore, the construction jobs generated by the Proposed Project would not conflict with the long-term employment or population projections upon which the AQMPs are based.

[159] South Coast Air Quality Management District, Air Quality Analysis Handbook, pp. 12-2, 12-3, http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook. Accessed April 16, 2019.
[160] South Coast Air Quality Management District, 1993. CEQA Air Quality Handbook, p. 12-1. November 1993.

Because emissions during construction of the Proposed Project would exceed the significance threshold for NO_X, this construction impact is considered **significant**.

Operation

Control Strategies

As discussed above, the SCAQMD AQMPs includes land use and transportation strategies from the SCAG 2016 RTP/SCS that are intended to reduce VMT and resulting regional mobile source emissions. The applicable land use strategies include planning for growth around livable corridors; providing more options for short trips/neighborhood mobility areas; supporting ZE vehicles & expanding vehicle charging stations; supporting local sustainability planning. The applicable transportation strategies include managing through the Transportation Demand Management (TDM) Program and the Transportation System Management (TSM) Plan including advanced ramp metering, and expansion and integration of the traffic synchronization network; promoting active transportation. The majority of the transportation strategies are to be implemented by cities, counties, and other regional agencies such as SCAG and SCAQMD, although some can be furthered by individual development projects.

The location, design, and land uses of the Proposed Project would support land use and transportation strategies related to reducing vehicle trips for patrons and employees by increasing commercial and hotel density near public transit. The Proposed Project is considered an "urban infill" project, as it would replace existing low density commercial and light manufacturing/ warehouse uses with a high-density, mixed-use development that would include an 18,000 fixed seat arena, office uses, a training facility, a sports medicine clinic, retail, restaurant, commercial uses, a hotel, and community spaces. The Proposed Project proposes higher density, consistent with compact growth, on infill urban land accessible to and well served by public transit including frequent and comprehensive transit services. New job growth, as a result of the completed Proposed Project, is focused in an infill area well served by transit.

The Project Site is located within one-quarter mile of eight existing Metro bus stops along the following four Metro routes, 117, 211/215, and 212/312. In addition, local transit service to the Project Site would be provided by Metro in the form of future below- and at-grade light rail on the Metro Crenshaw/LAX line, which is currently under construction and expected to be complete and operational in mid-2020. During operation of the Proposed Project, a shuttle pick-up and drop-off shuttle service will be provided at the following two Metro rail stations: the existing Metro Green Line – Hawthorne/Lennox Station and the future Metro Crenshaw/LAX Line – Florence/La Brea Station. The Project Site's proximity to these publicly available transit services enable the Proposed Project to potentially reduce vehicle trips, VMT, and associated transportation-related emissions compared to a project without these characteristics.

The Proposed Project land use characteristics (including increased density, location efficiency, increased land use diversity and mixed-uses, etc.), many of which overlap the strategies in the AQMPs, have been shown by CAPCOA, in its guidance document entitled *Quantifying*

Greenhouse Gas Mitigation Measures,[161] to support a relative reduction in vehicle trips and VMT in comparison to a project that does not include these land use characteristics, and corresponding vehicle emissions, further supporting consistency with the AQMPs. In particular, the Proposed Project would increase the Project Site density from 4.25 jobs per acre to 35.46 jobs per acre.[162] In addition, the Project Site is an urban location within the City of Inglewood and would be developed on an infill site that is located in a highly urbanized part of the SCAG region and is accessible to numerous transit lines, and would be located immediately adjacent to another major mixed use project that is under development (Hollywood Park Specific Plan). Furthermore, the Proposed Project would co-locate complementary arena, office, retail/restaurant, commercial, and hotel uses in close to proximity to existing off-site commercial and residential uses. The Project Site is adjacent to two LA Metro bus routes (lines 117 and 212/312 stop at the intersection of West Century Boulevard and South Prairie Avenue) and is also within one half mile of a Metro bus route (the combined 740/40 line stops at the intersection of West Century Boulevard and La Brea/Hawthorne Boulevard). These Metro bus routes provide frequent service during peak commute hours. As described in Section 3.0, Introduction to the Analysis, the Inglewood Transit Connector (ITC) (Cumulative Project #74) is a planned 1.8-mile electric train system with a station near the intersection of West Century Boulevard and South Prairie Avenue, adjacent to the Project Site; if approved and constructed, the ITC would provide close connections from the Project Site and the adjacent HPSP development to the LA Metro Crenshaw line Downtown Inglewood station. Additionally, as discussed above, the Proposed Project would provide shuttle pick-up and drop-off service at two LA Metro rail stations.

As demonstrated above, the Proposed Project would support land use and transportation strategies in the AQMPs. Nevertheless, as discussed further below in the analysis for Impact 3.2-2, regional emissions during operation of the Proposed Project would exceed the regional significance thresholds for those criteria air pollutants for the Air Basin is not in attainment (i.e., VOC, NO_X, PM10, and PM2.5).

Growth Projections

As discussed in Section 3.12, Population, Employment, and Housing, the Project Site is mostly vacant, and is partially developed with a fast-food restaurant, a motel, two warehouse and light manufacturing facilities, a commercial catering business, and a groundwater well and related facilities. Existing employment at the Project Site totals approximately 119 people. Operation of the Proposed Project would include permanent employment associated with the operations of the Arena and other uses included in the Proposed Project. The Proposed Project would eliminate the current uses and jobs at the Project Site (approximately 119 jobs) and would generate 768 permanent jobs at the Project Site as well as an additional 225 full-time equivalent jobs to support arena and/or plaza events throughout the year. Combined with the 768 permanent jobs, the

[161] California Air Pollution Control Officers Association (CAPCOA), 2010. Quantifying Greenhouse Gas Mitigation Measures. August 2010.

[162] Existing jobs per acre = 119 existing employees / 28 acres = 4.25 jobs per acre; proposed jobs per acre = 768 regular jobs plus 225 full time equivalent annual event jobs for a total of 993 full time employees / 28 acres = 35.46 jobs per acre.

Proposed Project would result in a total of 993 full-time equivalent jobs, for a net increase of 874 full-time jobs within the City.

As described in Section 3.12, Population, Employment, and Housing, the City of Inglewood's total employment in 2017 exceeded that projected by the 2016 RTP/SCS for 2020, and even additional employment projections through 2040.[163] Therefore, any project that includes employment would exceed the 2016 RTP/SCS forecasts for the City. As is discussed in Section 3.12, the SCAG employment projections were undertaken in 2012, during a period of economic recession, and have not been updated to reflect current and anticipated conditions in Inglewood. While this employment growth was not necessarily forecasted within SCAG's projection horizon, which could cause additional people to move into the area beyond what was planned, there is sufficient infrastructure planned (as detailed within Section 3.13, Public Services, and Section 3.15, Utilities and Service Systems) to accommodate the additional growth, and there would be no further environmental effects, including those related to air quality, beyond those described in the analysis of criteria pollutant emissions presented under Impact 3.2-2. In addition, as discussed in Section 3.12, Population, Employment, and Housing, the City of Inglewood has established several goals and policies to foster redevelopment of infill sites that would support healthy economic development. Moreover, as addressed under Section 2.4, Project Site Existing Conditions, and Section 3.10, Land Use and Planning, the Project Site is intended to support employment uses. Therefore, while the Proposed Project would require amendments to the General Plan, Planning and Zoning Code Text, and Zoning Map and would introduce more jobs to the Project Site than may have resulted under existing zoning, this growth is consistent with the City of Inglewood General Plan.

SCAG 2016 RTP/SCS

Goal 6 of the 2016 RTP/SCS aims to improve air quality and encourage active transportation. The TDM programs as described above would be designed to reduce vehicle trips through a variety of TDM components. This would reduce GHG, criteria pollutant, and TAC emissions from transportation, and would therefore improve air quality impacts from Project-related transportation. In addition, as described above, the TDM Program would encourage active transportation and alternative modes of travel; for example, the Proposed Project would include 23 visitor and 60 employee on-site bike parking spaces, which would exceed the City's bicycle parking code. This would further support Goal 6 of the RTP/SCS.

Goal 7 of the 2016 RTP/SCS aims to actively encourage and create incentives for energy efficiency. The Proposed Project would utilize energy efficiency appliances and equipment, as required by Title 24, and it would provide EV charging stations to support the future use of electric and hybrid-electric vehicles by employees and visitors traveling to and from the site. In addition, the Proposed Project would be designed and constructed to meet LEED Gold certification requirements, which would require the incorporation of energy efficiency measures. The Proposed Project would also comply with Title 24 energy efficiency requirements, use 100 percent LED lighting indoors and outdoors throughout the site, and install high efficiency

[163] Southern California Association of Governments, 2016. RTP/SCS Growth Forecast by Jurisdiction, p. 1. 2016.

HVAC systems. In addition, the Proposed Project design would include compliance with CalGreen Code Voluntary Tier 1, which is estimated to achieve a 10 percent reduction in energy consumption over Title 24 2019 standards based on the preliminary design of the Proposed Project. These actions would support Goal 7 of the 2016 RTP/SCS.

General Plan Air Quality-Related Policies

As discussed above, the City of Inglewood General Plan Land Use Element includes a goal relevant to air pollutant emissions.

> **Circulation Goal:** Promote and support adequate public transportation within the City and the region.

As described in Chapter 2, Project Description, the Proposed Project constitutes a large-scale development integrating commercial, office, hotel, and entertainment uses that support public transportation. The Proposed Project would include provisions that would promote the use of public transportation as a means of travel to and from the Proposed Project, including a transportation hub at the East Transportation and Hotel Site, shuttle stops on South Prairie Avenue, and a shuttle system for large events that would connect the Proposed Project to nearby Metro Crenshaw and Green Line rail stations. For these reasons, the Proposed Project would be consistent with Inglewood General Plan policies related to air quality.

Air Quality-Related Policies from the Inglewood Energy and Climate Action Plan

As described above, the City's ECAP includes strategies to mitigate the City's impacts on air quality and climate change. While these strategies are primarily directed towards GHG emission-reductions, the measures in the City's ECAP would also achieve co-benefits of reducing criteria air pollutants and TACs. These strategies include:

Strategy 1: Lead by Example with Municipal Government Actions

- Accelerate city vehicle fleet replacement
- Continue commute trip reduction program
- Planning for electric vehicle infrastructure

Strategy 4: Improve Transportation Options and Manage Transportation Demand

- Make roadways more efficient
- Improve transit
- Improve bicycle facilities
- Make parking more efficient
- Reduce commute trips
- Encourage land use intensification and diversity

Although the actions presented under Strategy 1 are for the City to implement, the Proposed Project would support implementation of these actions as the Proposed Project would be designed to achieve LEED Gold certification. This would serve to reduce energy use in the proposed buildings as well as require the installation of electric vehicle charging stations. The Proposed Project would also be consistent with Strategy 4 as the Proposed Project would incorporate shuttles would serve to facilitate multi-modal travel to and from events at the Project Site in a safe and efficient manner during event days. The Proposed Project would provide shuttle pick-up and drop-off service at the following two Metro rail stations: the existing Metro Green Line – Hawthorne/Lennox Station and the future Metro Crenshaw/LAX Line – Downtown Inglewood Station. The Proposed Project would include the installation of bicycle parking facilities. Furthermore, the Proposed Project would provide a dense mix of entertainment, office, retail, restaurant, community, and hotel uses on parcels of infill urban land accessible to and served by public transit and near existing and planned housing. For the reasons described above, the Proposed Project would be consistent with the City's ECAP.

Conclusion

As provided in the analysis above, the Proposed Project would be consistent with the air quality-related polices in the City's General Plan as well was the air quality related policies in the City's ECAP as the Proposed Project supports public transportation and improving transportation options and demand to the Project Site. In addition, the Proposed Project would be consistent with the overall control strategies of the AQMPs during construction of the Proposed Project. Nevertheless, construction and operation of the Proposed Project would generate emissions of nonattainment pollutants or precursors (i.e., VOC, NO_X, PM10, and PM2.5), that would exceed the applicable significance thresholds. Therefore, impacts related to consistency with air quality plans during operation of the Proposed Project would be **potentially significant**.

Mitigation Measure 3.2-1(a)

Implement Mitigation Measure 3.14-2(b). Implementation of a comprehensive Transportation Demand Management (TDM) program.

Mitigation Measure 3.2-1(b)

Implement Mitigation Measure 3.2-2(b). Emergency Generator and Fire Pump Generator Maintenance & Testing.

Mitigation Measure 3.2-1(c)

Implement Mitigation Measure 3.2-2(c). Construction Emissions Minimization Plan.

Mitigation Measure 3.2-1(d)

Implement Mitigation Measure 3.2-2(d). Incentives for vendors and material delivery trucks to use ZE or NZE trucks during operation.

Level of Significance After Mitigation: Because regional emissions during construction and operation of the Proposed Project would exceed the significance thresholds for those criteria air pollutants for which the Air Basin is not in attainment (i.e., VOC, NO_X, PM10,

and PM2.5), the Proposed Project would have a significant impact regarding consistency with the AQMP.

Regarding construction emissions, the Applicant has agreed to use off-road diesel-powered construction equipment that meets or exceeds CARB and US EPA Tier 4 Final off-road emissions standards or equivalent for all equipment rated at 50 hp or greater. Such equipment will be outfitted with BACT devices including, but not limited to, a CARB certified Level 3 Diesel Particulate Filters. Based on registration data, over 75 percent of heavy-duty diesel vehicles (i.e., vendor and haul trucks) in the State are model year 2010 or newer.

All construction equipment and vehicles shall maintain compliance with the manufacturer's recommended maintenance schedule and the Applicant will maintain maintenance records. The Applicant will strive to use ZE or NZE heavy- duty haul trucks during construction, and no idling signs will be posted upon entry and throughout the Project Site during construction. In addition, the project applicant will restrict vehicle idling time to no longer than five minutes and will post signs at the entrance and throughout the site stating that idling longer than five minutes is not permitted. Even with implementation of Project Design Feature 3.2-1 and Mitigation Measure 3.2-1(c)- construction-related daily emissions would exceed the SCAQMD significance threshold for NO_X. Therefore, short-term regional construction emissions would be considered **significant and unavoidable**.

Regarding operational emissions, feasible mitigation in line with the VMT-reduction targets of the AQMP and the City's ECAP to reduce regional emissions during operation of the Proposed Project have been developed. Implementation of Mitigation Measure 3.2-1 would require the implementation Mitigation Measure 3.14-2(b), which involves the implementation of a TDM program, consistent with the transportation strategies noted in the 2016 RTP/SCS. In particular, the TDM program would be designed to provide transportation services and monetary incentives and that encourage and support the use by employees, event attendees and customers of alternative modes of transportation and the reduction of vehicle trips, including by increasing average vehicle occupancy. The TDM program would be designed to be consistent with the requirements and achieve the reduction in vehicle trips set forth in AB 987. The Proposed Project TDM program would include a variety of components, including programs to encourage alternative modes of transportation (rail, public bus, and vanpool), including event-day dedicated shuttle services; programs to carpools and ZE vehicles, active transportation, employee vanpools, a park-n-ride program, and information services; and programs to reduce on-site parking demand, including event-day local microtransit service.

As demonstrated in Appendix K, the TDM program would result in a reduction of vehicle trips. Potential trip reductions are based on estimates of vehicle trips for LA Clippers home basketball games and other non-NBA basketball game events to be hosted at the Project Site, as well as LA Clippers employees who will use the LA Clippers practice and training facility and the LA Clippers offices, and vehicle trips by employees and patrons of the sports medicine clinic, retail, restaurant, community space and hotel uses included at the Project Site. The TDM program would be designed to achieve and maintain a reduction in the number of vehicle trips, on an annual basis, by attendees, employees, visitors, and customers as compared to trips generated by Project operations absent the TDM program. The implementation of this mitigation measure would reduce reliance on the personal automobile, thereby reducing Project-related emissions during operation of the Proposed Project. However, as the timing and efficacy of these measures cannot be

determined with certainty at this time, the regional operational emissions would continue to exceed the significance thresholds for those criteria air pollutants and precursors for which the Air Basin is not in attainment (i.e., VOC, NO_X, PM10, and PM2.5). As such, even with implementation of Mitigation Measure 3.14-2(b), the Proposed Project would not be consistent with the control strategies in the AQMPs.

The Applicant has agreed to conduct maintenance and/or testing on the emergency generators or fire pump generators on three separate non-event days. Each emergency generator shall be tested on a separate non-event day and the two fire pump generators may be tested together on a separate non-event day. As shown in **Table 3.2-24**, below, NO_X emissions during operations would be reduced to less-than-significant levels during Non-Event days. However, NO_X, CO, PM10, and PM2.5 emissions would remain in excess of the SCAQMD significance thresholds on Event days. In addition, the Applicant has agreed to provide incentives to vendor delivery trucks that use ZE or NZE trucks during project operations. As previously stated, registration data indicates over 75 percent of heavy-duty diesel vehicles (i.e., vendor and haul trucks) in the state are model year 2010 or newer. Thus, there are no additional feasible mitigation strategies to further reduce the maximum daily regional emissions of VOC, NO_X, CO, PM10, and PM2.5 during operations and the Proposed Project would continue to be above the SCAQMD regional significance thresholds and impacts would be **significant and unavoidable**.

The Proposed Project would be consistent with the air quality related policies in the City's General Plan and ECAP. However, even with implementation of all feasible mitigation, regional Proposed Project emissions of nonattainment pollutants would remain in excess of applicable thresholds, and this impact would be considered **significant and unavoidable**.

Impact 3.2-2: Construction and operation of the Proposed Project would result in a cumulatively considerable net increase in NO_X emissions during construction, and a cumulatively considerable net increase in VOC, NO_X, CO, PM10, and PM2.5 during operation of the Proposed Project. (Significant and Unavoidable)

Construction

Construction of the Proposed Project has the potential to temporarily emit criteria air pollutant emissions through the use of heavy-duty construction equipment, and through vehicle trips generated from workers and haul trucks traveling to and from the Project Site. In addition, fugitive dust emissions would result from demolition and various soil-handling activities. Mobile source emissions, primarily NO_X and PM emissions (i.e., PM10 and PM2.5), would result from the use of diesel powered on-and off-road vehicles and equipment.

Construction emissions would vary substantially from day to day, depending on the level of activity and the specific type of construction activity. The maximum daily construction emissions for the Proposed Project were estimated for each construction phase. Some individual construction phases could potentially overlap; therefore, the estimates of maximum daily emissions included these potential overlaps by combining the relevant construction phase emissions. Detailed calculations for all individual phases and all overlap scenarios modeled are included in Appendix D.

The results of the criteria air pollutant calculations are presented in **Table 3.2-14**. The calculations used to develop the values presented in Table 3.2-14 incorporate compliance with applicable project design features including Project Design Feature 3.2-1, which requires the use of off-road diesel-powered construction equipment that meets or exceeds CARB and US EPA Tier 4 Final off-road emissions standards or equivalent for all equipment rated at 50 hp or greater, dust control measures required to be implemented during each phase of construction by SCAQMD Rule 403 (Control of Fugitive Dust), and fugitive VOC control measures required to be implemented by architectural coating emission factors based on SCAQMD Rule 1113 (Architectural Coatings).

TABLE 3.2-14
MAXIMUM REGIONAL CONSTRUCTION EMISSIONS (POUNDS PER DAY)

Year	VOC	NO_X	CO	SO_2	PM10[a]	PM2.5[a]
2021	10	126	208	1	21	9
2022	32	127	287	1	37	10
2023	32	81	287	1	37	10
2024	36	35	135	<1	18	5
Maximum Daily Emissions[b]	36	127	287	1	37	10
SCAQMD Significance Thresholds	75	100	550	150	150	55
Exceeds Thresholds?	**No**	**Yes**	No	No	No	No

NOTES:
Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix D.
[a] Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.

SOURCE: ESA, 2019.

As shown in Table 3.2-14, with implementation of Project Design Feature 3.2-1, construction-related daily emissions would exceed the SCAQMD significance threshold for NO_X. Therefore, short-term regional construction emissions would be considered **potentially significant**.

In addition to implementation of project design features, as discussed in Chapter 2, the applicant has submitted an application to seek certification of the Proposed Project pursuant to AB 987. Certification under AB 987 requires that the Proposed Project must achieve reduction of 400 tons of NO_X and 10 tons of PM2.5 over 10 years following the commencement of construction of the Proposed Project. However, AB 987 provides that if the project applicant can demonstrate and verify to the SCAQMD that it has invested at least $30,000,000 to achieve the reduction requirements, reductions of at least 200 tons of NO_X and 5 tons of PM2.5 over 10 years would be deemed to meet the requirements of AB 987. This analysis conservatively does not include these reductions as required by AB 987 because the specific method and timing of achieving these reductions in the 10 years following the commencement of construction is uncertain at this time.

Operation

Operation of the Proposed Project would generate criteria air pollutant emissions from Project-generated vehicle trips traveling to and from the Project Site, energy sources such as natural gas

combustion, and area sources such as landscaping equipment and consumer products usage. The Proposed Project would also produce criteria air pollutant emissions from delivery trucks, charbroilers, cooling towers, and on-site diesel-fueled emergency generators. The on-road mobile sources related to the operation of the Proposed Project include passenger vehicles for workers, players and supporting staff, event attendees, customers to the commercial uses, hotel guests, media vans and trucks delivering to and from the Project Site. VMT data, which takes into account ridership, mode, and distance on freeways and local streets is provided in Appendix K.

Regional air emissions from the Proposed Project were assessed based on the incremental increase in emissions compared to existing baseline conditions (i.e., existing on-site or off-site Project-related emissions), consistent with SCAQMD methodology. This methodology measures the incremental project contributions and so the Adjusted Baseline conditions are not relevant to the mass emissions threshold. Analysis of localized emissions under Impact 3.2-3 includes consideration of the Adjusted Baseline condition, because as explained below, the standards against which localized emissions are compared are cumulative in nature.

Project emissions resulting from operational activities during other Proposed Project scenarios are presented in **Tables 3.2-15** through **3.2-22**. Similar to the regular season basketball game scenario, these other scenarios that were analyzed also include emissions from the event, as applicable, as well as associated office uses, practice hours, and other ancillary uses.

Projected emissions resulting from operational activities of the Proposed Project under the basketball game scenario are presented in **Table 3.2-23** and include emissions from a regular season basketball game as well as associated office uses, practice facilities, and other ancillary uses. The analysis is based on the Proposed Project planned first operations taking place in 2024. This is the most conservative assumption as years after 2024 account for lower emission factors, improved energy efficiency, and reduced number of vehicles trips, which would result in lower emissions as compared to emission in 2024.

The calculations in Tables 3.2-15 through 3.2-23 incorporate compliance with applicable project design features including Project Design Feature 3.2-2, which would serve to reduce emissions from operation of the emergency generators. In addition, the Proposed Project would incorporate a shuttle program on major event days, which would serve to facilitate multi-modal travel to and from events at the Project Site and LA Metro Crenshaw and Green Line stations during event days. The Proposed Project would also be designed and constructed to meet LEED Gold certification requirements, which could include a 700 kW PV system, Title 24 compliance, use of 100 percent LED lighting indoors and outdoors throughout the site, and implementation of high efficiency HVAC systems. In addition, the Proposed Project design would include compliance with CalGreen Code Voluntary Tier 1, which is estimated to achieve a 10 percent reduction in energy consumption over Title 24 2019 standards based on the preliminary design of the Proposed Project. Implementation of these design features would serve to reduce air quality emissions during operation of the Proposed Project.

TABLE 3.2-15
MAXIMUM REGIONAL OPERATIONAL EMISSIONS – NON-EVENT DAY (ANCILLARY USES ONLY) SCENARIO (2024) (POUNDS PER DAY)

Source	VOC	NO_X	CO	SO_2	PM10	PM2.5
Proposed Project						
Area (Consumer Products, Landscaping)	11	<1	<1	<1	<1	<1
Energy (Natural Gas)	<1	4	4	<1	<1	<1
Motor Vehicles	11	23	116	<1	38	10
Delivery Trucks	<1	3	5	<1	<1	<1
Charbroilers	<1	-	-	-	1	<1
Cooling Tower	-	-	-	-	<1	<1
Emergency Generators/Emergency Fire Pumps	3	52	31	<1	<1	<1
Total Project	**26**	**82**	**157**	**<1**	**40**	**12**
Total Existing	**(6)**	**(7)**	**(31)**	**(<1)**	**(10)**	**(3)**
Net Total Regional Emissions	**21**	**75**	**125**	**<1**	**29**	**9**
SCAQMD Significance Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	No	**Yes**	No	No	No	No

NOTE:
Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix D.

SOURCE: ESA, 2019.

TABLE 3.2-16
MAXIMUM REGIONAL OPERATIONAL EMISSIONS – PLAZA EVENT SCENARIO (2024) (POUNDS PER DAY)

Source	VOC	NO_X	CO	SO_2	PM10	PM2.5
Proposed Project (including event, office, practice, and ancillary uses)						
Area (Consumer Products, Landscaping)	11	<1	<1	<1	<1	<1
Energy (Natural Gas)	<1	4	4	<1	<1	<1
Motor Vehicles	23	36	284	1	98	27
Delivery Trucks	<1	3	5	<1	<1	<1
Charbroilers	<1	—	—	—	1	<1
Cooling Tower	—	—	—	—	<1	<1
Total Project	**35**	**44**	**293**	**1**	**100**	**28**
Total Existing	**(6)**	**(7)**	**(31)**	**(<1)**	**(10)**	**(3)**
Net Total Regional Emissions	**29**	**37**	**261**	**1**	**89**	**25**
SCAQMD Significance Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	No	No	No	No	No	No

NOTE:
Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix D.

SOURCE: ESA, 2019.

TABLE 3.2-17
MAXIMUM REGIONAL OPERATIONAL EMISSIONS – CORPORATE/COMMUNITY EVENT SCENARIO (2024)
(POUNDS PER DAY)

Source	VOC	NO_X	CO	SO_2	PM10	PM2.5
Proposed Project (including event, office, practice, and ancillary uses)						
Area (Consumer Products, Landscaping)	16	<1	1	<1	<1	<1
Energy (Natural Gas)	1	6	5	<1	<1	<1
Motor Vehicles	21	35	257	1	88	24
Delivery Trucks	<1	3	5	<1	<1	<1
Charbroilers	<1	—	—	—	1	<1
Cooling Tower	—	—	—	—	<1	<1
Total Project	**38**	**43**	**267**	**1**	**90**	**25**
Total Existing	**(6)**	**(7)**	**(31)**	**(<1)**	**(10)**	**(3)**
Net Total Regional Emissions	**33**	**36**	**235**	**1**	**79**	**22**
SCAQMD Significance Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	No	No	No	No	No	No

NOTE:
Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix D.

SOURCE: ESA, 2019.

TABLE 3.2-18
MAXIMUM REGIONAL OPERATIONAL EMISSIONS – OTHER EVENT SCENARIO (2024)
(POUNDS PER DAY)

Source	VOC	NO_X	CO	SO_2	PM10	PM2.5
Proposed Project (including event, office, practice, and ancillary uses)						
Area (Consumer Products, Landscaping)	28	<1	1	<1	<1	<1
Energy (Natural Gas)	1	8	7	<1	1	1
Motor Vehicles	34	46	448	1	157	42
Delivery Trucks	<1	3	5	<1	<1	<1
Charbroilers	<1	—	—	—	1	<1
Cooling Tower	—	—	—	—	<1	<1
Total Project	**63**	**57**	**461**	**1**	**158**	**44**
Total Existing	**(6)**	**(7)**	**(31)**	**(<1)**	**(10)**	**(3)**
Net Total Regional Emissions	**57**	**51**	**429**	**1**	**148**	**41**
SCAQMD Significance Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	**Yes**	No	No	No	No	No

NOTE:
Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix D.

SOURCE: ESA, 2019.

TABLE 3.2-19
MAXIMUM REGIONAL OPERATIONAL EMISSIONS – FAMILY SHOW SCENARIO (2024)
(POUNDS PER DAY)

Source	VOC	NO_X	CO	SO_2	PM10	PM2.5
Proposed Project (including event, office, practice, and ancillary uses)						
Area (Consumer Products, Landscaping)	28	<1	1	<1	<1	<1
Energy (Natural Gas)	1	8	7	<1	1	1
Motor Vehicles	37	49	494	1	173	47
Delivery Trucks	<1	3	5	<1	<1	<1
Charbroilers	<1	—	—	—	1	<1
Cooling Tower	—	—	—	—	<1	<1
Total Project	**66**	**60**	**507**	**2**	**175**	**48**
Total Existing	**(6)**	**(7)**	**(31)**	**(<1)**	**(10)**	**(3)**
Net Total Regional Emissions	**61**	**54**	**475**	**1**	**164**	**45**
SCAQMD Significance Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	**Yes**	No	No	No	**Yes**	No

NOTE:
Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix D.

SOURCE: ESA, 2019.

TABLE 3.2-20
MAXIMUM REGIONAL OPERATIONAL EMISSIONS – 9,500 ATTENDEE CONCERT SCENARIO (2024)
(POUNDS PER DAY)

Source	VOC	NO_X	CO	SO_2	PM10	PM2.5
Proposed Project (including event, office, practice, and ancillary uses)						
Area (Consumer Products, Landscaping)	28	<1	1	<1	<1	<1
Energy (Natural Gas)	1	8	7	<1	1	1
Motor Vehicles	40	69	542	2	190	51
Delivery Trucks	<1	3	5	<1	<1	<1
Charbroilers	<1	—	—	—	1	<1
Cooling Tower	—	—	—	—	<1	<1
Total Project	**69**	**80**	**555**	**2**	**192**	**53**
Total Existing	**(6)**	**(7)**	**(31)**	**(<1)**	**(10)**	**(3)**
Net Total Regional Emissions	**64**	**74**	**523**	**2**	**181**	**50**
SCAQMD Significance Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	**Yes**	**Yes**	No	No	**Yes**	No

NOTE:
Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix D.

SOURCE: ESA, 2019.

TABLE 3.2-21
MAXIMUM REGIONAL OPERATIONAL EMISSIONS – 14,500 ATTENDEE CONCERT SCENARIO (2024)
(POUNDS PER DAY)

Source	VOC	NO_X	CO	SO_2	PM10	PM2.5
Proposed Project (including event, office, practice, and ancillary uses)						
Area (Consumer Products, Landscaping)	32	<1	1	<1	<1	<1
Energy (Natural Gas)	1	10	8	<1	1	1
Motor Vehicles	56	84	768	2	271	73
Delivery Trucks	<1	3	5	<1	<1	<1
Charbroilers	<1	—	—	—	1	<1
Cooling Tower	—	—	—	—	<1	<1
Total Project	**89**	**96**	**781**	**2**	**272**	**74**
Total Existing	**(6)**	**(7)**	**(31)**	**(<1)**	**(10)**	**(3)**
Net Total Regional Emissions	**83**	**89**	**750**	**2**	**262**	**71**
SCAQMD Significance Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	**Yes**	**Yes**	**Yes**	No	**Yes**	**Yes**

NOTE:
Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix D.

SOURCE: ESA, 2019.

TABLE 3.2-22
MAXIMUM REGIONAL OPERATIONAL EMISSIONS – SOLD OUT ATTENDEE CONCERT SCENARIO (2024)
(POUNDS PER DAY)

Source	VOC	NO_X	CO	SO_2	PM10	PM2.5
Proposed Project (including event, office, practice, and ancillary uses)						
Area (Consumer Products, Landscaping)	32	<1	1	<1	<1	<1
Energy (Natural Gas)	1	10	8	<1	1	1
Motor Vehicles	66	93	917	3	324	87
Delivery Trucks	<1	3	5	<1	<1	<1
Charbroilers	<1	—	—	—	1	<1
Cooling Tower	—	—	—	—	<1	<1
Total Project	**99**	**105**	**930**	**3**	**326**	**89**
Total Existing	**(6)**	**(7)**	**(31)**	**(<1)**	**(10)**	**(3)**
Net Total Regional Emissions	**94**	**98**	**899**	**3**	**315**	**86**
SCAQMD Significance Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	**Yes**	**Yes**	**Yes**	No	**Yes**	**Yes**

NOTE:
Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix D.

SOURCE: ESA, 2019.

TABLE 3.2-23
MAXIMUM REGIONAL OPERATIONAL EMISSIONS – BASKETBALL GAME SCENARIO (2024)
(POUNDS PER DAY)

Source	VOC	NO_X	CO	SO_2	PM10	PM2.5
Proposed Project (including event, office, practice, and ancillary uses)						
Area (Consumer Products, Landscaping)	32	<1	1	<1	<1	<1
Energy (Natural Gas)	1	10	8	<1	1	1
Motor Vehicles	64	93	922	3	331	89
Delivery Trucks	<1	3	5	<1	<1	<1
Charbroilers	<1	-	-	-	1	<1
Cooling Tower	-	-	-	-	<1	<1
Total Project	**97**	**106**	**935**	**3**	**332**	**90**
Total Existing	**(6)**	**(7)**	**(31)**	**(<1)**	**(10)**	**(3)**
Net Total Regional Emissions	**92**	**99**	**904**	**3**	**322**	**88**
SCAQMD Significance Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	**Yes**	**Yes**	**Yes**	No	**Yes**	**Yes**

NOTE:
Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix D.

SOURCE: ESA, 2019.

The calculations in Tables 3.2-15 through 3.2-23 incorporate compliance with applicable project design features including Project Design Feature 3.2-2, which would serve to reduce emissions from operation of the emergency generators. In addition, the Proposed Project would incorporate a shuttle program on major event days, which would serve to facilitate multi-modal travel to and from events at the Project Site and LA Metro Crenshaw and Green Line stations during event days. The Proposed Project would also be designed and constructed to meet LEED Gold certification requirements, which could include a 700 kW PV system, Title 24 compliance, use of 100 percent LED lighting indoors and outdoors throughout the site, and implementation of high efficiency HVAC systems. In addition, the Proposed Project design would include compliance with CalGreen Code Voluntary Tier 1, which is estimated to achieve a 10 percent reduction in energy consumption over Title 24 2019 standards based on the preliminary design of the Proposed Project. Implementation of these design features would serve to reduce air quality emissions during operation of the Proposed Project.

As identified in Table 3.2-15, operational emissions for the Proposed Project for the non-event day (ancillary uses only) scenario would not exceed SCAQMD daily operational thresholds for VOC, CO, SO_X, PM10, and PM2.5 emissions, and would only exceed SCAQMD daily operational thresholds for NO_X on days when emergency generators are tested. Emergency generator testing would occur at a maximum of twice a month, pursuant to Mitigation Measure 3.2-2(b), discussed below. On all other non-event days when there is no emergency generator testing, there would be no exceedance of any mass emissions thresholds. However, as identified in Tables 3.2-16 through 3.2-23, operational emissions for the Proposed Project on event days

would exceed SCAQMD daily operational thresholds for all criteria air pollutants with the exception of SO_X. The VOC regional operational impact would be primarily related to the anticipated use of consumer products (e.g., cleaning solutions) and landscaping. The NO_X, CO, PM10, and PM2.5 regional operational impacts would result from vehicular trips to and from the Project Site and operation of emergency generators.

Even with implementation of the project design features discussed above, operational VOC, NO_X, CO, PM10, and PM2.5 emissions would exceed the applicable regional emissions significance threshold for the sold-out attendee concert scenario, which has the highest number of attendees, as well as for the regular season basketball game, 14,500-attendee concert, 9,500-attendee concert, family show, and other event scenario. Emissions on these event days would result in **potentially significant impacts**.

Health Impacts Assessment – Regional Effects

Impact 3.2-2 concludes that during construction, the Proposed Project would emit a criteria air pollutant (NO_X) in an amount that exceeds the mass emission threshold that is recommended for this pollutant by SCAQMD. In addition, during operations, under various operational scenarios, the Proposed Project would emit criteria air pollutants (VOC, NO_X, CO, PM10, and PM2.5) in amounts that would exceed the applicable mass emission thresholds recommended by SCAQMD. These exceedances would occur for the sold-out attendee concert scenario, which has the highest number of attendees, as well as for the regular season basketball game, 14,500-attendee concert, 9,500-attendee concert, family show, other event, and non-event day (with generator testing) scenarios. The analysis therefore concludes that, for this reason, the Proposed Project's emissions are significant with respect to these criteria air pollutants. The types of adverse health effects known to occur as a result of exposure to these pollutants and the potential secondary formed ozone have been discussed in "Pollutants and Related Health Effects" under Section 3.2.1, above, and also summarized below:

- VOCs are organic chemical compounds of carbon. Some VOCs are highly reactive and play a critical role in the formation of ozone. Other VOCs can result in adverse health effects from direct exposure and are classified by the TACs or HAPs by the USEPA.
- NO_X is a term that refers to a group of compounds containing nitrogen and oxygen. The primary compounds of air quality concern include NO_2 and NO. There are no health-based ambient air quality standards specifically for NO; however, NO can oxidize in the atmosphere to form NO_2. As discussed previously in Section 3.2.1, NO_2 can potentially irritate the nose and throat, aggravate lung and heart problems, and may increase susceptibility to respiratory infections, especially in people with asthma. Emissions of NO_X are a precursor to the formation of ground-level ozone, which occurs due to complex photo-chemical reactions of these pollutants in the atmosphere in the presence of sunlight. NO_2 can also potentially contribute to the secondary formation of particulate matter (PM10 and PM2.5) from conversion in the atmosphere.
- Ozone is a respiratory irritant that can cause the following health effects: irritate respiratory system; reduce lung function; breathing pattern changes; reduce breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; and/or increase mortality risk.

- CO emissions normally have only short and localized potential impact because CO transport is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. High CO concentrations are typically associated with roadways or intersections operating at unacceptable levels of service or with very high traffic volumes. Breathing air with a high concentration of CO reduces the amount of oxygen that can be transported in the blood stream to critical organs like the heart and brain. The most common effects of CO exposure are fatigue, headaches, confusion, and dizziness due to inadequate oxygen delivery to the brain. For people with cardiovascular disease, short-term CO exposure can further reduce their body's already compromised ability to respond to the increased oxygen demands of exercise, exertion, or stress; inadequate oxygen delivery to the heart muscle may lead to chest pain and decreased exercise tolerance. Unborn babies, infants, elderly people, and people with anemia or with a history of heart or respiratory disease are most likely to experience health effects with exposure to elevated levels of CO.

  As demonstrated in detail below in the "Intersection CO Hotspot Analysis" section for Impact 3.2-3, the Proposed Project plus the background CO concentrations would be below the health-protection-based state and federal air quality standards. CO hotspots are not anticipated as a result of traffic-generated emissions by the Proposed Project in combination with other anticipated developments in the area. Therefore, emissions of CO from the Proposed Project are not anticipated to cause identifiable health effects.

- Particulate matter (PM10 and PM2.5) can cause the following health effects from short-term (hours/days) exposure: irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravate existing lung disease, causing asthma attacks and acute bronchitis; and/or those with heart disease can suffer heart attacks and arrhythmias.

Heretofore, air districts and CEQA lead agencies around California regarded this analysis as sufficient disclosure of the adverse impacts of a project's criteria air pollutant emissions. In December 2018, however, the California Supreme Court issued a decision holding that, in order to be adequate, an EIR must contain a further discussion that correlates the specific health effects that will occur as a result of a project's significant criteria air pollutant emissions, or explain why such a further discussion is infeasible.[164]

The Supreme Court's decision presents significant challenges. Generally, models that correlate criteria air pollutant concentrations with specific health effects focus on regulatory decision-making that will apply throughout an entire air basin or region. These models focus on the region-wide health effects of pollutants so that regulators can assess the costs and benefits of adopting a proposed regulation that applies to an entire category of air pollutant sources, rather than the health effects related to emissions from a specific proposed project or source. Because of the scale of these analyses, any one project is likely to have only very small incremental effects which may be difficult to differentiate from the effects of air pollutant concentrations in an entire air basin. In addition, such modeling efforts are costly, and the value of a project-specific analysis may be modest in relation to that cost. Furthermore, the results, while costly to produce, may not be particularly useful. For regional pollutants, it is difficult to trace a particular project's criteria air pollutant emissions to a specific health effect. Moreover, the modeled results may be misleading because the margin of error in such modeling is large enough that, even if the

[164] Sierra Club v. County of Fresno (2018) 6 Cal.5th 502, 517-522.

modeled results report a given health effect, the model is sufficiently imprecise that the actual effect may differ from the reported results; that is, the modeled results suggest precision, when in fact available models cannot be that precise on a project level.

Nevertheless, in an effort to respond to the Supreme Court's decision, an HIA of the estimated Proposed Project criteria air pollutant emissions has been prepared. The analysis uses available models to attempt to correlate the Proposed Project criteria air pollutant emissions to elevated concentrations of such pollutants in the region, and then to identify health effects that may occur as a result of any predicted increased concentrations. There may, in time, be ways to perform this analysis with greater precision or accuracy. At this juncture, however, the following analysis reflects a good faith attempt to address the Supreme Court's direction. In reviewing this analysis, the reader is cautioned to bear in mind its limitations and qualifications, as described throughout the analysis.

As discussed above, the mass emissions thresholds developed by SCAQMD and used by CEQA lead agencies throughout southern California to determine potential significance of project-related regional changes in the environment are not directly indicative of exceedances of applicable ambient air standards. Meteorology, the presence of sunlight, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone or PM. The effects on ground-level ambient concentrations of pollutants that may be breathed by people are also influenced by the spatial and temporal patterns of the emission sources. In other words, the effect on ozone and PM concentrations from a given mass of pollutants emitted in one location may vary from the effect if that same mass of pollutants was emitted in an entirely different location in the Air Basin. The same effect may be observed when the daily and seasonal variation of emissions is taken into account. Regional-scale photochemical modeling, typically performed only for NAAQS attainment demonstration and rule promulgation, account for these changes in the spatial, temporal, and chemical nature of regional emissions. Emissions from the construction and operation of the Proposed Project would vary by time of day, month, and season, and the majority of Project-related emissions, being generated by mobile sources (cars and trucks) driving to and from the site, would be emitted throughout a wide area defined by the origins and destinations of people travelling to and from the Proposed Project. As SCAQMD has stated "it takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels over an entire region."[165]

The Proposed Project criteria air pollutant emissions would contribute to regional health impacts. As described above, emissions from the Proposed Project are expected at levels in excess of mass emissions thresholds for NO_X emissions during construction, and for VOC, NO_X, CO, PM10, and PM2.5 emissions during a number of operational event and non-event scenarios. As stated earlier, the mass emission thresholds were established primarily in conjunction with federal permitting "major source" thresholds. If emissions were below these "de minimis" emission rates, then the

[165] South Coast Air Quality Management District, Amicus Brief in Support of Neither Party, Sierra Club v. County of Fresno, 2015.

Proposed Project is presumed to conform with the NAAQS.[166] While based on the status of an air basin level of attainment of the health-based NAAQS, emissions in excess of the mass emission thresholds from one project does not mean the air basin would experience measurably higher ground level concentrations, or more frequent occurrences of ground level concentrations in exceedance of standards, or delay timely attainment of a particular NAAQS. The effect on ambient concentrations of emissions from one project, which in turn may influence air pollutant-based health impacts, can only be determined through dispersion modeling, and as appropriate, health effects modeling. The following analysis is provided for information purposes, to determine the extent the criteria air pollutant emissions from the Proposed Project would result in (1) changes in the concentration of criteria air pollutants in the atmosphere, and (2) correlative health effects that may occur as a result of those changes in air pollutant concentrations.

As previously discussed, the current version of the US EPA BenMAP-CE model only has health impact functions associated with ozone (including precursors, NO_X and VOC) and PM2.5, so those were the criteria pollutants for which health effects were quantified in this study. Although exposure to high levels of CO and NO_2 is recognized to result in negative health effects, the applicable NAAQS are widely recognized to be health protective, even for sensitive populations (see discussion under Impact 3.2-3). USEPA guidance recommends that a Gaussian dispersion model, such as AERMOD, is the appropriate model to predict the dispersion and accumulation of NO_2 and CO in the atmosphere since those pollutants are nonreactive (unlike ozone and secondary PM formation). Generally, as nonreactive pollutants travel away from the source, their concentrations diminish rather quickly. Thus, health impacts from exposure to NO_2 and CO are localized in nature; refer to the health impacts discussion under Impact 3.2-3 below.

This assessment evaluates the potential for the Proposed Project to contribute to regional ozone formation and ozone health impacts along with primary and secondary particulate matter health impacts. The Proposed Project contribution to a regional concentration of ozone and PM2.5 were modeled in the photochemical grid model, CMAQ, and the corresponding endpoint health effects were modeled in BenMAP-CE. The analysis was performed in consultation with SCAQMD.

Dispersion modeling performed using CMAQ predicts slight increases in the maximum ozone and PM2.5 concentrations with the Proposed Project emissions as compared to the baseline emissions. Both baseline and Proposed Project scenarios used SCAQMD controlled emissions inventory for year 2025, provided by SCAQMD for the Proposed Project. The baseline scenario used only the re-gridded SCAQMD 2025 dataset, while the Proposed Project dataset added incremental project emissions to the SCAQMD dataset.

The CMAQ result for the baseline as compared to the baseline plus Proposed Project shows a maximum increase of 0.0109 ppb, or 0.021 percent, at the most affected node for maximum daily 8-hour average ozone, and 0.0011 $\mu g/m^3$, or 0.0082 percent, for PM2.5. Note that these estimated increases are for the most affected node; thus, the estimated changes at all other nodes will be

[166] US Environmental Protection Agency. Frequent Questions about General Conformity. Available: https://www.epa.gov/general-conformity/frequent-questions-about-general-conformity. Accessed July 2019.

less. These results generally validate the prediction that the addition of locally generated emissions could result in incremental increases in nearby ground level concentrations of ozone and PM2.5. However, these differences are very small, well within the normal gross margin of error of the CMAQ model performance.

In this project-level analysis, the regional model results also observed some small negative model differences in grid cells when adding the Project emissions. As confirmed by the photochemistry model experts of the SCAQMD and the San Joaquin Valley Air Pollution Control District (SJVAPCD), such results are to be expected when applying regional models to local changes in emissions, especially taken in the context of the project emissions are magnitudes smaller than that of the regional emissions typically used in such regional models and also considering the specific atmospheric chemistry condition of the Project area.[167] For example, based on its recent experiences applying regional scale models to relatively small increase in emissions, SCAQMD stated in its Amicus Brief in the Sierra Club v. County of Fresno case: "[A] project emitting only 10 tons per year of NO_X or VOC is small enough that its regional impact on ambient ozone levels may not be detected in the regional air quality models that are currently used to determine ozone levels."[168] With the margin of error, and variability in results between the baseline and baseline plus Proposed Project model runs due to photochemical processes and other factors, the small negative model differences predicted for this project-level analysis are expected.

Overall, with the very small air pollutant concentration difference between the modeled Proposed Project scenario and the baseline scenario, no meaningful conclusion on project health impacts can be obtained from the analysis. Thus, the health impacts may in fact be zero, and still be well within the model's margin of error. Nevertheless, for informational purposes only, the CMAQ modeling results were imported into BenMAP-CE to model the potential health effects of the Proposed Project, given the changes in ozone and PM2.5 concentrations predicted by the CMAQ modeling.

Based on the BenMAP-CE output, regional health effects incidence associated with the emissions of ozone precursors and corresponding formation of ozone in the atmosphere associated with the operation of the Proposed Project included less than 0.1 incidence per year of respiratory-related hospital admissions (0.016 incidence), mortality (<0.02 incidence), and asthma-related emergency room visits (0.087 incidence) for all studied age groups combined. The amount of estimated incremental health effects incidence is less than 0.0001 percent of the baseline number of health effects incidences in the study area. The baseline is the actual health effects occurrences measured in the regional population (about 20 million people) of the modeling domain without the emissions produced by the Proposed Project.[169] The modeling performed is highly conservative, since it adds Proposed Project emissions to the air basin-wide inventory, as if all

[167] Phone consultation with SCAQMD's Sang-Mi Lee and SJVAPCD's Leland Villalvazo on August 9, 2019.
[168] South Coast Air Quality Management District, Amicus Brief in Support of Neither Party, Sierra Club v. County of Fresno, 2015. Page 13.
[169] Based on the 2010 census data, the EPA's PopGrid software generates the Ben-MAP ready population dataset for the modeling domains, which is 17,612,933 for the 2km modeling grid (the modeling domain is an 174 mile x 99 mile = 17,297 square mile area). Based on the 2010 population dataset generated by PopGrid, BenMAP-CE predicts the 2025 population for the modeled domain increases to 20,168,163 and used that in the health impact calculations.

Proposed Project-related emissions are net new, whereas it has been documented in this section, and in Sections 3.14, Transportation and Circulation, and 3.7, Greenhouse Gas Emissions, that a substantial percentage of the Proposed Project-related travel demand and related emissions currently occur, and as such would have been included in SCAQMD's 2025 inventory, although attributed to the current location(s) of emission. Nonetheless, the very small increase in health effects incidence, relative to the substantially larger number of baseline health effects incidences, demonstrates that the Proposed Project would have a negligible impact on specific health effects.

The BenMAP-CE default includes 23 health endpoints (adverse health effects) for PM2.5. Due to the very small changes in ambient PM2.5 concentrations as modeled by CMAQ, however, the incremental health incidences for all health endpoints were negative values, further confirming that the modeled PM2.5 concentrations are within the model's margin of error. Therefore, no conclusions can be reached on the specific health effects that may be caused by the Proposed Project ozone precursor and PM2.5 emissions. The health impacts may in fact be zero, and they would still be well within the models' margin of error. Please refer to Appendix D for more information.

As many regional-scale health impact assessments and this project-level analysis demonstrate, performing a quantitative HIA is complex and difficult, but it is possible to perform such analyses. Nevertheless, the limits of such analyses should be noted. The model outputs provide precise values. It would be inappropriate, however, to assume that these values, though seemingly precise, give an accurate understanding of the project's actual impacts. The imprecision of such analyses is inherent and unavoidable.

The modeling performed to estimate a single project's contribution to ambient concentrations of pollutants requires assumptions about many variables, both about the Proposed Project, and about the meteorological and other characteristics of the air basin into which the pollutants are emitted. Models often rely on assumptions that may not capture fully or accurately the complexity or dynamism of the physical world. There has been much research on sensitivities and uncertainties regarding the evaluation of environmental models.[170,171,172] It is widely recognized that validation of a chemical transport model, such as the CMAQ model used in this analysis, is impossible because natural systems are never closed, and results are always unique. Thus a model can be evaluated by comparisons with real-world observations, but it can never be precisely validated because the full array of possible scenarios cannot be included. Each step in the modeling process, and each assumption incorporated into the model, adds a degree of uncertainty into the reported results. These inputs include air pollutant emission estimates, ambient air concentration modeling, and health impact calculations using various health impact functions. The combination and compounding of the uncertainties from each step of the modeling analysis,

[170] Hanna, S. R., Z. Lu, H. C. Frey, N. Wheeler, J. Vukovich, S. Arunachalam, M. Fernau, and D. A. Hansen (2001). Uncertainties in predicted ozone concentrations due to input uncertainties for the UAM-V photochemical, grid model applied to the July 1995 OTAG domain. *Atmospheric Environment.* 35:891–903.

[171] Biswas, J. and S.T. Rao, 2001: Uncertainties in Episodic Ozone Modeling Stemming from Uncertainties in the Meteorological Fields. *J. Appl. Meteor.*, 40, 117–136, https://doi.org/10.1175/1520-0450(2001)040<0117:UIEOMS>2.0.CO;2.

[172] Baker, K. R. and J. O. Bash (2012). Regional Scale Photochemical Model Evaluation of Total Mercury Wet Deposition and Speciated Ambient Mercury. *Atmospheric Environment.* 49(3):1–424.

in the context of the very small increments of change that are predicted, could result in large margins of error for the overall modeled outcomes.

That does not mean the modeled results are invalid or meaningless. Rather, it means that one should not have undue confidence in the seeming precision of the reported outcome. Stated another way, the modeled results may be valid, but they should not be misinterpreted as an exact calculation of something as complex as criteria air pollutant dispersion modeling, or as correlating a given level of emissions with specific health effects. That is particularly true where, as here, regional models have been adapted for use at the project level. In this case, the calculated impact may be smaller than the reasonable margin of errors of such analyses. For example, the summation of modeled PM2.5-related incremental health effects incidences are negative values, while the summation of modeled ozone-related incremental health effects incidences are positive values. Negative incremental values at a set location for a set period of time arise when the predicted concentration with Project emissions are lower than the baseline value. For example, the baseline PM2.5 value at a particular point in space and time might be reported as 13 $\mu g/m^3$. With an error range of 20 percent, the result could more accurately be reported as 10.4 to 15.6 $\mu g/m^3$. The PM2.5 concentration with Project emissions at that same point may be reported as 12.5 $\mu g/m^3$, which could more accurately be reported as 10.0 to 15.0 $\mu g/m^3$. When comparing the two ranges, one can see how both negative and positive incremental increases are possible. The narrower the error range is, the more likely the results will reflect the true trend.

Performance of this quantitative HIA using the best available tools and guidance demonstrates that applying state-of-the art models and methods designed to predict the health effects of large changes in air basin-wide emissions does not result in statistically significant results with respect to emissions increases at the project level. Therefore, no meaningful conclusion can be drawn with respect to potential health effects from the criteria pollutant emissions of the Proposed Project.

Conclusion

As discussed above, the Proposed Project would result in operational VOC, NO_X, CO, PM10, and PM2.5 emissions that would exceed the applicable regional emissions significance threshold for the sold out attendee concert scenario, which has the highest number of attendees, as well as for the regular season basketball game, 14,500-attendee concert, 9,500-attendee concert, family show, and other event scenario, as well as non-event with generator testing scenario. The impact of emissions on these days would be **potentially significant**.

Mitigation Measure 3.2-2(a)

Implement Mitigation Measure 3.14-2(b).

Mitigation Measure 3.2-2(b)

Emergency Generator and Fire Pump Generator Maintenance & Testing. The Applicant shall conduct maintenance and/or testing of the emergency generators or fire pump generators on three separate non-event days. Each emergency generator shall be tested on a separate non-event day and the two fire pump generators may be tested together on a separate non-event day.

Mitigation Measure 3.2-2(c)

The project applicant shall prepare and implement a Construction Emissions Minimization Plan. Before a construction permit is issued, the project applicant shall submit this plan to the City Department of Public Works for review and approval. The plan shall detail compliance with the following requirements:

1) *The Plan shall set forth in detail how the project applicant will implement Project Design Feature 3.2-1.*

2) *The Plan shall require construction contractor(s) to use off-road diesel-powered construction equipment that meets or exceeds California Air Resources Board (CARB) and US Environmental Protection Agency (EPA) Tier 4 off-road emissions standards for equipment rated at 50 horsepower or greater. Such equipment shall be outfitted with Best Available Control Technology (BACT) devices including, but not limited to, a CARB certified Level 3 Diesel Particulate Filters. This requirement shall be included in applicable bid documents, and the successful contractor(s) shall be required to demonstrate the ability to supply compliant equipment prior to the commencement of any construction activities. A copy of each unit's certified tier specification and CARB or South Coast Air Quality Management District operating permit (if applicable) shall be available upon request at the time of mobilization of each applicable unit of equipment. The City shall require quarterly reporting and provision of written documentation by contractors to ensure compliance, and shall conduct regular inspections to ensure compliance with these requirements.*

3) *The project applicant shall require, at a minimum, that operators of heavy-duty haul trucks visiting the Project during construction commit to using 2010 model year or newer engines that meet CARB's 2010 engine emission standards of 0.01 grams per brake horsepower-hour (g/bhp-hr) for particulate matter (PM) and 0.20 g/bhp-hr of NO_X emissions or newer, cleaner trucks. In addition, the project applicant shall strive to use zero-emission (ZE) or near-zero-emission (NZE) heavy-duty haul trucks during construction, such as trucks with natural gas engines that meet CARB's adopted optional NO_X emissions standard of 0.02 g/bhp-hr. Contractors shall be required to maintain records of all trucks visiting the Project, and such records shall be made available to the City upon request.*

4) *The project applicant shall ensure all construction equipment and vehicles are in compliance with the manufacturer's recommended maintenance schedule. The project applicant shall maintain maintenance records for the construction phase of the Project and all maintenance records shall remain on site for a period of at least 2 years from completion of construction.*

5) *The project applicant shall enter into a contract that notifies all construction vendors and contractors that vehicle idling time will be limited to no longer than 5 minutes or another timeframe as allowed by California Code of Regulations Title 13, section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, unless exempted by this regulation. For any vehicle that is expected to idle longer than 5 minutes, the project applicant shall require the vehicle's operator to shut off the engine. Signs shall be posted at the entrance and throughout the site stating that idling longer than 5 minutes is not permitted.*

Mitigation Measure 3.2-2(d)

The project applicant shall provide incentives for vendors and material delivery trucks that would be visiting the Proposed Project to encourage the use of ZE or NZE trucks during operation, such as trucks with natural gas engines that meet CARB's adopted optional NO_X emissions standard of 0.02 grams per brake horsepower-hour (g/bhp-hr). At a minimum, incentivize the use of 2010 model year delivery trucks.

Level of Significance After Mitigation: The Applicant has agreed to use off-road diesel-powered construction equipment that meets or exceeds CARB and US EPA Tier 4 Final off-road emissions standards or equivalent for all equipment rated at 50 hp or greater. Based on registration data, over 75 percent of heavy-duty diesel vehicles (i.e., vendor and haul trucks) in the state are model year 2010 or newer. Even with implementation of Project Design Feature 3.2-1 and Mitigation Measure 3.2-1(c) discussed below, construction-related daily emissions would exceed the SCAQMD significance threshold for NO_X. Therefore, short-term regional construction emissions would be **significant and unavoidable**.

With regard to regional operational emissions, under Mitigation Measure 3.2-2(a) the Proposed Project would implement Mitigation Measure 3.14-2(b), which would require the Proposed Project to develop a TDM program which would be designed to reduce vehicle trips by spectators, event-day staff, and employees through the use of alternate modes of transportation including public transit, shuttles, ridesharing, walking, and biking. The TDM program would be required to demonstrate a reduction in vehicle trips produced by the Proposed Project. Potential trip reductions are based on estimates of vehicle trips for LA Clippers home basketball games and other non-NBA basketball game events to be hosted at the Project Site, as well as LA Clippers employees who would use the LA Clippers practice and training facility and the LA Clippers offices, and vehicle trips by employees and patrons of the sports medicine clinic, retail, restaurant, community space, and hotel uses included at the Project Site. The TDM program would be designed to reduce single-occupancy vehicle trips and to use other modes of transportation besides automobile to travel to basketball games and other events hosted at the Proposed Project. The implementation of this mitigation measure would serve to further reduce mobile emissions during operation of the Proposed Project, as well as any negligible related health effects. Because the timing for this mitigation measure is speculative and the efficacy of these measures to reduce trips cannot be determined with certainty at this time, maximum daily regional emissions of VOC, NO_X, CO, PM10, and PM2.5 during operation of the Proposed Project would continue to be above the SCAQMD regional significance thresholds and impacts would be **significant and unavoidable**.

As shown in **Table 3.2-24**, with Mitigation Measure 3.3-2(b), NO_X emissions during operations would be reduced to less-than-significant levels during Non-Event days. However, NO_X, CO, PM10, and PM2.5 emissions would remain in excess of the SCAQMD significance thresholds on Event days, therefore impacts would be **significant and unavoidable**.

TABLE 3.2-24
MAXIMUM REGIONAL OPERATIONAL EMISSIONS – NON-EVENT DAY WITH MITIGATION MEASURE 3.2-2(B) (ANCILLARY USES ONLY) SCENARIO (2024) (POUNDS PER DAY)

Source	VOC	NO_X	CO	SO_2	PM10	PM2.5
Proposed Project						
Area (Consumer Products, Landscaping)	11	<1	<1	<1	<1	<1
Energy (Natural Gas)	<1	4	4	<1	<1	<1
Motor Vehicles	11	23	116	<1	38	10
Delivery Trucks	<1	3	5	<1	<1	<1
Charbroilers	<1	—	—	—	1	<1
Cooling Tower	—	—	—	—	<1	<1
Emergency Generators/Emergency Fire Pumps	1	24	14	<1	<1	<1
Total Project	**25**	**54**	**139**	**<1**	**39**	**11**
Total Existing	**(6)**	**(7)**	**(31)**	**(<1)**	**(10)**	**(3)**
Net Total Regional Emissions	**19**	**47**	**107**	**<1**	**29**	**9**
SCAQMD Significance Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	No	No	No	No	No	No

NOTE:
Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix D.

SOURCE: ESA, 2019.

With Mitigation Measure 3.3-2(c), the Applicant has agreed to use off-road diesel-powered construction equipment that meets or exceeds CARB and US EPA Tier 4 Final off-road emissions standards or equivalent for all equipment rated at 50 hp or greater, will strive to use ZE or NZE heavy- duty haul trucks during construction, and no idling signs will be posted upon entry and throughout the Project Site during construction. Based on registration data, over 75 percent of heavy-duty diesel vehicles (i.e., vendor and haul trucks) in the state are model year 2010 or newer. Thus, there are no additional feasible mitigation strategies to further reduce the maximum daily regional emissions of VOC, NO_X, CO, PM10, and PM2.5 during construction and the Proposed Project would continue to be above the SCAQMD regional significance thresholds and impacts would be **significant and unavoidable**.

With Mitigation Measure 3.3-2(d), the Applicant has agreed to provide incentives to vendor delivery trucks that use ZE or NZE trucks during project operations. Based on registration data, over 75 percent of heavy-duty diesel vehicles (i.e., vendor and haul trucks) in the state are model year 2010 or newer. Thus, there are no additional feasible mitigation strategies to further reduce the maximum daily regional emissions of VOC, NO_X, CO, PM10, and PM2.5 during operations and the Proposed Project would continue to be above the SCAQMD regional significance thresholds and impacts would be **significant and unavoidable**.

Impact 3.2-3: Construction and operation of the Proposed Project could expose sensitive receptors to substantial pollutant concentrations. (Less than Significant)

Local Air Quality

Construction

Potential localized impacts from short-term construction activities were analyzed using an air dispersion model (AERMOD) to generate concentrations of NO_2, CO, PM10, and PM2.5 at air quality sensitive receptor locations surrounding the Project Site. As discussed in Project Design Feature 3.2-1, heavy duty construction trucks (import, export, delivery, etc.) would be prohibited from traveling to and from the Project Site during the pre-and post-event hours on days with major events at Hollywood Park and/or The Forum.

Particulate Matter

Project-generated incremental increases of PM10 and PM2.5 were then compared to SCAQMD's allowable incremental increase thresholds. The results of the PM analysis are presented in **Table 3.2-25**. As shown in Table 3.2-24, localized maximum daily construction emissions would not exceed the allowable 24-hour or annual incremental increase in PM10 or PM2.5. Therefore, the emissions of PM during construction would be less than significant.

TABLE 3.2-25
ASSESSMENT OF LOCALIZED PM EMISSIONS DURING CONSTRUCTION

Pollutant	Averaging Time, units	Project Local Increase	Threshold	Total Impact Exceeds Threshold
PM10	24 hour, $\mu g/m^3$	7.0	10.4	No
	Annual, $\mu g/m^3$	0.64	1.0	No
PM2.5	24 hour, $\mu g/m^3$	4.3	10.4	No

NOTES:
$\mu g/m^3$ = micrograms per cubic meter (a concentration unit)

SOURCE: ESA 2019.

Nitrogen Dioxide and Carbon Monoxide

To compare the Proposed Project construction emission concentrations of NO_2 and CO to applicable NAAQSs, existing concentrations of these pollutants from nearby monitors (see Table 3.2-2, above) and the future contribution to ambient concentrations resulting from the Adjusted Baseline must be included, as detailed on **Table 3.2-26**. As described in Project Design Feature 3.2-1, on days when major events are held at Hollywood Park and The Forum, the project applicant would not allow trucks to travel to or from the project construction site during the pre-event and post-event hours. As detailed on Table 3.2-25, annual emissions were modeled to demonstrate compliance with the annual NO_2 NAAQS.

TABLE 3.2-26
ASSESSMENT OF LOCALIZED NO_2 AND CO IMPACTS DURING CONSTRUCTION

		Air Concentration					
Pollutant	**Averaging Time, units**	**Existing Background[a]**	**Project**	**Adjusted Baseline**	**Total (Background + Project + Adjusted Baseline)[b,c]**	**Standard/ Threshold[d]**	**Total Impact Exceeds Threshold?**
Nitrogen Dioxide	State 1-hour, ppm	0.087	0.018	0.027	0.132	0.180	No
	National 1-hour, ppm	0.058	0.015	0.024	0.097	0.100	No
	Annual, ppm	0.011	0.001	0.0001	0.012	0.030 (State)/ 0.053 (National)	No
Carbon Monoxide	State 1-hour, ppm	2.1	0.7	1.8	4.6	20.0	No
	National 1-hour, ppm	2.1	0.7	1.8	4.6	35.0	No
	State 8-hour, ppm	1.6	0.1	0.8	2.5	9.0	No
	National 8-hour, ppm	1.6	0.1	0.8	2.5	9.0	No

NOTES:
$\mu g/m^3$ = micrograms per cubic meter (a concentration unit)
[a] Background data for CO and nitrogen dioxide derived as the highest air quality measured data over a 3-year rolling average from 2015-2017.
[b] The location of the maximum total impacts may vary due to contributions from Proposed Project and Adjusted Baseline.
[c] Totals may not add up exactly due to rounding in the modeling calculations.
[d] The 1-hour standard/threshold differs between the State and National analyses. The State threshold is based on a not-to-exceed value of modeled concentration impacts whereas the National threshold is based on a 98th percentile value.

SOURCE: ESA 2019.

As shown in Table 3.2-26, localized maximum daily construction emissions, added to existing ambient conditions and projected future contributions from the Adjusted Baseline, would not exceed the applicable NO_2 or CO standards and construction would not expose sensitive receptors to substantial pollutant concentrations. Therefore, the localized impact of construction emissions would be **less than significant**.

Operation

Localized impacts from operation of the Proposed Project were analyzed using air dispersion modeling to generate concentrations of NO_2, CO, PM10, and PM2.5 at receptor locations surrounding the Project Site. Project-generated incremental increases of PM10 and PM2.5 were then compared to SCAQMD's allowable incremental increase thresholds. The results of the PM analysis are presented in **Table 3.2-27**.

TABLE 3.2-27
ASSESSMENT OF LOCALIZED PM EMISSIONS DURING OPERATION

Pollutant	Averaging Time, units	Project Local Increase	Standard/ Threshold	Total Impact Exceeds Threshold
PM10	State 24 hour, $\mu g/m^3$	0.56	2.5	No
	State Annual, $\mu g/m^3$	0.12	1.0	No
PM2.5	State 24 hour, $\mu g/m^3$	0.28	2.5	No

NOTE:
$\mu g/m^3$ = micrograms per cubic meter (a concentration unit)

SOURCE: ESA 2019.

Particulate Matter

As shown in Table 3.2-27, localized maximum daily operational emissions would not exceed the allowable incremental increase in PM10 or PM2.5. Therefore, impacts would be **less than significant**.

Nitrogen Dioxide and Carbon Monoxide

To compare the Proposed Project operational concentrations of NO_2 and CO to applicable NAAQSs, existing concentrations of these pollutants from nearby monitors (see Table 3.2-2, above) and the future contribution to ambient concentrations resulting from the Adjusted Baseline must be included, as detailed in **Table 3.2-28**. As described above, on days when events are held at Hollywood Park and the Forum, the project applicant would not allow delivery trucks to travel to or from the Project Site during the two pre- and post-event hours. Therefore, to assess the potential for maximum localized impacts in the vicinity of the Project Site within the applicable pollutant standard averaging times (i.e., 1 hour for NO_2 and CO NAAQS and 8 hours for CO NAAQS), two scenarios were modeled. The first includes the Proposed Project major event emissions (excluding delivery truck activity in the pre- and post- event hours) concurrent with emissions from ancillary HPSP uses, a major event at the NFL Stadium, and a concert at The Forum. The second localized scenario includes Project operational emissions for a 9,500 or less person event which includes delivery truck activity in the two pre-event hours and one post-event hour concurrent with a major event at the NFL Stadium, a concert at The Forum, and ancillary uses of HPSP. As detailed on Table 3.2-28, annual emissions were modeled to demonstrate compliance with the annual NO_2 NAAQS.

As shown in Table 3.2-28, localized maximum daily operational emissions, added to existing ambient conditions and projected future contributions from the Adjusted Baseline, would not result in an exceedance of applicable NAAQS for NO_2. Therefore, the impact of operational emissions would be **less than significant**.

TABLE 3.2-28
ASSESSMENT OF LOCALIZED NO_2 AND CO IMPACTS DURING OPERATION

Pollutant	Averaging Time, units	Air Concentration: Existing Background[a]	Project	Adjusted Baseline	Total (Background + Project + Adjusted Baseline)[b,c]	Standard/ Threshold[d]	Total Impact Exceeds Threshold
Nitrogen Dioxide	**1 Hour Scenario 1**						
	State 1 hour, ppm	0.087	0.010	0.030	0.127	0.180	No
	National 1 hour, ppm	0.058	0.010	0.029	0.097	0.100	No
	1 Hour Scenario 2						
	State 1 hour, ppm	0.087	0.012	0.027	0.126	0.180	No
	National 1 hour, ppm	0.058	0.010	0.027	0.095	0.100	No
	Annual, ppm	0.011	0.0004	0.00002	0.011	0.030 (State)/ 0.053 (National)	No
Carbon Monoxide	State 1 hour, ppm	2.1	0.7	1.8	4.6	20	No
	National 1 hour, ppm	2.1	0.7	1.8	4.6	35	No
	State 8 hour, ppm	1.6	0.1	0.4	2.1	9	No
	National 8 hour, ppm	1.6	0.1	0.4	2.1	9	No

NOTES:
$\mu g/m^3$ = micrograms per cubic meter (a concentration unit)
[a] Background data for CO and nitrogen dioxide derived as the highest air quality measured data over a 3-year rolling average from 2015-2017.
[b] The location of the maximum total impacts may vary due to contributions from Proposed Project and Adjusted Baseline.
[c] Totals may not add up exactly due to rounding in the modeling calculations.
[d] The 1-hour standard/threshold differs between the State and National analyses. The State threshold is based on a not-to-exceed value of modeled concentration impacts whereas the National threshold is based on a 98th percentile value.

SOURCE: ESA 2019.

Intersection CO Hotspot Analysis

SCAQMD recommends that a local CO hotspot analysis be conducted if the intersection meets one of the following criteria: (1) the intersection is at LOS D or worse and where the project would increase the volume to capacity ratio by 2 percent, or (2) the project would decrease Level of Service (LOS) at an intersection from C to D. A decrease in LOS, i.e., from C to D, means that there is more traffic and more delay at the intersection. A detailed review of the Proposed Project intersection data, as presented in Appendix K, identified the four intersections in the vicinity of the Project Site that would represent the most degraded LOS and highest vehicle volumes with the Proposed Project. CO hotspot modeling was conducted for the four intersections that would experience the highest traffic volumes for each scenario within each condition. Logically, if these four intersections demonstrate CO concentrations below the required thresholds, all other affected intersections would also be below thresholds and thus not create hotspots. LOS and traffic volumes for the four worst intersections within the local study area with the Proposed Project is shown in **Table 3.2-29**.

TABLE 3.2-29
TRAFFIC INTERSECTIONS LEVEL OF SERVICE

		Hawthorne Boulevard and West Century Boulevard		South Prairie Avenue and West Century Boulevard		Crenshaw Boulevard and West Century Boulevard		South Prairie Avenue and Imperial Highway	
Condition	**Scenario**	**LOS**	**Traffic Volumes**	**LOS**	**Traffic Volumes**	**LOS**	**Traffic Volumes**	**LOS**	**Traffic Volumes**
Adjusted Baseline	WD Pre-E	D	4,965	E	5,084	E	4,552	D	5,111
	WD Post-E	C	2,596	C	2,543	C	2,491	C	2,762
	WE Pre-E	D	4,371	D	4,566	C	4,590	E	4,517
Adjusted Baseline Plus Project	WD Pre-E	F	6,694	F	7,070	F	5,942	D	5,400
	WD Post-E	F	5,331	F	5,035	D	4,434	C	3,888
	WE Pre-E	F	5,922	F	6,849	F	5,862	D	4,864
Adjusted Baseline with NFL Stadium and Forum Plus Project	WD Pre-E	F	7,863	F	9,205	F	7,443	F	6,065
	WD Post-E	E	6,392	F	8,350	F	6,771	D	6,060
	WE Pre-E	F	6,122	F	8,465	F	6,996	D	5,195

NOTES:
WD Pre-E = weekday pre-event
WD Post-E = weekday post-event
WE Pre-E = weekend pre-event

SOURCE: Fehr & Peers 2019.

Hotspot modeling was conducted utilizing Caltrans' CALINE4 model and emission rates obtained from CARB's EMFAC2017 to determine the maximum potential pollutant concentrations generated by the Proposed Project. Hotspot modeling was conducted for the following scenarios: Adjusted Baseline, Adjusted Baseline Plus the Proposed Project, and Adjusted Baseline Plus events occurring at The Forum and the NFL Stadium Plus the Proposed Project.

Table 3.2-30 shows estimated CO concentrations for future 2024 conditions for the Adjusted Baseline Environmental Setting, Adjusted Baseline Plus the Proposed Project and Adjusted Baseline with The Forum and the NFL Stadium Plus the Proposed Project. Additionally, estimated emission concentrations are provided in Table 3.2-28. As shown therein, the estimated 1-hour and 8-hour average CO concentrations from the Proposed Project plus the background concentrations would be below the state and federal standards. CO hotspots are not anticipated due to traffic-generated emissions by the Proposed Project in combination with other anticipated developments in the area. Therefore, the mobile emissions of CO from the Proposed Project are not anticipated to contribute substantially to an existing or projected air quality violation of CO. Therefore, according to this criterion, air pollutant emissions during operation would result in a **less-than-significant impact**.

TABLE 3.2-30
CARBON MONOXIDE CONCENTRATIONS AT INTERSECTIONS

Condition	CO Concentration (ppm)	Hawthorne and West Century	South Prairie and West Century	Crenshaw and West Century	South Prairie and Imperial	State Standard (ppm)	Exceed State Standard?
Adjusted Baseline 2024	1 hour	2.1	2.1	1.9	2.1	20	No
	8 hour	1.3	1.3	1.1	1.3	9	No
Adjusted Baseline Plus Project	1 hour	2.2	2.1	1.9	2.1	20	No
	8 hour	1.3	1.3	1.1	1.3	9	No
Adjusted Baseline with NFL Stadium and The Forum Plus Project	1 hour	2.3	2.3	1.9	2.1	20	No
	8 hour	1.4	1.4	1.1	1.3	9	No

NOTES:
- ppm = parts per million
- A significant impact would occur if the estimated CO concentration is over the 1-hour State standard of 20 ppm or the 8-hour State/Federal standard of 9 ppm.

SOURCE: ESA 2019.

Health Impacts Assessment –Localized Effects

Potential health effects from exposure to CO include fatigue, headaches, confusion, and dizziness due to inadequate oxygen delivery to the brain, and at extremely high levels, asphyxiation. Short-term exposures to NO_2 can potentially lead to respiratory symptoms (such as coughing, wheezing or difficulty breathing), and at extreme levels result in hospitalization. Nonetheless, NAAQS and CAAQS for these pollutants are widely recognized as adequately health protective. For example, OSHA has established the permissible level for daily employee exposure to CO at 50 ppm 8-hour average, while the USEPA has established an ambient standard of 9 ppm 8-hour average, not to be exceeded once per year. Clearly the NAAQS is highly conservative as compared to OSHA's health protective standard. As shown in Tables 3.2-6 and 3.2-8, concentrations of CO and NO_2 resulting from the combination of ambient sources, the adjusted baseline, and project-related emissions are below applicable NAAQS and CAAQS. Therefore, with the Proposed Project localized emissions below the health-protective ambient concentration thresholds, the direct emissions from localized construction and operation would not be expected to cause or contribute to identifiable health effects.

As discussed above, NO_X and PM contribute to the formation of secondary ozone and particulate matter (indirection emissions), the accumulation of which can happen at greater distances from the source. Thus, potential health effects from these pollutants (both direct emission and associated secondary formations of other air pollutant) are most appropriately evaluated at the regional level. Please see the discussion above in Impact 3.2-2, where a quantitative HIA for ozone and PM2.5 was prepared for informational purposes and considered both the direction emissions and secondary atmospheric formations associated with NO_X and PM. Localized construction and operational emissions are not only relatively much smaller (e.g., only fractions

of the Proposed Project regional operational emissions), but also are localized and short term in nature; correspondingly, health effects associated with localized construction and operational emissions are expected to be smaller than those negligible (if not zero) regional health effects that were disclosed in Impact 3.2-2, above.

Toxic Air Contaminants

Health Risk Assessment

Lifetime Cancer Risk

Excess lifetime cancer risk is estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to carcinogens. As the individual incremental increase in lifetime cancer risk is assessed over long exposure time periods (i.e., 30-year for residential receptors), the potential effects of Proposed Project-related carcinogenic TAC emissions must include the combination of exposure to construction-related activities and exposure to operation-related activities. For cancer risk, SCAQMD guidance identifies a significant impact if a project would result in an incremental cancer risk that is greater than 10 in one million for any receptor.

The TAC emissions of the Proposed Project would be generated from mobile sources, including gasoline powered passenger vehicles, diesel-powered heavy-duty trucks, and emergency generators/emergency fire pumps. These sources generate TOG and PM10 from combustion of gasoline and diesel fuels. Gasoline and diesel TOG and PM10 emissions are composed of MSATs in varying distributions resulting in a speciation profile. The speciation profile represents the MSAT's weight fraction of TOG and PM10.

For construction, the potential emission sources of MSATs and DPM would be diesel-fueled heavy-duty equipment, on-road travel and idling emissions from diesel-fueled haul trucks, and on-road travel emissions from gasoline-fueled worker vehicles. For operation, the potential emission sources would be gasoline-fueled passenger vehicles travelling to and from the Project Site, diesel-fueled delivery trucks, diesel-fueled delivery truck with TRUs, and diesel-fueled emergency generators and emergency fire pumps.

A dense receptor grid around the Project Site and surrounding roadways that would carry the Proposed Project traffic, captures the maximum health risk impacts to exposed air quality sensitive receptors. The same meteorological, terrain, and other modeling input options as described in the section for the LST modeling analysis were used to characterize air dispersion and measure health risk impacts at air quality sensitive receptors.

Table 3.2-31 presents the estimated incremental cancer risks for the exposure scenario that starts from Proposed Project construction for air quality sensitive receptors over a maximum 30-year exposure in line with OEHHA guidance starting with the first year of construction of the Proposed Project. The EMFAC model assumes that engines get cleaner over time, resulting in reduced emission rates; therefore, using 2024 emission levels is the "worst-case" scenario and thus conservative. As shown in Table 3.2-31, the Proposed Project would not exceed SCAQMD's

cancer risk significance threshold of an incremental increase of 10 in a million. Therefore, the lifetime cancer risk that would result from construction and operation of the Proposed Project would be a **less-than-significant impact**.

TABLE 3.2-31
ESTIMATED CANCER RISK, EXPOSURE DURATION STARTING FROM BEGINNING OF PROJECT CONSTRUCTION

Receptor Type	Total Exposure Time (years)	Incremental Increase in Cancer Risk During Project Construction (risk/million)	Incremental Increase in Cancer Risk During Project Operation (risk/million)	Total Incremental Increase in Cancer Risk[a] (risk/million)	SCAQMD Cancer Risk Significance Threshold (risk/million)	Exceeds Threshold?
Residential	30	7.6	2.1	9.7	10	No
Worker	25	0.6	3.2	3.8	10	No
School (Child)	7	0.3	0.2	0.5	10	No
Early Childhood Education (Child)	7	1.3	0.5	1.8	10	No

SOURCE: ESA 2019. Health risk calculations are provided in Appendix D.

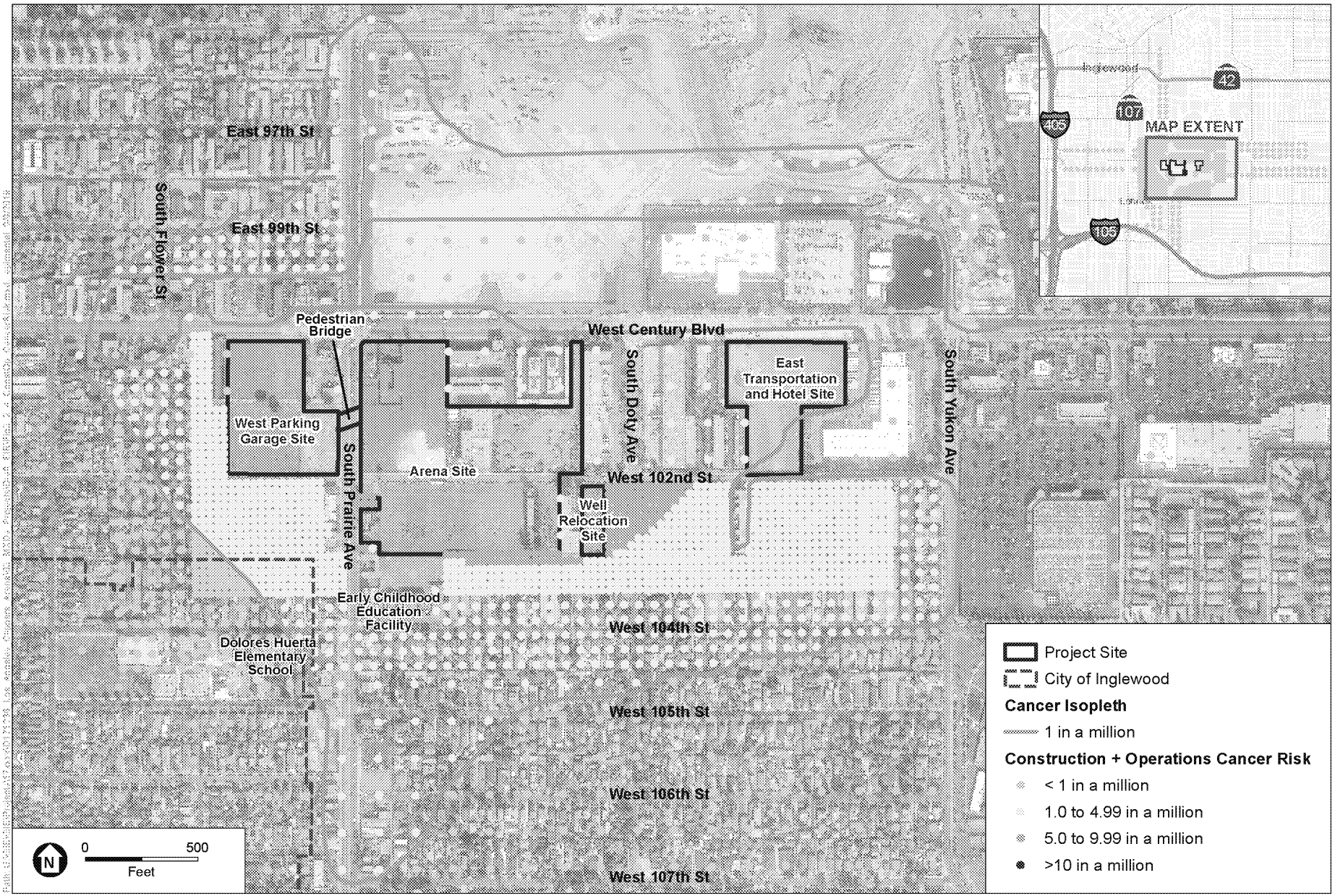
A graphical representation of the incremental increase in cancer risk due to construction and operation emissions is shown in **Figure 3.2-4**.

Non-carcinogenic Health Risk (Chronic and Acute) – Construction

As previously discussed, an HRA was prepared to evaluate the risk of potential non-carcinogenic negative health outcomes related to TACs exposure from airborne emissions during the construction of the Proposed Project. For construction, the potential TAC emission sources were heavy-duty equipment used during demolition, grading and excavation, and building construction activities. The HRA followed the procedures and methods provided in the *Guidance Manual for Preparation of Health Risk Assessments* issued by OEHHA in 2015 as well as the methods in the SCAQMD's *Risk Assessment Procedures for Rule 1401, 1401.1, and 212, version 8.1*, used in conjunction with the associated *SCAQMD Permit Application Package "N."* Non-cancer effects of chronic (i.e., long- term) and acute (i.e., short-term) TAC exposure were evaluated using the HI approach consistent with the OEHHA and SCAQMD guidance.

A chronic HI equal to or greater than 1.0 represents a significant chronic health hazard. A chronic health effect could include irritation to eyes, throat, lungs or neurological damage. The Proposed Project related TACs with known or suspected chronic health effects emitted during construction could include DPM, acetaldehyde, benzene, 1,3-butadiene, formaldehyde and nickel.[173]

[173] Office of Environmental Health Hazard Assessment, 2000. Determination of Noncancer Chronic Reference Exposure Levels. February 2000.



SOURCE: TerraServer, 2018; ESA, 2019.

Inglewood Basketball and Entertainment Center

Figure 3.2-4
Construction + Operations Cancer Risk

ESA

An acute HI equal to or greater than 1.0 represents a significant acute health hazard. An acute health effect could include irritation to eyes, throat, or lungs, sensory irritation, or coughing, chest pain or vomiting. The Proposed Project related TACs with known or suspected acute health effects emitted during construction could include acetaldehyde, benzene, 1,3-butadiene and formaldehyde.[174] There can also be acute effects associated with the speciation of DPM, which are addressed in more detail in Appendix D.

The maximum chronic non-carcinogenic health risks are presented in **Table 3.2-32**. As shown in Table 3.2-33, the Proposed Project would result in non-carcinogenic health risk that would be below the significance threshold of a chronic HI of 1.0 for the maximum impacted resident, worker, school (child), and early childhood education (child) receptors and, this, this impact would be **less than significant**.

TABLE 3.2-32
MAXIMUM CHRONIC NON-CARCINOGENIC HEALTH RISK DURING CONSTRUCTION

Receptor Location	TAC Resulting in Maximum Impact (8HR/Annual)	Target Organ	8-Hour Hazard Index	Annual Chronic Hazard Index
Receptor Type				
Residential	Formaldehyde/DPM	Respiratory	0.12	0.009
Worker	Formaldehyde/DPM	Respiratory	0.12	0.009
School (Child)	Formaldehyde/DPM	Respiratory	0.02	0.0003
Early Childhood Education (Child)	Formaldehyde/DPM	Respiratory	0.05	0.002
Hazard Index Threshold	—	—	1.0	1.0
Exceeds Threshold?	—	—	No	No

SOURCE: ESA 2019. Health risk calculations are provided in Appendix D.

In addition, the maximum acute non-carcinogenic health risks are presented in **Table 3.2-33**. As shown in Table 3.2-33, the Proposed Project would result in non-carcinogenic health risk that would be below the significance threshold of an acute HI of 1.0 for the maximum impacted residential, worker, school (child), and early childhood education (child) receptors and impacts would be **less than significant**.

Non-carcinogenic Health Risk (Chronic and Acute) – Operation

Exposure to MSAT emissions during the Proposed Project operations could also result in chronic and acute health risks. The maximum chronic non-carcinogenic health risks are presented in **Table 3.2-34**. As shown, the Proposed Project would result in chronic non-carcinogenic health risk that would be below the significance threshold of a chronic and acute HI of 1.0 for the

[174] Office of Environmental Health Hazard Assessment, 2008. Appendix D. Individual Acute, 8-Hour, and Chronic Reference Level Summaries. December 2008, updated July 2014.

maximum exposed individual receptor (i.e., residential, worker, school (child), early childhood education (child) receptors). This impact would therefore be **less than significant**.

TABLE 3.2-33
MAXIMUM ACUTE NON-CARCINOGENIC HEALTH RISK DURING CONSTRUCTION

Receptor Location	TAC Resulting in Maximum Impact	Target Organ	Acute Hazard Index
Receptor Type			
Residential	Formaldehyde	Eyes	0.06
Worker	Formaldehyde	Eyes	0.06
School (Child)	Formaldehyde	Eyes	0.01
Early Childhood Education (Child)	Formaldehyde	Eyes	0.03
Hazard Index Threshold	—	—	1.0
Exceeds Threshold?	—	—	No

SOURCE: ESA 2019. Health risk calculations are provided in Appendix D.

TABLE 3.2-34
MAXIMUM CHRONIC NON-CARCINOGENIC HEALTH RISK DURING OPERATION

	Target Organ	8-Hour Hazard Index	Annual Chronic Hazard Index
Maximum Exposed Individual Receptor	Hematological System	0.27	0.007
Hazard Index Threshold	—	1.0	1.0
Exceeds Threshold?	—	No	No

SOURCE: ESA 2019. Health risk calculations are provided in Appendix D.

In addition, the maximum acute non-carcinogenic health risks are presented in **Table 3.2-35**. As shown, the Proposed Project would result in non-carcinogenic health risk that would be below the significance threshold of an acute HI of 1.0 for the maximum exposed individual receptor (i.e., residential, worker, school (child), and early childhood education (child) receptors), and, thus, this impact would be **less than significant**.

TABLE 3.2-35
MAXIMUM ACUTE NON-CARCINOGENIC HEALTH RISK DURING OPERATION

	Target Organ	Acute Hazard Index
Maximum Exposed Individual Receptor	Immune System	0.21
Hazard Index Threshold	—	1.0
Exceeds Threshold?	—	No

SOURCE: ESA 2019. Health risk calculations are provided in Appendix D.

Population-Wide Risks (Cancer Burden)

If incremental individual cancer risk from the Proposed Project would exceed the SCAQMD regulatory threshold of an incremental increase of 1 in one million, then an estimated determination of population level risks is required. For the cancer burden analysis, the Proposed Project risks from construction and operation impacts are evaluated for a 70-year residential scenario.[175] Cancer risks were estimated at the geographical center (centroid) of census tracts that are within the study area of the HRA and multiplied by the corresponding population number. A cancer burden greater than 0.5 is considered a significant cancer burden. As presented in **Table 3.2-36**, for the 70-year exposure duration, the cancer burden is estimated to be 0.04 individuals that were estimated to have a cancer risk of 1 in a million or more. Therefore, the Proposed Project would not exceed SCAQMD's cancer burden significance, and thus, this impact would be **less than significant**.

TABLE 3.2-36
CANCER BURDEN, 70-YEAR EXPOSURE DURATION

Scenario	Cancer Burden
Construction + Operations Population Cancer Burden	0.04
Cancer Burden Threshold	0.5
Exceeds Threshold?	No

SOURCE: ESA 2019. Health risk calculations are provided in Appendix D.

Conclusion

For all criteria pollutants studied impacts related to potentially exposing air quality sensitive receptors to substantial pollutant concentrations would be below applicable thresholds, and no mitigation is required. Emissions of TACs would result in carcinogenic, and acute- and chronic-noncarcinogenic health risks below applicable standards, the impacts related to such exposures are less than significant. Therefore, the impacts related to exposing air quality sensitive receptors to substantial pollutant emissions would be **less than significant**.

Mitigation Measures

None required.

---

[175] South Coast Air Quality Management District, 2017. Risk Assessment Procedures for Rule 1401, 1401.1, and 212, Version 8.1, September 1, 2017.

Impact 3.2-4: Construction and operation of the Proposed Project could result in other emissions (such as those leading to odors). (Less than Significant)

Construction

Potential sources that may emit odors during construction activities include the use of architectural coatings and solvents. SCAQMD Rule 1113 (Architectural Coatings) limits the amount of VOCs from architectural coatings and solvents. According to the SCAQMD CEQA Air Quality Handbook, construction equipment is not a typical source of odors. Odors from the combustion of diesel fuel would be minimized by complying with the CARB ATCM, adopted in 2004, that limits diesel-fueled commercial vehicle idling to 5 minutes at any given location. The Proposed Project would also comply with SCAQMD Rule 402 (Nuisance), which prohibits the emissions of nuisance air contaminants or odorous compounds. Through adherence with mandatory compliance with SCAQMD Rules and State measures, construction activities and materials would not create objectionable odors. Construction of the Proposed Project would not be expected to generate nuisance odors at nearby air quality sensitive receptors. With respect to odors, the impact would be **less than significant**.

Operations

The Proposed Project land uses involve the operation of an arena, offices, retail/restaurant uses, parking, and hotel uses, none of which would be uses that are typically expected to be substantial sources of other emissions, including odors. According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The Proposed Project would not involve elements related to these types of uses. The Proposed Project would include various trash receptacles associated with the proposed arena, office, retail/restaurant, commercial, and hotel uses. On-site trash receptacles used by the Proposed Project would be covered and properly maintained to prevent adverse odors. With proper housekeeping practices, trash receptacles would be maintained in a manner that promotes odor control, and no adverse odor impacts are anticipated from the uses. Impacts with respect to odors would be **less than significant**.

Mitigation Measure

None required.

Cumulative Impacts

The following cumulative impact analysis is based on the recommendations provided by SCAQMD in the *Potential Control Strategies to Address Cumulative Impacts from Air Pollution White Paper*. SCAQMD's guidance for assessing a project's cumulative impacts recommends the use of two alternative methodologies: (1) that project-specific air quality impacts be used to determine the project's potential cumulative impacts to regional air quality; or (2) that a project's consistency with the AQMPs are used to determine its potential cumulative impacts. Under SCAQMD's guidance, "[p]rojects that exceed the project-specific significance thresholds are

considered by SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."[176] Therefore, consistent with this guidance, the potential for the Proposed Project to results in cumulative impacts from regional emissions is assessed based on SCAQMD thresholds.

Impact 3.2-5: Construction and operation of the Proposed Project, in conjunction with other cumulative development, would result in inconsistencies with implementation of applicable air quality plans. (Significant and Unavoidable)

As described above under Impact 3.2-1, impacts related to consistency with the AQMPs and the air quality-related policies in the City's General Plan and ECAP during construction of the Proposed Project would be less than significant. However, during operation, the Proposed Project would not be consistent with the AQMP as the Proposed Project would generate emissions of nonattainment pollutants or precursors (i.e., VOC, NO_X, PM10, and PM2.5) that exceed the applicable significance thresholds. Based on SCAQMD guidance, the exceedance of this threshold indicates that the Proposed Project would have a considerable contribution to a significant impact. Therefore, the Proposed Project would result in a **potentially significant cumulative impact**.

Mitigation Measure 3.2-5(a)

Implement Mitigation Measure 3.14-2(b). (Implementation of a comprehensive Transportation Demand Management (TDM) program)

Mitigation Measure 3.2-5(b)

Implement Mitigation Measure 3.2-2(b). (Emergency Generator and Fire Pump Generator Maintenance & Testing)

Mitigation Measure 3.2-5(c)

Implement Mitigation Measure 3.2-2(c). (Construction Emissions Minimization Plan)

Mitigation Measure 3.2-5(d)

Implement Mitigation Measure 3.2-2(d). (Incentives for vendors and material delivery trucks to use ZE or NZE trucks during operation)

Level of Significance After Mitigation: Because Proposed Project regional emissions during construction would exceed the significance thresholds for those criteria air pollutants for which the Air Basin is not in attainment (i.e., VOC, NO_X, PM10, and PM2.5), the Proposed Project would have a considerable contribution to a significant cumulative inconsistency with the AQMPs. As discussed above, the Proposed Project would implement Mitigation Measures 3.2-5(a-d), which would require the Applicant to use off-road diesel-powered construction equipment that meets or exceeds the CARB and US EPA Tier 4 Final off-road emissions standards or equivalent for all equipment rated at

[176] South Coast Air Quality Management District, 2003. White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution (August 2003). Appendix D, Page D-3.

50 hp or greater and implement a Construction Emissions Minimization Plan during project construction.

Implementation of a TDM program would serve to reduce Project-related mobile emissions during operation of the Proposed Project. Maintenance and/or testing of emergency generators or fire pump generators will be conducted on three separate non-event days. Each emergency generator shall be tested on a separate non-event day and the two fire pump generators may be tested together on a separate non-event day. As demonstrated in Table 3.2-24, NO_X emissions during operations would be reduced to less-than-significant levels during Non-Event days. However, NO_X, CO, PM10, and PM2.5 emissions would remain in excess of the SCAQMD significance thresholds on Event days. In addition, the Applicant has agreed to provide incentives to vendor delivery trucks that use ZE or NZE trucks during project operations. As previously stated, registration data indicates over 75 percent of heavy-duty diesel vehicles (i.e., vendor and haul trucks) in the state are model year 2010 or newer. Thus, there are no additional feasible mitigation strategies to further reduce the regional emissions generated during operation of the Proposed Project, based on the above, construction and operation of the Proposed Project would contribute to a **significant and unavoidable cumulative impact** as it relates to consistency with the applicable air quality plan.

Impact 3.2-6: Construction and operation Proposed Project, in conjunction with other cumulative development, would result in cumulative increases in short-term (construction) and long-term (operational) emissions. (Significant and Unavoidable)

Construction

The SCAQMD CEQA Air Quality Handbook states: "[f]rom an air quality perspective, the impact of a project is determined by examining the types and levels of emissions generated by the project and its impact on factors that affect air quality. As such, projects should be evaluated in terms of air pollution thresholds established by the District."[177] As shown in Table 3.2-14, provided under Impact 3.2-2, above, regional emissions during construction of the Proposed Project would exceed the SCAQMD significance threshold for NO_X. Thus, based on SCAQMD methodology, the Proposed Project construction emissions would represent a considerable contribution to a cumulative impact, resulting in a **potentially significant cumulative impact**.

Operation

As discussed under Impact 3.2-2, above, and shown in Tables 3.2-15 through 3.2-22, regional emissions of VOC, NO_X, CO, PM10, and PM2.5 emissions during operation of the Proposed Project would exceed the SCAQMD significance thresholds. Thus, based on SCAQMD methodology, the Proposed Project operational emissions would represent a considerable contribution to a cumulative impact, resulting in a **potentially significant cumulative impact**.

[177] South Coast Air Quality Management District, CEQA Air Quality Handbook, 1993, p. 6-1.

Mitigation Measure 3.2-6(a)

Implement Mitigation Measure 3.14-2(b). Implementation of a comprehensive Transportation Demand Management (TDM) program.

Level of Significance After Mitigation: As discussed above under Mitigation Measure 3.2-2(c), there would be no feasible mitigation measures to further reduce NO_X emissions during construction. Thus, consistent with SCAQMD guidance, the Proposed Project NO_X emissions during construction of the Proposed Project would be cumulatively considerable, resulting in a **significant and unavoidable cumulative impact**.

Implementation of Mitigation Measure 3.14-2(b) would reduce regional and localized emissions for all pollutants during operation of the Proposed Project. However, even after implementation of the required TDM Program, emissions are predicted to remain in excess of applicable thresholds. Thus, consistent with SCAQMD recommendations, the Proposed Project contribution to VOC, NO_X, CO, PM10, and PM2.5 emissions during operation of the Proposed Project would remain cumulatively considerable, resulting in a **significant and unavoidable cumulative impact**.

Mitigation Measure 3.2-6(b)

Implement Mitigation Measure 3.2-2(b). Emergency Generator and Fire Pump Generator Maintenance & Testing.

Level of Significance After Mitigation: As shown in Table 3.2-24, NO_X emissions during operations would be reduced to less-than-significant levels during Non-Event days. However, NO_X, CO, PM10, and PM2.5 emissions would remain in excess of the SCAQMD significance thresholds on Event days, therefore cumulative impacts would be **significant and unavoidable**.

Mitigation Measure 3.2-6(c)

Implement Mitigation Measure 3.2-2(c). Prepare and implement a Construction Emissions Minimization Plan.

Level of Significance After Mitigation: As discussed above under Mitigation Measure 3.2-2 (b), there would be no feasible mitigation measure to further reduce the maximum daily regional emissions of VOC, NO_X, CO, PM10, and PM2.5 during construction and the Proposed Project would cumulatively be above the SCAQMD regional significance thresholds and cumulative impacts would be **significant and unavoidable**.

Mitigation Measure 3.2-6(d)

Implement Mitigation Measure 3.2-2(d). Incentivize use of ZE or NZE trucks.

Level of Significance After Mitigation: The Applicant has agreed to provide incentives to vendor delivery trucks that use ZE or NZE trucks during project operations. Based on registration data, over 75 percent of heavy-duty diesel vehicles (i.e., vendor and haul trucks) in the state are model year 2010 or newer. Thus, there are no additional feasible mitigation strategies to further reduce the maximum daily regional emissions of VOC, NO_X, CO, PM10, and PM2.5 during operations and the Proposed Project would cumulatively be above the SCAQMD regional significance thresholds and cumulative impacts would be **significant and unavoidable**.

Impact 3.2-7: Construction and operation Proposed Project, in conjunction with other cumulative development, could contribute to a cumulative exposure of sensitive receptors to substantial pollutant concentrations. (Less than Significant)

Localized construction and operational impacts for PM10, PM2.5, NO_2, and CO, as described above under Impact 3.2-3, are cumulative in nature as they consider the ambient levels of these pollutants as well as concurrent Proposed Project construction and operation with a major sold-out event at the NFL Stadium and The Forum. As discussed further above, localized construction and operational impacts for annual and one-hour emissions were found to be less than significant. Therefore, construction and operation of the Proposed Project would result in a **less-than-significant cumulative impact**.

To evaluate potential cumulative CO impacts from roadway sources, cumulative scenarios (Cumulative, Cumulative Plus the Proposed Project, and Cumulative with The Forum and the NFL Stadium Plus the Proposed Project), were also modeled to determine if a CO hotspot would occur. CO hotspot modeling was conducted for the four intersections that experience the highest traffic volumes for each scenario within each scenario. Logically, if these four intersections demonstrate CO concentrations below the required thresholds, all other affected intersections would also be below thresholds and thus not create hotspots. LOS and traffic volumes for the four worst intersections within the local study area with the Proposed Project is shown in **Table 3.2-37**.

TABLE 3.2-37
CUMULATIVE TRAFFIC INTERSECTIONS LEVEL OF SERVICE

		Hawthorne Boulevard and West Century Boulevard		South Prairie Avenue and West Century Boulevard		Crenshaw Boulevard and West Century Boulevard		South Prairie Avenue and Imperial Highway	
Condition	**Scenario**	**LOS**	**Traffic Volumes**	**LOS**	**Traffic Volumes**	**LOS**	**Traffic Volumes**	**LOS**	**Traffic Volumes**
Cumulative	WD Pre-E	E	5,898	F	6,041	D	5,580	D	5,795
	WD Post-E	C	3,007	C	2,919	C	2,891	C	3,085
	WD Pre-E	D	5,328	E	5,417	E	5,743	D	5,187
Cumulative Plus Project	WD Pre-E	F	7,627	F	8,025	F	6,970	E	6,085
	WD Post-E	F	5,741	F	5,412	E	4,834	D	4,210
	WD Pre-E	F	7,065	F	7,403	F	7,130	D	5,480
Cumulative with NFL Stadium and The Forum Plus Project	WD Pre-E	F	8,649	F	10,210	F	8,472	F	6,753
	WD Post-E	E	6,813	F	8,762	F	7,228	E	6,385
	WD Pre-E	E	7,082	F	9,333	F	8,150	E	5,867

NOTES:
WD Pre-E = weekday pre-event
WD Post-E = weekday post-event
WE Pre-E = weekend pre-event

SOURCE: Fehr & Peers 2019.

Table 3.2-38 shows estimated CO concentrations for future 2024 Cumulative, Cumulative with Plus the Proposed Project, and Cumulative with the NFL Stadium and The Forum Plus the Proposed Project estimated emission concentrations. As shown therein, the estimated 1-hour and 8-hour average CO concentrations from project-generated and cumulative traffic plus the background concentrations are below the state and federal standards. No CO hotspots are anticipated because of traffic-generated emissions by the Proposed Project in combination with other anticipated development in the area. Therefore, the mobile emissions of CO from the Proposed Project are not anticipated to contribute substantially to an existing or projected cumulative air quality violation of CO. Therefore, according to this criterion, air pollutant emissions during operation would result in a **less-than-significant cumulative impact**.

TABLE 3.2-38
CUMULATIVE CARBON MONOXIDE CONCENTRATIONS AT INTERSECTIONS

Condition	CO Concentration (ppm)	Hawthorne and West Century	South Prairie and West Century	Crenshaw and West Century	South Prairie and Imperial	State Standard (ppm)	Exceed State Standard?
Cumulative	1 hour	2.1	2.1	1.9	2.1	20	No
	8 hour	1.3	1.3	1.1	1.3	9	No
Cumulative Plus Project	1 hour	2.4	2.1	1.9	2.1	20	No
	8 hour	1.4	1.3	1.1	1.3	9	No
Cumulative with NFL Stadium and The Forum Plus Project	1 hour	2.4	2.3	1.9	2.2	20	No
	8 hour	1.4	1.4	1.1	1.3	9	No

NOTES:
- ppm = parts per million
- A significant impact would occur if the estimated CO concentration is over the 1-hour State standard of 20 ppm or the 8-hour State/Federal standard of 9 ppm.

SOURCE: ESA 2019.

With regard to localized construction and operational impacts for PM10 and PM2.5, the SCAQMD's ambient air quality thresholds for PM10 and PM2.5 are project-specific because the Air Basin is in nonattainment, as described in Section 3.2.4. Because the Air Basin is in nonattainment, based on SCAQMD Rule 403, the thresholds are designed to regulate an allowable change in concentration.[178] Therefore, background concentration is irrelevant, and a cumulative analysis is not necessary. In addition, as it relates to the health risk analysis provided above under Impact 3.2-3, the lifetime cancer risk as well as the non-carcinogenic health risk (chronic and acute) for construction and operation has thresholds designed to analyze a project's potential impact on individual health risk, without consideration for any background

[178] Note that the ambient air quality thresholds for PM10 and PM2.5 is different than the ambient air quality thresholds for NO_2 and CO, pollutants for which the Air Basin is in attainment. It is necessary to analyze the contribution from background sources for NO2 and CO.

concentrations or risk, or the contribution from other reasonable foreseeable projects in the vicinity. Therefore, a cumulative analysis is not necessary.

Mitigation Measures

None required.

Impact 3.2-8: Construction and operation Proposed Project, in conjunction with other cumulative development, could result in cumulative increases of other emissions (such as those leading to odors). (Less than Significant)

As discussed under Impact 3.2-4, above, during construction, the Proposed Project would implement applicable SCAQMD regulations including SCAQMD Rule 1113, which would limit the amount of VOCs from architectural coatings and solvents, and SCAQMD Rule 402, which prohibits the emissions of nuisance air contaminants or odorous compounds. Through adherence with mandatory compliance with SCAQMD Rules and State measures, construction activities and materials would not create objectionable odors.

The Proposed Project would not involve elements related to those land uses described in the SCAQMD CEQA Air Quality Handbook that would typically be associated with odor complaints. None of the cumulative projects identified in Section 3.0, Introduction to the Analysis, indicate the intent to construct and operate uses that would typically be associated with odor complaints. It can also be reasonably assumed that the related projects in the vicinity of the Project Site would also comply with applicable SCAQMD Rules and State measures to reduce odors during construction and operation. Therefore, increases in other emissions from the Proposed Project and other cumulative development would result in a **less-than-significant cumulative impact**.

Mitigation Measures

None required.