SECTION 3.2

Air Quality

3.2.1 Introduction

This section evaluates the potential air quality impacts associated with construction activities, mobile sources, and other aspects the proposed program's construction and operations that have the potential to generate criteria air pollutant emissions. The objectives of this analysis are to:

- Evaluate the construction and operational criteria air pollutant emissions associated with program level restoration process and the potential for regional air quality impacts based on applicable standards and thresholds;
- Identify air quality benefits from improving habitat areas and restoring wetlands;
- Provide, if needed, air quality mitigation measures as required to meet applicable air quality standards and thresholds as specified by the South Coast Air Quality Management District (SCAQMD).

The information presented in this section is based on the analysis conducted in the *Air Quality Technical Report* (ESA 2019), which is included as Appendix B to this PEIR). All information sources used are included as citations within the text; sources are listed in Section 3.2.7, *References*.

3.2.2 Environmental Setting

3.2.2.1 Regional and Local Air Quality

The program area is located within the South Coast Air Basin (Air Basin). The Air Basin is an approximately 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east (SCAQMD, 2012). The Air Basin consists of Orange County, Los Angeles County (excluding the Antelope Valley portion), and the western, non-desert portions of San Bernardino and Riverside counties, in addition to the San Gorgonio Pass area in Riverside County. The terrain and geographical location determine the distinctive climate of the Air Basin, as it is a coastal plain with connecting broad valleys and low hills.

The Air Basin lies in the semi-permanent high-pressure zone of the eastern Pacific Ocean. The usually mild climatological pattern is interrupted by periods of hot weather, winter storms, or Santa Ana winds. The extent and severity of criteria pollutant concentrations in the Air Basin is a function of the area's natural physical characteristics (weather and topography) and anthropogenic influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and dispersion of pollutants throughout the Air Basin, making it an area of high pollution potential. The Air Basin's meteorological conditions, in combination with regional topography, are particularly conducive to the formation and retention of ozone (O_3), which is a secondary pollutant that forms through photochemical reactions in the atmosphere. Thus, the greatest air pollution impacts throughout the Air Basin typically occur from June through September. This condition is generally attributed to the emissions occurring in the Air Basin, light winds, and shallow vertical atmospheric mixing. These factors reduce the potential for pollutant dispersion causing elevated air pollutant levels. Pollutant concentrations in the Air Basin vary with location, season, and time of day. Concentrations of O_3, 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 (SCAQMD, 2012).

Criteria Air Pollutants and Ozone Precursors

Certain air pollutants have been recognized to cause notable health problems and consequential damage to the environment either directly or in reaction with other pollutants, due to their presence in elevated concentrations in the atmosphere. Such pollutants have been identified as criteria air pollutants and regulated as part of the overall endeavor to prevent further deterioration and facilitate improvement in air quality. The following criteria pollutants are regulated by the United States Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB), and are subject to emissions control requirements adopted by federal, state, and local regulatory agencies. Ambient air quality standards (AAQS) have been established to limit the pollutant health impacts discussed below, and air district mass emission significance thresholds have been established that tie to the achievement and maintenance of the AAQS (SCAQMD, 2017).

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 favorable 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 USEPA, ozone can cause the muscles in the airways to constrict potentially leading to wheezing and shortness of breath (USEPA, 2018a). 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 (USEPA, 2018a). Long-term exposure to ozone is linked to aggravation of asthma, and is likely to be one of many causes of asthma development and long-term exposures to higher concentrations of ozone may also be linked to permanent lung damage, such as abnormal lung development in children (USEPA, 2018a). The USEPA 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 (USEPA, 2018a). 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 (USEPA, 2018a). 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 (CARB, 2018). Children breathe more rapidly than adults and inhale more pollution per pound of their body weight than adults. As such, children are less likely than adults to notice their own symptoms and avoid harmful exposures (CARB, 2018). Further research may be able to better distinguish between health effects in children and adults (CARB, 2018).

Volatile Organic Compounds (VOCs): VOCs are organic chemical compounds of carbon and are not "criteria" pollutants themselves; however, they contribute with NO_X to form ozone, and are regulated to prevent the formation of ozone (USEPA, 2017b). According to CARB, some VOCs are highly reactive and play a critical role in the formation of ozone, other VOCs have adverse health effects, and in some cases, VOCs can be both highly reactive and have adverse health effects (CARB, 2016b). VOCs are typically formed from combustion of fuels and/or released through evaporation of organic liquids, internal combustion associated with motor vehicle usage, and consumer products (e.g., architectural coatings, etc.) (CARB, 2016b).

Nitrogen Dioxide (NO_2): 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 nitric oxide (NO). Ambient air quality standards have been promulgated for NO_2, which is a reddish-brown, reactive gas (CARB, 2019b). The principle 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 (CARB, 2019b). Major sources of NO_X include emissions from cars, trucks and buses, power plants, and off-road equipment (USEPA, 2016b). 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 USEPA, short-term exposures to NO_2 can potentially aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing). Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections, leading to hospital admissions and emergency room visits (USEPA, 2016b). According to CARB, controlled human exposure studies show that NO_2 exposure can intensify responses to allergens in allergic asthmatics (CARB, 2019b). 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 (CARB, 2019b). 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. In adults, the greatest risk is to people who have chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease (CARB, 2019b). 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 (CARB, 2019b).

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 (CARB, 2019a). According to the USEPA, 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. At very high levels of CO, which can occur indoors or in other enclosed environments, CO can cause dizziness, confusion, unconsciousness, and death (USEPA, 2016a). 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 because 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 (USEPA, 2016a). 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 (USEPA, 2016a). According to CARB, the most common effects of CO exposure are fatigue, headaches, confusion, and dizziness due to inadequate oxygen delivery to the brain (CARB, 2019a). 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 (CARB, 2019a). 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 (CARB, 2019a).

Sulfur Dioxide (SO_2): According to the USEPA, the largest source of sulfur dioxide (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 emissions include industrial processes such as extracting metal from ore; natural sources such as volcanoes; and locomotives, ships and other vehicles and heavy equipment that burn fuel with a high sulfur content (USEPA, 2018b). 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 (ppm), down from the previous requirement of 500 parts per million, substantially reducing emissions of sulfur from diesel combustion (CARB, 2004). According to the USEPA, short-term exposures to SO_2 can harm the human respiratory system and make breathing difficult (USEPA, 2018b). 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 ppm) results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality (CARB, 2019c). 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 (CARB, 2019c; USEPA, 2018b).

Particulate Matter (PM10 and PM2.5): Particulate matter air pollution is a mixture of solid particles and liquid droplets found in the air (USEPA, 2018c). 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 (USEPA, 2018c). Particles are defined by their diameter for air quality regulatory purposes: inhalable particles with diameters that are generally 10 micrometers and smaller (PM10); and fine inhalable particles with diameters that are generally 2.5 micrometers and smaller (PM2.5) (USEPA, 2018c). 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 (CARB, 2017). Sources of PM2.5 emissions include combustion of gasoline, oil, diesel fuel, or wood (CARB, 2017). 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 (CARB, 2017). 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 (CARB, 2017). 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 (CARB, 2017). 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 (IARC, 2014). 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 and 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 (CARB, 2017). 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 they inhale more air per pound of body weight than do adults, spend more time outdoors, and have developing immune systems (CARB, 2017).

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 (USEPA, 2017a). 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 (USEPA, 2017a). 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. (USEPA, 2017a) 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 (CARB, 2019d). 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 (CARB, 2019d).

Non-Criteria Air Pollutants

In addition to criteria air pollutants and ozone precursors, the state and local air districts regulate non-criteria pollutants that contribute to adverse air quality and health effects, which are discussed below.

Toxic Air Contaminants: Toxic air contaminants (TACs) are generally defined as those contaminants that are known or suspected to cause serious health problems, but do not have a corresponding ambient air quality standard. TACs are also defined as an air pollutant that may increase a person's risk of developing cancer and/or other serious health effects; however, the emission of a toxic chemical does not automatically create a health hazard. Other factors, such as the amount of the chemical, 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. 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 and may exist as PM10 and PM2.5 or as vapors (gases). TACs include metals, other particles, gases absorbed by particles, and certain vapors from fuels and other sources.

The emission of toxic substances into the air can be damaging to human health and to the environment. Human exposure to these pollutants 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. Pollutants 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.

Diesel Particulate Matter: According to the 2006 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 particulate matter from the exhaust of diesel-fueled engines, i.e., diesel particulate matter (DPM). The State of California has identified DPM as a TAC. However, 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 hazardous air pollutants, 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 the 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 both short-term or acute exposures, and 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 just DPM but there is enough evidence to indicate that inhalation exposure to diesel exhaust causes acute and chronic health effects.

Acute exposure to diesel exhaust may cause irritation to the eyes, nose, throat and lungs, some neurological effects such as lightheadedness. Acute exposure may also elicit a cough or nausea as well as exacerbate asthma. Chronic exposure to diesel PM in experimental animal inhalation studies have shown a range of dose-dependent lung inflammation and cellular changes in the lung and immunological effects. Based upon human and laboratory studies, there is considerable evidence that diesel exhaust is a likely carcinogen. Human epidemiological studies demonstrate an association between diesel exhaust exposure and increased lung cancer rates in occupational settings.

Other Emissions (Odors)

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). Offensive odors are unpleasant and can lead to public distress, generating citizen complaints to local governments. Although unpleasant, offensive odors rarely cause physical harm. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source, wind speed, direction, and the sensitivity of receptors.

3.2.2.2 Existing Pollutant Levels at Nearby Monitoring Stations

Criteria Air Pollutants

The SCAQMD maintains a network of air quality monitoring stations located throughout the Air Basin to measure ambient pollutant concentrations. The program area is in the South Los Angeles County Coastal Source-Receptor Area (SRA) 4. The monitoring station most representative of the program area is the Long Beach (Hudson) Monitoring Station (South Coastal Los Angeles County 3 location). Criteria pollutants monitored at this station include CO, O_3, NO_2, PM10, and SO_2. However, PM2.5 and lead are not monitored at this station. The second most representative monitoring station for these pollutants is the South Coastal Los Angeles County 2 location. The most recent data available from the SCAQMD for these monitoring stations is from years 2013 to 2018. The pollutant concentration data for these years are summarized in **Table 3.2-1**, *Ambient Air Quality Data*.

TABLE 3.2-1
AMBIENT AIR QUALITY DATA

Pollutant/Standard	2013	2014	2015	2016	2017	2018
O_3 (1-hour)						
Maximum Concentration (ppm)	0.090	0.087	0.087	0.079	0.082	0.074
Days > CAAQS (0.09 ppm)	0	0	0	0	0	0
O_3 (8-hour)						
Maximum Concentration (ppm)	0.069	0.072	0.066	0.059	0.068	0.063
4th High 8-hour Concentration (ppm)	0.057	0.061	0.056	0.055	0.062	0.053
Days > CAAQS (0.070 ppm)	0	1	0	0	0	0
Days > NAAQS (0.075 ppm)	0	0	0	0	0	0
NO_2 (1-hour)						
Maximum Concentration (ppm)	0.0813	0.1359	0.1018	0.0756	0.0895	0.0853
98th Percentile Concentration (ppm)	0.0713	0.0848	0.0644	0.0663	0.0729	0.0627
Days > CAAQS (0.18 ppm)	0	0	0	0	0	0
NO_2 (Annual)						
Annual Arithmetic Mean (0.030 ppm)	0.0215	0.0207	0.0198	0.0185	0.0179	0.0173
CO (1-hour)						
Maximum Concentration (ppm)	—	4.0	3.3	3.3	3.9	2.0
Days > CAAQS (20 ppm)	—	0	0	0	0	0
Days > NAAQS (35 ppm)	—	0	0	0	0	0
CO (8-hour)						
Maximum Concentration (ppm)	2.6	2.6	2.2	2.2	2.6	1.7
Days > CAAQS (9 ppm)	0	0	0	0	0	0
Days > NAAQS (9 ppm)	0	0	0	0	0	0
SO_2 (1-hour)						
Maximum Concentration (ppm)	0.0151	0.0375	0.0126	0.0178	0.0197	0.0105
99th Percentile Concentration (ppm)	0.0116	0.0118	0.0063	0.0012	0.0143	0.0094
Days > CAAQS (0.25 ppm)	0	0	0	0	0	0
Days > NAAQS (0.075 ppm)	0	0	0	0	0	0
PM10 (24-hour)						
Maximum Concentration (µg/m^3)	—	—	80	75	79	84
Samples > CAAQS (50 µg/m^3)	—	—	6	8	9	1
Samples > NAAQS (150 µg/m^3)	—	—	0	0	0	0
PM10 (Annual Average)						
Annual Arithmetic Mean (20 µg/m^3)	—	—	31.5	31.9	33.3	23.9
PM2.5 (24-hour)						
Maximum Concentration (µg/m^3)	42.9	52.2	48.3	28.93	56.3	47.10
98th Percentile Concentration (µg/m^3)	24.6	27.2	31.2	22.05	31.10	27.70
Samples > NAAQS (35 µg/m^3)	1	2	4	0	5	2
PM2.5 (Annual)						
Annual Arithmetic Mean (12 µg/m^3)	10.97	10.72	10.26	9.62	11.02	11.15
Lead						
Maximum 30-day average (µg/m^3)	0.012	0.012	0.010	0.008	0.010	0.006
Samples > CAAQS (1.5 µg/m^3)	0	0	0	0	0	0

NOTES:

ppm = parts per million; µg/m^3 = micrograms per cubic meter; CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards

SOURCE: South Coast Air Quality Management District. Historical Data by Year. Available online at: http://www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year. Accessed June 2019.

Toxic Air Contaminants

Concentrations of TACs are also used as indicators of ambient air quality conditions. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

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. The program is designated to quantify the amounts of potentially hazardous air pollutants released, the location of the release, the concentrations to which the public is exposed, and the resulting health risks. The State Air Toxics Program (Assembly Bill 2588) identified over 200 TACs, including the 188 TACs identified in the CAA. The USEPA has assessed this expansive list of toxics and identified 21 TACs as Mobile Source Air Toxics (MSATs). 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. USEPA also extracted a subset of these 21 MSAT compounds that it now labels as the six priority MSATs: benzene, formaldehyde, acetaldehyde, diesel particulate matter/diesel exhaust organic gases, acrolein, and 1,3-butadiene. While these six MSATs are considered the priority transportation toxics, USEPA stresses that the lists are subject to change and may be adjusted in future rules.

Between July 2012 and June 2013, the SCAQMD conducted the Multiple Air Toxics Exposure Study (MATES IV), which is a follow-up to previous air toxics studies conducted in the SCAB. The MATES IV Final Report was issued in May 2015. The study, based on actual monitored data throughout the SCAB, consisted of a monitoring program, an updated emissions inventory of TACs, and a modeling effort to characterize carcinogenic risk across the SCAB from exposure to TACs. The study concluded that the average of the modeled air toxics concentrations measured at each of the monitoring stations in the SCAB equates to a background cancer risk of approximately 418 per million based on the average of 10 fixed monitoring sites and 367 per million based on a population-weighted average risk. The risk is primarily due to diesel exhaust, which is about 65 percent lower for the average of 10 fixed monitoring sites and 57 percent lower for the population-weighted risk than the previous MATES III cancer risk (SCAQMD 2015, ES-2-3). Subsequent to the SCAQMD's risk calculations estimates performed for MATES IV, the California Environmental Protection Agency Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA Guidance) updated the methods for estimating cancer risks (OEHHA 2015). The updated method utilizes higher estimates of cancer potency during early life exposures and uses different assumptions for breathing rates and length of residential exposures. When combined together, SCAQMD staff estimates that risks for the same inhalation exposure level will be about 2.5 to 2.7 times higher using the updated methods. This would be reflected in the average lifetime air toxics risk estimated from the monitoring sites data going from 418 per million to 1,023 per million the average of 10 fixed monitoring sites and from 367 per million to 897 per million for the population-weighted risk (SCAQMD 2015, 2-11). Under the updated OEHHA methodology, adopted in March 2015, the relative reduction in risk from the MATES IV results compared to MATES III would be the same (about 65 percent reduction in risk).

Approximately 68 percent of the airborne carcinogenic risk is attributed to diesel particulate emissions matter (DPM), approximately 22 percent 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 other certain businesses, such as dry cleaners and chrome plating operations) (SCAQMD 2015, ES-2). The study also found lower ambient concentrations of most of the measured air toxics compared to the levels measured in the previous study conducted during 2004 and 2006. Specifically, benzene and 1,3-butadiene, pollutants generated mainly from vehicles, were down 35 percent and 11 percent, respectively (SCAQMD 2015, 6-1). The reductions were attributed to air quality control regulations and improved emission control technologies. In addition to air toxics, MATES IV included continuous measurements of black carbon and ultrafine particles (particles smaller than 0.1 micron in size), which are emitted by the combustion of diesel fuels. Sampling sites located near heavily-trafficked freeways or near industrial areas were characterized by increased levels of black carbon and ultrafine particles compared to more rural sites.

3.2.2.3 Sensitive Receptors

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. The nearest sensitive land uses to the program area are shown in **Figure 3.2-1**, *Air Quality Sensitive Receptors*, and include the following:

JH McGaugh Elementary School: 1,800 feet south from program boundary

Charles F Kettering Elementary School: 2,000 feet north from program boundary

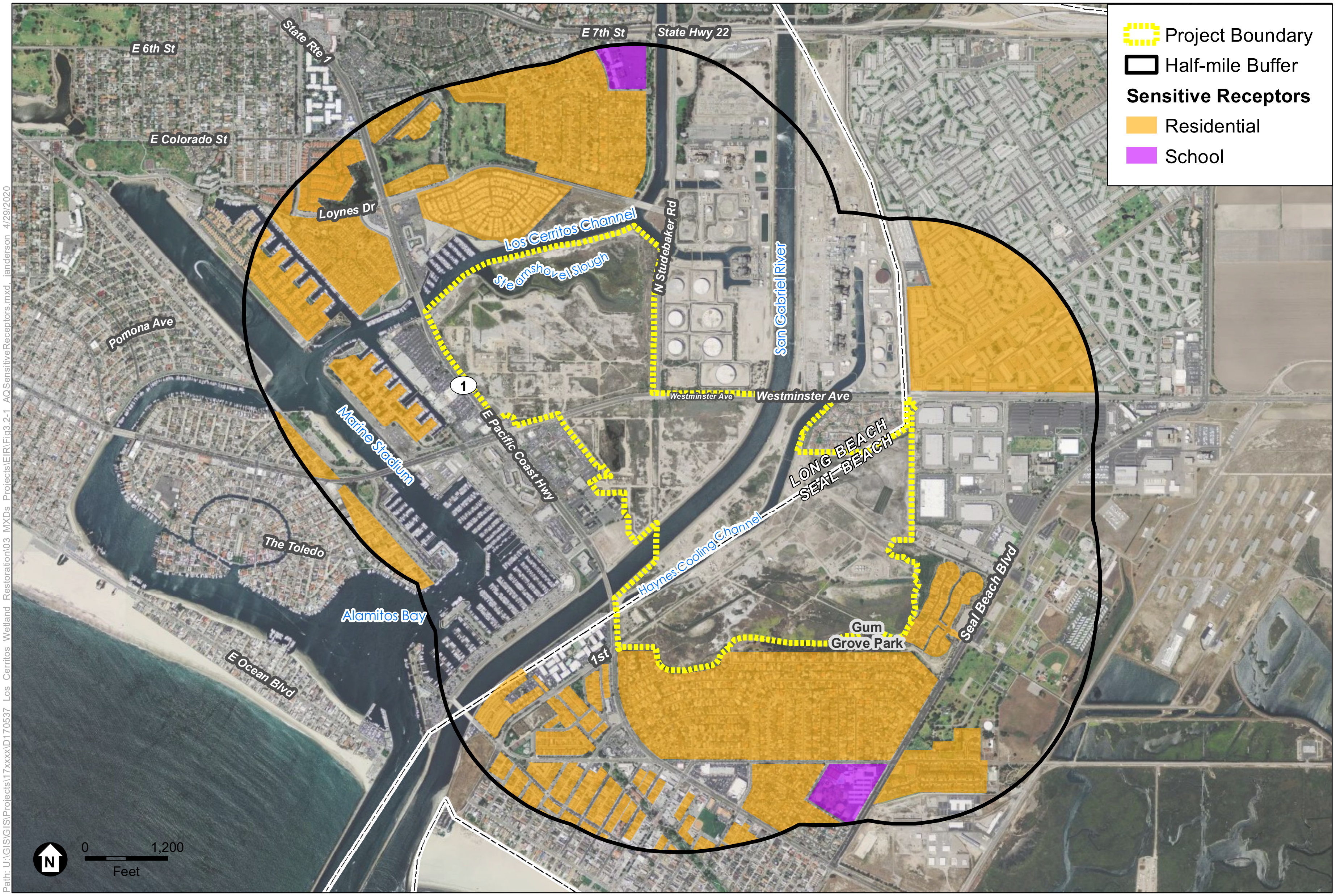
Long Beach VA Hospital: 5,165 feet northwest from the program boundary (not shown on map)

Residential neighborhoods (including the Leisure World retirement community) to the north, east, south, and west of the program boundary. Residential neighborhoods to the south are immediately adjacent to the program boundary.

3.2.3 Regulatory Framework

3.2.3.1 Federal

The federal Clean Air Act of 1963 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, the USEPA is responsible for implementation of certain portions of the Clean Air Act including mobile source requirements. Other portions of the Clean Air Act, such as stationary source requirements, are implemented by state and local agencies.



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SOURCE: Mapbox, LCWA

Los Cerritos Wetlands Restoration Plan Draft Program EIR

Figure 3.2-1
Air Quality Sensitive Receptors

ESA

The Clean Air Act establishes federal air quality standards, known as National Ambient Air Quality Standards (NAAQS) and specifies future dates for achieving compliance. The 1990 Amendments to the Clean Air Act 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. Title I (Nonattainment Provisions) and Title II (Mobile Source Provisions) of the Clean Air Act are most applicable to the development and operations of the proposed program. Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants: (1) O_3; (2) NO_2; (3) CO; (4) SO_2; (5) PM10; and (6) Pb. The NAAQS were updated in 1997 to include separate standards for PM2.5, which is a subset of PM10 emissions. **Table 3.2-2**, *Ambient Air Quality Standards*, shows the NAAQS currently in effect for each criteria pollutant.

The proposed program is located within the South Coast Air Basin, which is an area designated as non-attainment because it does not currently meet NAAQS for certain pollutants regulated under the Clean Air Act. Currently, the Air Basin does not meet the NAAQS for O_3 and PM2.5 and is classified as being in non-attainment for these pollutants. The Air Basin is in non-attainment for PM10 California Ambient Air Quality Standards (CAAQS) in both Los Angeles and Orange counties. The Los Angeles County portion of the Air Basin is designated as non-attainment for the lead NAAQS while the Orange County portion of the Air Basin is designated as attainment for lead NAAQS. **Table 3.2-3**, *South Coast Air Basin Attainment Status*, lists the criteria pollutants and their relative attainment status.

The Clean Air Act also specifies future dates for achieving compliance with the NAAQS and mandates that states submit and implement a State Implementation Plan (SIP) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards would be met. The 1990 amendments to the Clean Air Act identify specific emission reduction goals for basins 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.

Title II of the Clean Air Act pertains to mobile sources, such as cars, trucks, buses, and planes. Reformulated gasoline, automobile pollution control devices, and vapor recovery nozzles on gas pumps are a few of the mechanisms the USEPA uses to regulate mobile air emission sources. The provisions of Title II have resulted in tailpipe emission standards for vehicles, which have strengthened in recent years to improve air quality. For example, the standards for NO_X emissions have been lowered substantially, and the specification requirements for cleaner burning gasoline are more stringent.

TABLE 3.2-2
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/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
NO_2[i]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemi-luminescence	100 ppb (188 µg/m^3)	None	Gas Phase Chemi-luminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		53 ppb (100 µg/m^3)	Same as Primary Standard	
CO	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10mg/m^3)		9 ppm (10 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
SO_2[j]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)[9]
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[j]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[j]	—	
PM10[k]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
PM2.5[k]	24 Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3 [k]	15 µg/m^3	
Pb[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[m]	--		0.15 µg/m^3		

TABLE 3.2-2
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]
Visibility Reducing Particles[n]	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. 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 O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b National standards (other than O_3, PM10, PM2.5, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 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 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 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 USEPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the USEPA.

h On October 1, 2015, the national 8-hour O_3 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/m^3 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 2016a.

TABLE 3.2-3
SOUTH COAST AIR BASIN ATTAINMENT STATUS

Pollutant	National Standards (NAAQS)	California Standards (CAAQS)
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 – Serious	Non-attainment
Lead (Pb)	Non-attainment (Los Angeles County)[b]; Unclassified/Attainment (Orange County)	Attainment
Visibility Reducing Particles	N/A	Unclassified
Sulfates	N/A	Attainment
Hydrogen Sulfide	N/A	Attainment
Vinyl Chloride[c]	N/A	Attainment

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 Non-attainment designation – Los Angeles County portion of the Air Basin only for near-source monitors.

[c] In 1990, the California Air Resources Board identified vinyl chloride as a toxic air contaminant and determined that it does not have an identifiable threshold. Therefore, the California Air Resources Board does not monitor or make status designations for this pollutant.

SOURCES: California Air Resources Board, Area Designations Maps/State and National, last reviewed December 28, 2018. Available at http://www.arb.ca.gov/desig/adm/adm.htm. Accessed June 2019;
South Coast Air Quality Management District, *National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) Attainment Status for South Coast Air Basin*, February 2016. Accessed June 2019.

3.2.3.2 State

California Air Resources Board

CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets the CAAQS, complies emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emission standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and local air districts. The SIP is required for the state to take over implementation of the federal Clean Air Act from the USEPA.

California Clean Air Act

The California Clean Air Act, signed into law in 1988, requires all areas of the state to achieve and maintain the CAAQS by the earliest practical date. The CAAQS apply to the same criteria pollutants as the federal Clean Air Act but also include state-identified criteria pollutants, which include sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. CARB has primary responsibility for ensuring the implementation of the California Clean Air Act, responding to the federal Clean Air Act planning requirements applicable to the state, and regulating emissions from motor vehicles and consumer products within the state. Table 3.2-2 shows the CAAQS currently in effect for each of the criteria pollutants as well as the other pollutants recognized by the state. As shown in Table 3.2-2, the CAAQS include more stringent standards than the NAAQS for most of the criteria air pollutants.

Health and Safety Code Section 39607(e) requires CARB to establish and periodically review area designation criteria. Table 3.2-3 provides a summary of the attainment status of the Air Basin for both Los Angeles and Orange Counties with respect to the state standards. The Air Basin is designated as attainment for the California standards for sulfates, hydrogen sulfide, and vinyl chloride.

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 particulate matter and other vehicle emissions (Title 13 California Code of Regulations [CCR], Section 2485). 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 (13 CCR, Section 2025). The requirements were amended in December 2010 and apply to nearly all diesel fueled trucks and busses with a gross vehicle weight rating greater than 14,000 pounds. For the largest trucks in the fleet, those with a gross vehicle weight rating greater than 26,000 pounds, there are two methods to comply with the requirements. The first way 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 8 years, starting in 2015 and would be fully implemented by 2023, meaning that all trucks operating in the state subject to this option would meet or exceed the 2010 engine emission standards for NO_X and particulate matter 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 option must still comply with the 2010 engine emission standards for their trucks and buses by 2020.

In addition to limiting exhaust from idling trucks, CARB recently promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower (hp), such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation adopted by the 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 (13 CCR, Section 2449). 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 (VDECS) on a certain percentage of its total fleet horsepower. The compliance schedule requires that BACT turn overs or retrofits (VDECS installation) be fully implemented by 2023 in all equipment in large and medium fleets and across 100 percent of small fleets by 2028.

3.2.3.3 Regional

South Coast Air Quality Management District

As indicated previously, the cities of Seal Beach and Long Beach are located within the South Coast Air Basin (Air Basin). The SCAQMD has jurisdiction over an area of approximately 10,743 square miles. This area includes 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 sub-region of the SCAQMD jurisdiction. While air quality in this area has improved, the Air Basin requires continued diligence to meet air quality standards.

Air Quality Management Plan

The SCAQMD has adopted a series of Air Quality Management Plans (AQMP) to meet the CAAQS and NAAQS. The 2012 AQMP incorporates the latest scientific and technological information and planning assumptions, including regional growth projections to achieve federal standards for air quality in the Air Basin. It incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, and on-road and off-road mobile sources. The 2012 AQMP includes new and changing federal requirements, implementation of new technology measures, and the continued development of economically sound, flexible compliance approaches. Additionally, it highlights the significant amount of emissions reductions needed and the urgent need to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under the federal Clean Air Act (SCAQMD, 2012).

The key understanding 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 federal Clean Air Act Section 182(e)(5) long-term measures for NO_X and VOC reductions The 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. CARB approved the 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 zero and near-zero-emissions technologies; and taking credit from co-benefits from greenhouse gas (GHG), energy, transportation and other planning efforts (SCAQMD, 2017). The strategies included in the 2016 AQMP are intended to demonstrate attainment of the NAAQS for the federal non-attainment pollutants O_3 and PM2.5 (SCAQMD, 2016). Similar to the 2012 AQMP, the 2016 AQMP relies on "…aggressive mobile source control strategy supplemented with focused and strategic stationary source control measures" (SCAQMD, 2017, p. 4-1). The 2016 AQMP also recognizes the reduction in traditional air pollutants which occur as a "co-benefit" with the reduction in climate change-related pollutants achieved through GHG emission reduction programs and policies (SCAQMD, 2016). Vehicles and appliances (boilers, water heaters, space heaters, etc.) used in the construction and operation of the proposed program would comply with applicable regulations. While the 2016 AQMP was adopted by the SCAQMD and CARB, it has not yet received USEPA approval for inclusion in the SIP. Therefore, until such time as the 2016 AQMP is approved by the USEPA, the 2012 AQMP remains the applicable AQMP for federal purposes; however, this analysis considers both the 2012 and 2016 AQMP as appropriate.

Air Quality Guidance Documents

The SCAQMD published the CEQA Air Quality Handbook to provide local governments with guidance for analyzing and mitigating project-specific air quality impacts (SCAQMD, 1993). The CEQA Air Quality Handbook provides standards, methodologies, and procedures for conducting air quality analyses in EIRs and was used extensively in the preparation of this analysis. However, the SCAQMD is currently in the process of replacing the CEQA Air Quality Handbook with the Air Quality Guidance Handbook. While this process is underway, the SCAQMD recommends that lead agencies avoid using the screening tables in Chapter 6 (Determining the Air Quality Significance of a Project) of the CEQA Air Quality Handbook and instead recommends using other approved models to calculate emissions from land use projects, such as the California Emissions Estimator Model (CalEEMod) software. The SCAQMD has published a guidance document called the *Final Localized Significance Threshold Methodology* that is intended to provide guidance in evaluating localized effects from mass emissions during construction and operations (SCAQMD, 2008). The SCAQMD adopted additional guidance regarding PM2.5 in a document called Final Methodology to Calculate Particulate Matter (PM)2.5 and PM2.5 Significance Thresholds (SCAQMD, 2006). This latter document has been incorporated by the SCAQMD into its CEQA significance thresholds and Localized Significance Threshold Methodology.

Regulations and Rules

Several SCAQMD rules adopted to implement portions of the AQMP may apply to construction or operation of the proposed program. The proposed program 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 may apply to the proposed program:

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 (US Bureau of Mines, 1967).

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 the project property line, restricts the net PM10 emissions to less than 50 $\mu g/m^3$ and restricts the tracking out of bulk materials onto public roads. Additionally, projects must utilize one or more of the best available control measures (identified in the tables within the rule). Mitigation measures may include adding freeboard to haul vehicles, covering loose material on haul vehicles, watering, using chemical stabilizers and/or ceasing all activities. Finally, a contingency plan may be required if so determined by the USEPA.

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

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 1166. Volatile organic compound emissions from decontamination of soil procedures and requirements: This rule sets requirements to control the emissions of VOC from excavating, grading, handling, and treating VOC-contaminated soil as a result of leakage from storage or transfer operations, accidental spillage, or other deposition.

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**).

3.2.3.4 Local

Seal Beach General Plan

The City of Seal Beach General Plan, adopted in December 2003, does not contain a stand-alone air quality element. Rather, the City is able to comply with SCAQMD's AQMP through its Land Use Element, which "organizes land uses in relation to the circulation system, promotes commercial and industrial land uses with convenient access to transportation, and provides a Land Use Plan that promotes a favorable relationship between jobs and housing" (City of Seal Beach, 2003). In addition, the Circulation Element sets a goal to minimize air pollution through development of regional transportation facilities and a transportation demand management system. A reduction in vehicle miles traveled would have a resulting beneficial impact to air quality emissions.

Long Beach General Plan: Air Quality Element

The City of Long Beach adopted an "Air Quality Element," (adopted December 3, 1996) as part of the City's General Plan. The Air Quality Element, "identifies a series of policies, programs, and strategies that encourage fewer vehicle trips, increased opportunities for alternative transportation modes and fuels, and land use patterns that can be efficiently served by a diversified transportation system (Long Beach, 1996)." The following goals and policies are relevant to the proposed program:

Air Quality Element—1996

Goal 6.0: Minimize particulate emissions from the construction and operation of roads and buildings, from mobile sources, and from the transportation, handling and storage of materials.

Policy 6.1: Control Dust. Further reduce particulate emissions from roads, parking lots, construction sites, unpaved alleys, and port operations and related uses.

Goal 7.0: Reduce emissions through reduced energy consumption.

3.2.4 Significance Thresholds and Methodology

3.2.4.1 Significance Thresholds

For the purposes of this Program Environmental Impact Report (PEIR) and consistency with Appendix G of the *CEQA Guidelines*, the proposed program would have a significant impact on air quality if it would:

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

The *CEQA Guidelines* Section 15064.7 indicates that significance criteria established by the applicable air quality management district or air pollution control district, when available, may be relied upon to make determinations of significance. SCAQMD has set thresholds for both construction and operational emissions, as described in the Air Quality Technical Report (SCAQMD, 2019). A project with daily emission rates below these thresholds would be considered to have a less than significant impact to air quality.

3.2.4.2 Methodology

Existing Emissions

For the purposes of this program-level analysis, it is conservatively assumed that the program activities would result in all net new emissions. Most of the program area is either vacant or an active oil field. Existing emissions from oil fields within the boundaries of the Los Cerritos Wetlands Oil Consolidation and Restoration Project (State Clearinghouse Number 2016041083), located on the Southern Synergy Oil Field site and the Long Beach City Property site in the northern and central portion of the program area, were found to be minimal and have already been addressed in a previously certified EIR, and therefore are not analyzed in this PEIR. As the program activities would restore habitats and eventually decommission and remove existing oil operations, the net change for emissions in the long term could be negative. However, this would be difficult to quantify since the exact timing and commitments to cease oil operations in the future is unknown. As a conservative approach, no existing emissions were subtracted from estimated program emissions before comparison to emission thresholds.

Construction Emissions

Daily regional emissions during construction are forecasted by assuming a worst-case scenario year for the maximum acreage to be disturbed in one year. The emissions are estimated using the CalEEMod (Version 2016.3.2) software, an emissions inventory software, which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professions to quantify potential criteria pollutant emissions from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Regional data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered to be an accurate and comprehensive tool for quantifying air pollutant emissions from land use projects throughout California and is recommended by the SCAQMD.

The input values used in this analysis were adjusted to account for the nature of wetlands restoration activities and referenced the equipment and assumptions used for the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse Number 2016041083) for consistency. Specialized construction equipment was added as appropriate according to the activities listed in Chapter 2, *Project Description*, of this PEIR. An off-road equipment list is shown in Table 5 of the *Air Quality Technical Report*, provided in Appendix B of this PEIR.

Construction haul and vendor truck emissions were evaluated using regional heavy-duty truck emission factors from the CARB on-road vehicle emissions factor model (EMFAC), with emission factors from the USEPA-approved EMFAC2017 model used for the analysis. Subphases of construction would include demolition and site preparation, grading/excavation for levees, drainage/utilities/subgrade, building construction for the visitor center, paving for access roads and parking, and architectural coating for the visitor center and traffic markings. The demolition and site preparation includes removal of pipelines, tanks, and other oil infrastructure within the

Alamitos Bay Partners site and Central LCWA site. Waste is assumed to be hauled to the Montebello landfill located approximately 23 miles away. The main wetland restoration activities are covered in the grading/excavation subphase, which includes construction, modifying, and removing berms as well as establishing tidal channels. It is assumed that a tug boat would be used to pull the barges for soil transport and that there would be two crew/survey boats at most on any given day. The proposed program may use either a tugboat or a combination of a tugboat and trucks to transport soil. However, the use of a tugboat for soil transport would generate greater emissions of VOC, NO_X, CO, and SO_2 compared to trucks (see Table 3.2-4, *Maximum Unmitigated Regional Construction Emissions [Pounds per Day]*, below). Therefore, it is more conservative to assume soil transport by tugboat compared to truck travel. Tugboat emissions were calculated using emission factors from USEPA marine engine rules for Tier 2 engines. Emission factors were multiplied by the number of vessels and estimated hours of operation per day for usage and travel to and from the program area. Calculations are included in Appendix A of the Air Quality Technical Report provided in Appendix B, of this PEIR. These off-shore emissions (tugboats and other crew/survey boats) were added to the on-shore emissions for the grading/excavation subphase. For building construction and paving, for the purposes of this program-level air quality analysis, it is estimated that approximately 2,000 square feet of visitor center space and 50 parking spaces would be required to serve the program area. Emissions from these activities are estimated by construction subphase.

Fugitive emissions from paved and unpaved roads are calculated in CalEEMod using emission factors for off-road equipment from CARB's OFFROAD model and on-road vehicles from CARB's EMFAC model (CARB, 2019e). All unpaved demolition and construction areas shall be wetted (i.e., three times daily unless soils already contain equivalent moisture content) during excavation and construction, and temporary dust covers shall be used where needed to reduce dust emissions and meet SCAQMD District Rule 403. Wetting would reduce fugitive dust emissions by 61 percent.

The maximum daily emissions are estimated values for the worst-case day and do not represent the emissions that would occur for every day of program construction. The construction year was set to 2020 to obtain conservative emission factors for the construction activities. Emission factors decline in later years because of the requirement and development of cleaner and more efficient equipment. The year 2020 would represent a worst case scenario with all of the construction activities occurring simultaneously that are associated with the near-term restoration and public access. Construction activities for the mid-term, and long-term phases were not modeled specifically, but would likely be less than the modeled 2020 year due to similar construction subphases, but lower emission factors. The maximum daily emissions are compared to the SCAQMD daily regional numeric indicators. Detailed construction equipment lists, construction scheduling, and emissions calculations are provided in Appendix A of the Air Quality Technical Report, provided in Appendix B, of this PEIR.

Localized impacts to air quality were not analyzed quantitatively in this program-level document due to the uncertainty of the timing and exact locations of the construction activities. Rather, local air quality was discussed qualitatively with regard to the potential for localized impacts.

Potential odor impacts are evaluated by conducting a screening-level analysis followed by a more detailed analysis as necessary. The screening-level analysis consists of reviewing the program site plan and project description to identify new or modified odor sources. If it is determined that the proposed program would introduce a potentially significant new odor source or modify an existing odor source, then downwind sensitive receptor locations are identified, and a site-specific analysis is conducted to determine potential impacts.

Operational Emissions

The operational emissions are estimated using the CalEEMod software. CalEEMod was used to forecast the daily regional emissions from mobile sources that would occur during long-term program operations. The operational year was set to 2021 for a conservative emissions estimate. This consists mostly of truck trips for maintenance of the trails and wetlands and emissions from passenger vehicles from visitors. The analysis relied on the Institute of Transportation Engineers (ITE) Manual, 10th Edition "Public Park" category trip rates (i.e., denoted in the ITE Manual as "Land Use [LU] 411").

Area source emissions are based on natural gas (building heating and water heaters), landscaping equipment, and consumer product usage (including paints) rates provided in CalEEMod for the visitor center building, which was assumed to be up to 2,000 square feet of floor area.

Operational air quality impacts are presented as net new emissions. As discussed previously, no existing emissions were subtracted from estimated program emissions before comparison to emission thresholds given desire for a conservative approach. Program activities would restore habitats and eventually decommission and remove existing oil operations potentially resulting in a net change in emissions in the long term that could be negative, but cannot be accurately evaluated at this program-level given the uncertainty of the timing of specific restoration activities in the program area. The maximum daily emissions from operation of the proposed program are compared to the SCAQMD daily regional numeric indicators. Detailed operational emissions calculations are provided in Appendix A of the Air Quality Technical Report, provided in Appendix B of this PEIR.

As stated in Chapter 1, *Introduction*, on March 8, 2019, the Los Cerritos Wetlands Authority sent a Notice of Preparation to responsible, trustee, and federal agencies, as well as to organizations, and individuals potentially interested in the proposed program to identify the relevant environmental issues that should be addressed in the PEIR. Issues related to air quality were identified.

3.2.5 Program Impacts and Mitigation Measures

Impact AQ-1: The proposed program would result in a significant impact if the proposed program would conflict with or obstruct implementation of the applicable air quality plan.

The SCAQMD is required, pursuant to the Clean Air Act, to reduce emissions of criteria pollutants for which the Air Basin is in non-attainment of the NAAQS (e.g., O_3 and PM2.5). The Air Basin is also in non-attainment of the CAAQS (e.g., O_3, PM10, and PM2.5). The SCAQMD's

AQMP contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving the NAAQS and CAAQS. These strategies are developed, in part, based on regional growth projections prepared by the SCAG. Projects that are consistent with the assumptions used in the AQMP do not interfere with attainment because the growth is included in the projections utilized in the formulation of the AQMP. Thus, projects, uses, and activities that are consistent with the applicable growth projections and control strategies used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP, even if they exceed the SCAQMD's numeric indicators. As noted above, while the 2016 AQMP was adopted by the SCAQMD and CARB, it has not yet received USEPA approval for inclusion in the SIP. Therefore, until such time as the 2016 AQMP is approved by the USEPA, the 2012 AQMP remains the applicable AQMP for federal purposes, however, this analysis considers both the 2012 and 2016 AQMP as appropriate.

Criteria for determining the proposed program's consistency with the AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the SCAQMD's CEQA Air Quality Handbook, and include the following:

> Consistency Criterion No. 1: The proposed project will not result in an increase in the frequency or severity of existing air quality violations, or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

The violations to which Consistency Criterion No. 1 refers are the CAAQS and the NAAQS. Daily regional emissions during construction are estimated by subphase for a worst case scenario year. For the purposes of the analysis, the construction year was assumed to be 2020. Actual construction for the proposed program will vary over the three phases of near-, mid-, and long-term (next 10 years, 10-20 years, and 20+ years). As discussed below under Impact AQ-2, maximum daily emissions from construction activities would exceed the SCAQMD regional threshold for NO_X (Table 3.2-4). Regional construction emissions of NO_X would be mitigated to less than significant after mitigation (Table 3.2-7, *Maximum Mitigated Regional Construction Emissions [Pounds per Day]*, below). However, as discussed below under Impact AQ-3, localized impacts to sensitive receptors at the program-level during construction would be considered potentially significant. Operational emissions would be less than significant (Table 3.2-4) and no mitigation measures would be required. Therefore, while incorporation of mitigation would reduce regional construction emissions to less than significant, the proposed program could still potentially result in significant localized construction impacts and as such, could conflict with Criterion No. 1 and would result in a potentially significant impact for construction emissions.

> Consistency Criterion No. 2: The proposed project will not exceed the assumptions in the AQMP or increments based on the years of the project build-out phase.

Under Consistency Criterion No. 2, the AQMP contains air pollutant reduction strategies based on the SCAG's latest growth forecasts, and SCAG's growth forecasts were defined in consultation with local governments and with reference to local general plans. The SCAQMD recommends that lead agencies demonstrate that a project would not directly obstruct implementation of an applicable air quality plan and that a project be consistent with the assumptions upon which the air quality plan is based. During construction, the proposed program would be required to comply with CARB requirements to minimize short-term emissions from on-road and off-road diesel equipment, and with SCAQMD's regulations for controlling fugitive dust and other construction emissions. Compliance with these requirements is consistent with and meets or exceeds the AQMP requirements for control strategies intended to reduce emissions from construction equipment and activities.

Construction would occur sporadically over the next 20+ years across the 503-acre program area. Construction subphases and the required number of workers would vary over the near-, mid-, and long-term phasing of the proposed program. Because the construction would only occur for short periods of time in each location, construction emissions and duration would still be considered short-term and, therefore, would not conflict with the AQMP. For operations, the proposed program would restore wetlands and habitat areas which would reduce emissions in the long term from the existing environmental setting as oil operations cease. The proposed program would not increase population growth as it includes no housing and would generate a minimal number of jobs for maintenance of the facilities. The improvements to pedestrian access would help decrease vehicle miles traveled region-wide as it provides a recreational area near existing residential communities in the cities of Seal Beach and Long Beach thereby reducing the need to travel long distances for recreation (see Figure 3.2-1). Program emissions would be only a small percentage of overall Basin-wide emissions (Table 3.2-6, *Comparison of Program-Level Operational Emissions and SCAB Emissions [Tons per Year]*, below). Therefore, the proposed program would not conflict with Criterion No. 2.

Because the proposed program could conflict with Criterion No. 1, there would be a significant impact from conflicting with or obstructing implementation of the applicable air quality plan.

Mitigation Measure

Mitigation Measure AQ-1 (as described below under Impact AQ-2).

Significance after Mitigation

Significant and Unavoidable (construction); Less than Significant (operation)

Impact AQ-2: The proposed program would have in a significant impact if a cumulatively considerable net increase of any criteria pollutant for which the program region is non-attainment under an applicable federal or state ambient air quality standard.

Construction

The South Coast Air Basin is in non-attainment of the NAAQS for O_3 and PM2.5 and also in non-attainment of the CAAQS for O_3, PM10, and PM2.5. As shown in **Table 3.2-4**, *Maximum Unmitigated Regional Construction Emissions (Pounds per Day)*, there would be exceedances to the SCAQMD daily regional threshold for NO_X during individual construction subphases. In addition, there is potential for subphases to overlap as well, thereby worsening the exceedances for NO_X, but likely not causing a new exceedance. The emissions for CO, SO_2, PM10, and PM2.5 would not be exceeded even if all subphases of construction occurred at the same time. Construction emissions would vary temporally and spatially as the exact construction schedules, staging areas, and work plans are not known at this time. Despite the long construction duration for near-term, mid-term, and long-term activities, emissions from a singular activity would not be concentrated in one place for an extended duration. It is anticipated that a project-level analyses would be conducted when more specific construction information is known. At a program level, construction emissions could potentially exceed the SCAQMD daily regional thresholds for the nonattainment ozone precursor emissions (i.e., NO_X), construction impacts would be potentially significant and mitigation measures would be required.

TABLE 3.2-4
MAXIMUM UNMITIGATED REGIONAL CONSTRUCTION EMISSIONS (POUNDS PER DAY)

Source	VOC	NO_X	CO	SO_2	PM10[a]	PM2.5[a]
Construction Subphases						
Demolition and Site Preparation	4	38	27	<0.1	27	6
Grading/Excavation – Combined On-Shore and Off-Shore	17	172	116	28	44	13
On-Shore Emissions	*6*	*67*	*43*	*<0.1*	*41*	*9*
Off-Shore Emissions	*11*	*105*	*73*	*28*	*4*	*4*
Drainage/Utilities/Subgrade	2	22	22	<0.1	1	1
Building Construction	2	20	18	<0.1	2	1
Paving	3	14	15	<0.1	1	1
Architectural Coating[b]	5	2	2	<0.1	<0.1	<0.1
Combined Regional (On-Site and Off-Site) Emissions[c]	**33**	**268**	**200**	**28**	**76**	**22**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Over (Under)	(42)	168	(350)	(122)	(74)	(33)
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 A of the Air Quality Technical Report, provided in Appendix B of this PEIR.
[a] Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.
[b] Architectural coating emissions for VOC are assumed by CalEEMod to paint the entire 10,000-square-foot floor area in 1 day. VOC emissions have been adjusted to spread out the painting over 20 days.
[c] Emissions from all subphases are combined to simulate a worst case scenario where all construction activities are occurring simultaneously.
SOURCE: ESA, *Air Quality Technical Report*, 2019.

Construction Health Impacts from Regional Emissions (Friant Ranch Case)

The accumulation and dispersion of air pollutant emissions within an air basin is dependent upon the size and distribution of emission sources in the region and meteorological factors such as wind, sunlight, temperature, humidity, rainfall, atmospheric pressure, and topography. As expressed in the *amicus curiae* brief submitted for the *Sierra Club v. County of Fresno* case (*Friant Ranch* case) (SJVAPCD, 2015), the air districts established and recommend CEQA air quality analysis of criteria air pollutants use significance thresholds that were set at emission levels tied to the region’s attainment status, based on emission levels at which stationary pollution sources permitted by the air district must offset their emissions. Such offset levels allow for growth while keeping the cumulative effects of new sources at a level that will not impede attainment of the NAAQS. The health risks associated with exposure to criteria pollutants are evaluated on a regional level, based on the region's attainment of the NAAQS. Moreover, the formation of ozone occurs through a complex photo-chemical reaction between NO_X and ROG in the atmosphere with the presence of sunlight. The impacts of ozone are typically considered on a basin-wide or regional basis and not on a localized basis. The mass emissions significance thresholds used in CEQA air quality analysis are not intended to be indicative of human health impacts that a project may have (SCAQMD, 2012; SJVAPCD, 2015). Therefore, the proposed program's exceedance of the mass regional emissions threshold prior to mitigation (i.e., proposed program construction NO_X exceedance) from program-related activities does not necessarily indicate that the proposed program would cause or contribute to the exposure of sensitive receptors to ground-level concentrations in excess of health-protective levels. Nonetheless, as indicated above, proposed program construction would require the implementation of feasible mitigation measures to reduce the NO_X exceedance. As shown below, Mitigation Measure AQ-1 would reduce construction emission impacts to less than significant, which would also minimize construction-related air pollution health effects.

The health-based ambient air quality standards for ozone are established as concentrations of ozone and not as tonnages of their precursor pollutants (i.e., ROG and NO_X). It is not necessarily the tonnage of pollutants that causes human health effects, but the concentration of the resulting pollutants, such as ozone. Because of the complexity of ozone formation and the non-linear relationship of ozone concentration with its precursor gases, and given the state of environmental science modeling in use at this time, it is not practical to determine whether, or the extent to which, a single project's precursor (i.e., ROG and NO_X) emissions would potentially result in the formation of secondary ground-level ozone and the geographic and temporal distribution of such secondary formed emissions. Meteorology, the presence of sunlight, seasonal impacts, and other complex photochemical factors all combine to determine the ultimate concentration and location of ozone (SCAQMD 2012; SJVAPCD 2015). Running the regional-scale photochemical grid model used for predicting ozone attainment with the emissions from any individual project can be done, but it would not yield reliable information regarding a measurable increase in ozone concentrations sufficient to accurately quantify ozone-related health effects. Based on this information, a general description of the adverse health effects resulting from the program-level criteria pollutants, which is discussed previously, is all that can be feasibly provided at this time.

Operation

As shown in **Table 3.2-5**, *Maximum Unmitigated Regional Operational Emissions (Pounds per Day)*, all operational criteria air pollutants emissions would be well below the SCAQMD regional thresholds during operation. Operational emissions are mainly generated from mobile sources including visitors traveling to and from the wetlands for recreation and the employees who work at the visitor center. There would be a minimal amount of emissions from maintenance staff who would need to maintain the trails, access roads, and facilities within the program area. No operational mitigation measures are required.

TABLE 3.2-5
MAXIMUM UNMITIGATED REGIONAL OPERATIONAL EMISSIONS (POUNDS PER DAY)

Source	VOC	NO_X	CO	SO_2	PM10	PM2.5
Phases						
Area	1	<0.1	<0.1	<0.1	<0.1	<0.1
Energy	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile	4	4	29	<0.1	5	1
Total	**5**	**4**	**29**	**<0.1**	**5**	**1**
Maximum Regional (On-Site and Off-Site) Emissions	5	4	29	<0.1	5	1
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Over (Under)	(50)	(51)	(521)	(150)	(145)	(54)
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 A of the Air Quality Technical Report, provided in Appendix B, of this PEIR.
SOURCE: ESA, *Air Quality Technical Report*, 2019.

Table 3.2-6, *Comparison of Program-Level Operational Emissions and SCAB Emissions (Tons per Year)*, compares program-level operational emissions with South Coast Air Basin emissions. The net increase in emissions from the proposed program would be minuscule in comparison to basin-wide emissions. SCAQMD presents baseline inventories for 2019, 2022, 2023, 2025, and 2031 in their 2016 AQMP. SCAB emissions from 2031 were chosen for consistency with the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse No. 2016041083) analysis.

TABLE 3.2-6
COMPARISON OF PROGRAM-LEVEL OPERATIONAL EMISSIONS AND SCAB EMISSIONS (TONS PER YEAR)

Source	VOC	NO_X	CO	SO_2	PM10	PM2.5
Program Emissions (Operation)	0.60	0.37	2.75	0.005	0.47	0.13
2031 South Coast Air Basin Emissions	345	214	1,188	18	N/A	65
Program as Percentage of Basin	0.17%	0.17%	0.23%	0.03%	N/A	0.20%

SOURCE: South Coast Air Quality Management District, *Final 2016 Air Quality Management Plan*, Table 3-4E. Available at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf. Accessed June 2019.

Mitigation Measure

The proposed program will require implementation of Mitigation Measure AQ-1: Construction NO_X Reduction Measures. Mitigation measure AQ-1 would reduce NO_X and associated health impacts. The emission reductions are shown in **Table 3.2-7**, *Maximum Mitigated Regional Construction Emissions (Pounds per Day)*.

TABLE 3.2-7
MAXIMUM MITIGATED REGIONAL CONSTRUCTION EMISSIONS (POUNDS PER DAY)

Source	VOC	NO_X	CO	SO_2	PM10[a]	PM2.5[a]
Phases						
Demolition and Site Preparation	1	3	29	<0.1	25	4
Grading/Excavation – combined	12	70	119	28	40	10
On-Shore Emissions	*1*	*6*	*46*	*<0.1*	*38*	*7*
Off-Shore Emissions	*11*	*65*	*73*	*28*	*2*	*4*
Drainage/Utilities/Subgrade	<1	2	25	<0.1	<1	<1
Building Construction	1	4	19	<0.1	1	<1
Paving	1	1	18	<0.1	<1	<1
Architectural Coating	3	<1	2	<0.1	<1	<1
Combined Regional (On-Site and Off-Site) Emissions[b]	**18**	**80**	**212**	**28**	**66**	**15**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Over (Under)	(57)	(20)	(338)	(122)	(84)	(40)
Exceeds Thresholds?	No	No	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 A of the Air Quality Technical Report, provided in Appendix B of this PEIR.
[a] Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.
[b] Emissions from all subphases are combined to simulate a worst-case scenario where all subphases are occurring simultaneously.
SOURCE: ESA, *Air Quality Technical Report*, 2019.

Mitigation Measure AQ-1: Construction NO_X Reduction Measures. The Applicant for the proposed program shall be responsible for the implementation of the following construction-related NO_X reduction measures:

Require all off-road diesel-powered construction equipment greater than 50 horsepower (e.g., excavators, graders, dozers, scrappers, tractors, loaders, etc.) to comply with EPA-Certified Tier IV emission controls where commercially available. Documentation of all off-road diesel equipment used for this proposed program including Tier IV certification, or lack of commercial availability if applicable, shall be maintained and made available by the contractor to the local permitting agency (City of Seal Beach and City of Long Beach) for inspection upon request. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by the California Air Resources Board (CARB) such as certified Level 3 Diesel Particulate Filter or equivalent. A copy of each unit's certified tier specification, BACT documentation, and CARB or South Coast Air Quality Management District operating permit shall be provided at the time of mobilization of each applicable unit of equipment. If Tier IV construction equipment is not available, LCWA shall require the contractor to implement other feasible alternative measures, such as reducing the number and/or horsepower rating of construction equipment, and/or limiting the number of individual construction subphases occurring simultaneously. The determination of commercial availability of Tier IV construction equipment shall be made by the City prior to issuance of grading or building permits based on applicant-provided evidence of the availability or unavailability of Tier IV equipment and/or evidence obtained by the City from expert sources such as construction contractors in the region.

Require all main engines for tugboats to comply with EPA-Certified Tier IV emission controls.

Eliminate the use of all portable generators. Require the use of electricity from power poles rather than temporary diesel or gasoline power generators.

Provide temporary traffic controls such as a flag person, during all phases of construction to maintain smooth traffic flow, including during the transportation of oversized equipment and vehicles.

Provide dedicated turn lanes for movement of construction trucks and equipment on and off-site. The location of these dedicated lanes shall be addressed in the Construction Trip Management Plan.

Reroute construction trucks away from congested streets or sensitive receptor areas.

Prohibit the idling of on-road trucks and off-road equipment in excess of 5 continuous minutes, except for trucks and equipment where idling is a necessary function of the activity, such as concrete pour trucks. The Applicant or construction contractor(s) shall post signs at the entry/exit gate(s), storage/lay down areas, and at highly visible areas throughout the active portions of the construction site of the idling limit.

On-road heavy-duty diesel haul trucks with a gross vehicle weight rating of 19,500 pounds or greater used to transport construction materials and soil to and from the program area shall be engine model year 2010 or later or shall comply with the USEPA 2007 on-road emissions standards.

Significance after Mitigation

Less than Significant with Mitigation (construction); Less than Significant (operation)

Impact AQ-3: The proposed program would result in a significant impact if the program would expose sensitive receptors to substantial pollutant concentrations.

Construction

The South Coast Air Basin is in attainment of the NAAQS for PM10, CO and SO_2, and also in attainment of the CAAQS for CO and SO_2. As shown in Table 3.2-4, the proposed program would not exceed the SCAQMD regional thresholds for these pollutants during construction. Sensitive receptors surround the program area with residents located adjacent to the southern border of the program area (see Figure 3.2-1). Typically, SCAQMD’s Localized Significance Threshold (LST) Methodology (June 2003, revised July 2008) relies on on-site mass emission rate screening tables and project-specific dispersion modeling, where appropriate. The program area includes both Seal Beach, located in Source Receptor Area (SRA) 18 and Long Beach, located in SRA 4.

Construction screening LSTs for both cities are shown in **Table 3.2-8**, *Construction Screening LSTs (Pounds per Day)*, for a 5-acre area and a receptor distance of 50 meters for SRA 4 and

25 meters for SRA 18. Compared to Table 3.2-4, if only on-site emissions (no offshore tugboat and survey boat emissions) are considered, then the unmitigated on-site construction emissions would exceed the construction screening LSTs for NO_X, PM10, and PM2.5.

TABLE 3.2-8
CONSTRUCTION SCREENING LSTS (POUNDS PER DAY)

Source	NO_X	CO	PM10	PM2.5
SRA 4 LST Thresholds (25-meter receptor distance)	123	1,530	14	8
SRA 18 LST Thresholds (25-meter receptor distance)	197	1,711	14	9

NOTE:

LST thresholds are listed for a 5-acre site. Receptor distances were chosen based on the nearest sensitive receptor. Within Seal Beach, there are residences directly south and adjacent to the program boundary. Within Long Beach, there are residences within 50 meters across from the Los Cerritos Channel.

SOURCE: SCAQMD, Table C-1, 2006–2008 Thresholds for Construction and Operation with Gradual Conversion of NO_X to NO_2. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2.

However, on-site emissions for the proposed program will vary greatly in location and by subphase for the proposed program. Therefore, it is not possible to conduct a quantified localized analysis without speculating due to the uncertainty of the specific locations, timing, and intensity of construction activities, particularly in areas near sensitive receptors. Without a specific quantitative analysis, the impact to sensitive receptors at the program-level during construction would be considered potentially significant.

Operation

During operation, all criteria pollutants would be below the SCAQMD regional thresholds (Table 3.2-5). Operational activities would include mobile trips by visitors and minimal maintenance of the wetlands once established. Passenger vehicles would be spread out within the entire program area as there would be multiple parking areas and overlook terraces. Siting of these locations would account for the potential of ongoing emissions in the vicinity of a sensitive receptor. Therefore, mobile emissions would not be concentrated by any one sensitive receptor. As discussed above, SCAQMD's LST Methodology (June 2003, revised July 2008) relies on on-site mass emission rate screening tables and project-specific dispersion modeling, where appropriate. Operational screening LSTs for the program area are shown in **Table 3.2-9**, *Operational Screening LSTs (Pounds per Day)*, for a 5-acre area and a receptor distance of 25 meters for SRA 4 and 25 meters for SRA 18. Compared to Table 3.2-5, the unmitigated on-site operational emissions would not exceed any of the operational screening LSTs since most of the operational emissions are from mobile sources (off site).

TABLE 3.2-9
OPERATIONAL SCREENING LSTS (POUNDS PER DAY)

Source	NO_X	CO	PM10	PM2.5
SRA 4 LST Thresholds (25-meter receptor distance)	123	1,530	4	2
SRA 18 LST Thresholds (25-meter receptor distance)	197	1,711	4	2

NOTE:
LST thresholds are listed for a 5-acre site. Receptor distances were chosen based on the nearest sensitive receptor. Within Seal Beach, there are residences directly south and adjacent to the program boundary. Within Long Beach, there are residences within 50 meters across from the Los Cerritos Channel.

SOURCE: SCAQMD, Table C-1, 2006–2008 Thresholds for Construction and Operation with Gradual Conversion of NO_X to NO_2. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2.

Toxic Air Contaminants

A quantitative evaluation of emissions from toxic air contaminants, particularly for program construction activities, would be speculative given the uncertainty of the specific locations, timing, and intensity of construction activities. Therefore, a construction Health Risk Assessment (HRA) cannot be conducted for the program-level analysis without speculating on the locations, timing, and intensity of construction activities. Localized air quality emissions, including toxic air contaminants, would be evaluated quantitatively at the project-level when adequate information is known for individual wetland restoration projects. For example, the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse Number 2016041083) found cancer risk to be less than significant after mitigation. At the program-level, any subsequent projects within the program area would be required to implement Tier IV engines per Mitigation Measure AQ-1. This would reduce NO_X emissions and other TACs (including diesel particulate matter). However, without a specific construction scenario, impacts to toxic air contaminants at the program-level would be considered potentially significant.

Mitigation Measure

Mitigation Measure AQ-1.

Significance after Mitigation

Significant and Unavoidable (construction); Less than Significant (operation)

Impact AQ-4: The proposed program would result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Construction

As shown in Table 3.2-4, construction emissions associated with the proposed program would not exceed the SCAQMD regional significance thresholds for the federal and state attainment pollutants of CO and SO_2, and the federal attainment pollutant of PM10, even if the construction activities were to overlap. With respect to odors, potential activities that may emit odors during construction activities include the use of architectural coatings and solvents and the combustion of diesel fuel in on- and off-road equipment. SCAQMD Rule 1113 would limit the amount of VOCs in architectural coatings and solvents reducing the potential for odorous emissions. Through mandatory compliance with SCAQMD Rules, no construction activities or materials are expected to create objectionable odors affecting a substantial number of people. Therefore, construction of the proposed program would result in less-than-significant impacts with respect to odors.

Operation

As shown in Table 3.2-4, operational emissions associated with the proposed program would not exceed the SCAQMD regional significance thresholds for the federal and state attainment pollutants of CO and SO_2, and the federal attainment pollutant of PM10. With respect to 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. Odors are regulated by SCAQMD Rule 402 for causing a nuisance. SCAQMD Rule 402 states, "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." While the program area contains active oil fields and historic landfills, the proposed program would focus on ecosystem restoration and public access improvements. Because the proposed program would decommission oil wells and pipelines, the impact to odors would be expected to be reduced compared to the existing setting. As a result, the proposed program is not expected to discharge contaminants into the air in quantities that would cause a nuisance, injury, or annoyance to the public or property pursuant to SCAQMD Rule 402. Therefore, the proposed program would not create adverse odors affecting a substantial number of people, and impacts would be less than significant.

Mitigation Measure

No mitigation is required.

Significance after Mitigation

Less than Significant

3.2.6 Cumulative Impacts

3.2.6.1 Construction

Per the SCAQMD guidance on cumulative impacts, cumulative significance is based upon project significance (SCAQMD, 2003). As shown in Impact AQ-2, the proposed program would result in potential significant impacts to air quality as program construction activities could result in an exceedance of the SCAQMD regional significance threshold for NO_X emissions during construction. With implementation of feasible mitigation measures, regional construction NO_X emissions would be reduced to less than significant. However, due to the uncertainty of the specific locations, timing, and intensity of construction activities, particularly in areas near sensitive receptors, without a specific quantitative analysis, the impact to sensitive receptors at the program-level during construction would be considered potentially significant for localized emissions.

Because the City of Seal Beach and City of Long Beach have not adopted their own citywide significance thresholds for air quality impacts, it is appropriate to rely on thresholds established by the SCAQMD (refer to *CEQA Guidelines* Section 15064.7). It would not be meaningful to sum multiple cumulative or related project emissions as there are no thresholds set for comparison. Additionally, regional emissions from a project have the potential to affect the Air Basin as a whole, and it is not possible to establish a geographical radius from a specific project site where potential cumulative impacts from regional emissions would be limited. Therefore, consistent with accepted and established SCAQMD cumulative impact evaluation methodologies, the potential for the proposed program to result in cumulative air quality impacts is assessed based on the SCAQMD thresholds. Thus, given the potentially significant localized construction impact at the project-level, cumulative localized construction air quality impacts would be potentially significant.

Mitigation Measure

Mitigation Measure AQ-1.

Significance after Mitigation

Significant and Unavoidable (construction)

3.2.6.2 Operation

Per the SCAQMD guidance on cumulative impacts, cumulative significance is based upon project significance (SCAQMD, 2003). As shown in Impact AQ-2, program operational impacts to air quality would be less than significant. Operational cumulative impacts would follow the same methodology as demonstrated for construction cumulative impacts. Therefore, the cumulative air quality impacts would be less than significant during operation and mitigation measures would not be required.

Mitigation Measure

No mitigation is required.

Significance after Mitigation

Less than Significant

3.2.7 References

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