3.2 Air Quality

This section describes effects on air quality that would be caused by the implementation of the Project. The following discussion addresses existing environmental conditions in the affected area, identifies and analyzes environmental impacts for the proposed Project, and recommends measures to reduce or avoid adverse impacts anticipated from Project construction, operation, and maintenance. In addition, existing laws and regulations relevant to air quality are described. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid certain impacts that would occur with the implementation of the Project. The analysis of the impacts from the Project's direct and indirect greenhouse gas emissions is provided separately in Section 3.6 (Greenhouse Gas Emissions).

3.2.1 Environmental Setting

The Project site is located in Hermosa Beach within the South Coast Air Basin (SCAB) under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). Emissions from construction and operation of the proposed Project would affect air quality in the immediate Project area and the surrounding region.

The air quality area of influence for the proposed Project includes the SCAB, which consists of the urbanized areas of Los Angeles, Riverside, San Bernardino, and Orange Counties, and the ocean areas in South Coast waters. The SCAB onshore area covers 6,000 square miles. On a more localized level, the area of influence is related to the Project site's location within SCAQMD jurisdiction. The SCAQMD has 37 separate source receptor areas (SRAs) designated within its jurisdiction related to its ambient air pollutant monitoring network, and the Project site is located in SRA 3 – Southwest Los Angeles County Coastal.

3.2.1.1 Regional Climate and Meteorology

The climate of the SCAB is characterized as Mediterranean climate with warm, dry summers and cool winters with seasonally heavy precipitation that occurs primarily during the winter months. Summers typically have clear skies, warm temperatures, and low humidity. A monthly climate summary for the City of Hermosa Beach was selected to characterize the climate of the Project area. As described in Table 3.2-1, average summer (June through September) high and low temperatures in the study area range from 77° Fahrenheit (°F) to 60°F. Average winter (December-March) high and low temperatures in the study area range from 67°F to 48°F. Hermosa Beach's climate is moderated by its location adjacent to the Pacific Ocean, meaning it is much cooler in the summer than inland locations within the SCAB and it is generally warmer than most of the inland SCAB in winter.

The average annual precipitation is approximately 13.2 inches with over 78 percent occurring between December and March and over 91 percent occurring between November and April. The months of May through October are very dry with all of these months averaging less than a half of an inch of precipitation. Little precipitation occurs during summer because a high-pressure cell blocks migrating storm systems over the eastern Pacific Ocean.

Winds across the Project area are an important meteorological parameter as they control both the initial rate of dilution and direction of pollutant dispersion. Using data from the nearby Los Angeles International Airport (LAX) winds blowing onshore from the west southwest are dominant from February through November, while the prevailing winds during December and January are from the east. At the Hawthorne Airport, the winds are dominant from the west southwest from March through September and prevailing from the west the rest of the year (WRCC, 2011). The typical wind speeds and directions for the Project area are depicted in Figure 3.2-1 using a wind rose from LAX, which is located approximately 5 miles north of the Project site. This wind rose is based on five years of data between 2005, 2006 to 2009, and 2011. As shown, there is a strong predominant onshore flow from the south southwest through the west, with higher wind speeds and more predominately onshore winds occurring during the day. The average wind speed during this five-year period was approximately 4.9 miles per hour, but the daytime (7 am to 7 pm) wind speed average is almost 6.4 miles per hour. The ocean winds adjacent to and on the beach at Hermosa Beach would be stronger on average than those monitored at LAX as the LAX meteorological station is located further inland and behind the bluffs located east of Dockweiler State Beach.

Table 3.2-1 Hermosa Beach Monthly Average Temperatures and Precipitation

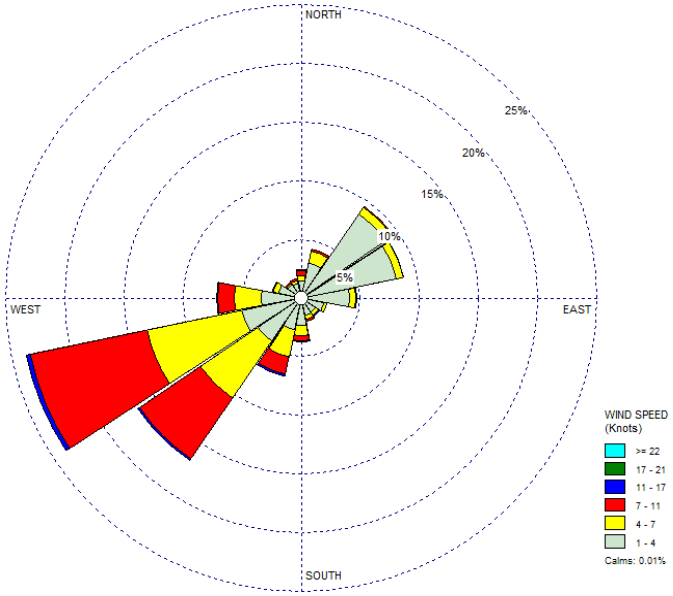
Month	Temperature (°F)		Precipitation
	Average High	Average Low	
January	66	49	2.98
February	66	50	3.11
March	65	51	2.40
April	68	54	0.63
May	69	57	0.24
June	73	60	0.08
July	75	63	0.03
August	77	65	0.14
September	77	64	0.26
October	74	59	0.36
November	70	53	1.13
December	67	48	1.79

Source: Intellicast, 2015

3.2.1.2 Air Pollutants and Monitoring Data

Air pollutants are defined as two general types: (1) "criteria" pollutants, representing six pollutants for which national and state health- and welfare-based ambient air quality standards have been established; and (2) toxic air contaminants (TACs), which may lead to serious illness or increased mortality even when present at relatively low concentrations. Generally, TACs do not have ambient air quality standards. The three TACs that do have ambient air quality standards (lead, vinyl chloride, and hydrogen sulfide) are not pollutants that are relevant to the Project. The Project would not emit any vinyl chloride or hydrogen sulfide, and only trace amounts of lead.

Figure 3.2-1. Wind Rose for LAX (2005, 2007–2009, 2011)



Source: SCAQMD, 2015a

3.2.1.3 Criteria Pollutants

The U.S. Environmental Protection Agency (USEPA), California Air Resources Board (CARB), and the local air districts classify an area as attainment, unclassified, or nonattainment depending on whether or not the monitored ambient air quality data shows compliance, insufficient data available, or non-compliance with the ambient air quality standards, respectively. The National and California Ambient Air Quality Standards (NAAQS and CAAQS, respectively) relevant to the Project are provided in Table 3.2-2. Table 3.2-3 summarizes the federal and State attainment status of criteria pollutants for the SCAQMD based on the NAAQS and CAAQS, respectively.

Table 3.2-2. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	Health Effects
Ozone (O_3)	1-hour	0.09 ppm	--	Breathing difficulties, lung tissue damage
	8-hour	0.070 ppm	0.070 ppm [1]	
Respirable particulate matter (PM10)	24-hour	50 µg/m^3	150 µg/m^3	Increased respiratory disease, lung damage, cancer, premature death
	Annual	20 µg/m^3	--	
Fine particulate matter (PM2.5)	24-hour	--	35 µg/m^3	Increased respiratory disease, lung damage, cancer, premature death
	Annual [2]	12 µg/m^3	12 µg/m^3	
Carbon monoxide (CO)	1-hour	20 ppm	35 ppm	Chest pain in heart patients, headaches, reduced mental alertness
	8-hour	9.0 ppm	9 ppm	
Nitrogen dioxide (NO_2)	1-hour	0.18 ppm	0.100 ppm [2]	Lung irritation and damage
	Annual	0.030 ppm	0.053 ppm	
Sulfur dioxide (SO_2)	1-hour	0.25 ppm	0.075 ppm [2]	Increases lung disease and breathing problems for asthmatics
	3-hour	--	0.5 ppm	
	24-hour	0.04 ppm	--	

Source: CARB, 2001; CARB, 2015a

Notes:

ppm = parts per million; µg/m^3 = micrograms per cubic meter; "--" = no standards

1. The federal 8-hour ozone standard was lowered from 0.075 to 0.070 ppm on October 1, 2015. The attainment status designation is currently based on the former standard.
2. The federal standard shown is the primary standard, the secondary standard is 15 µg/m^3.
3. The new federal 1-hour NO_2 and SO_2 standards are based on the 98th and 99th percentile of daily hourly maximum values, respectively.

Table 3.2-3 Attainment Status for the SCAB

Pollutant	Attainment Status [1]	
	Federal	State
Ozone	Nonattainment/Extreme	Nonattainment
PM10	Attainment/Maintenance	Nonattainment
PM2.5	Nonattainment	Nonattainment
CO	Attainment/Maintenance	Attainment
NO_2	Attainment/Maintenance	Attainment
SO_2	Attainment	Attainment

Source: CARB, 2015b; USEPA, 2015

1. The Attainment designations shown in this table may actually be unclassified/unclassifiable or cannot be classified designations that for regulatory purposes are the same as an attainment designation.

The SCAQMD operates regional air quality monitoring stations, the nearest of which to Hermosa Beach with recent complete annual data and the one that is located within the same Source Receptor Area as Hermosa Beach is to the northwest in Los Angeles. That station located on Westchester Parkway just north of the Los Angeles International Airport monitors all of the federal criteria pollutants except PM2.5. The nearest station that monitors PM2.5 concentrations is the Compton monitoring station in the adjacent SRA 12 – South Central Los Angeles County. Table 3.2-4 presents the maximum pollutant levels measured at the Los Angeles – Westchester Parkway and Compton (PM2.5 only) monitoring stations from 2012 through 2014. Values in exceedance of the most restrictive ambient air quality standard for each pollutant and averaging period are shown in **bold**.

Table 3.2-4. Background Ambient Air Quality Data

Pollutant	Averaging Time	Maximum Concentration (ppm or µg/m³) [1]		
		2012	2013	2014
Ozone	1-hour	0.106	0.105	0.114
	8-hour	0.075	0.081	0.080
PM10	24-hour	31	38	46
	Annual	19.8	20.8	22.1
PM2.5	24-hour (98th percentile)	30.3	24.3	30.9
	Annual	11.7	12.0	12.6
CO	8-hour	2.5	2.5	1.9
NO_2	1-hour	0.062	0.078	0.087
	1-hour (98th percentile)	0.055	0.058	0.066
	Annual	0.010	0.012	0.012
SO_2	1-hour	0.005	0.010	0.015
	1-hour (99th percentile)	0.005	0.007	0.009

Source: SCAQMD, 2015b; CARB, 2015c

Notes:

ppm = parts per million; µg/m³ = micrograms per cubic meter; "—" = no data

1. Gaseous pollutant (ozone, SO_2, NO_2, and CO) concentrations are shown in ppm and particulate (PM10 and PM2.5) concentrations are shown in µg/m³.

The ambient air quality data provided above shows exceedances of the State and federal ozone standards, the State PM10 standard, and the State and federal PM2.5 standards; but shows no exceedances of the State or federal CO, NO_2, or SO_2 standards. While the SCAB is still non-attainment of several AAQS, the air quality of the air basin has improved substantially since air quality regulations were enacted in the 1970s. For example, there hasn't been a single Stage II Smog Alert in the SCAB since the 1980s; and the last Stage I Smog Alert, event that used to occur 100 to 120 times a year, occurred in 2003.

3.2.1.4 Toxic Air Contaminants

TACs are compounds that are known or suspected to cause adverse long-term (cancer and chronic) and/or short-term (acute) health effects. TACs are emitted from mobile sources, including diesel particulate matter (DPM); industrial processes and stationary sources, such as dry cleaners, gasoline stations, paint and solvent operations; and stationary fossil fuel-burning combustion. The SCAQMD estimates in the draft Multiple Air Toxics Exposure Study IV (MATES IV) that over 68 percent of the background airborne air toxics risk in the SCAB is due to DPM (SCAQMD, 2014). DPM is by far the largest TAC emissions source from the Project; therefore, this EIR focuses on the impacts of DPM emissions from the Project.

3.2.1.5 Valley Fever

Coccidioidomycosis, often referred to as San Joaquin Valley Fever or Valley Fever, is one of the most studied and oldest known fungal infections. Valley Fever most commonly affects people who live in hot dry areas with alkaline soil and varies with the season. This disease, which affects both humans and animals, is caused by inhalation of arthroconidia (spores) of the fungus Coccidioides immitis (CI). CI spores are found in the top few inches of soil and the existence of the fungus in most soil areas is temporary. The cocci fungus lives as a saprophyte (an organism, especially a fungus or bacterium, which grows on and derives its nourishment from dead or decaying organic matter) in dry, alkaline soil. When weather and moisture conditions are favorable, the fungus "blooms" and forms many tiny spores that lie dormant in the soil until they are stirred up by wind, vehicles, excavation, or other ground-disturbing activities and become airborne. Agricultural workers, construction workers, and other people who are outdoors and are exposed to wind, dust, and disturbed topsoil are at an elevated risk of contracting Valley Fever (CDPH, 2013).

Most people exposed to the CI spores will not develop the disease and of 100 persons who are infected approximately 60 will have no symptoms, 40 will have some symptoms, and 2 to 4 will have the more serious disseminated forms of the disease. After recovery nearly all, including the asymptomatic, develop a life-long immunity to the disease (Guevara, 2014). African Americans, Asians, women in the 3rd trimester of pregnancy, and persons whose immunity is compromised are most likely to develop the most severe form of the disease (CDC, 2013). In addition to humans, a total of 70 different species are known to be susceptible to Valley Fever infections, including dogs, cats, and horses; with dogs being the most susceptible (LACPH, 2007).

The Project is located in an area designated as suspected endemic for Valley Fever by the Center for Disease Control (CDC, 2013). Annual case reports for 2000 through 2013 from the California Department of Public Health indicate that Los Angeles County has reported incident rates for Valley Fever that range from a rate of 0.8 to 3.3 cases per year per 100,000 population (CDPH, 2011; CDPH, 2014). These incidence rates for Los Angeles County, while rising since 2000, have remained below the State average incidence rates and have been well below the worst-case annual rates for other counties within the State during this period, occurring within the San Joaquin Valley, where there are over 300 cases per 100,000 population. Given the low incidence rate in Los Angeles County as a whole the potential for the Project construction activities to encounter and disperse CI spores and create the potential for additional Valley Fever infections is considered low.

3.2.1.6 Atmospheric Deposition

The fallout of air pollutants to the surface of the earth is known as atmospheric deposition. Atmospheric deposition occurs in both a wet and dry form. Wet deposition occurs in the form of precipitation or cloud water and is associated with the conversion in the atmosphere of directly emitted pollutants into secondary pollutants such as acids. Dry deposition occurs in the form of directly emitted pollutants or the conversion of gaseous pollutants into secondary PM. Atmospheric deposition can produce watershed acidification, aquatic toxic pollutant loading, deforestation, damage to building materials, and respiratory problems.

3.2.1.7 Sensitive Receptors

The impact of air emissions on sensitive members of the population is a special concern. Sensitive receptor groups include children and infants, pregnant women, the elderly, and the acutely and

chronically ill. According to SCAQMD guidance, sensitive receptor locations include schools, hospitals, convalescent homes, day care centers, and other locations where children, chronically ill individuals, or other sensitive persons could be exposed. In addition, this analysis includes residents as sensitive receptors.

The majority of City of Hermosa Beach consists of residential zoning, which is considered a sensitive land use for the purposes of air quality. Within Hermosa Beach, there are two primary schools, Hermosa Valley Middle School and Hermosa View Elementary School, both of which are also sensitive land uses. There are also several private schools as well as day care facilities, and a senior assisted living facility called Sunrise within the City that are also considered sensitive uses. In terms of recreational land uses, there are many public parks, the Greenbelt, beach and Strand, and the Hermosa Beach Community Center with outdoor facilities. The onshore Project components, including the directional boring locations on the beach, would generally be adjacent to residences.; Other adjacent receptors temporarily affected during Project construction would include area parks and schools. Table 3.2-5 identified the sensitive receptors that have been determined to be within one-half mile of the two proposed cable landing sites.

Table 3.2-5 Sensitive Receptors near Cable Landing Sites

Receptor	Distance from Neptune/Longfellow Avenue	Distance from 25th Street
Single-family homes	Adjacent (40 feet)	Adjacent (40 feet)
Strand & Beach	Immediately Adjacent	Immediately Adjacent
Robinson Elementary School	0.20 mile east	0.45 mile northeast
Valley Park	0.40 mile southeast	0.45 mile northeast
Shaffer Park	0.30 mile east	0.25 mile east
Children's Journey Daycare	0.50 mile southeast	0.20 mile east
St. Cross Episcopal Church	>0.50 mile southeast	0.45 mile southeast
Hermosa Valley School	>0.50 mile southeast	0.50 mile southeast

Source: (ICF, 2015a)

In addition to construction activities at the cable landing sites, the Project would have construction emissions during trenching and directional boring at multiple locations within Hermosa Beach, as well as construction of the power feed equipment (PFE) facility locations. These additional construction locations would also be adjacent to residents and nearby other sensitive receptor locations.

Project operations would be minimal, but would include periodic service calls to the emergency generator engines at each of the PFE facility locations and occasional testing of facilities.

3.2.2 Regulatory Setting

Sources of air emissions in the SCAB are regulated by the USEPA, CARB, and SCAQMD. In addition, regional and local jurisdictions play a role in air quality management. The role of each regulatory agency is discussed below.

3.2.2.1 Federal

The federal Clean Air Act (CAA) of 1963 and its subsequent amendments form the basis for the nation's air pollution control effort. The USEPA is responsible for implementing most aspects of the CAA. Basic elements of the act include the NAAQS for major air pollutants, hazardous air pollutant standards, attainment plans, motor vehicle emission standards, stationary source emission standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The CAA delegates the enforcement of the federal standards to the states. In California, the CARB is responsible for enforcing air pollution regulations. In the SCAB, the SCAQMD has this responsibility.

Other USEPA regulations promulgated under the authority of the CAA or other federal authority that are relevant, directly or indirectly, to the Project are described below.

IMO MARPOL Annex VI

The International Maritime Organization (IMO) adopted NOx limits in MARPOL (Marine Pollution) Annex VI to the International Convention for the Prevention of Pollution from Ships in 1997. These NOx limits apply to Category 3 (greater than 30 liters per cylinder displacement) marine engines installed on vessels built on or after 2000. The NOx standards are from 17.0 grams per kilowatt hour (g/kW-hr) (for less than 130 revolutions per minute [rpm]) to 9.8 g/kW-hr (for less than 2000 rpm), depending on the engine speed in rpm. The required number of countries (15 countries with not less than 50 percent of the world's shipping tonnage) ratified the Annex in May 2004, and it went into force for those countries in May 2005. The Annex has been ratified by the United States. In October 2008, the Marine Environment Protection Committee (MEPC) of the IMO unanimously adopted amendments to the MARPOL Annex VI regulations that would reduce fuel sulfur content and further reduce NO_x emissions from ocean going vessels (OGV). These requirements include global standards and tighter standards for ships that operate in areas with air quality problems, designated as Emission Control Areas (ECAs). The global fuel sulfur cap is now 3.5 percent (reduced from the former limit of 4.5 percent), which was effective on January 1, 2012, then will be reduced to 0.5 percent effective from January 1, 2020, or possibly delayed until 2015, subject to a feasibility review to be completed no later than 2018. The fuel sulfur limits applicable in ECAs were reduced to 1 percent, beginning on July 1, 2010, (from the former limit of 1.5 percent) and have been further reduced to 0.1 percent, effective from January 1, 2015. On March 26, 2010, the IMO officially designated waters off North American coasts as ECAs, in which these more stringent international fuel sulfur standards apply to ships.

Control of Emissions from New Marine Compression-Ignition Engines at or above 30 Liters per Cylinder

In December 2009, the USEPA adopted revisions to the CAA engine program to include two additional tiers of NOx standards for new Category 3 marine diesel engines installed on vessels flagged or registered in the United States (USEPA, 2009). The final near-term Tier 2 standards for newly built engines applied beginning in 2011 and require more efficient use of current engine technologies, including engine timing, engine cooling, and advanced computer controls. The Tier 2 standards will result in a 15 to 25 percent NOx reduction below the current Tier 1 levels. The final long-term Tier 3 standards for newly built engines will apply beginning in 2016 and will require the use of high-efficiency emission control technology such as selective catalytic reduction to achieve NOx reductions 80 percent below the current levels.

In addition to the NOx emission limits, the USEPA has adopted standards for emissions of hydrocarbons (HC) and CO from new Category 3 engines. The USEPA did not adopt a standard for PM emissions for Category 3 engines. However, significant PM emissions benefits will be achieved through the ECA fuel sulfur requirements that will apply to ships that operate in areas that affect United States air quality. The USEPA is also requiring engine manufacturers to measure and report PM emissions.

The USEPA has also finalized a change to the diesel fuel program, consistent with the IMO MARPOL Annex VI, which will allow for the production and sale of 1,000 ppm sulfur fuel for use in Category 3 marine vessels.

In addition, these new fuel requirements, approved in 2010, forbid the production and sale of marine fuel oil above 1,000 ppm sulfur for use in most United States waters, unless the vessel employs alternative devices, procedures, or compliance methods that achieve equivalent emission reductions. This fuel standard applies starting in 2015 and covers all areas with the ECAs in United States waters. For this Project the entire shipping route is within the North American ECA and the ECA in United States waters would extend out 200 nautical miles from the coast.

The applicant has not proposed the use of a specific cable-laying vessel, so with the exception of the fuel sulfur requirements, it is not clear how the actual cable-laying vessel used would be subject to the emissions control requirements of this rule.

Emission Standards for Marine Diesel Engines

In March 2008, the USEPA adopted more stringent emission standards for locomotives and marine compression-ignition engines. To reduce emissions from Category 1 (at least 50 horsepower] but less than 7 liters per cylinder displacement) and Category 2 (7 to 30 liters per cylinder displacement) marine diesel engines, the USEPA has established emission standards for new engines, referred to as Tier 2 marine engine standards. The Tier 2 standards were phased in from 2004 to 2007 (year of manufacture), depending on the engine size (USEPA, 1999). The 2008 final rule includes the first-ever national emission standards for existing marine diesel engines, applying to engines larger than 600 kilowatts (kW) when they are remanufactured. The rule also sets Tier 3 emissions standards for newly built engines that are phasing in from 2009. Finally, the rule establishes Tier 4 standards for newly built commercial marine diesel engines above 600 kW, based on the application of high-efficiency catalytic after-treatment technology, phasing in beginning in 2014.

The new diesel marine engine standards will reduce emissions of DPM by 90 percent and emissions of NOx by 80 percent for engines meeting Tier 4 standards, in comparison with engines meeting the current Tier 2 standards. The USEPA's three-part program: (1) tightened standards for existing marine diesel engines when they are remanufactured, taking effect as certified remanufacture systems are available starting in 2008; (2) sets near-term emission standards, referred to as Tier 3 standards, for newly built locomotive and diesel marine engines, which reflect the application of currently available technologies to reduce engine-out PM and NOX emissions and phase-in starting in 2009; and (3) applies the final long-term Tier 4 emissions standards to marine diesel engines. These standards are based on the application of high-efficiency catalytic after-treatment technology and would be phased in beginning in 2014 for marine diesel engines. These marine Tier 4 engine standards apply only to commercial marine diesel engines above 600 kW (800 horsepower) (USEPA, 2008).

This rule would be applicable to the Project's support vessels that would homeport at one of the local Southern California ports, but not the cable-laying vessel auxiliary engines, as the latter are generally manufactured overseas and would be exempt from the rule. However, the Project would use ships of opportunity to support the main cabling vessel, so while these vessels would have to comply with these regulations, depending on the vessel's engine(s) age, compliance with this regulation may not entail any specific emissions reduction.

Emission Standards for Non-Road Diesel Engines

The USEPA has established a series of cleaner emission standards for new off-road diesel engines culminating in the Tier 4 Final Rule of June 2004 (USEPA, 2004a). The Tier 1, Tier 2, Tier 3, and Tier 4 standards require compliance with progressively more stringent emission standards. Tier 1 standards

were phased in from 1996 to 2000 (year of manufacture), depending on the engine horsepower category. Tier 2 standards were phased in from 2001 to 2006, and the Tier 3 standards were phased in from 2006 to 2008.

The Tier 4 standards complement the latest 2007 and later on-road, heavy-duty engine standards by requiring 90 percent reductions in diesel particulate matter (DPM) and NO_x when compared against current emission levels. The Tier 4 standards are currently being phased in, starting with smaller engines in 2008 until all but the very largest diesel engines meet NO_x and PM standards in 2015.

Non-Road Diesel Fuel Rule

In May 2004, the USEPA set sulfur limits for non-road diesel fuel. Under this rule, sulfur levels in non-road diesel fuel are now limited to 15 ppm (USEPA, 2004b, p. 4), which make it equivalent to sulfur content restrictions of the California Diesel Fuel Regulations (described below).

Emission Standards for On-Road Trucks

To reduce emissions from on-road, heavy-duty diesel trucks, the USEPA established a series of cleaner emission standards for new engines, starting in 1988. These emission standards regulations have been revised over time. The latest effective regulation, the 2007 Heavy-Duty Highway Rule, provides for reductions in PM, NO_x, and non-methane hydrocarbon emissions that were phased in during the model years 2007 through 2010 (USEPA, 2000, p. 2).

3.2.2.2 State

In California, the CARB is designated as the responsible agency for all air quality regulations. The CARB, which became part of the California Environmental Protection Agency (Cal/EPA) in 1991, is responsible for implementing the requirements of the federal CAA, regulating emissions from motor vehicles and consumer products, and implementing the California Clean Air Act of 1988 (CCAA). The CCAA outlines a program to attain the CAAQS for O_3, NO_2, SO_2, and CO by the earliest practical date. Since the CAAQS are often more stringent than the NAAQS, attainment of these more stringent CAAQS will require more emission reductions than what will be required to show attainment of the NAAQS. Similar to the federal system, the State requirements and compliance dates are based on the severity of the ambient air quality standard violation within a region.

Other CARB regulations promulgated under the authority of the CCAA that are relevant, directly or indirectly, to the Project are described below.

California Diesel Risk Reduction Plan

CARB has adopted several regulations that are meant to reduce the health risk associated with on- and off-road and stationary diesel engine emissions. This plan recommends many control measures with the goal of an 85 percent reduction in DPM emissions by 2020. The regulations noted below, which may also serve to significantly reduce other pollutant emissions, are all part of this risk reduction plan.

Emission Standards for On-Road and Off-Road Diesel Engines

The CARB, similar to the USEPA on-road and off-road emissions standards, regulations described above, has established emission standards for new on-road and off-road diesel engines. These regulations have model year based emissions standards for NO_x, hydrocarbons, CO, and particulate matter (PM).

In-Use Off-Road Vehicle Regulation

The State has also enacted a regulation for the reduction of DPM and criteria pollutant emissions from in-use off-road diesel-fueled vehicles (CCR Title 13, Division 3, Chapter 9, Article 4.8, Section 2449). This regulation provides target emission rates for PM and NO_x emissions from owners of fleets of diesel-fueled off-road vehicles and applies to off-road equipment fleets of three specific sizes[1] and the target emission rates are reduced over time. Specific regulation requirements:

- Impose limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles;
- Require all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System, DOORS) and labeled;
- Restrict the adding of older vehicles into fleets starting on January 1, 2014; and
- Require fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies, VDECS (i.e., exhaust retrofits). (CARB, 2014, p. 1)

The construction contractor(s) who complete the construction activities for this Project, including the applicant if they use their own off-road equipment fleet, would have to comply with the requirements of this regulation.

Heavy-Duty Diesel Truck Idling Regulation

This CARB rule became effective February 1, 2005, and prohibits heavy-duty diesel trucks from idling for longer than five minutes at a time, unless they are queuing, provided the queue is located beyond 100 feet from any homes or schools (CARB, 2006).

California Diesel Fuel Regulations

Fuel Sulfur Regulation for On-Road and Off-Road Vehicles

In 2004, the CARB set limits on the sulfur content of diesel fuel sold in California for use in on-road and off-road motor vehicles (CARB, 2004). Under this rule, diesel fuel used in motor vehicles except harbor craft and intrastate locomotives has been limited to 500 ppm sulfur since 1993. The sulfur limit was reduced to 15 ppm beginning on September 1, 2006. Diesel fuel used in harbor craft in the SCAB also was limited to 500 ppm sulfur starting January 1, 2006, and was lowered to 15 ppm sulfur on September 1, 2006.

Fuel Sulfur Regulation for OGV

CARB approved an updated version of the "Fuel Sulfur and Other Operational Requirements for Ocean-Going Vessels within California Waters and 24 Nautical Miles of the California Baseline," which was approved by the Office of Administrative Law (OAL) and became legally effective on June 28, 2009; it

[1] The three off-road equipment fleet sizes covered under this regulation are:

Small – fleet or municipality with less than or equal to 5,000 total equipment horsepower; and municipality fleet in low population county, captive attainment area fleet, or non-profit training center, regardless of total horsepower.

Medium – fleet with 2,501 to 5,000 total equipment horsepower.

Large – Fleet with greater than 5,000 total equipment horsepower, and all state and federal government fleets regardless of total horsepower.

was amended again in 2011. This Fuel Sulfur Regulation for Ocean Going Vessels (auxiliary, main engines, and boilers) is designed such that it does not require USEPA authorization. The fuel requirements in the proposed regulation apply to Ocean Going Vessels (OGV) main (propulsion) diesel engines, auxiliary diesel engines, and auxiliary boilers when OGV are traveling and operating within 24 nautical miles (nm) of the California coastline. Vessel owners/operators are required to use the marine distillate fuels based on a phased approach. The Phase II fuel requirement, which became effective on January 1, 2014, specifies the use of marine gas oil (DMA) or marine diesel oil (DMB) for main engines, auxiliary engines, diesel electric engines, and auxiliary boilers at or below 0.1 percent sulfur. The applicant's OGV would be required to comply with these location specific fuel sulfur limits.

Statewide Portable Equipment Registration Program (PERP)

The PERP establishes a uniform program to regulate portable engines and portable engine–driven equipment units (CARB, 2005). Once registered in the PERP, engines and equipment units may operate throughout California without the need to obtain individual permits from local air districts, as long as the equipment is located at a single location for no more than 12 months. There may be construction equipment that would be required to be PERP registered, but there are no known operating emissions sources that would be subject to this regulation.

3.2.2.3 Local

South Coast Air Quality Management District (SCAQMD)

The SCAQMD is primarily responsible for planning, implementing, and enforcing federal and State ambient standards within this portion of the SCAB. As part of its planning responsibilities SCAQMD prepares Air Quality Management Plans and Attainment Plans as necessary based on the attainment status of the air basins within its jurisdiction. The SCAQMD is also responsible for permitting and controlling stationary source criteria and air toxic pollutants as delegated by the USEPA.

Through the attainment planning process, the SCAQMD develops the SCAQMD Rules and Regulations to regulate sources of air pollution in the SCAB (SCAQMD, 2015c). The applicable SCAQMD rules to the Project are listed below.

SCAQMD Rule 201 - Permit to Construct and Rule 202 – Permit to Operate

The emergency backup generators would be required to obtain permits to construct and operate. Additionally, the non-self-propelled portable equipment used during construction that have engines that are over 50 horsepower, such as the drill machines, would be required to obtain SCAQMD permits; or be permitted under the CARB PERP program.

SCAQMD Rule 401 – Visible Emissions

This rule prohibits discharge of air contaminants or other material, which are as dark or darker in shade as that designated No. 1 on the Ringelmann Chart or obscure an observer's view.

SCAQMD Rule 402 – Nuisance

This rule prohibits discharge of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any such persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property.

SCAQMD Rule 403 – Fugitive Dust

The purpose of this rule is to control the amount of PM entrained in the atmosphere from man-made sources of fugitive dust. Under Rule 403, no person shall conduct active operations without utilizing the applicable best available control measures to minimize fugitive dust emissions. Construction and operation fugitive dust emission sources are subject to this rule, which covers all fugitive dust emissions sources, such as excavation and other earthmoving operations, storage piles, and unpaved and paved roads.

During Project construction, best available control measures identified in the rule would be required to minimize fugitive dust emissions from proposed earth-moving and grading activities. These measures would include site watering as necessary to maintain sufficient soil moisture content.

SCAQMD Regulation XI – Source Specific Standards

This regulation is composed of several dozen individual rules, most of which are not applicable to the Project. Specific rules that may be applicable include:

- Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines. This rule, which has limited requirements for emergency standby engines, would apply to the small diesel-fired emergency generator engines (107 horsepower) that would be sited at the PFE facilities as part of the Project.
- Rule 1113 – Architectural Coatings. This rule limits the VOC contents of paints applied to various surfaces that would be applicable to any construction painting operations.
- Rule 1166 – Volatile Organic Compound Emissions from Decommissioning of Soils. This rule sets requirements to control emissions from excavating, grading, handling and treating VOC-contaminated soils that may be encountered during Project construction. The proposed Project site does not have known contamination issues. Regardless if VOC contaminated soils are discovered during Project construction, this rule would apply and the Project would have to comply with applicable parts of this rule.

Vessel Speed Reduction Program

In May of 2001, USEPA Region 9, CARB, SCAQMD, the Port of Long Beach, the Port of Los Angeles, the Pacific Merchant Shipping Association (PMSA), and the Marine Exchange of Southern California signed a Memorandum of Understanding (MOU) to voluntarily reduce the speed of OGV to 12 knots or less within 20 nautical miles of Point Fermin. Reduction in speed demands less power on the main engine, which in turn reduces fuel usage and emissions, except under very slow/very low engine load conditions. The Port of Long Beach and Port of Los Angeles Clean Air Action Plan (CAAP) expands the program out to 40 nautical miles from Point Fermin. The applicant has agreed to reduce the main lay vessel speed, which has a maximum speed of 16.9 knots, a service speed of 12 knots, and an economic speed of 10 knots; to a speed of 9 knots during vessel transit.

City of Hermosa Beach

The City of Hermosa Beach does not have any plans or policies related to air quality in the currently approved General Plan and Local Coastal Plan. The City is in the process of updating these plans and the environmental and regulatory setting information provided above was prepared to be as consistent as possible with the Air Quality Section of the Existing Conditions Report, which was prepared by the City in 2014 as part of this ongoing planning process (City of Hermosa Beach, 2014). However, the updated General Plan and Local Coastal Plan will not be completed within the timeframe of this Project's environmental review.

3.2.3 Impact Analysis

This section evaluates air quality impacts associated with the construction and operation of the proposed Project. This includes the evaluation of the air pollutant emissions, including air toxics emissions, and their impacts related to the marine cable-laying activities and the onshore construction activities.

Existing air quality conditions, as described above in Section 3.2.1, were used as a baseline to identify impacts associated with Project implementation. The proposed Project's construction and operation emissions were evaluated against the numeric SCAQMD significance thresholds identified below to determine project impacts. Non-numeric significance thresholds have been evaluated qualitatively. This impact analysis includes the evaluation of marine vessel emissions out to 40 nautical miles (NM) from shore per SCAQMD guidance. Appendix B includes emissions calculations out to 200 NM from shore.

3.2.3.1 Methodology/Approach

The air quality impact analysis considers the proposed Project's air pollutant emissions estimate provided by the applicant (ICF, 2015b), which was reviewed and then modified by the applicant to address completeness, accuracy, and other adequacy issues discovered during the review. The revised applicant air pollutant emissions estimate (ICF, 2015a) is generally considered adequate, although it did not consider vessel port calls in the localized impacts analysis, which is included in this section's analysis. The final corrected version of the air pollutant emissions estimate for the Project is provided in Appendix B (Air Pollutant Emissions Calculations). Appendix B identifies the air pollutant emissions estimate assumptions and the emission factor sources used in the estimate, that include air pollutant emissions factor sources from USEPA and CARB for the proposed Project's marine vessel and onshore construction emissions sources and onshore operation emission sources.

3.2.3.2 Significance Thresholds

An Air Quality impact would be considered significant if the proposed Project's construction, operation, or retirement would:

- Be inconsistent with the applicable adopted Air Quality Management Plan (AQMP).
- Generate emissions of criteria air pollutants that would exceed SCAQMD regional significance thresholds.
- Generate emissions of criteria air pollutants that would exceed SCAQMD localized significance thresholds.

The table to the right provides the emissions thresholds based on a 1-acre project site size at different distances to receptors within Source Receptor Area 3.

SCAQMD Regional Emissions Thresholds		
Pollutant	Emissions Thresholds (lbs/day)	
	Construction	Operation
NOx	100	55
VOC	75	55
PM10	150	150
PM2.5	55	55
SOx	150	150
CO	550	550

The onshore construction activities can be assumed to be within 25 meters of a receptor, and the offshore marine cabling activities can be assumed to be more than 500 meters from a receptor and so do not require impact analysis. Based on a review of the size, active area for the proposed ship types, and the surrounding land uses, of King's Harbor and the Ports of Los Angeles and Long Beach; the marine vessel ship call/berthing activities that may occur in Kings Harbor could be within 50 meters of receptors, while the one-time cabling vessel ship call/berthing within the Port of Los Angeles/Long Beach is assumed to be more than 500 meters from sensitive receptors.

SCAQMD Localized Significance Thresholds (one-acre site)					
	Distance to Receptor				
Pollutant	25 Meters	50 Meters	100 Meters	200 Meters	500 Meters
Construction and Operation (lbs/day)					
NOx	91	93	107	139	218
CO	664	785	1,156	2,228	7,269
Construction (lbs/day)					
PM10	5	14	28	56	140
PM2.5	3	5	9	21	75
Operation (lbs/day)					
PM10	1	4	7	14	34
PM2.5	1	2	3	5	18

- Generate emissions of toxic or hazardous air pollutants that exceed SCAQMD significance thresholds.
- Subject individuals to substantial risk of Valley Fever infection.
- Create and subject a substantial number of people to objectionable odors.

SCAQMD Air Toxics Thresholds	
Impact	Impact Threshold
Cancer Risk	≥ 10 in 1 million
Cancer Burden	>0.5 excess cancer cases (in areas with risk >1 in a million)
Chronic Hazard Index	≥ 1
Acute Hazard Index	≥ 1

3.2.3.3 Impacts and Mitigation Measures

Consistency with the Air Quality Management Plan

The proposed Project would produce emissions of nonattainment pollutants primarily from diesel-powered marine vessels, mobile on-road vehicles, and off-road equipment sources during construction. The 2007 AQMP, the federally approved air quality management plan, and the 2012 AQMP (the local and State approved air quality plan) propose emission reduction measures that are designed to bring the SCAB into attainment of the NAAQS and CAAQS. The attainment strategies in these plans include mobile source control measures and clean fuel programs that are enforced at the federal and state levels on engine manufacturers and petroleum refiners and retailers.

The SCAQMD adopts AQMP control measures into the SCAQMD rules and regulations, which are then used to regulate sources of air pollution in the SCAB. The proposed Project would comply with these regulatory requirements. Therefore, the proposed Project's emission sources would conform with the emissions control forecasts for all approved AQMP control measures.

Since the 2007 and 2012 AQMP assume growth that is consistent with the implementation of this Project, where this Project is not growth inducing, it would not exceed the future growth projections in the AQMPs, and it would not conflict with or obstruct implementation of the State Implementation Plan (SIP). As a result, construction and operation of the proposed Project would conform to the applicable AQMPs.

Regional Air Pollutant Emissions Impacts

Impact AQ-1: Project construction emissions would exceed SCAQMD regional criteria pollutant emissions thresholds.

The Project's maximum daily construction emissions estimate considered each of the four construction phases onshore and offshore maximum equipment use and throughputs, worst-case construction phase overlap, and implementation of the applicant-proposed mitigation measures for main lay cabling ship vessel speed reduction. The worst-case daily construction emissions occur during marine construction activities, when they do not overlap with terrestrial construction. Detailed assumptions for the construction phases, including the schedule for and types of all marine and terrestrial construction equipment and on-road vehicle use, are provided in Appendix B (Air Quality and Greenhouse Gas Calculations). Table 3.2-6 compares the maximum daily construction emissions of the Project with the SCAQMD regional significance thresholds.

Table 3.2-6. Maximum Daily Construction Emissions (lbs/day)

	VOC	CO	NO_x	SO_x	PM10	PM2.5
Phase 1-4 Marine Construction	150	354	2,844	71	69	65
SCAQMD Regional Significance Thresholds	75	550	100	150	150	55
Significant?	Yes	No	Yes	No	No	Yes

Source: Appendix B; SCAQMD, 2015d

The maximum daily emissions occur during the marine construction phase of the Project, and these emissions, which are primarily from the cabling vessel engines, exceed the SCAQMD emissions significance thresholds for VOC, NOx, and PM2.5. This maximum emissions period during construction, which would occur under each of the four construction phases, is during early cable laying when there is the potential for diver-assisted and ROV-assisted cable burial activities to be occurring concurrently. There is only one construction period where there is overlap in the marine and terrestrial construction activities, which occurs over 8 days of the marine boring schedule where there is marine HDD installation support. The NOx emissions during this period are above the SCAQMD threshold, and the marine NOx emissions are dominant in this emissions overlap. The maximum daily emissions during the rest of the non-concurrent terrestrial construction activities are well below the SCAQMD regional emissions significance thresholds.

The Project has an expected life of about 25 years. Upon retirement of the Project, the applicant anticipates that both the marine and terrestrial cable systems would be abandoned in place, meaning they would not be removed (see Section 2.7, *Retirement, Abandonment, or Removal of the Cable Systems*). If the cables are completely abandoned in place, there would be no air pollutant emissions associated with the retirement of the Project. It is possible that the Coastal Commission would require removal of the cable from State waters. If that occurs, emissions would be generated by the vessels involved in removing the cable and transporting it away for disposal. The details of such an operation are not known at this time, but it is expected that the scale of the operation would be similar to that of cable installation.

For the terrestrial cables, it is possible that the terrestrial cable would be pulled out of the buried conduit after Project retirement, leaving the conduit itself in place. If this occurs, air pollutant emissions would occur from the use of a truck with a reel puller that would pull the terrestrial cable from the existing manhole locations. The emissions associated with this limited decommissioning activity would be lower than maximum daily terrestrial construction emissions associated with the original installation of the terrestrial cables and PFE facilities, substantially lower than the maximum

daily marine construction emissions, and would be well below all SCAQMD emissions significance thresholds.

Mitigation Measures

The Project would only exceed the regional significance levels during marine construction, and during eight days of the 42-day marine boring schedule when there is marine HDD installation support where the marine HDD installation support is the dominant source of the estimated daily NOx emissions that exceed the SCAQMD regional thresholds. Therefore, the mitigation proposed below is focused on the reduction of marine vessel emissions. The main lay vessel would be reducing emissions through the applicant-proposed measure of vessel speed reduction during transit and through using low-sulfur fuels. Other ocean going vessel emission reduction measures, such as retrofitting engines, are not feasible for this type of specialty vessel that is not regularly berthed in California and that would only be in use for the Project within California waters during the limited Project marine construction periods.

The other marine vessels that would be in use during Project construction are support vessels that would be locally berthed. To reduce air pollutant emissions from these vessels the following mitigation measure has been developed.

AQ-1 **Support Vessel Emissions Reduction.** The support vessels shall reduce emissions by: (1) reducing normal transit speeds by 2 knots; (2) by berthing at Kings Harbor assuming appropriately sized slips are available during the Project's marine construction period; and (3) support vessels that have Tier 2 engines or better shall be used if available.

While this mitigation measure would reduce potential emissions from the support vessels, the worst-case daily emissions of VOC, NOx, and PM2.5 from the cabling vessel engines would remain well above the SCAQMD regional thresholds during Project construction, so regional air pollutant impacts would be significant and unavoidable (Class I).

Impact AQ-2: If marine cable repairs are required during Project operations, repair activities would generate criteria pollutant emissions.

The Project's normal operation consists of weekday inspections, requiring a vehicle trip, and monthly testing of a standby diesel-fueled emergency generator engine. The maximum daily emissions from normal operations are provided below in Table 3.2-7.

Table 3.2-7. Maximum Daily Operation Emissions (lbs/day)

	VOC	CO	NO_x	SO_x	PM10	PM2.5
Emergency Generator	0.1	0.7	1.7	0.0	0.1	0.1
On-Road Vehicle	0.0	0.8	0.1	0.0	0.0	0.0
Total	0.1	1.5	1.8	0.0	0.1	0.1
SCAQMD Regional Significance Thresholds	55	550	55	150	150	55
Significant?	NO	NO	NO	NO	NO	NO

Source: Appendix B; SCAQMD, 2015d

The normal maximum daily emissions, as shown above in Table 3.2-7 are well below the SCAQMD regional emissions significance thresholds.

The worst-case non-routine maintenance event is assumed to be marine cable repair. Such an event, which is not anticipated but could occur, has estimated air pollutant emissions that would exceed the NOx SCAQMD regional emissions significance thresholds. These calculations, presented in Appendix B,

use the same relevant marine vessel emissions factors as used for the construction marine vessels. Due to differences in the total marine vessel engine use assumptions for a marine cable repair event versus the initial cable installation, the VOC and PM2.5 emissions that were found to be marginally above the SCAQMD regional daily emissions threshold for construction would be marginally below that threshold during a cable repair event. If this type of worst-case event were to happen, the actual emissions could be lower if newer lower emitting marine vessels are available to make the repair. However, as this is not an expected event, and relates to an upset condition, it is not considered as the normal operating emissions case that is compared to the SCAQMD regional emissions significance thresholds.

The normal operation emissions are well below the SCAQMD regional emissions thresholds and would not result in a significant impact (Class III).

Local Air Pollutant Emissions Impacts

Impact AQ-3: Project construction would expose local receptors to pollutant emissions.

The proposed Project's construction includes marine and terrestrial activities. The localized portion of these emissions are the worst-case job site emissions for the terrestrial construction and the potential worst-case at berth emissions for the support vessels in Kings Harbor, which would be required under Mitigation Measure AQ-1. The other marine emissions occur either in transit and/or would occur greater than 500 meters from shore and from receptors. The SCAQMD LST analysis is suggested only for emissions sources located within 500 meters of a receptor. The main lay vessel would also come to port to provision, but that would be the Port of Long Beach or the Port of Los Angeles where distances to receptors are most likely to be greater than 500 meters. The other regular operation emissions are mobile emissions that are not included as site-specific localized emissions. The significance thresholds use the SCAQMD look-up table values for a 1-acre site and 25-meter distance to receptor for the terrestrial construction emissions, and 50-meter distance to receptor for the Kings Harbor service vessel emissions at berth. The maximum daily localized emissions from normal operations, compared to the significance criteria are provided below in Table 3.2-8.

Table 3.2-8. Maximum Daily Localized Construction Emissions (lbs/day)

	CO	NO_x	PM10	PM2.5
Phase 1 – Terrestrial Construction	16	29	1.3	1.2
Phase 2 – Terrestrial Construction	10	9	0.5	0.4
Phase 3 – Terrestrial Construction	10	6	0.3	0.3
Phase 4 – Terrestrial Construction	10	4	0.2	0.2
SCAQMD Localized Significance Thresholds [1]	664	91	5	3
Significant?	No	No	No	No
Phase 1-4 Kings Harbor Service Vessel Emissions	3.1	5.7	0.3	0.3
SCAQMD Localized Significance Thresholds [2]	664	91	5	3
Significant?	No	No	No	No

Source: Appendix B; SCAQMD, 2015e

1 – These represent SRA 3 values for one acre site and 25 meters from receptor.

2-These represent SRA 3 values for one acre site and 50 meters from receptor.

As shown above in Table 3.2-8, construction of the Project would have emissions that are well below the SCAQMD localized significance thresholds, and so would not result in significant impacts (Class III).

Impact AQ-4: Project operation would expose local receptors to pollutant emissions.

The Project's normal operation consists of weekday inspections, requiring a vehicle trip, and monthly testing of a standby diesel-fueled emergency generator engine. The localized portion of these emissions are from the stationary standby emergency generator testing events. The other regular operation emissions are mobile emissions that are not included as site-specific localized emissions. The significance thresholds use the SCAQMD look-up table values for a 1-acre site and 25-meter distance to receptor. The maximum daily localized emissions from normal operations, compared to the significance criteria are provided below in Table 3.2-9.

Table 3.2-9. Maximum Daily Localized Operation Emissions (lbs/day)

	CO	NO_x	PM10	PM2.5
Standby Generator Test Emissions	0.7	1.7	0.1	0.1
SCAQMD Localized Significance Thresholds	664	91	1	1
Significant?	No	No	No	No

Source: Appendix B; SCAQMD, 2015e

As shown above in Table 3.2-9, operation of the proposed Project would have emissions that are well below the SCAQMD localized significance thresholds, and so would not result in significant impacts (Class III).

Air Toxic Pollutant Emissions Impacts

Impact AQ-5: Project construction, operation, and decommissioning emissions would generate air toxic pollutant emissions.

The bulk of the proposed Project's TAC emissions are primarily associated with the DPM emissions from the diesel-fueled marine engines during Project construction. A much smaller amount of DPM would be emitted from the onshore off-road and on-road engines during Project construction. The TAC emissions from Project operation are limited to the negligible emissions of occasional inspection trips and testing of a diesel-fueled standby generator. So, the primary potential health risk would be related to the carcinogenic and chronic risks from DPM exposure during Project construction. The proposed Project's marine DPM emissions constitute the majority of the project's DPM emissions, but those emissions, which would total 1.6 tons (for emissions within 40 nautical miles of shore) over the Project's entire 10 year construction period, which includes less than 10 months of construction activity on and off over the ten year period. These marine DPM emissions would occur over a very large offshore area much of which would be miles from any receptors. The Project's terrestrial DPM emissions would be less than 0.1 tons over the entire project construction period, and those emissions would be spread over a large area of Hermosa Beach. In comparison, the entire South Coast Air Basin was estimated to have over 5,000 tons of DPM emissions in 2010 (CARB, 2013). Comparatively, the Project's annual average terrestrial DPM emissions are less than 0.01 tons per year and the Project's offshore DPM emissions would average less than 0.2 tons per year over the Project's ten year construction period. Therefore, the Project's short-term TAC emissions are not considered to be of concern in relation to the potential long-term health risk impacts from DPM exposure.

Therefore, given that vast majority of the proposed Project's TAC emissions are temporary and are spread over a large marine and terrestrial area the health risk impacts from the proposed Project would not be significant (Class III).

Valley Fever

Impact AQ-6: Project construction, operation, and decommissioning emissions would present a risk of infection from exposure to Valley Fever.

Earthmoving and other activities that cause fugitive dust emissions can cause *C. immitis* arthrospores, if present, to become airborne. The proposed Project would require some earthmoving; however, much of the temporary impact area would either be at the beach or would be below existing roadways or other paved/constructed areas that would not have been subject to long-term *C. immitis* fungal growth. So, while the *C. immitis* fungus may exist in the Project area, the risk of Project activities causing Valley Fever infection is considered low due to the characteristics of the Project area and the implementation of the SCAQMD Rule 403 required fugitive dust mitigation measures for this Project that would substantially reduce fugitive dust emissions. Therefore, Valley Fever impacts would not be significant (Class III).

Odor Impacts

Impact AQ-7: Objectionable odors that would affect a substantial number of people would be created during Project construction, operation, and decommissioning.

Some mildly objectionable odors may be temporarily created during construction or decomissioning-related activities, such as from diesel exhaust. Additionally, occasional standby diesel generator use could create mildly objectionable odors during Project operation. However, no significantly malodorous substances would be used during Project construction, decommissioning, or operation. Therefore, due to the limited and mild odors created during Project construction, these odors would not affect a substantial number of people. Odor impacts would be not be significant (Class III).

3.2.3.4 Cumulative Effects

Geographic Extent/Context

The geographic area of analysis for cumulative air quality impacts is generally limited to areas within one mile of any work area. This maximum area is defined because air quality impacts quickly disperse, or dissipate, over distance from the source of emissions and would not have a substantial additive effect with other emissions sources that are located more than a mile away. Therefore, only projects within one mile of the Project work sites, as well as projects that could adversely affect traffic during Project construction are considered projects that could, with the proposed Project, cause cumulative impacts. Additionally, only projects that are scheduled concurrently in the same area as the proposed Project are considered as projects that could contribute to cumulative impacts.

Since the proposed Project has very minor direct operating emissions, proposed Project operation is considered to have a less-than-significant cumulative air quality impact potential, including impacts AQ-2 and AQ-4 that are solely focused on operation impacts. Therefore, the cumulative impact discussion is focused on construction impacts.

Existing Cumulative Conditions

The existing ambient air quality conditions are summarized in Section 3.2.1. The Project is located in a portion of the SCAB that is designated as nonattainment of the federal and State ozone and PM2.5 standards and the State PM10 standard. Air quality has improved over time as various regulations affecting emissions sources, such as the mobile and stationary sources regulations enacted by CARB

and SCAQMD, have started to take effect. As noted in Section 3.2.1, concentrations of all criteria pollutants within the SCAB have gone down, even considering significant population growth, since major air quality regulations were enacted in the 1970s. Air quality is forecast to improve slowly within the SCAB as current regulations continue to reduce air pollutant emissions from stationary, mobile, and area emission sources.

Cumulative Impact Analysis

The potential for air quality impacts of the proposed Project (described in Section 3.2.2.2) to combine with the effects of other proposed, planned, and reasonably foreseeable future projects, as listed in Table 3-1 and shown in Figure 3-1 that are within the geographic extent of the cumulative analysis are described below for each significance criterion.

Consistency with the Air Quality Management Plan. This criterion is a project-specific analysis, there are no cumulative project impacts related to this criterion. (Impact AQ-1)

Regional Air Pollutant Emissions Impacts. The Project was found to have significant regional criteria pollutant emissions impacts during construction. The SCAQMD thresholds used for significance determination are project-specific thresholds and the SCAQMD has not developed separate cumulative emissions thresholds. However, the SCAQMD regional thresholds are often applied to assess cumulative impacts by considering the on-site emissions from nearby projects (typically a one-mile radius). The emissions from the Project, including the worst-case maximum daily emissions overlap would occur over a large area when considering a one-mile radius from all Project construction activities. Some of the cumulative projects listed in Table 3-1 would either not be active at the same time as the Project's construction or are located more than a mile from the Project. However, some could both be active and are within one mile of the Project. Therefore, the Project could make a substantial contribution to regional air quality cumulative impacts during construction. (Impact AQ-2)

Local Air Pollutant Emissions Impacts. The SCAQMD LST lookup tables used to determine Project significance for criteria pollutants do not apply to cumulative project evaluation; in fact, the SCAQMD LST guidelines do not mention cumulative project impact analysis (SCAQMD, 2008). However, the significance criteriaare based on downwind pollutant concentrations causing a new exceedance (NOx and CO) of an air quality standard, or substantially increasing current exceedances (PM10 and PM2.5) of an air quality standard, and these general criteria are applicable standards for localized impact cumulative project analysis. For the emissions of any two projects to have the potential for significant cumulative downwind concentrations, they must both be concurrent and in close proximity to limit the downwind dispersion from one site to the other. None of the known cumulative projects would have large amounts of concurrent and adjacent air pollutant emissions to the Project's construction sites. Therefore, it can be assumed that the potential for cumulative impacts to sensitive receptors is the same as the Project impacts to sensitive receptors, so the proposed Project's construction would not make a substantial contribution to cumulative impacts on sensitive receptors from criteria pollutants after mitigation (Impact AQ-3).

Air Toxic Pollutant Emissions Impacts. Construction activities associated with the Project do not have large amounts of toxic air contaminant emissions, other than DPM, and are of short duration. The majority of the DPM emissions occur at large distances from receptors during the marine construction activities, and the terrestrial construction does not have significant emissions in any single area that could create a significant risk or contribute a cumulatively considerable risk to local populations. Given the temporary nature and low TAC emission levels for the proposed Project's terrestrial construction

activities, the proposed Project would not make a substantial contribution to cumulative health risk impacts. (Impact AQ-5)

Given the low incidence rates for Valley Fever in the Project area, the low potential for fugitive dust emissions for this Project, which must comply with SCAQMD Rule 403, the Project would not make a substantial contribution to cumulative Valley Fever impacts. (Impact AQ-6)

Odor Impacts. The Project would have minimal odor impacts and would not create cumulative odor impacts or substantially contribute to significant odor impacts and so not make a substantial contribution to cumulative odor impacts. (Impact AQ-7)

3.2.3.5 Summary of Impacts, Mitigation Measures, and Significance Conclusions

Table 3.2-10, below, provides a summary of the Project's significant impacts (Class I or Class II) related to air quality. The table also indicates the mitigation measures proposed to reduce these significant impacts.

Table 3.2-10. Summary of Air Quality Impacts, Mitigation Measures, and Significance Conclusions

Impact	Mitigation Measures	Significance Conclusion
Impact AQ-1: Project construction emissions would exceed SCAQMD regional criteria pollutant emissions thresholds.	AQ-1 Support Vessel Emissions Reduction.	Class I

Class I: **Significant impact; cannot be mitigated to a level that is not significant.** A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: **Significant impact; can be mitigated to a level that is not significant.** A Class II impact is a significant adverse effect that can be reduced to a less-than-significant level through the application of feasible mitigation measures presented in this EIR.