Section 3.1
Air Quality and Meteorology

SECTION SUMMARY

Section 3.1, Air Quality and Meteorology, provides:

- A description of existing air quality in the Port area;
- A list of local, state, and federal regulations and policies that apply to the Berths 148-151 Phillips 66 proposed Marine Oil Terminal (MOT) improvements (Proposed Project) as well as the alternatives;
- A discussion of the methodology used to determine whether the Proposed Project, the Reduced Project Alternative (Alternative 2), and the No Project Alternative (Alternative 1) would result in an impact on air quality from air emissions (a full description is provided in Appendix B1-B3 of this Draft Environmental Impact Report (Draft EIR);
- An impact analysis of the Proposed Project and alternatives; and
- A description of mitigation and lease measures proposed to reduce potential impacts.

Key Points of Section 3.1

Construction Impacts

Construction of the Proposed Project or the Reduced Project Alternative (Alternative 2) would not result in significant impacts from emissions of volatile organic compounds (VOC), carbon monoxide (CO), nitrogen oxides (NO_X), sulfur oxides (SO_X), or respirable particulate matter (PM) less than 2.5 micrometers in diameter ($PM_{2.5}$). However, construction of the Proposed Project would result in exceedances of the South Coast Air Quality Management District (SCAQMD) ambient air quality significance threshold for 24-hour average particulate matter less than 10 micrometers in diameter (PM_{10}) during the 2026, 2027, and 2028 construction years. (As described in Section 2.5.1, the assumed dates are for analytical purposes only and mean that the analysis is conservative, as a later start date would result in cleaner construction and operational equipment being used.) Accordingly, emissions of PM_{10} from construction would represent a significant impact. The largest contributor to construction-related peak daily PM_{10} emissions is fugitive dust from off-road construction activity. The Proposed Project includes implementation of the following mitigation measures (MM), which are set forth in full in Section 3.1.5.1:

MM AQ-1: On-Road Trucks Used During Construction.

MM AQ-2: Off-Road Construction Equipment

MM AQ-3: Port of Los Angeles Sustainable Construction Guidelines.

MM AQ-4: General Construction Mitigation Measure.

MM AQ-5: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks.

Taken together, MM AQ-1 through MM AQ-5 include control measures requiring construction equipment and practices cleaner than those reflected in an average regional fleet. No additional feasible mitigation measures are available. Impacts of construction PM_{10} emissions would therefore be significant and unavoidable.

The Reduced Project Alternative (Alternative 2) would result in slightly lower construction emissions, but all in-water construction would remain the same. Accordingly, it is anticipated that construction of the Reduced Project Alternative (Alternative 2) would also result in exceedance of the SCAQMD ambient air quality significance threshold for PM_{10} and impacts would be significant and unavoidable. The No Project Alternative (Alternative 1) would not involve any construction and would therefore have no air quality impacts.

Operational Impacts

Operation of the Proposed Project or the Reduced Project Alternative (Alternative 2) would result in peak daily emissions that exceed the SCAQMD regional significance thresholds for NO_X for both operational years analyzed (2027 and 2057). The Proposed Project and the Reduced Project Alternative (Alternative 2) would not result in significant regional impacts from emissions of VOC, CO, SO_X, PM_{10}, or $PM_{2.5}$ in either 2027 or 2057.

Emissions from operations in 2027 combined with overlapping construction emissions would exceed the SCAQMD ambient concentration thresholds for the federal 1-hour and state annual nitrogen dioxide (NO_2) standards and the 24-hour PM_{10} standard (construction would be completed in 2029). Accordingly, impacts would be significant. Emissions from operations alone in 2057 would not exceed any SCAQMD ambient concentration thresholds. The largest contributors to peak daily emissions of NO_X would be vessel transit and at-berth activities.

The Proposed Project would include application of Mitigation Measure MM AQ-6 and Lease Measure LM AQ-1, described in full in Section 3.1.5.1. As described in Section 3.1.4, additional feasible mitigation related to operational emissions is not available.

MM AQ-6: Vessel Speed Reduction Program (VSRP).

LM AQ-1: Periodic Review of New Technology.

After implementation of mitigation measures and lease measure, operational emissions of the Proposed Project would be reduced, but impacts of emissions of NO_X and PM_{10} would be significant and unavoidable.

The Reduced Project Alternative (Alternative 2) would result in slightly lower construction emissions, but operational emissions would remain the same. Accordingly, it is anticipated that operation of the Reduced Project Alternative (Alternative 2) would result in significant and unavoidable impacts for NO_X and PM_{10}.

Under the No Project Alternative (Alternative 1), no construction or new operational activities would occur at the Project site. The existing Berths 148-151 MOT would be permanently closed and the site is assumed to be idle for the foreseeable future. Because there would be no construction or vessel operations at Berths 148-151, there would not be any activities resulting in air emissions. Therefore, there would be no impacts on air quality.

Health Risk Impacts

The Health Risk Assessment (HRA) evaluated four different types of health effects: individual cancer risk, population cancer burden, chronic noncancer hazard index, and acute noncancer hazard index. These health effects consider the toxic air contaminants generated from construction and operations during different exposure periods over the life of a project, for distinct populations (residential, non-residential sensitive, and occupational receptors). The Proposed Project's health impacts for all four health effects on residential, non-residential sensitive, and occupational receptors would be less than significant under CEQA.

Diesel particulate matter (DPM) is the dominant risk driver among all toxic air pollutants, coming mainly from emissions from vessels while at the berth. The Reduced Project Alternative (Alternative 2) would result in slightly lower construction emissions, but operational emissions would remain the same. Accordingly, health impacts of the Reduced Project Alternative (Alternative 2) would be the same as for the Proposed Project. Health impacts of the No Project Alternative (Alternative 1) would be less than significant.

3.1.1 Introduction

Emissions from construction and operation of the Proposed Project and alternatives would affect air quality in the immediate area of the Proposed Project and the surrounding region. This section includes a description of the affected air quality environment and predicted impacts from construction and operation of the Proposed Project and alternatives. Emission and dispersion modeling details are provided in Appendices B1 (Air Quality Regulations/Methodology and Air Quality and GHG Emissions/Energy) and B2 (Air Dispersion Modeling), respectively. Appendix B3 presents the detailed health risk assessment (HRA).

3.1.2 Environmental Setting

The Proposed Project is located in the Harbor District of the City of Los Angeles, within the South Coast Air Basin (SCAB). The SCAB consists of the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties and all of Orange County. The air basin covers an area of approximately 6,000 square miles and is bounded on the west by the Pacific Ocean; on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains; and on the south by the San Diego County line.

3.1.2.1 Regional Climate and Meteorology

The climate of the SCAB is classified as Mediterranean, characterized by warm, dry summers and mild, wet winters. The major influence on the regional climate is the Eastern Pacific High (a strong persistent area of high atmospheric pressure over the northeastern Pacific Ocean), topography, and the moderating thermal effects of the Pacific Ocean. Seasonal variations in the position and strength of the Eastern Pacific High are a key factor in the weather changes in the area.

The Eastern Pacific High attains its greatest strength and most northerly position during the summer, when it is centered west of Northern California. In this location, the Eastern Pacific High effectively shelters Southern California from the effects of polar storm systems. Large-scale atmospheric subsidence associated with the Eastern Pacific High produces an elevated temperature inversion along the West Coast. The base of this subsidence inversion is generally from 1,000 to 2,500 feet (300 to 800 meters) above mean sea level during the summer. Vertical mixing of the boundary layers is often limited to the base of the inversion, and air pollutants are trapped in the lower atmosphere. The mountain ranges that surround the Los Angeles Basin constrain the horizontal movement of air and also inhibit the dispersion of air pollutants out of the region. These two factors, combined with the air pollution sources of more than 15 million people, are responsible for the high pollutant concentrations that can occur in the SCAB. In addition, the warm temperatures and high solar radiation during the summer months promote the formation of ozone, which has its highest levels during the summer.

3.1.2.2 Criteria Pollutants and Air Monitoring

Criteria Pollutants

Air quality at a given location can be characterized by the concentration of various pollutants in the air. Units of concentration are generally expressed as parts per million by volume (ppmv) or micrograms per cubic meter ($\mu g/m^3$) of air. The significance of a pollutant concentration is determined by comparing the concentration to an appropriate national or state ambient air quality standard. These standards represent the allowable

atmospheric concentrations at which the public health and welfare are protected. They include a reasonable margin of safety to protect the more sensitive individuals in the population.

Pollutants for which ambient air quality standards have been adopted are known as criteria pollutants. These pollutants can harm human health and the environment, and cause property damage due, in part, to the deposition of PM. These pollutants are called "criteria" air pollutants because they are regulated by developing human health-based and/or environmentally based criteria (science-based guidelines) for setting permissible levels. The set of limits based on human health is called the primary standards. Another set of limits intended to prevent environmental and property damage are called the secondary standards. The criteria pollutants of greatest concern in this air quality assessment are ozone (O_3), CO, NO_2, sulfur dioxide (SO_2), respirable particulate matter (PM) less than 10 micrometers in diameter (PM_{10}), and fine particulate matter less than 2.5 micrometers in diameter ($PM_{2.5}$). Lead (Pb) is also a criteria pollutant but is not a pollutant of concern for the Proposed Project as lead emissions from construction and operation would be negligible due to the use of unleaded fuels. Nitrogen oxides (NO_X) and sulfur oxides (SO_X) refer to generic groups of compounds that include NO_2 and SO_2, respectively. These oxides are produced during combustion. Because members of these compound groups typically change rapidly from one form to another, emissions from combustion sources such as diesel engines are often stated in terms of total NO_X and total SO_X emissions, rather than being listed by individual compound.

The USEPA establishes the federal National Ambient Air Quality Standards (NAAQS) and defines how to demonstrate whether an area meets the NAAQS. The California Air Resources Board (CARB) establishes the California Ambient Air Quality Standards (CAAQS), which must be equal to or more stringent than the NAAQS when initially adopted. CARB defines how to evaluate whether an area meets the CAAQS.

As discussed above, one of the main concerns with criteria pollutants is that they contribute directly to regional human health problems. The known adverse effects associated with these criteria pollutants are shown in Table 3.1-1.

Of the criteria pollutants of concern, ozone is unique because it is not directly emitted from Project-related sources. Rather, ozone is a secondary pollutant formed from the precursor pollutants volatile organic compounds (VOC) and NO_X. VOC and NO_X react to form ozone in the presence of sunlight through a complex series of photochemical reactions. As a result, unlike inert pollutants, such as CO, ozone (O_3) levels usually peak several hours after the precursors are emitted and many miles downwind of the source. Because of the complexity and uncertainty of predicting photochemical pollutant concentrations, ozone impacts are indirectly addressed in this study by comparing Proposed Project-generated emissions of VOC and NO_X to daily emission thresholds set by SCAQMD. These emission thresholds are discussed in Section 3.1.4.6.

Generally, concentrations of photochemical pollutants, such as ozone, are highest during the summer and coincide with the season of maximum solar insolation. Concentrations of other pollutants, such as PM_{10}, tend to be the greatest during the winter and are a product of light wind conditions and surface-based temperature inversions that are frequent during that time of year and that limit atmospheric dispersion. However, in the case of PM_{10} impacts from fugitive dust sources, maximum concentrations may occur during high wind events or near man-made ground-disturbing activities, such as vehicular activities on roads and earth moving during construction activities.

Table 3.1-1. Adverse Effects Associated with Criteria Pollutants

Pollutant[a]	Adverse Effects
Ozone (O_3)	(a) Short-term exposures: (1) Pulmonary function decrements and localized lung edema in humans and animals and (2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; (d) Property damage
Carbon Monoxide (CO)	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; (d) Possible increased risk to fetuses
Nitrogen Dioxide (NO_2)	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) Contribution to atmospheric discoloration
Sulfur Dioxide (SO_2)	(a) Broncho-constriction accompanied by symptoms that may include wheezing, shortness of breath, and chest tightness during exercise or physical activity in persons with asthma
Suspended Particulate Matter less than 10 Microns (PM_{10})[b]	(a) Excess deaths from short-term and long-term exposures; (b) Excess seasonal declines in pulmonary function, especially in children; (c) Asthma exacerbation and possibly induction; (d) Adverse birth outcomes including low birth weight; (e) Increased infant mortality; (f) Increased respiratory symptoms in children such as cough and bronchitis; and (g) Increased hospitalization for both cardiovascular and respiratory disease (including asthma)
Suspended Particulate Matter less than 2.5 microns ($PM_{2.5}$)[b]	(a) Excess deaths from short-term and long-term exposures; (b) Excess seasonal declines in pulmonary function, especially in children; (c) Asthma exacerbation and possibly induction; (d) Adverse birth outcomes including low birth weight; (e) Increased infant mortality; (f) Increased respiratory symptoms in children such as cough and bronchitis; and (g) Increased hospitalization for both cardiovascular and respiratory disease (including asthma)
Lead[c]	(a) Increased body burden; (b) Impairment of blood formation and nerve conduction, and neurotoxin.
Sulfates[d]	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardiopulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) Property damage

Source: SCAQMD 2017.
Notes:
[a] CAAQS have also been established for hydrogen sulfide, vinyl chloride, and visibility reducing particles. They are not shown in this table because they are not pollutants of concern for the Proposed Project.
[b] More detailed discussions on the health effects associated with exposure to suspended particulate matter can be found in USEPA's 2009 Integrated Science Assessment for Particulate Matter (USEPA 2009).
[c] Lead is not a pollutant of concern for the Proposed Project.
[d] Sulfate is not a pollutant of concern for the Proposed Project. SCAQMD has not established an emissions thresholds for sulfates.

Because most of the Proposed Project's emission sources would be diesel-powered (as described in Section 3.1.4.2 below), DPM is a key pollutant evaluated in this analysis. DPM is one of the components of ambient PM_{10} and $PM_{2.5}$. DPM is also classified as a toxic air contaminant (TAC) by CARB. As a result, DPM is evaluated in this study both as a criteria pollutant (as a component of PM_{10} and $PM_{2.5}$) and as a TAC.

Regional Air Quality

The USEPA designates all areas of the United States according to whether they meet the NAAQS. A "nonattainment" designation means that one or more of the six criteria pollutants considered as indicators of air quality exceeds the primary NAAQS in any given area, over a period of time specified by the NAAQS. States with nonattainment areas must prepare a State Implementation Plan (SIP) that demonstrates how those areas will come into attainment. The USEPA currently designates the SCAB as a nonattainment area for ozone, $PM_{2.5}$ (24-hour standard), and lead (lead is not emitted by the Proposed Project because its operations or construction would not use leaded fuels or handle lead-containing materials, lead is not a pollutant of concern for this Draft EIR). The severity of nonattainment has been classified by the USEPA for several pollutants. The USEPA currently classifies the SCAB as extreme nonattainment for the 8-hour ozone NAAQS and serious nonattainment for $PM_{2.5}$ (24-hour standard). The SCAB is in attainment/maintenance of the NAAQS for CO, SO_2, NO_2, and PM_{10}.

CARB also designates areas of the state according to whether they meet the CAAQS. A nonattainment designation means that a CAAQS has been exceeded more than once in three years. CARB currently designates the SCAB as a nonattainment area for ozone, PM_{10}, $PM_{2.5}$, and NO_2. The SCAB is in attainment of the CAAQS for CO, SO_2, lead, and sulfates, and is unclassified for hydrogen sulfide and visibility reducing particles (CARB 2022).

Local Air Monitoring

The Los Angeles Harbor Department (LAHD) has been conducting its own air quality monitoring program since February 2005. This monitoring program supports the Port's commitment to improve air quality within the San Pedro Bay Ports area under the San Pedro Bay Ports Clean Air Action Plan (CAAP; POLA 2006, 2010, 2017) by helping to better manage and provide feedback on the Port's air quality improvement efforts. The monitoring program includes a network of four air monitoring stations that measure a comprehensive suite of air pollutants within the Port's region of influence. The program includes a number of real-time air quality measurements: O_3, SO_2, NO_2, CO, two sizes of particulate matter (PM_{10} and $PM_{2.5}$), polycyclic aromatic hydrocarbons (PAHs), and ultrafine particles. As part of the program, meteorological monitoring stations operate adjacent to each air monitoring station, to help interpret the air quality data and for use in other Port programs. Each meteorological monitoring station collects wind speed, wind direction, and temperature data. In addition, one station also collects solar radiation, relative humidity, and barometric pressure data.

The monitoring stations are strategically located within the Port's region of influence at: 1) Saints Peter and Paul School (Wilmington Community Station), 2) Berth 47 in the Outer Harbor (Coastal Boundary Station), 3) Terminal Island Water Reclamation Plant (TITP) (Source-Dominated Station), and 4) along Harbor Boulevard near 3rd Street, adjacent to the San Pedro Waterfront Promenade (San Pedro Community Station). Meteorological data from the Wilmington Community Station was considered the most representative meteorological station for the Project site in accordance with the Bay-wide Sphere of Influence analysis (LAHD 2010) and was used in this air quality analysis to model criteria pollutant impacts and human health risks and associated with the Proposed Project and alternatives.

Table 3.1-2 shows the highest pollutant concentrations recorded (in parts per million [ppm]) at the Saints Peter and Paul School (Wilmington Community Station), for 2023 through 2025 – the 3-year period data relevant to the Proposed Project.

Table 3.1-2. Maximum Pollutant Concentrations (ppm) Measured at the Wilmington Community Monitoring Station (SPPS)

Pollutant	Averaging Period	National Standard	State Standard	Highest Monitored Concentration		
				2023[a]	2024[a]	2025[a]
Ozone (ppm)	1-hour	--	0.09	0.089c	0.083	**0.094**
	8-hour National [b]	0.070	--	0.060	0.058	0.056
	8-hour State	--	0.07	**0.071**	0.066	0.053
CO (ppm)	1-hour	35	20	5.1	3.0	3.2
	8-hour	9	9.0	2.4	1.9	2.2
NO_2 (ppm)	1-hour National[c]	0.100	--	0.052	0.048	0.046
	1-hour State	--	0.18	0.052	0.053	0.060
	Annual	0.053	0.030	0.013	0.012	0.012
SO_2 (ppm)	1-hour National[d]	0.075	--	0.009	0.007	0.008
	1-hour State	--	0.25	0.008	0.16	0.015
	24-hour	--	0.04	0.002	0.013	0.004
PM_{10} ($\mu g/m^3$)	24-hour	150	50	**60.8**	**67.6**	**62.5**
	Annual	--	20	**22.5**	**21.1**	**23.0**
$PM_{2.5}$ ($\mu g/m^3$)	24-hour[e]	35	--	28.6	22.8	24.3
	Annual	12	12	7.0	6.5	7.2

Source: Leidos, Inc., 2023, 2024, 2025

Notes:

Exceedances of the standards are shown in **bold**/*italic*. All reported values represent the highest recorded concentration during the year unless otherwise noted.

[a] Year 2023 represents the period May 2022-April 2023, year 2024 represents the period May 2023-April 2024, and year 2025 represents the period May 2024-April 2025.

[b] The monitored concentrations reported for the national 8-hour ozone standard represent the 3-year average (including the reported year and the prior 2 years) of the fourth-highest 8-hour concentration.)

[c] The monitored concentrations reported for the national 1-hour NO_2 standard represent the 3-year average (including the reported year and the prior 2 years) of the 98th percentile of the annual distribution of daily maximum 1-hour average concentrations.)

[d] The monitored concentrations reported for the national 1-hour SO_2 standard represent the 3-year average (including the reported year and the prior 2 years) of the 99th percentile of the annual distribution of daily maximum 1-hour average concentrations.)

[e] The monitored concentrations reported for the national 24-hour $PM_{2.5}$ standard represent the 3-year average (including the reported year and the prior 2 years) of the 98th percentile of the annual distribution of daily average concentrations.)

Toxic Air Contaminants

The California Office of Environmental Health Hazard Assessment (OEHHA) determines the toxicity of regulated substances in the state. TACs include air pollutants that can produce adverse human health effects, including carcinogenic effects, after short-term (acute) or long-term (chronic) exposure. Examples of TAC sources within the

SCAB include dry cleaners, gasoline stations, paint and solvent operations, and fossil fuel combustion sources.

SCAQMD's *Multiple Air Toxics Exposure Study V* (MATES V)[1] determined that about 50 percent of the background airborne cancer risk in the SCAB is due to diesel exhaust (SCAQMD 2021), with the highest modeled air toxics risk near the ports. Other areas of elevated risk were identified near Central Los Angeles and transportation corridors and freeways. The other major contributors of cancer risks are Benzene, 1,3- Butadiene, and Carbonyls that collectively make up 25 percent (SCAQMD 2021). Compared to the MATES IV[2] (SCAQMD 2015) and MATES II[3] (SCAQMD 2000) studies, the MATES V study found a large decrease in carcinogenic risk, with the population-weighted risk in the basin down by 40 percent from the analysis in MATES IV and 85 percent lower than the average in MATES II.

This Draft EIR includes an HRA that evaluates potential public health effects from TAC emissions that would be generated during construction and operation of the Proposed Project. The HRA evaluates four different types of health effects: individual cancer risk, population cancer burden, chronic noncancer hazard index, and acute noncancer hazard index. More details on the HRA methodology is described in Section 3.1.4.2.

Sensitive Receptors

The off-site receptor populations included in the HRA are:

- Residents;
- Non-residential sensitive receptors; and
- Off-site workers (occupational).

The impact of air emissions on residents and other types of non-residential sensitive members of the population is a special concern. Sensitive receptor groups include children, the elderly, and the acutely and chronically ill. Residential receptors near the Proposed Project facility were identified based on zoning information (see Appendix B3 Figure B3-4), including the nearest residential development in San Pedro. In addition to residential receptors, other non-residential sensitive receptors include schools, childcare centers, elder care facilities, hospitals, and recreational areas (e.g., such as parks, marinas, and public waterfront areas). Non-residential sensitive receptor locations near the Project site were also identified and evaluated using residential exposure assumptions. This approach is conservative and overestimates cancer risk for the non-residential sensitive receptors because the exposure rates (e.g., exposure time, exposure frequency, and exposure duration) for these receptors in reality are likely much lower than for residential receptors. Additional information regarding this methodology can be found in Appendix B3. The remaining areas in the modeling domain that are not identified under residential land use or as non-residential sensitive receptors, were modeled as occupational receptors. Figure 3.1-1 shows the locations of non-residential sensitive receptors near the Project site; a table listing the name and locations of each non-residential sensitive receptor is included in Appendix B3. The two nearest sensitive receptors to the Project site are the Los Angeles World Cruise Center (classified as recreational) at 100 Swinford

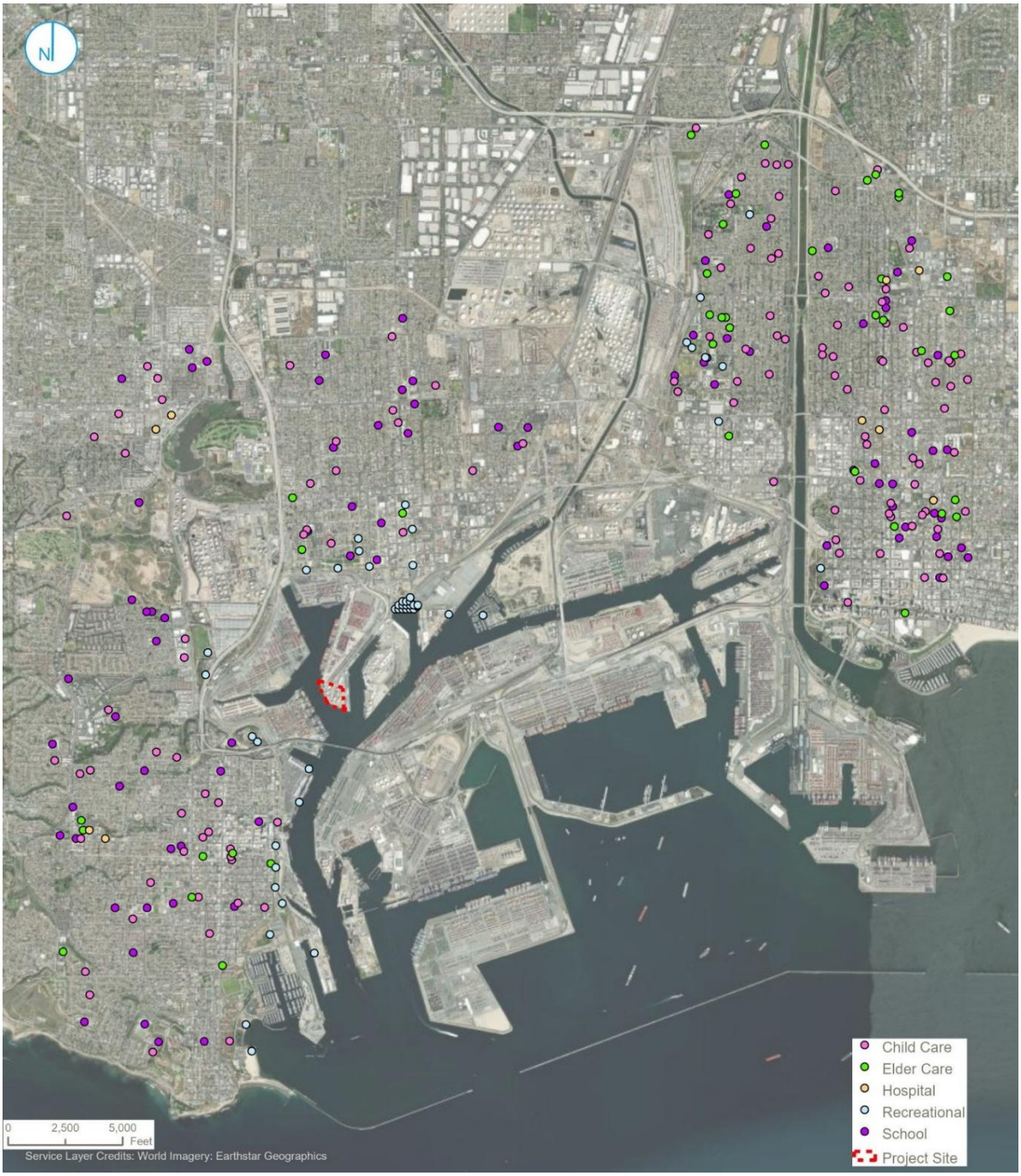
[1] MATES V focuses on measurements during 2018 and 2019 with a comprehensive modeling analysis and emissions inventory based on 2018 data.

[2] The MATE IV analysis was based on measurements during 2012-2013 and the 2012 emission inventory.

[3] The MATE II analysis was based on sampling data from 1998-1999.

St, San Pedro, CA 90731 and Knoll Hill dog park (classified as recreational) at 705-711 N Front Street, San Pedro, CA 90731.

Figure 3.1-1. Non-Residential Sensitive Receptors Near Berths 148-151



3.1.3 Applicable Regulations

The federal Clean Air Act of 1970 and its subsequent amendments established air quality regulations and the NAAQS, and delegated enforcement of these standards to the states. In California, CARB is responsible for enforcing air pollution regulations. CARB has, in turn, delegated the responsibility of regulating stationary emission sources to the local air agencies. In the SCAB, the local air agency is SCAQMD.

The following subsections list the key federal, state, and local air quality rules, policies, and agreements that potentially apply to the Proposed Project and alternatives. A description of each is presented in Appendix B1 (with the exception of Office of Environmental Health Hazard Assessment [OEHAA] and SCAQMD's air toxic guidelines, which are described in Appendix B3). The list below shows the programs and rules that influenced the Draft EIR's air quality analysis. Other regulations that could be expected to reduce future mobile source emissions related to the Proposed Project, but that were not taken credit for in this analysis, are discussed in Appendix B1, Section 2.0.

3.1.3.1 International Rules, Policies, and Agreements:

- The International Maritime Organization (IMO) International Convention for the Prevention of Pollution from Ships (MARPOL) Annex VI

3.1.3.2 Federal Rules, Policies, and Agreements:

- USEPA Emissions Standards for Marine Diesel Compression Ignition Engines – Category 1and 2 (40 Code of Federal Regulations [CFR] 1042.101)
- USEPA Emission Standards for Large Marine Diesel Engines – Category 3 Engines (40 CFR 1042.104)
- USEPA Emission Standards for Non-Road Diesel Engines (40 CFR 1039, 40 CFR 1068)
- USEPA Emission Standards for On-Road Trucks (40 CFR 86, 40 CFR 1037)

USEPA and National Highway Traffic Safety Administration Light-Duty Vehicle GHG Emission Standards and Corporate Average Fuel Economy Standards (40 CFR 531)

3.1.3.3 State Rules, Policies, and Agreements:

- State Implementation Plan (SIP)
- California Clean Air Act
- Assembly Bill (AB) 2650 (2002), California Port Community Air Quality Program
- CARB Heavy Duty Diesel Vehicle Idling Emission Reduction Regulation (Cal. Code Regs. Tit. 13, §2485)
- CARB California Diesel Fuel Regulation (Cal. Code Regs. Tit. 13, §§2281 et seq.)
- CARB General Requirements for In-Use Off-Road Diesel-Fueled Fleets Regulation (Cal. Code Regs. Tit. 13, §§ 2449 et seq.)
- CARB Advanced Clean Fleets regulations (Cal. Code Regs. Tit. 13, §2013)

- CARB Measures to Reduce Emissions from Goods Movement Activities:
- CARB Regulations for Fuel Sulfur and Other Operational Requirements for Ocean Going Vessels (OGVs) within California Waters and 24 Nautical Miles of the California Baseline (Cal. Code Regs. Tit. 13, §2299.2; Tit. 17, §93118.2)
- CARB Control Measure for OGVs At Berth (Cal. Code Regs. Tit. 17, §93130 et seq.)
- CARB Emission Standards, Test Procedures, for Large Spark Ignition Engine Forklifts and Other Industrial Equipment (Cal. Code Regs. Tit. 13, § 2775 et seq.)
- CARB On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation—Truck and Bus Regulation (Cal. Code Regs. Tit. 13, §2775)
- CARB Commercial Harbor Craft Regulation (Cal. Code Regs. Tit. 13, §2299.5; Tit. 17, §93118.5)

3.1.3.4 Local Rules, Policies, and Agreements:

- SCAQMD Rule 212 – Standards for Approving Permits and Issuing Public Notice
- SCAQMD Regulation IV: Prohibitions:
  - SCAQMD Rule 401 – Visible Emissions
  - SCAQMD Rule 402 – Nuisance
  - SCAQMD Rule 403 – Fugitive Dust
  - SCAQMD Rule 462 – Organic Liquid Loading
  - SCAQMD Rule 463 – Organic Liquid Storage
  - SCAQMD Rule 466.1 – Valves and Flanges
  - SCAQMD Rule 467 – Pressure Relief Devices
- SCAQMD Regulation IX: Standards of Performance for New Sources
- SCAQMD Regulation XI: Source Specific Standards:
  - SCAQMD Rule 1142 – Marine Tank Vessel Operations
  - SCAQMD Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants

3.1.3.5 LAHD Emission Reduction Programs:

- San Pedro Bay Ports Clean Air Action Plan (CAAP) (2006 CAAP, 2010 and 2017 Updates):
  - CAAP Measure – SPBP-OGV1, Vessel Speed Reduction Program
  - CAAP Measure – SPBP-OGV2, Reduction of At-Berth OGV Emissions
  - CAAP Measures – SPBP-OGV3 and 4, OGV Low Sulfur Fuel for Auxiliary Engines, Auxiliary Boilers, and Main Engines
  - CAAP Measure – SPBP-OGV5 and 6, Cleaner OGV Engines and OGV Engine Emissions Reduction Technology Improvements and Environmental Ship Index Program
  - CAAP Measure – SPBP-HC1, Performance Standards for Harbor Craft

- CAAP Measure – SPBP-HDV1, Performance Standards for On-Road Heavy-Duty Vehicles; Clean Trucks Program
- LAHD Sustainable Construction Guidelines for Reducing Air Emissions (LAHD 2009)

3.1.4 Impacts and Mitigation Measures

This section presents a discussion of the potential air quality impacts associated with construction and operation of the Proposed Project.

3.1.4.1 Methodology

The methodologies used to assess air quality impacts under California Environmental Quality Act (CEQA) are described in detail in Appendix B1 (Air Quality Regulations/Methodology and Air Quality and GHG Emissions/Energy), Appendix B2 (Air Dispersion Modeling), and B3 (Health Risk Assessment).

The emission estimates, dispersion modeling, and health risk estimates presented in this document were calculated using the latest available data, assumptions, emission factors, and on-the-books regulations at the time this document was prepared. The numerical results presented in the tables of this report were rounded for presentation purposes. As a result, the sum of displayed tabular data in the tables could differ slightly from the displayed totals. Although the rounded numbers create an apparent discrepancy in the table, the underlying addition is accurate. Results for each impact evaluated are presented in two steps: 1) "Impact Determination": as estimated quantitatively through the methods described at a high level below and in greater detail in Appendix B, and 2) "Residual Impacts": quantifying the effects after implementation of all feasible mitigation.

3.1.4.2 CEQA Baseline

CEQA Guidelines §15125 subdivision (a) provides that an EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. For purposes of defining the CEQA baseline for impact analyses, the LAHD's practice is to define the baseline as the existing conditions in the first full calendar year preceding preparation of the Initial Study/Notice of Preparation (IS/NOP). Since preparation of the IS/NOP commenced in 2022, the LAHD has determined that 2021 is the baseline year for the CEQA analysis.

In assessing cancer risk impacts under Impact AQ-5 for purposes of CEQA, this Draft EIR employs not only the fixed 2021 Baseline, but also a secondary analysis that compares cancer risk impacts of the Proposed Project to an "Floating" Future Baseline. The Floating Future Baseline is only used for cancer risk evaluation. For purposes of this analysis, the Floating Future Baseline assumes actual 2021 terminal operation levels of activity such as vessel calls, truck trips, and product throughput will continue in through the future analysis years (through 2057) but differs from the 2021 Baseline in that all vehicles and equipment would continue to comply with existing emissions regulations including those that are being phased in after 2021. Phasing in of these regulations post 2021 generally results in emission reductions as new, lower-emitting technologies are

introduced, although this may be offset to some extent by estimated increases in emissions due to "deterioration" of engines that are not replaced as specified in the applicable CARB emissions models (details provided in Appendix B1).

The Floating Future Baseline cancer risks are typically lower than the fixed baseline cancer risks because emission factors for Port-related equipment generally decline over time in response to existing air quality regulations and assumptions regarding equipment fleet turnover. This declining trend in future emission factors is accounted for in the Floating Future Baseline but not the fixed baseline. As a result, the Project cancer risk increments relative to the Floating Future Baseline are generally – but not always - greater than the increments relative to the fixed baseline. Comparison of the Proposed Project impacts to both the fixed 2021 Baseline and the Floating Future Baseline provides a more complete analysis of the Proposed Project's health risks.

3.1.4.3 Methodology for Determining Emissions

Emissions of CO, NO_X, SO_X, PM_{10} and $PM_{2.5}$ from construction and operation of the Proposed Project would be dominated by diesel engine exhaust from tanker ships, harbor craft, heavy-duty trucks, and construction equipment. Additional emissions of these pollutants would occur from diesel combustion in steam boilers used on tanker ships. In addition to combustion exhaust emissions, particulate emissions would occur in the form of tire and brake wear, and resuspended road dust.

While diesel engines and boilers emit some VOC, the dominant VOC source from the Proposed Project would be from tanker vessel and truck loading operations, petroleum storage tanks, and fugitive emissions from pipeline components (i.e., valves, flanges, etc.).

Information regarding the activity and emissions characteristics of the construction and operational phases of the Proposed Project was obtained from Phillips 66, LAHD staff, and the 2021 Port Emissions Inventory (POLA 2022a). Activity and utilization assumptions used to estimate peak daily construction and operational emissions for comparison to SCAQMD emission thresholds represent upper-bound estimates of activity levels at the facility that theoretically could occur occasionally but would not occur regularly, and, therefore, represent a conservative set of assumptions. Methodologies used for mobile emission sources commonly found at the Port such as vessels, harbor craft, trucks and off-road equipment are consistent with those in the San Pedro Bay Ports (SPBP) Emissions Inventory Methodology Report (SPBP 2022) and updated to reflect MOTEMS specific project design data where available. The methodology used to estimate fugitive dust emissions is consistent with USEPA AP-42: Compilation of Air Emissions Factors (USEPA 2006). Stationary source emissions were based on the Annual Emissions Reports (AER) provided by Phillips 66 (Phillips 66 2023a). The CEQA quantitative significance thresholds for operations and construction are discussed in Section 3.1.4.6.

An overview of construction and operational emission source assumptions and activities is presented in the following subsections. Emissions calculation procedures are described in more detail in Appendix B1 Air Emissions.

Construction Emissions Estimates

Construction of the Proposed Project would include both in-water activities, including wharf demolition, loading platform construction, wharf and shoreline refurbishment, and maintenance dredging to clean-up the slope after construction activities, and

topside/landside activities, including installation of handling, safety, and emissions and spill control equipment, shoreside connections, storage tank refurbishment and construction, pipeline installation, landside equipment relocation, and grading and paving of currently unpaved areas. For the purposes of this analysis, it is assumed that construction of the Proposed Project would occur in multiple phases, beginning with demolition of the existing wharf at Berths 150-151 followed by construction of the new loading platform at Berths 150-151, the mooring dolphin at Berth 149, and topside and landside improvements. Construction is assumed to be completed by 2027, at which time the new berth at Berths 150-151 would become operational. Refurbishment of the 11 currently idle tanks along with grading and paving operations would proceed after completion of the new Berth 150-151 and conclude in 2029.

In the following analyses and tables, the construction period is presented as the years 2024 – 2029, which was a valid assumption at the time document preparation was initiated. Although the analyses were completed early on in the process, subsequent project delays have postponed document release, and therefore the start of construction, by several years. However, the original construction schedule and associated emissions are retained in order to present a conservative analysis. For each analysis year from 2024 through 2029, emissions are based on the average fleet characteristics for that specific year. This approach is conservative because the construction equipment and vehicles actually used would likely be newer and cleaner than the average fleet assumed in these analyses, given that construction would likely occur later than assumed.

Construction and demolition activities would include, but not be limited to, use of diesel-powered equipment such as cranes, forklifts, generators, and excavators. Construction equipment type, quantity, hours of operation, and equipment size (horsepower) were provided by Phillips 66 as described in Appendix B1. Engine load factors and emission factors were obtained from California Air Pollution Control Officers Association (CAPCOA)'s California Emissions Estimator Model (CalEEMod).

Harbor craft, such as tugboats, crew boats, and survey boats, would be used during construction of structures in or near the water and maintenance dredging to clean-up the slope after construction activities. Harbor craft type, hours of operation, and engine sizes were provided by Phillips 66 as described in Appendix B1. Engine load factors were obtained from the San Pedro Bay Ports Emissions Inventory Methodology Report, Version 3a, Table 3.1 (SPBP 2022).

Construction trucks would be used to haul materials, and equipment to and from the construction site. Worker vehicles would be used by construction workers to travel to and from the construction site. Vehicle trips and travel distances for each construction task were provided by Phillips 66. Emissions from on-road, heavy-duty, diesel trucks were calculated using emission factors generated by the CARB EMFAC2021 on-road mobile source emission factor model. Emissions from grading and paving operations were calculated using CalEEMod.

Operational Emission Estimates

Operational emissions would be generated by tanker vessels and barges, harbor crafts, on-road vehicles, and stationary sources. Most equipment would be fueled by marine diesel and on-road diesel, but worker vehicles would be gasoline powered.

Operational emissions were analyzed for the years 2021 (baseline operations), 2027 (first year of operation), and 2057 (last year of residential receptor 30-year exposure period). For purposes of this analysis, it is assumed that the terminal would operate at the

maximum activity levels specified in the Project Description throughout the 30-year period. A brief discussion of data sources and methods used in the calculation of emissions from operational sources is provided in the following subsections.

Oceangoing Tanker Vessels and Barges

Tanker vessel and barge emissions in the 2021 Baseline were derived primarily from activity data provided by Phillips 66. This includes the number of vessel visits by vessel type and size, and time spent in transit, maneuvering, and hoteling (hoteling refers to a vessel tied up at berth with propulsion engines turned off). The 2021 Baseline activity represents actual vessel calls that occurred in 2021 (Phillips 66 2023b). Tanker ships hoteling at the Phillips 66 MOT in 2021 were not required to use and did not use any methods such as shore power or an emissions capture and control system to reduce emissions from auxiliary engines or boilers while at berth.

Future year vessel activity, including the number of vessels visits annually and during the peak activity day and the vessel size and type distribution in future years as shown in Table 3.1-3, was provided by Phillips 66 (Phillips 66 2023b). In general, the future number of vessel visits is based on the forecasted growth in throughput as presented in Chapter 2 (Project Description), with the same modes of activity (transit, maneuvering, hoteling, anchorage) occurring in the future as in the 2021 Baseline.

Main engine power ratings for tankers and articulated tug-barges (ATBs) were obtained from 2021 call records and gap-filled with a worldwide vessel database (IHS Fairplay 2020) and public Internet web searches. Other vessel characteristic data including auxiliary engine power, load factors, and speed were obtained from the Port of Los Angeles 2021 emissions inventory (POLA 2022a) and Phillips 66 Rodeo Renewed Project (Phillips 66 2022). Call records for 2021 including engine tier information for tankers were used to determine the age of vessels calling during the 2021 Baseline. In cases where engine tier information was not provided, the age of vessels was determined from keel laid dates or information in the vessel call data records in 2021. The vessel fleet tier mix was conservatively held constant over the duration of the Project timeline; i.e., no assumptions regarding advancements in engine tier, and associated reductions in emissions, were included. Vessel emissions were calculated from 40-nautical miles offshore, which approximately coincides with the SCAB overwater boundary, to Berth 150-151, which included the precautionary, maneuvering, and anchorage zones. In all analysis years, vessel transit speeds were assumed to match the historical Port's VSRP compliance levels for 2021 recorded by POLA (LAHD 2022).

Since the number of tanker ship calls under the full Project operational levels assumed for each future year (75) exceeds the "low-use" exception (i.e., 19 visits or fewer per year) allowed under the Ocean-Going Vessels at Berth Regulation (At-Berth Regulation), this analysis assumes that tanker ship calls to the terminal in each future year will utilize a barge-based CARB-approved emissions control strategy (CAECS) to meet emission reduction requirements under the At-Berth Regulation (note that this technology reduces priority pollutants, such as nitrogen compounds, and diesel particulate matter, but does not capture and sequester carbon dioxide or other greenhouse gases). Use of a CAECS barge for regulatory compliance is consistent with the Terminal Plan submitted to CARB by Phillips 66 for the Berths 148-151 MOT as described in Section 2 (Project Description). Details of the assumptions and methods used to calculate at-berth emissions under Project operations, including exceptions from control provided by the maximum allowed annual number of Vessel Incident Events and Terminal Incident Events (VIEs and TIEs) and accounting for emissions from diesel generators operating on the CAECS

barge and assist tugs used to maneuver the CAECS barge, are provided in Appendix B1. As described in Appendix B1, tanker ship calls under the peak-day emissions scenario are assumed to coincide with the use of a VIE and TIE, thus resulting in uncontrolled at-berth emissions. In addition, calculations described in Appendix B1 show that Proposed Project annual operational emissions are greater under the 75-tanker ship call scenario with At-Berth Regulation compliance than would be the case in any year in which the "low-activity terminal" exception (which allows for a maximum of 19 tanker ship calls without at-berth controls) might be used. Thus, assuming that the terminal is under full operations with 75 tanker ship calls in all future years results in a conservative estimate of Proposed Project emissions (an estimate expected to be greater than actual emissions) and resulting air quality impacts. Accordingly, the Project operational annual emissions reflect the "Full Use" scenario, which assumes Project operations at the estimated maximum of 75 annual tanker vessel calls, including an allowance for up to 8 VIE and TIE calls, and assumes compliance with the At-Berth Regulation through use of an CAECS barge. Project operational peak daily emissions would be the same under either scenario (full use or low activity) given the assumption that the peak day would coincide with a VIE and TIE call.

Harbor Craft – Assist Tugs

During operation of the Proposed Project, harbor craft activity would consist of tugboats/assist tugs used to assist tanker vessels while maneuvering and docking during operations. Two tugboats were assumed to be required for assistance of each tanker arrival/departure; only one assist tug is required for ATB and ocean-going barges as well as the CAECS barge. Harbor craft main and auxiliary engine sizes and load factors, and other vessel operational characteristics were obtained from the 2021 Port Emissions Inventory (POLA 2022a). Average vessel engine model year information for the baseline year 2021 was also obtained from the POLA 2021 Port Emissions Inventory (POLA 2022a). For the future years, main and auxiliary engines were assumed to be turned over based on the vessel's average useful life as assumed in CARB's harbor craft emissions inventory (CARB 2021a).

On-Road Vehicles – Construction Trucks and Operations Delivery Trucks

Emissions from on-road vehicles during operation of the Proposed Project were calculated using emission factors generated by the 2021 CARB Emissions Factor Model (EMFAC2021 v1.0.2) for on-road mobile sources. The default fleet mix for the SCAB heavy-duty trucks was used in the analysis. Road dust emission factors from truck movements, also referred to as fugitive dust, were derived from Section 13.2 of USEPA's AP-42 (USEPA 2006).

Truck activity on-site included idling and on-site driving. Truck activity off-site included truck travel along nearby roadway links with an average trip length of 15 miles (see Appendix B1).

Worker Vehicles

Emissions from worker vehicles are associated with employee commutes during operation in the baseline year 2021 and the Proposed Project years were calculated using emission factors for light-duty gasoline vehicles generated by the EMFAC2021 model for on-road mobile sources. Road dust emission factors for on-terminal and off-terminal driving were derived from Section 13.2 of USEPA's AP-42 (USEPA 2006).

Stationary Sources

The Phillips 66 MOT includes tank farms containing 26 storage tanks of varying sizes. Other landside facilities on the site include piping systems, pumps and compressors, vapor-recovery equipment used when loading (i.e., exporting) lighter commodities, a dock house, a gatehouse, a truck loading rack, a warehouse, an office building, and electrical substations.

2021 Baseline operational criteria pollutant annual mass emissions for stationary sources were provided by Phillips 66 (Phillips 66 2023a). For future years, storage tank emissions were assumed to change based on the change in throughput between the baseline and the future years. Similarly, truck and tank vapor loading emissions were scaled by the change from baseline in volume of product loaded. Fugitive emissions from piping components would be unchanged from baseline as the number of components of each type would remain the same and emission factors are independent of throughput.

Table 3.1-3 summarizes key activity parameters that shape the operational emissions and therefore, the air quality results disclosed in Section 3.1.5. Impact Determination. Detailed data and assumptions used to develop the emission estimates are provided in Appendix B1.

Table 3.1-3. Summary of Key Activity for Baseline and Proposed Project

Annual Activity	2021 Baseline	Proposed Project
Oceangoing Tankers (Total Calls)	**15**	**75**
Handysize	10	38
Chemical	4	11
Panamax	1	19
Aframax	0	7
Barges (Total Calls)	**276**	**296**
ATBs	13	8
Ocean-Going	29	79
Bunker	234	209
Total Vessel Calls[a]	**291**	**371**
Trucks (round trips)	1,605	1,951
Terminal Throughput: Total Barrels (bbls)	**6,359,423**	**23,761,500**
Imports (bbls)	2,543,769	9,504,600
Exports (bbls)	3,815,654	14,256,900

Notes:

[a] All vessels in 2021 called at Berth 149. Under the Proposed Project, all vessels would call at Berth 150-151 starting in 2027.

3.1.4.4 Dispersion Modeling Methodology

The USEPA dispersion model AERMOD, version 22112 (USEPA 2022a), was used to predict maximum localized ambient pollutant concentrations at or beyond the Proposed Project site boundary during Proposed Project operations. The dispersion modeling methodology was based on USEPA and SCAQMD modeling guidance (USEPA 2017; SCAQMD 2023a). The following presents a brief summary of the dispersion modeling methodology and assumptions; a complete description is included in Appendix B2.

The analysis modeled peak 1-hour and annual NO_2 concentrations, peak 24-hour and annual PM_{10} concentrations, and peak 24-hour $PM_{2.5}$ concentrations.

Valid receptors included all locations along and outside the Proposed Project footprint boundary and excluded over-water and on-road receptors.

The significance concentration thresholds for PM_{10} and $PM_{2.5}$ are incremental thresholds, meaning that the modeled Proposed Project concentrations are compared directly to the thresholds without adding ambient background concentrations.

The significance thresholds for NO_2 concentration are absolute thresholds based on the ambient air quality standards, meaning that the modeled Proposed Project concentrations are added to the ambient background concentrations for the Proposed Project vicinity, and the resulting total concentrations are compared to the thresholds.

AERMOD used the meteorological data collected at the Wilmington Community Station, located at Saints Peter and Paul School (SPPS). SPPS is located about 1.2 miles north of the Proposed Project site and is considered the most representative meteorological station for the Proposed Project in accordance with the "Sphere of Influence" analysis conducted by POLA and POLB in 2010 (LAHD 2010).

Ambient background concentrations were obtained from the Wilmington Community Station.

CO Hot Spots

Information presented by SCAQMD in the 2003 Air Quality Management Plan (AQMP) indicates that a CO hot spot analysis is unnecessary because CO hotspots are unlikely to occur. In the 1992 Federal Attainment Plan for Carbon Monoxide (SCAQMD 2005), a CO hot spot analysis was conducted for the four most congested intersections in the Los Angeles region and found no exceedances of ambient air quality standards for CO, indicating that hotspots did not occur. Since the study intersections for the Proposed Project would experience lower traffic volumes than SCAQMD's study intersections, even with increased throughput, a hotspot analysis is not warranted.

3.1.4.5 Health Risk Assessment (HRA) Methodology

To inform the public and decision-makers of the Proposed Project's environmental impacts, the predicted health risks associated with TAC emissions from the Proposed Project are compared to both the 2021 Baseline and the Floating Future Baseline. The 2021 Baseline cancer risk uses 2021 activity levels and emission factors. The Floating Future Baseline cancer risk uses 2021 activity levels, but uses emission factors, averaged over 25-, 30-, and 70-year exposure periods, that incorporate the effects of existing air quality regulations. The 2021 Baseline cancer risk is typically higher than the Floating Future Baseline cancer risk because the adjusted future emissions factors for port-related equipment generally decline in response to existing air quality regulations and assumptions regarding equipment fleet turnover. As noted earlier, TACs are compounds

that are known or suspected to cause adverse health effects after short-term (acute) or long-term (cancer and chronic non-cancer) exposure. The complete HRA Report is presented in Appendix B3.

LAHD has developed a methodology for assessing mortality and morbidity in CEQA documents based on the health effects associated with changes in $PM_{2.5}$ concentrations. Because mortality and morbidity studies represent major inputs used by CARB and USEPA to set CAAQS and NAAQS, project-level mortality and morbidity is presented in LAHD CEQA documents as a further elaboration of local $PM_{2.5}$ impacts, which are addressed in Impact AQ-4. Per LAHD's standard approach as used in prior EIRs, mortality and morbidity are quantified if dispersion modeling of ambient air quality concentrations during project operation identifies a significant impact for 24-hour $PM_{2.5}$. Mortality and morbidity effects are calculated for the population living inside the 2.5 $\mu g/m^3$ project increment isopleth identified during the dispersion modeling.

The USEPA dispersion model, AERMOD version 22112, was used to predict ambient TAC concentrations at or beyond the Project site boundary. The health risk calculations were performed based on output from the emissions inventory analysis (described in Appendix B1) and the dispersion factors from the AERMOD dispersion model (described in Appendix B2), using assumptions and procedures described in OEHHA's Air Toxics Hot Spots Program Risk Assessment Guidelines (OEHHA 2015) and SCAQMD's Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (SCAQMD 2020).

The HRA evaluated four different types of health effects: individual cancer risk, population cancer burden, chronic noncancer hazard index, and acute noncancer hazard index.

Individual cancer risk is the additional chance for a person to contract cancer after long-term exposure to emissions from the Proposed Project. The exposure durations assumed in this HRA are 30 years for residential and non-residential sensitive receptors and 25 years for occupational receptors (i.e., locations where commercial or industrial workers may be found). Exposure assumptions for each receptor type are summarized in Appendix B3, Table B3-4. The period from 2027 (first year of Project operations) to 2057 was used as the 30-year residential exposure period with greatest overall diesel exhaust emissions (diesel exhaust is the dominant TAC for cancer risk). This includes the period from 2027-2029, when full Project operations would overlap with construction activity, and the period from 2030-2057 when full Project operations would continue as construction has concluded. Therefore, setting the starting year of the HRA to 2027 accounts for the health impact from combined construction and operational activities along with the remaining years of operations, thus yielding the most conservative risk estimates for the HRA.

Cancer burden is an estimate of the expected number of additional cancer cases in a population exposed to Proposed Project-generated TAC emissions and is the product of individual lifetime incremental cancer risk multiplied by the population exposed to that level of incremental risk, calculated at the census tract or block level. For purposes of calculating the cancer burden, a residential lifetime exposure period of 70 years (2027-2097) was assumed in accordance with OEHHA's guidance (OEHHA 2015); exposures beyond 2057 were assumed to remain constant through the remainder of the 70-year period. In accordance with SCAQMD guidance (SCAQMD 2020), cancer burden was calculated in this analysis for all census blocks with an individual lifetime residential cancer risk increment exceeding one in one million.

The chronic hazard index is a ratio of the annual average concentrations of TACs in the air to established chronic reference exposure levels. A chronic hazard index below 1.0 indicates that adverse noncancer health effects from long-term exposure are not expected. Similarly, the acute hazard index is a ratio of the maximum 1-hour maximum concentrations of TACs in the air to established acute reference exposure levels. An acute hazard index below 1.0 indicates that adverse noncancer health effects from short-term exposure are not expected.

The main sources of TACs from Proposed Project operations would be diesel exhaust emissions from oceangoing vessels, harbor craft, off-road equipment, and heavy-duty trucks on the Proposed Project site. For cancer risk and the chronic hazard index, CARB uses DPM as a surrogate for total diesel exhaust. TAC emissions from non-diesel sources (such as alternative fuel engines) and diesel non-internal combustion sources (such as tanker boilers) were also evaluated in the HRA.

To determine significance, the HRA evaluated the health effects associated with the Proposed Project relative to the baseline health effects. The resulting health effect values were compared to the significance thresholds for health risk described in Section 3.1.4.6.

To estimate individual cancer risk impacts for residential and non-residential sensitive receptors, TAC emissions were projected over a 30-year period, from 2027 to 2057. To estimate occupational cancer risk impacts, TAC emissions were projected over a 25-year occupational exposure period (OEHHA 2015), from 2027 through 2052. To calculate the 30-year and 25-year emissions, activity levels and emission factors were determined for the years 2021 (CEQA Baseline), 2027, 2028, 2029, and 2057 and interpolated for intervening years. Emissions were assumed to remain constant after 2057 for purposes of evaluating the 70-year period used in the cancer burden analysis.

Activity levels for the fixed 2021 Baseline and the Floating Future Baseline do not include any Project construction or operational activities and were held constant at their 2021 values for the entire 30-year period assumed in the individual cancer risk evaluation and 70-year period assumed in the cancer burden evaluation. In the Floating Future Baseline used in the HRA, yearly emission factors are allowed to change with time in accordance with normal fleet turnover rates (for tugboats, off-road equipment, and heavy-duty trucks) and existing regulations and agreements, while activity levels are kept constant to the 2021 Baseline level.

The use of both the 2021 Baseline and the Floating Future Baseline for cancer risk helps to resolve the complication of evaluating the terminal during a fixed point in time (2021 Baseline conditions) for a health impact that is based on decades-long exposure periods. This complication does not exist for the chronic and acute hazard indices because they are based on modeled TAC concentrations of one year and one hour, respectively, both of which fit within the 2021 Baseline period. Therefore, the Floating Future Baseline was used only for cancer risk. This approach is consistent with the methodology developed by the Port for previous health risk analyses.

The HRA was conducted following the methodology as recommended by OEHHA (2015) and SCAQMD (2020). The estimated excess lifetime cancer risks for the residents and non-residential sensitive receptors were adjusted using the age sensitivity factors (ASFs) recommended by Cal/EPA (Cal/EPA 2009). This approach accounted for an "anticipated special sensitivity to carcinogens" of infants and children. See the detailed discussion of the HRA methodology in Appendix B3.

$PM_{2.5}$ Morbidity and Mortality

Mortality and morbidity calculations are required for any areas with residential populations where $PM_{2.5}$ or PM_{10} concentrations exceed the SCAQMD localized ambient air quality concentration threshold for Proposed Project operations listed in Table 3.1-9 (SCAQMD 2020). For the Proposed Project and alternatives, dispersion model results show that maximum off-site PM_{10} and $PM_{2.5}$ concentrations do not exceed the SCAQMD thresholds (see Table 3.1-17). Accordingly, analyses of $PM_{2.5}$ morbidity and mortality were not conducted.

3.1.4.6 Thresholds of Significance

CEQA Guidelines Appendix G (California Code of Regulations, Title 14, Division 6, Chapter 3, §§15000-15387) suggests the following criteria for determining the significance of impacts related to air quality. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations, which ask whether the Proposed Project 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?
c) Expose sensitive receptors to substantial pollutant concentrations?
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The Initial Study in the Notice of Preparation (Appendix A) eliminated item (d) above from further consideration as it was determined that odors from construction and operation of the Proposed Project would be less than significant. Therefore, the following thresholds (criteria AQ-1 through AQ-6 described below) were used to determine the significance of air quality impacts of the Proposed Project and alternatives under CEQA. The thresholds are based on the standards established by the CEQA Air Quality Handbook and associated significance thresholds developed by the SCAQMD (SCAQMD 1993; SCAQMD 2023b).

Construction Thresholds

Construction-related air impacts are considered against the following significance thresholds:

Impact AQ-1: Would the Proposed Project result in construction-related peak day emissions that exceed any of the SCAQMD regional thresholds of significance in Table 3.1-4?

For determining significance, these thresholds are compared to the Proposed Project peak day construction emissions.

Table 3.1-4. SCAQMD Regional Thresholds for Construction Emissions

Air Pollutant	Emission Threshold (pounds/day)
Volatile Organic Compounds (VOC)	75
Carbon Monoxide (CO)	550
Nitrogen Oxides (NO_X)	100
Sulfur Oxides (SO_X)	150
Particulates (PM_{10})	150
Particulates ($PM_{2.5}$)	55

Source: SCAQMD 2023b.

Impact AQ-2: Would the Proposed Project construction result in off-site ambient air pollutant concentrations that exceed the SCAQMD localized thresholds of significance in Table 3.1-5?

SCAQMD has developed a localized significance threshold (LST) methodology, including LST mass "look-up" tables for CO, NO_2, PM_{10}, and $PM_{2.5}$ to determine whether or not a project may generate significant localized air quality impacts. LSTs represent the maximum daily emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard. Although ambient concentration thresholds may be used to evaluate off-site concentrations, SCAQMD LST guidance uses on-site emission levels as a screening tool to determine if emissions may significantly impact off-site receptors. Applicable Proposed Project construction LST thresholds from SCAQMD guidance (SCAQMD 2008) are shown in Table 3.1-5. If construction emissions are above the construction-related LSTs in Table 3.1-5, then localized ambient pollutant concentrations are estimated using a dispersion model and evaluated against thresholds in Table 3.1-6. An exceedance of a threshold in Table 3.1-6 would indicate a significant localized impact. These ambient concentration thresholds target those pollutants the SCAQMD has determined are most likely to cause or contribute to an exceedance of the NAAQS or CAAQS.

Table 3.1-5. SCAQMD Localized Significance Thresholds Associated with Project Construction

	SCAQMD LSTs[a] (lb/day)			
	CO	NO_2	PM_{10}	$PM_{2.5}$
Off-Site Worker	1,530	123	14	8
Sensitive Receptor	10,198	179	191	120

Notes:
[a] LSTs based on a receptor located 25 meters (for off-site worker) or 500 m (for sensitive receptor; actual sensitive receptor distance is > 500 m) from the Project site within Source Receptor Area 4 (South Los Angeles County Coastal) and a 5 acre construction area. Distances from Project site to nearest off-site worker and sensitive receptors were measured using Google Earth. LSTs were obtained from the 2008 SCAQMD Final Localized Significance Threshold Methodology, Appendix C, Mass Rate LST Look-up Tables. Available at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds.

Table 3.1-6. SCAQMD Thresholds for Ambient Air Quality Concentrations Associated with Project Construction

Air Pollutant[a]	Construction Ambient Concentration Threshold
Nitrogen Dioxide (NO_2)[b]	
1-hour average (federal)[c]	0.100 ppm (188 µg/m^3)
1-hour average (state)	0.18 ppm (338 µg/m^3)
Annual average (federal)	0.0534 ppm (100 µg/m^3)
Annual average (state)	0.030 ppm (57 µg/m^3)
Sulfur Dioxide (SO_2)	
1-hour average (federal)[d]	0.075 ppm (197 µg/m^3)
1-hour average (state)	0.25 ppm (655 µg/m^3)
24-hour average	0.04 ppm (105 µg/m^3)
Carbon Monoxide (CO)	
1-hour average	20 ppm (23,000 µg/m^3)
8-hour average	9.0 ppm (10,000 µg/m^3)
Particulates (PM_{10} or $PM_{2.5}$)[e]	
24-hour average (PM_{10} and $PM_{2.5}$)	10.4 µg/m^3
Annual average (PM_{10} only)	1.0 µg/m^3
Sulfate[f]	
24-hour average	25 µg/m^3
Lead[f]	
30-day average (state)	1.5 µg/m^3
Rolling 3-month average (federal)	0.15 µg/m^3

Notes:

[a] Construction emissions of sulfates and lead would be negligible; thus, concentration standards would not be exceeded. The NO_2, SO_2, and CO thresholds are absolute thresholds; the maximum predicted impact from Proposed Project is added to the background concentration and compared to the threshold.

[b] To evaluate Proposed Project impacts on ambient NO_2 levels, the analysis included the use of both the current SCAQMD 1-hour NO_2 threshold (0.18 ppm) and the newer, more stringent 1-hour federal ambient air quality standard (0.100 ppm). To attain the federal standard, the 3-year average of the 98th percentile of the daily maximum 1-hour averages at a receptor must not exceed 0.100 ppm.

[c] Federal 1-hour average NO_2 concentration is based on the NAAQS because it is more stringent than the SCAQMD thresholds.

[d] To attain the SO_2 federal 1-hour standard, the 3-year average of the 99th percentile of the daily maximum 1-hour averages at a receptor must not exceed 0.075 ppm.

[e] The PM_{10} and $PM_{2.5}$ thresholds are incremental thresholds; the maximum predicted impact from construction activities (without adding the background concentration) is compared to these thresholds.

[f] Sulfates and lead are not of concern for this project.

Sources: SCAQMD 2023b.

Operational Thresholds

Operations-related air impacts are considered against the following significance thresholds:

Impact AQ-3: Would the Proposed Project result in operational emissions that exceed the SCAQMD peak day regional emission thresholds of significance in Table 3.1-7?

For determining significance under CEQA, these thresholds are compared to the net change in the Proposed Project's operational peak daily emissions relative to 2021 Baseline emissions.

Table 3.1-7. SCAQMD Regional Thresholds for Operational Emissions

Air Pollutant	Peak Day Emission Threshold (pounds/day)
Volatile organic compounds (VOC)	55
Carbon monoxide (CO)	550
Nitrogen oxides (NO_X)	55
Sulfur oxides (SO_X)	150
Particulates (PM_{10})	150
Particulates ($PM_{2.5}$)	55

Source: SCAQMD 2023b.

Impact AQ-4: Would the Proposed Project operation result in offsite ambient air pollutant concentrations that exceed any of the SCAQMD localized thresholds of significance in Table 3.1-8?

Similar to criterion AQ-2, SCAQMD's LSTs are evaluated as a screening of whether the operational emissions may generate significant localized air quality impacts.

Table 3.1-8. SCAQMD Localized Significance Thresholds Associated with Project Operations

	SCAQMD LSTs[a] (lb/day)			
	CO	NO_2	PM_{10}	$PM_{2.5}$
Off-Site Worker	1,530	123	4	2
Sensitive Receptor	10,198	179	46	29

Notes:

[a] LSTs based on a receptor located 25 meters (for off-site worker) or 500 m (for sensitive receptor; actual sensitive receptor distance is > 500 m) from the Project site within Source Receptor Area 4 (South Los Angeles County Coastal) and a 5-acre source area. Distances from Project site to nearest off-site worker and sensitive receptors were measured using Google Earth. LSTs were obtained from the 2008 SCAQMD Final Localized Significance Threshold Methodology, Appendix C, Mass Rate LST Look-up Tables. Available at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds.

If operational emissions are above LSTs, then localized maximum ambient pollutant concentrations are calculated via dispersion modeling and evaluated against thresholds in Table 3.1-9. These ambient concentration thresholds target those pollutants the SCAQMD has determined are most likely to cause or contribute to an exceedance of the NAAQS or CAAQS.

Table 3.1-9. SCAQMD Thresholds for Localized Ambient Air Quality Concentrations Associated with Project Operation

Air Pollutant[a]	Operation Ambient Concentration Threshold
Nitrogen Dioxide (NO_2)[b]	
1-hour average (federal)[c]	0.100 ppm (188 µg/m^3)
1-hour average (state)	0.18 ppm (338 µg/m^3)
Annual average (federal)	0.0534 ppm (100 µg/m^3)
Annual average (state)	0.030 ppm (57 µg/m^3)
Carbon Monoxide (CO)	
1-hour average	20 ppm (23,000 µg/m^3)
8-hour average	9.0 ppm (10,000 µg/m^3)
Particulates (PM_{10} or $PM_{2.5}$)[d]	
24-hour average (PM_{10} and $PM_{2.5}$)	2.5 µg/m^3
Annual average (PM_{10} only)	1.0 µg/m^3
1-hour average	0.04 ppm (105 µg/m^3)
Sulfate[e]	
24-hour average	25 µg/m^3
Lead[e]	
30-day average (state)	1.5 µg/m^3
Rolling 3-month average (federal)	0.15 µg/m^3

Notes:

[a] Operational emissions of sulfates and lead would be negligible; thus, concentration standards would not be exceeded. The NO_2, SO_2, and CO thresholds are absolute thresholds; the maximum predicted impact from Proposed Project operations is added to the background concentration and compared to the threshold.

[b] To evaluate the Proposed Project's impacts on ambient NO_2 levels, the analysis included the use of both the current SCAQMD 1-hour NO_2 threshold (0.18 ppm) and the newer, more stringent 1-hour federal national ambient air quality standard (0.100 ppm). To attain the federal standard, the 3-year average of the 98th percentile of the daily maximum 1-hour averages at a receptor must not exceed 0.100 ppm.

[c] Federal 1-hour average NO_2 concentration is based on the NAAQS because it is more stringent than the SCAQMD thresholds.

[d] The PM_{10} and $PM_{2.5}$ thresholds are incremental thresholds; the maximum predicted impact from operational activities (without adding the background concentration) is compared to these thresholds.

[e] Sulfates and lead are not of concern for this Project.

Sources: SCAQMD 2023b; EPA 2022b.

Impact AQ-5: Would the Proposed Project expose receptors to significant levels of toxic air contaminants?

The determination of significance for AQ-5 is made as follows:

- Maximum Incremental Cancer Risk is greater than or equal to 10 in 1 million;
- Cancer Burden is greater than 0.5 excess cancer cases in areas where the maximum incremental cancer risk for residential receptors is greater than or equal to 1 in one million; and
- Non-Cancer Hazard Index is greater than or equal to 1.0 (project increment).

Impact AQ-6: Would the Proposed Project or alternatives conflict with or obstruct implementation of an applicable air quality plan?

The consistency of the Proposed Project or alternative with an applicable AQMP is assessed qualitatively. The Proposed Project or alternative would be considered consistent with the local AQMP and not interfere with attainment goals if its activities (e.g., throughput, ship calls) are consistent with the projections utilized in the formulation of the AQMP; in other words, if project activities do not exceed the assumptions in the latest AQMP.

3.1.5 Impact Determination

3.1.5.1 Proposed Project

Several of the elements of the Proposed Project's construction and operations, described above and in more detail in Chapter 2 (Project Description), would generate criteria pollutant air emissions. Therefore, potential air quality impacts are evaluated in this section. The major elements of the Proposed Project that would generate air emissions during construction would be diesel-powered on-road trucks, diesel-powered off-road construction equipment such as backhoes, graders, cranes, forklifts, and generators, and diesel-powered harbor craft involved in construction of structures and maintenance dredging to clean-up the slope after construction activities. Emissions would include fuel combustion (exhaust) pollutants, tire and brake wear, and fugitive dust. Major operational elements that would generate air emissions include tanker vessels and barges and the associated tugboats fueled by marine diesel, stationary sources such as storage tanks, fugitive components, tanker vessel and tanker truck loading, and diesel-powered on-road trucks delivering imported lube oil from the facility.

Under the Proposed Project, the Phillips 66 MOT is projected to accommodate vessel call and product throughput activity levels greater than those in the 2021 Baseline year starting in 2027 as shown in Table 3.1-3.

Impact AQ-1: Would construction of the Proposed Project result in emissions that exceed the SCAQMD regional thresholds of significance for construction emissions listed in Table 3.1-4?

Construction activities related to the Proposed Project are described in Section 2.5.1 and in more detail in Appendix B1. The key construction activities of the Proposed Project are demolition of the existing wharf and construction of a new MOTEMS-compliant berthing and loading/unloading facility at Berths 150-151. Emissions produced by off-road equipment, off-road and on-road vehicles, and harbor craft involved in these activities make up the Proposed Project construction emissions inventory for 2024 through 2029. Table 3.1-10 presents peak-day criteria pollutant emissions associated with construction of the Proposed Project (see Section 3.1.4.3 for a discussion of the construction dates assumed in this analysis). Construction emissions shown in Table 3.1-10 reflect compliance with the MM AQ-3 (Port of Los Angeles Sustainable Construction Guidelines), which require construction equipment, heavy duty vehicles, and harbor craft to meet the latest emission standards (or model year requirements). The guidelines also include Best Management Practices (BMPs) based on application of BACT for construction equipment including on-road trucks for all construction projects on Port property. In addition, the guidelines describe certain practices for fugitive dust watering control, which are quantified in this analysis.

Table 3.1-10. Peak Daily Construction Emissions — Proposed Project (lbs/day)

Source Category[a]	Peak Construction Daily Emissions (lbs/day)[b]					
	VOC	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_X
Year 2024[c]						
Fugitives	0	0	0	9	1	0
Harbor Crafts (HC)	<1	0	12	<1	<1	<1
Nonroad Equipment	<1	18	2	<1	<1	<1
Onroad Vehicles	<1	1	38	2	<1	<1
Total Construction Year 2024	**1**	**20**	**52**	**12**	**3**	**<1**
Significance Threshold	75	550	100	150	55	150
Significant?	No	No	No	No	No	No
Year 2025[c]						
Fugitives	0	0	0	10	2	0
Harbor Crafts (HC)	<1	8	18	<1	<1	<1
Nonroad Equipment	2	91	25	<1	<1	<1
Onroad Vehicles	<1	6	16	<1	<1	<1
Total Construction Year 2025	**3**	**105**	**59**	**12**	**3**	**<1**
Significance Threshold	75	550	100	150	55	150
Significant?	No	No	No	No	No	No
Year 2026[c]						
Fugitives	0	0	0	31	6	0
Harbor Crafts (HC)	0	0	0	0	0	0
Nonroad Equipment	1	64	18	<1	<1	<1
Onroad Vehicles	<1	6	6	<1	<1	<1
Total Construction Year 2026	**2**	**70**	**24**	**32**	**6**	**<1**
Significance Threshold	75	550	100	150	55	150
Significant?	No	No	No	No	No	No
Year 2027[c]						
Fugitives	0	0	0	31	5	0
Harbor Crafts (HC)	0	0	0	0	0	0
Nonroad Equipment	2	86	33	<1	<1	<1
Onroad Vehicles	<1	4	<1	<1	<1	<1
Total Construction Year 2027	**2**	**90**	**33**	**31**	**6**	**<1**
Significance Threshold	75	550	100	150	55	150
Significant?	No	No	No	No	No	No

Source Category[a]	Peak Construction Daily Emissions (lbs/day)[b]					
	VOC	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_X
Year 2028[c]						
Fugitives	0	0	0	30	5	0
Harbor Crafts (HC)	0	0	0	0	0	0
Nonroad Equipment	2	84	33	<1	<1	<1
Onroad Vehicles	<1	3	<1	<1	<1	<1
Total Construction Year 2028	**2**	**87**	**33**	**31**	**6**	**<1**
Significance Threshold	75	550	100	150	55	150
Significant?	No	No	No	No	No	No
Year 2029[c]						
Fugitives	0	0	0	3	2	0
Harbor Crafts (HC)	0	0	0	0	0	0
Nonroad Equipment	1	57	18	<1	<1	<1
Onroad Vehicles	<1	3	<1	<1	<1	<1
Total Construction Year 2029	**1**	**60**	**18**	**3**	**2**	**<1**
Significance Threshold	75	550	100	150	55	150
Significant?	No	No	No	No	No	No

Notes:
[a] Fugitive emission includes fugitive dust from on-site construction off-road equipment activity.
[b] Due to rounding numbers shown, values may not add up perfectly with results.
[c] The construction period is presented as the years 2024 – 2029, which was a valid assumption at the time document preparation was initiated. The analysis is conservative because the construction equipment and vehicles that would actually be used would be cleaner than is assumed in these analyses, which is the average emission factors of the 2024 fleet, not the future fleet (see Section 3.1.3.3).

Impact Determination

Table 3.1-10 shows that peak daily construction emissions would not exceed the SCAQMD daily emission thresholds for any construction year.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impact would be less than significant.

Impact AQ-2: Would construction of the Proposed Project result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance?

Table 3.1-11 compares peak daily on-site construction emissions of the Proposed Project to the applicable SCAQMD LST thresholds from Table 3.1-5. Emissions considered onsite during construction were those that fell within the boundary of the Proposed Project site and included emissions from all activities described under Impact AQ-1 above except for off-site truck and worker vehicle travel.

Impact Determination

As shown in Table 3.1-11, estimated maximum onsite daily construction emissions are below the SCAQMD LST thresholds for the nearest sensitive receptor for NO_X, CO,

PM_{10}, and $PM_{2.5}$. On-site construction CO and NO_X emissions are also below the SCAQMD LST thresholds for the nearest off-site worker. These impacts would be less than significant and therefore, no mitigation is required.

While on-site construction PM_{10} and $PM_{2.5}$ emissions exceed the LSTs for the nearest off-site worker in some years, comparisons of PM emissions against the off-site worker LSTs are not relevant since the PM_{10} and $PM_{2.5}$ LSTs are only applicable to receptors reasonably likely to be present for 24-hours or more at a time which is not the case for off-site workers. Since this screening analysis shows that on-site construction emissions of CO are below the mass-rate LSTs, further air dispersion modeling to evaluate local CO concentration impacts from construction of the Proposed Project is not required and localized impacts would be less than significant. Note that SO_2 is not modeled. The primary source of SO_2 emissions during construction is exhaust from construction equipment. As state and federal regulations (California Ocean-Going Vessel Fuel Regulation SCAQMD Rule 431.2) require the use of low sulfur fuels, SO_2 emissions are expected to be insignificant. For this reason, SO_2 emissions from construction of the Proposed Project are not expected to cause or contribute to any exceedance of NAAQS or CAAQS.

Table 3.1-11. Comparison of On-Site Construction Peak Day Emissions to SCAQMD LST Thresholds

Scenario	Maximum Daily On-site Emissions[a] (lb/day)			
	CO	NO_2[b]	PM_{10}	$PM_{2.5}$
2024[c]				
2024 Onsite Construction Emissions	18.4	13.9	8.2	1.6
LST: Off-Site Worked[c]	*1,530*	*123*	*14.0*	*8.0*
Exceeds Off-Site Worker LST?	No	No	N/A[e]	N/A[e]
LST: Sensitive Receptor[d]	*10,198*	*179*	*191*	*120*
Exceeds Sensitive Receptor LST?	No	No	No	No
2025[c]				
2025 Onsite Construction Emissions	99.2	43.5	10.4	2.3
LST: Off-Site Worker	*1,530*	*123*	*14.0*	*8.0*
Exceeds Off-Site Worker LST?	No	No	N/A[e]	N/A[e]
LST: Sensitive Receptor[d]	*10,198*	*179*	*191*	*120*
Exceeds Sensitive Receptor LST?	No	No	No	No
2026[c]				
2026 Onsite Construction Emissions	64.2	18.6	30.7	6.0
LST: Off-Site Worker	*1,530*	*123*	*14.0*	*8.0*
Exceeds Off-Site Worker LST?	No	No	N/A[e]	N/A[e]

Scenario	Maximum Daily On-site Emissions[a] (lb/day)			
	CO	NO_2[b]	PM_{10}	$PM_{2.5}$
LST: Sensitive Receptor[d]	*10,198*	*179*	*191*	*120*
Exceeds Sensitive Receptor LST?	No	No	No	No
2027[c]				
2027 Onsite Construction Emissions	85.5	33.1	30.7	5.4
LST: Off-Site Worker	*1,530*	*123*	*14.0*	*8.0*
Exceeds Off-Site Worker LST?	No	No	N/A[e]	N/A[e]
LST: Sensitive Receptor[d]	*10,198*	*179*	*191*	*120*
Exceeds Sensitive Receptor LST?	No	No	No	No
2028[c]				
2028 Onsite Construction Emissions	84.1	33.0	30.2	5.3
LST: Off-Site Worker	*1,530*	*123*	*14.0*	*8.0*
Exceeds Off-Site Worker LST?	No	No	N/A[e]	N/A[e]
LST: Sensitive Receptor[d]	*10,198*	*179*	*191*	*120*
Exceeds Sensitive Receptor LST?	No	No	No	No
2029[c]				
2029 Onsite Construction Emissions	56.5	18.3	3.4	1.8
LST: Off-Site Worker	*1,530*	*123*	*14.0*	*8.0*
Exceeds Off-Site Worker LST?	No	No	N/A[e]	N/A[e]
LST: Sensitive Receptor[d]	*10,198*	*179*	*191*	*120*
Exceeds Sensitive Receptor LST?	No	No	No	No

Notes:
[a] Maximum daily on-site construction emissions.
[b] An approximated LST was estimated to evaluate the federal 1-hour NO_2 standard, as the SCAQMD LST has not been updated to reflect this standard. This value was estimated by scaling the SCAQMD LST that represents the state 1-hr NO_2 standard with the ratio of the federal to state 1-hr NO_2 standard (0.10 ppm/0.18 ppm).
[c] The construction period is presented as the years 2024 – 2029, which was a valid assumption at the time document preparation was initiated. The analysis is conservative because the construction equipment and vehicles that would actually be used would be cleaner than is assumed in these analyses, which is the average emission factors of the 2024 fleet, not the future fleet (see Section 3.1.3.3).
[d] LSTs are listed in Table 3.1-5.
[e] PM_{10} and $PM_{2.5}$ LSTs are relevant to sensitive receptors reasonably likely to be present for 24 hours or more. Since off-site worker receptors are not expected to be present for this duration, significance for particulates have been omitted for off-site worker receptors.

Although PM_{10}, and $PM_{2.5}$ emissions are below the LST thresholds for the nearest sensitive receptor, dispersion modeling of these pollutants was performed to more fully evaluate impacts of these emissions at all off-site locations. Dispersion modeling inputs,

procedures, and assumptions are described in Appendix B2. Results of the dispersion modeling of construction PM_{10} and $PM_{2.5}$ emissions are presented in Table 3.1-12.

Dispersion modeling of PM_{10} and $PM_{2.5}$ construction emissions shows that annual PM_{10} and 24-hour $PM_{2.5}$ concentrations would be below significance thresholds in all years (2024 – 2029); accordingly, impacts would be less than significant. However, 24-hour PM_{10} ambient concentrations would exceed the significance thresholds in 2026, 2027, and 2028. Accordingly, impacts of 24-hour PM_{10} would be significant.

As shown in Table 3.1-12, PM_{10} construction emissions during 2026, 2027, and 2028 are dominated by fugitive dust, which accounts for over 96 percent of the peak day PM_{10} emissions during these years. Dust emissions are high in these years due to use of earth moving equipment for grading and paving and other land-side construction activities.

Maximum 24-hour PM_{10} exceedances are located on the site boundary. Figure B2-10 in Appendix B2 shows the locations of maximum air quality impacts due to combined construction and operation. Figure B2-11 in Appendix B2 shows the locations of maximum air quality impacts due to operation.

Table 3.1-12. Maximum Off-Site Ambient PM_{10} and $PM_{2.5}$ Concentrations - Proposed Project Construction

Pollutant	Averaging Period	Year[a]	Maximum Modeled Project Concentration Increment ($\mu g/m^3$)[b,c]	Significance Threshold ($\mu g/m^3$)[d]	Threshold Exceeded?
PM_{10}	24-hour	2024	7.5	10.4	No
		2025	9.6	10.4	No
		2026	**29.4**	**10.4**	**Yes**
		2027	**29.3**	**10.4**	**Yes**
		2028	**28.9**	**10.4**	**Yes**
		2029	3.3	10.4	No
	Annual	2024	0.055	1.0	No
		2025	0.40	1.0	No
		2026	0.33	1.0	No
		2027	0.29	1.0	No
		2028	0.21	1.0	No
		2029	0.037	1.0	No
$PM_{2.5}$	24-hour	2024	1.3	10.4	No
		2025	1.9	10.4	No
		2026	5.7	10.4	No
		2027	5.1	10.4	No
		2028	5.1	10.4	No
		2029	1.7	10.4	No

Notes:

[a] The construction period is presented as the years 2024 – 2029, which was a valid assumption at the time document preparation was initiated. The analysis is conservative because the construction equipment and vehicles that would actually be used would be cleaner than is assumed in these analyses, which is the average emission factors of the 2024 fleet, not the future fleet (see Section 3.1.3.3)

[b] The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

[c] Because the thresholds for PM_{10} and $PM_{2.5}$ are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.
[d] See Table 3.1-6

Mitigation Measures

Proposed Project construction activities would comply with the following Mitigation Measures:

MM AQ-1: On-Road Trucks Used During Construction.

1. Trucks hauling materials such as debris or fill shall be fully covered while operating off Port property.
2. Idling shall be restricted to a maximum of 5 minutes when not in use.
3. Tier Specifications:
    - Until December 31, 2026: All on-road heavy-duty diesel trucks with a GVWR of 19,500 pounds or greater used on site or to transport materials to and from the site shall comply with 2012 emission standards, or newer, where available.
    - Post January 1, 2027: All on-road heavy-duty diesel trucks used on site or to transport materials to and from the site shall comply with 2015 emission standards, or newer, where available.

A copy of each unit's certified U.S. Environmental Protection Agency (USEPA) rating, BACT documentation, and CARB or South Coast Air Quality Management District (SCAQMD) operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

MM AQ-2: Off-Road Construction Equipment.

1. Construction equipment shall incorporate, where feasible, emissions savings technology such as hybrid drives and specific fuel economy standards.
2. Idling shall be restricted to a maximum of 5 minutes when not in use.
3. Tier Specifications:
    - All offroad diesel-powered construction equipment greater than 50 horsepower shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
    - A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

The construction equipment measures shall be met, unless one of the following circumstances exists and the contractor is able to provide proof that any of these circumstances exists:

- A piece of specialized equipment is unavailable in a controlled form within the state of California, including through a leasing agreement.
- A contractor has applied for necessary incentive funds to put controls on a piece of uncontrolled equipment planned for use on the project, but the

application process is not yet approved, or the application has been approved, but funds are not yet available.

- A contractor has ordered a control device for a piece of equipment planned for use on the project, or the contractor has ordered a new piece of controlled equipment to replace the uncontrolled equipment, but that order has not been completed by the manufacturer or dealer. In addition, for this exemption to apply, the contractor must attempt to lease controlled equipment to avoid using uncontrolled equipment, but no dealer within 200 miles of the project has the controlled equipment available for lease.

MM AQ-3: Port of Los Angeles Sustainable Construction Guidelines. The Proposed Project shall implement and comply with all measures as required by the Los Angeles Harbor Department's Sustainable Construction Guidelines adopted in February 2008 and updated in November 2009 during Project construction activities. These requirements shall be included in the construction contracts and bid documents for the Proposed Project.

MM AQ-4: General Construction Mitigation Measure. For MM AQ-1 through MM AQ-3, if a CARB-certified technology becomes available that is as good as or better than the existing measure in terms of emissions performance, the technology could replace the existing technology if approved by LAHD.

MM AQ-5: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks. The Tenant shall fuel diesel-powered construction equipment and on-road trucks with renewable diesel fuel during construction. The renewable diesel product that is used shall comply with ASTM fuel standards.

In the event of renewable diesel supply challenges or disruptions, the Tenant shall use ULSD as a secondary fuel. The Tenant shall demonstrate to LAHD substantial evidence of a supply disruption or event in a timely manner.

MM AQ-6: Vessel Speed Reduction Program (VSRP). 100 percent of vessels calling at the Phillips 66 MOT will be required to comply with the expanded VSRP at 12 knots between 40 nautical miles (nm) from Point Fermin and the Precautionary Area. Vessels experiencing a maritime emergency[4] that prevents compliance with the expanded VSRP may be exempt from this measure.

In addition to mitigation measures MM AQ-1 through MM AQ-6, Proposed Project construction and operational activities would also comply with the following Project Design Feature (PD):

LM AQ-1: Periodic Review of New Technology. The Tenant will conduct a periodic review of any Port-identified or other new emissions-reducing technology and report to the LAHD on the feasibility of any new technology advancements that may reduce emissions not less frequently than once every five years following the effective date of the entitlement. The technology review would be subject to approval by LAHD and would involve consultation with appropriate resources (e.g., consultants, engineers, regulators) to validate the findings. If the review demonstrates the new technology would be effective in reducing emissions and is determined by the LAHD to be feasible, including but not limited to, financial, technical and

[4] Maritime emergencies may include, but are not limited to, suspicious activity, drone/plane activity, security breaches or attempts, United States Coast Guard safety/security/protection zone violations, crimes on land and water, navigation rule violations, vessels in distress, rescues, and fires and emergencies, as defined by the Port of Los Angeles Mariners Guide.

operational considerations, the Tenant will implement the new air quality technological advancements, subject to mutual agreement, the implementation which shall not be unreasonably withheld by the Tenant.

Table B1-1 of Appendix B1 discusses in detail the specific regulations and agreements assumed as part of the construction emissions analysis which includes measures and BMPs that reduce air emissions from harbor craft, off-road equipment, fugitive dust and delivery trucks involved in Project construction, such as by limiting idling time. In addition, MM AQ-4 (Port of Los Angeles Sustainable Construction Guidelines [Guidelines]) describe certain practices for fugitive dust watering control, which were quantified in this analysis.

The Guidelines are mandatory requirements for all developments in the Port. Those guidelines include control measures requiring construction equipment and vehicles to comply with more stringent emission standards than those reflected in an average regional fleet (as described in Section 4 of Appendix B1). Additional control measures of air emissions from construction equipment and vehicles are not feasible at this time. Fugitive dust control measures (such as regular watering of areas of disturbed soil) are also included in the Guidelines. In general, the Guidelines encompass control measures potentially applicable to the Proposed Project that are consistent with measures included in relevant SCAQMD and Southern California Association of Governments (SCAG) planning documents.[5] No additional feasible mitigations for construction dust emissions are available.

Due to uncertainties in the timing and availability of emission reduction technologies and overlapping requirements with existing regulations, including requirements of mitigation measures MM AQ-1 through MM AQ-6 and lease measure LM AQ-1, it is not feasible to reliably estimate any additional degree of emission reductions which may be achieved by these mitigation measures beyond what is already included in the unmitigated Project construction emissions.

Residual Impacts

No additional feasible mitigation measures are available. Accordingly, the impacts of 24-hour PM_{10} emissions from Proposed Project construction would be significant and unavoidable.

Impact AQ-3: Would the Proposed Project result in operational emissions that exceed an SCAQMD regional threshold of significance in Table 3.1-6?

Table 3.1-13 presents peak daily criteria pollutant emissions associated with terminal operations of the Proposed Project. Operational sources of emissions associated with the MOTEMS facility would include tanker vessels and barges, harbor craft, heavy-duty trucks, worker vehicles, and stationary sources. Operational peak daily emissions of mobile sources are tracked outside of the terminal (referred to as off-site emissions) out to the SCAB border.

[5] These documents include: SCAG's Mitigation Monitoring and Reporting Plan for the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (Connect SoCAL) https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook; SCAQMD's Mitigation Monitoring and Reporting Plan for the 2022 Air Quality Management Plan 2022 Air Quality Management Plan; SCAQMD's Air Quality Analysis Handbook: Mitigation and Control Efficiencies https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies

Peak day operational emissions are based on the maximum level of vessel operations associated with the terminal during any given 24-hour period, including vessel berthing, vessel loading/unloading, anchoring, maneuvering, and transiting. For the 2021 Baseline, vessel call records provided by Phillips 66 were used to identify the 24-hour period of maximum activity. Future year Proposed Project peak-day operational emissions were calculated based on a reasonably foreseeable maximum level of activity during any given 24-hour period based on vessel operational parameters and other logistical considerations. The future year peak day operational scenario was determined in consultation with the Port of Los Angeles and Phillips 66. It includes a visit to the Berth 150-151 wharf by a larger Aframax class tanker for a longer period of berthing and transiting time as compared to the shorter berthing and transit time of a smaller Handysize class tanker included in the 2021 Baseline peak day scenario. In addition, it is assumed that tanker ship calls during the future year peak day would make use of a Terminal Incident Event and Vessel Incident Event (TIE and VIE) exception allowed under the CARB At-Berth regulation and therefore tanker ship auxiliary engine and boiler emissions while at berth would not be controlled by the CAECS barge. As a result, future year peak-day operational emissions are estimated to exceed those of the 2021 Baseline peak day as shown in Table 3.1-12. Details of the Baseline and future year peak day operational scenarios and emission calculations are presented in Appendix B1.

Peak daily emissions represent upper-limit estimates of activity levels at the terminal and as such would occur infrequently. Emissions by source characteristics, activity levels, fuel sulfur content, emission factors, and other parameters assumed in the operational emissions calculations are discussed in detail in Appendix B1.

Future year emissions were calculated for the 2027 (the assumed first year of Project operation, see Section 3.1.3.3) and 2057 operational years and the same peak-day operating scenario was applied in each year. Accordingly, 2027 is the first year and 2057 is the last year of the 30-year residential exposure period used to calculate health risk impacts for the Proposed Project (see discussion under Impact AQ-5 below). This analysis assumes that product throughput and vessel visits at the Berth 150-151 wharf would remain constant from the start-up of Project operations in 2027 through the life of the Project, and makes conservative assumptions about emission reductions in future years resulting from the introduction of cleaner OGV, harbor craft, and truck engines (i.e., actual reductions are likely to be larger than assumed). As a result, emissions from operational activities are calculated to remain essentially the same between 2027 and 2057. Additional details are provided in Appendix B1.

Overlapping construction emissions in 2027 are included in the emissions calculations shown in Table 3.1-13. Construction would be completed in 2029 and construction emissions in 2027 are estimated to be greater than in 2028 or 2029.

Table 3.1-13. Peak Daily Operational Emissions – Proposed Project (lbs/day)

	Peak Operational Daily Emissions (lbs/day)					
Source Category	**VOC**	**CO**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**SO_X**
2027[a]						
Harbor Crafts (HC)	<1	10	23	<1	<1	<1
OGV Hoteling/Anchorage	36	88	931	22	21	63
OGV Transit	36	83	1,225	14	13	34
Worker Vehicles	<1	<1	<1	<1	<1	<1
Trucks	<1	<1	2	<1	<1	<1

	Peak Operational Daily Emissions (lbs/day)					
Source Category	**VOC**	**CO**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**SO_X**
Fugitive Components	12	0	0	0	0	0
Other Stationary Processes	<1	0	0	0	0	0
Storage Tanks	28	0	0	0	0	0
Total Operational Year 2027	**114**	**181**	**2,181**	**37**	**34**	**97**
Overlapping Construction	2	90	33	31	6	<1
Project Total with Overlapping Construction	**116**	**271**	**2,215**	**69**	**40**	**98**
CEQA Baseline Emissions	70	103	1,164	23	21	58
Project Minus CEQA Baseline	45	168	1,051	45	18	39
Significance Threshold	55	550	55	150	55	150
Significant?	No	No	**Yes**	No	No	No
2057						
Harbor Crafts (HC)	<1	10	24	<1	<1	<1
OGV Hoteling/Anchorage	36	88	931	22	21	63
OGV Transit	36	83	1,225	14	13	34
Worker Vehicles	<1	<1	<1	<1	<1	<1
Trucks	<1	<1	1	<1	<1	<1
Fugitive Components	12	0	0	0	0	0
Other Stationary Processes	<1	0	0	0	0	0
Storage Tanks	28	0	0	0	0	0
Total Operational Year 2057	**114**	**181**	**2,181**	**37**	**34**	**97**
CEQA Baseline Emissions	70	103	1,164	23	21	58
Project Minus CEQA Baseline	43	78	1,017	14	13	39
Significance Threshold	55	550	55	150	55	150
Significant?	No	No	**Yes**	No	No	No

Note:

[a]As described in more detail in Section 3.1.3.3, the first year of operation is assumed to be 2027 because the analysis was conducted before project delays caused delays in the release of this Draft EIR. The analysis is conservative because the equipment and vehicles that would actually be used would be cleaner than is assumed in these analyses.

Impact Determination

Table 3.2-13 shows that unmitigated peak daily operational emissions would exceed the SCAQMD daily regional emissions thresholds for NO_X. Therefore, Proposed Project operational NO_X emissions would be significant under CEQA prior to mitigation.

Impact Discussion

As shown in Table 3.2-13, by far the largest contributors to peak daily operational emissions of NO_X are ocean-going vessels. Nevertheless, even if all OGV hoteling and anchorage emissions were eliminated, NO_X emissions would still exceed the SCAQMD significance threshold in both years.

The largest contributor to the significant impact for peak daily NO_X emissions are the tanker ship and barge emissions related to transiting and hoteling. Activities during the Proposed Project peak day include 18 hours of berthing and 5 hours of transiting by an Aframax class tanker ship, 18 hours of anchorage and 5 hours of berthing by a Panamax class tanker ship, and 4 hours of transiting and 20 hours of anchorage by an ocean-going

barge. The analysis, conservatively, does not take credit for potential future turnover of the fleet to a higher percentage of Tier 3 tanker ships than was included in the 2021 Baseline.

Hoteling emissions from vessels are another major contributor of NO_X emissions. Hoteling NO_X emissions from the Proposed Project would be reduced by compliance with CARB's At-Berth regulation. Phillips 66 submitted a Terminal Plan to CARB describing how vessel visits to the MOT will comply with the At-Berth rule. The Terminal Plan was accepted as final by CARB on December 29, 2022. A revised Terminal Plan was submitted to CARB in January 2024. According to this plan, Phillips 66 will comply with the rule either by 1) operating under the rule's "low use" exception from control requirements by limiting the number of annual vessel visits to no more than nineteen, or 2) using a third-party barge-based CAECS that is accepted for safe interfacing with tanker vessels. Use of a barge-based CAECS would reduce hoteling NO_X emissions. However, the most conservative assumption for analyzing peak-day emissions is to assume that vessel visits during the peak day would coincide with a Vessel and Terminal Incident Event (VIE and TIE) when at-berth controls are not used as allowed under the At-Berth Regulation. Therefore, the peak day emissions analysis (Table 3.1-13) does not take credit for any potential emission reductions resulting from compliance with the At-Berth regulation.

Lastly, the analysis assumes normal future turnover of the average engine age mix of the Port's assist tug fleet starting with the 2021 Baseline based on engine useful life. CARB recently approved the 2022 Amendments to the Commercial Harbor Craft (CHC) Regulation, and compliance with the amended regulation may result in a faster fleet turnover and, therefore, lower future emissions. On January 10, 2025, CARB received partial authorization for the 2022 CHC Amendments. However, for purposes of the current study, because emissions calculations were completed prior to USEPA's January 2025 granting of a partial waiver under the Clean Air Act, the analysis does not quantify potential reductions benefits of the 2022 CHC rule amendments.

On January 13, 2025, CARB withdrew its request for a waiver and authorization to USEPA for its Advanced Clean Fleets Regulation. Therefore, this analysis conservatively does not take credit for potential future NO_X emission reductions from on-road trucks resulting from the CARB's Advanced Clean Fleet Regulation.

Mitigation Measures

As noted above, compliance with CARB's At-Berth emission control regulation would reduce NO_X emissions from vessel hoteling on most days and this would reduce – but not eliminate – the possibility of peak-day operating emissions reaching the levels assumed in this analysis. Enforcement of the 2022 amendments to the CHC regulation would also reduce Project operating emissions but any such reductions are speculative as of the time of this analysis.

Vessel transiting emissions would be reduced under the Proposed Project by implementation of Mitigation Measure (MM) AQ-6 (see Impact AQ-2, above). Vessel transiting records maintained by the Port show that 96.9 percent of vessels calling at the Phillips 66 MOT in 2021 complied with the VSRP 12 knot speed guidance inside the 20 nm zone and 94.1 percent complied inside the 40 nm zone. Compliance in recent years has been even higher: 100 percent inside the 20 nm zone in 2023 through 2025 and from 95 percent in 2023 to 100 percent in 2025 inside the 40 nm zone (POLA 2026). For purposes of this analysis, vessel transits to the MOT during Project operation were assumed to have the same level of compliance with the VSRP requirements as was

recorded for the 2021 Baseline. Therefore, the emission reductions resulting from implementation of MM AQ-4 (General Construction Mitigation Measure) have been approximately accounted for in this air quality impact analysis.

Emissions from the Proposed Project would potentially be further reduced as a result of the application of lease measure LM AQ-1 (Periodic Review of New Technology [see Impact AQ-2, above]). Due to uncertainties in the timing and availability of emission reduction technologies, it is not possible to quantify any potential emission reductions resulting from LM AQ-1 (Periodic Review of New Technology) at this time. Nevertheless, it is expected that these measures would further reduce future air quality emissions and serve to comply with the Port's air quality goals.

After the application of mitigation, NO_X emissions from operation of the Proposed Project would be dominated by emissions from OGVs during transit within the South Coast Air Basin, which are not under the direct control of the Port, the state, or local air pollution control authorities. Accordingly, no additional feasible mitigations of Project NO_X impacts are available.

Residual Impacts

Impacts would be significant and unavoidable for operational NO_X emissions under the Proposed Project.

Impact AQ-4: Would operation of the Proposed Project result in offsite ambient air pollutant concentrations that exceed a SCAQMD threshold of significance?

An analysis of on-site operational emissions of CO, NO_X, PM_{10} and $PM_{2.5}$ was performed to determine if operational emissions in the two analysis years (2027 and 2057) would exceed the SCAQMD operational LSTs listed in Table 3.1-7. Results are shown in Table 3.1-14. Overlapping construction emissions in 2027 were included in the comparisons (construction emissions in 2028 and 2029 are estimated to be no greater than in 2027; see Table 3.1-11). On-site emissions sources of CO, NO_X and PM include ships at berth, harbor craft, truck and light-duty vehicle on-site idling and driving, and stationary sources.

Table 3.1-14. Peak Daily On-Site Operational Emissions – Proposed Project (lbs/day)

	Peak Daily Operational On-Site Emissions (lbs/day)			
Source Category	**CO**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
2027[a]				
Harbor Craft	8.3	19.7	<1	<1
Tanker Ships and Barges	58.0	622.5	15.5	14.3
Worker Vehicles	<1	<1	<1	<1
Trucks	<1	<1	<1	<1
Total On-Site Operations	**66.4**	**642.4**	**16.0**	**14.7**
Construction Activities	85.5	33.1	N/A[b]	N/A[b]
Total On-Site Operations and Construction	**151.9**	**675.5**	**16.0**	**14.7**
CEQA Baseline On-Site Emissions	64.4	578.2	13.6	12.5
Project Minus CEQA Baseline	**87.5**	**97.3**	**2.4**	**2.2**
LST: Off-Site Worker[c]	*1,530*	*123*	*4*	*2*

	Peak Daily Operational On-Site Emissions (lbs/day)			
Source Category	**CO**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Significant?	No	No	N/A[d]	N/A[d]
LST: Sensitive Receptor[c]	*10,198*	*179*	*46*	*29*
Significant?	No	No	No	No
2057				
Harbor Craft	8.4	19.9	<1	<1
Tanker Ships and Barges	58.0	622.5	15.5	14.3
Worker Vehicles	<1	<1	<1	<1
Trucks	<1	<1	<1	<1
Total On-Site Operations	**66.5**	**642.5**	**16.0**	**14.7**
CEQA Baseline On-Site Emissions	64.4	578.2	13.6	12.5
Project Minus CEQA Baseline	**2.1**	**64.3**	**2.4**	**2.2**
LST: Off-Site Worker[c]	*1,530*	*123*	*4*	*2*
Significant?	No	No	N/A[d]	N/A[d]
LST: Sensitive Receptor[c]	*10,198*	*179*	*46*	*29*
Significant?	No	No	No	No

Notes:
[a] As described in more detail in Section 3.1.3.3, the first year of operation is assumed to be 2027 because the analysis was conducted before project delays caused delays in the release of this Draft EIR. The analysis is conservative because the equipment and vehicles that would actually be used would be cleaner than is assumed in these analyses.
[b] Construction emissions are not applicable to the PM_{10} and $PM_{2.5}$ LSTs for operational activities.
[c] LSTs are listed in Table 3.1-8.
[d] PM_{10} and $PM_{2.5}$ LSTs are relevant to sensitive receptors reasonably likely to be present for 24 hours or more. Since off-site worker receptors are not expected to be present for this duration, significance for particulates have been omitted for off-site worker receptors.

The SCAQMD LST screening analysis showed that estimated maximum daily incremental on-site operational emissions are below the applicable SCAQMD mass-rate CO, NO_X, PM_{10}, and $PM_{2.5}$ LSTs for the nearest sensitive receptor in both 2027 and 2057. $PM_{2.5}$ emissions are greater than the LST for the nearest off-site worker in both years, but the $PM_{2.5}$ and PM_{10} LSTs are only applicable to daily exposures of 24 hours or more whereas off-site workers are not expected to be present for this duration. PM_{10} and $PM_{2.5}$ emissions from construction in 2027 are not added to the operational emissions in Table 3.1-14 because construction PM emissions do not apply to the operational PM LSTs; comparisons of construction PM emissions to the construction PM LSTs were provided in Table 3.1-11.

Dispersion modeling of NO_2, PM_{10}, and $PM_{2.5}$ emissions from Project operations and overlapping construction was performed to estimate maximum ambient air quality concentration impacts for comparison with SCAQMD thresholds shown in Table 3.1-8. Dispersion modeling inputs, procedures, and assumptions are described in Appendix B2. Dispersion modeling of CO emissions was not performed as ambient CO impacts can be expected to fall below the SCAQMD thresholds based on results of the LST analysis shown in Table 3.1-14. SO_2 impacts can also be expected to be less than significant due to very low SO_2 emissions (see Table 3.1-12); SCAQMD has not established an LST threshold for SO_2.

Table 3.1-15 presents the maximum off-site concentrations of NO_2, from operational activities with overlapping construction for the 2027 analysis year. Table 3.1-16 presents the maximum off-site concentrations of PM_{10} and $PM_{2.5}$ from operational activities with

overlapping construction for the 2027 analysis year and Table 3.1-17 presents maximum off-site concentrations of PM_{10} and $PM_{2.5}$ from operational activities alone for both the 2027 and 2057 analysis years. Overlapping construction with Proposed Project operations would only occur in 2027, 2028, and 2029. Since construction emissions in 2028 and 2029 are no greater than in 2027 and Proposed Project operations are assumed for the purposes of this analysis to remain at the same maximum level in all years starting in 2027, impacts from Proposed Project operations and overlapping construction in 2028 and 2029 would be no greater than those shown for 2027 in Tables 3.1-15 and 3.1-16.

Table 3.1-15. Maximum Off-site Ambient NO_2 Concentrations — Proposed Project Operation with Overlapping Construction in 2027

Averaging Time[a]	Analysis Years	Background Concentration (µg/m³)[b]	Maximum Modeled Project Concentration Increment (µg/m³)[c,d]	Total Concentration (µg/m³)[e]	Significance Threshold (µg/m³)	Concentration above Threshold?
Federal 1-hour	2027[f]	98	109.4	**207.2**	188	**Yes**
	2057	98	27.2	125.0	188	No
State 1-hour	2027[f]	113	110.6	223.5	338	No
	2057	113	37.1	150.0	338	No
Federal annual	2027[f]	24	33.2	57.6	100	No
	2057	24	23.6	48.1	100	No
State Annual	2027[f]	24	33.2	57.6	57	**Yes**
	2057	24	23.6	48.1	57	No

Notes:
[a] The federal 1-hour NO_2 modeled concentration represents the 98th percentile of the daily maximum 1-hour averages. The state 1-hour NO_2 modeled concentration represents the maximum concentration.
[b] The background concentrations for NO_2 were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).
[c] The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).
[d] 2027 hourly and annual average concentrations include overlapping construction impacts.
[e] The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.
[f] As described in more detail in Section 3.1.3.3, the first year of operation is assumed to be 2027 because the analysis was conducted before project delays caused delays in the release of this Draft EIR. The analysis is conservative because the equipment and vehicles that would actually be used would be cleaner than is assumed in these analyses.

Table 3.1-16. Maximum Off-site Ambient PM_{10} and $PM_{2.5}$ Concentration Increments – Proposed Project Operation with Overlapping Construction

Pollutant	Averaging Period	Analysis Year[a]	Maximum Modeled Project Concentration Increment (µg/m³)[b,c]	Significance Threshold (µg/m³)	Threshold Exceeded?
PM_{10}	24-hour	2027	**29.1**	**10.4**	**Yes**
	Annual	2027	0.78	1.0	No
$PM_{2.5}$	24-hour	2027	4.9	10.4	No

Notes:
[a] As described in more detail in Section 3.1.3.3, the first year of operation is assumed to be 2027 because the analysis was conducted before project delays caused delays in the release of this Draft EIR. The analysis is conservative because the equipment and vehicles that would actually be used for construction and operation would be cleaner than is assumed in these analyses.
[b] The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

[c] Because the thresholds for PM_{10} and $PM_{2.5}$ are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment. .

Table 3.1-17. Maximum Off-Site Ambient PM_{10} and $PM_{2.5}$ Concentration Increments – Proposed Project Operation

Pollutant	Averaging Period	Analysis Year[a]	Maximum Modeled Project Concentration Increment (µg/m³)[b, c]	Significance Threshold (µg/m³)	Threshold Exceeded?
PM_{10}	24-hour	2027	0.32	2.5	No
		2057	0.32	2.5	No
	Annual	2027	0.49	1.0	No
		2057	0.49	1.0	No
$PM_{2.5}$	24-hour	2027	0.30	2.5	No
		2057	0.30	2.5	No

Notes:
[a] As described in more detail in Section 3.1.3.3, the first year of operation is assumed to be 2027 because the analysis was conducted before project delays caused delays in the release of this Draft EIR. The analysis is conservative because the equipment and vehicles that would actually be used would be cleaner than is assumed in these analyses
[b] The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.
[c] Because the thresholds for PM_{10} and $PM_{2.5}$ are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.

Impact Determination

Dispersion modeling of NO_2 combined construction and operation emissions (Table 3.1-15) for years 2027-2029 shows that 1-hr concentrations would be below significance thresholds for the state standards in all years, and annual concentrations would be below the significance levels for the state standard in 2057 and the federal standards in all years. However, NO_2 ambient concentrations from Proposed Project operations and overlapping construction would exceed the significance thresholds for the federal 1-hr standard and the state annual standard in 2027. Accordingly, impacts of 1-hr and annual NO_2 operational emissions in 2027 would be significant.

Dispersion modeling of PM_{10} and $PM_{2.5}$ combined construction and operation emissions in 2027 (Table 3.1-16) shows that annual PM_{10} and 24-hour $PM_{2.5}$ concentrations would be below significance thresholds in all years; accordingly, impacts would be less than significant. However, 24-hour PM_{10} ambient concentrations would exceed the significance threshold in 2027. Accordingly, impacts of 24-hour PM_{10} from combined construction and operation emissions in 2027 would be significant.

Dispersion modeling of PM_{10} and $PM_{2.5}$ operation emissions without overlapping construction (Table 3.1-17) shows that 24-hr and annual PM_{10} and 24-hour and $PM_{2.5}$ concentrations would be below significance thresholds in all years; accordingly, impacts from operation emissions alone would be less than significant.

Impact Discussion

Overlapping construction and operation PM_{10} emissions are dominated by fugitive dust from construction activities: peak-day on-site PM_{10} emissions from Proposed Project operations are 16 pounds [lb]/day (Table 3.1-14) and 2027 peak-day construction emissions are 31 lb/day (Table 3.1-11). As shown in Table 3.1-16, PM_{10} construction emissions in 2027 are dominated by fugitive dust which accounts for over 96 percent of the 2027 peak day PM_{10} emissions (Table B1-2 in Appendix B1).

Figure B2-10 in Appendix B2 shows the locations of maximum air quality concentration increments due to combined Project construction and operation. Maximum impacts are located along the Project site boundary. Figure B2-11 in Appendix B2 shows the locations of maximum PM_{10} and $PM_{2.5}$ concentration increments due to Project operation alone. Maximum PM_{10} and $PM_{2.5}$ concentration increments are located on the eastern boundary of the Project site and just east of the Project site near Berth 168.

As shown in Table 3.1-14, on-site Project NO_X emissions are dominated by on-site tanker ships and barges activity, which accounts for 42 percent and 55 percent of the peak day NO_2 emissions during this year. Maximum 1-hr NO_2 exceedances are located on the Project site boundary.

Mitigation Measures

Unmitigated NO_X emissions from Proposed Project operation alone in 2057 are calculated to result in maximum NO_2 concentration increments that are less than significant (Table 3.1-15). NO_X emissions from Proposed Project operation in 2027 are essentially the same as in 2057 (see Table 3.1-13) and therefore would also result in a less than significant impact. However, when the overlapping construction emissions in 2027 are taken into account, the resulting maximum federal 1-hour and state annual ambient NO_2 concentration increments are significant.

Project construction emissions would be mitigated by mitigation measures MM-AQ-1 through MM AQ-6 and LM AQ-1 as described above.

Table B1-2 of Appendix B1 discusses in detail the specific regulations and agreements assumed as part of the construction emissions analysis, which includes measures and BMPs that reduce air emissions from harbor craft, off-road equipment, fugitive dust, and delivery trucks involved in Project construction, such as by limiting idling time. As noted under Impact AQ-2 above, no additional feasible mitigations for construction emissions are available.

As noted above, compliance with CARB's At-Berth regulation during Project operation would reduce NO_X emissions from vessel hoteling on most days and this would reduce – but not eliminate – the possibility of peak-day operating emissions reaching the levels assumed in this analysis. On January 10, 2025, CARB received partial authorization for the 2022 CHC Amendments. However, for purposes of the current study, because emissions calculations were completed prior to USEPA's January 2025 granting of a partial waiver under the Clean Air Act, the analysis does not quantify potential reductions benefits of the 2022 CHC rule amendments. In addition, on January 13, 2025, CARB withdrew its request for a waiver and authorization to USEPA for its Advanced Clean Fleet regulation. Therefore, this analysis conservatively does not take credit for potential emission reductions.

Vessel transiting emissions would be reduced under the Proposed Project by Mitigation Measure MM AQ-6 (see Impact AQ-2, above). Vessel transiting records maintained by the Port show that 96.9 percent of vessels calling at the Phillips 66 MOT in 2021 complied with the VSRP 12 kt speed guidance inside the 20 nm zone and 94.1 percent complied inside the 40 nm zone. Thus, vessel visits in 2021 were effectively consistent with an overall 95 percent VSRP compliance level. For purposes of this analysis, vessel visits to the MOT during Project operation were assumed to be the same as for the 2021 Baseline.

Due to uncertainties in the timing and availability of emission reduction technologies, it is not possible to quantify any potential emission reductions resulting from LM AQ-1

(Periodic Review of New Technology) at this time. Nevertheless, it is expected that these measures would further reduce future air quality emissions and serve to comply with the Port's air quality goals.

NO_X emissions from operation of the Proposed Project are dominated by emissions from OGVs (Table 3.1-13) which are not under the direct control of the Port, the state, or local air pollution control authorities. Accordingly, no additional feasible mitigations of Project NO_X impacts are available.

Residual Impacts

Localized off-site ambient pollutant concentrations associated with operation of the Proposed Project would be significant and unavoidable for NO_2 (federal 1-hour and state annual standards) and PM_{10} (24-hour average) in 2027 when emissions from overlapping construction activities are included.

Impact AQ-5: Would the Proposed Project expose receptors to significant levels of TACs?

Proposed Project activities would emit TACs that could affect public health. As described in Section 3.1.4.5, an HRA was conducted to address potential public health effects from TACs generated by the Proposed Project. Results of the HRA are summarized below, with impacts shown relative to the 2021 Baseline for all evaluated health endpoints and to the Floating Future Baseline (for cancer risk). The rationale for a CEQA analysis is discussed in detail in Sections 3.1.4.1 through 3.1.4.6 above. Technical details of the analysis, including TAC emissions and the risk calculation approach, are presented in Appendix B3.

Impact Determination

Table 3.1-18 presents the maximum predicted CEQA health impacts associated with the Proposed Project relative to the CEQA Baseline conditions. The table includes estimates of individual cancer risk, chronic noncancer hazard index, and acute noncancer hazard index at the maximally exposed residential, occupational, and non-residential sensitive receptors. The table also presents the population cancer burden. Significance findings are made by comparing the incremental health impacts associated with construction and operation of the Proposed Project to the SCAQMD significance thresholds.

Table 3.1-18. Maximum CEQA Health Impacts Estimated for Construction and Operation of the Proposed Project

Health Impact[a]	Receptor Type	CEQA Increment[b]	Future CEQA Increment[c]	Significance Threshold	Threshold Exceeded?
Individual Cancer Risk	Residential	3.1×10^{-6}	3.2×10^{-6}	10×10^{-6} (10 in a million)	No
		3.1 in a million	3.2 in a million		
	Non-Residential Sensitive[d]	6.4×10^{-6}	6.9×10^{-6}		No
		6.4 in a million	6.9 in a million		
	Occupational	6.0×10^{-6}	6.0×10^{-6}		No
		6.0 in a million	6.0 in a million		
Chronic Hazard Index	Residential	0.00090	n/a[e]	1	No
	Non-Residential Sensitive	0.0023	n/a[e]		No
	Occupational	0.14	n/a[e]		No
Acute Hazard Index	All Populations	0.048	n/a[e]	1	No
			n/a[e]		No
			n/a[e]		No
Population Cancer Burden	0.18		0.42	0.5	No

Notes:
[a] Each result shown in the table for cancer risk, chronic hazard index, and acute hazard index represents the receptor location with the maximum modeled health value. The health values at all other modeled receptors would be less than the values in the table.
[b] The CEQA Increment column represents the maximum difference of the Proposed Project minus the CEQA Baseline.
[c] The Future CEQA Increment column represents the maximum difference of the Proposed Project minus the Floating Future Baseline.
[d] The non-residential sensitive receptor location with the maximum cancer risk is located at the Los Angeles World Cruise Center, which is located approximately 870 meters southwest of the Project site.
[e] The Future CEQA Baseline and Future CEQA increment are applicable only to cancer risk because cancer risk has a uniquely long exposure period (30 years for residential and sensitive exposure, and 70 years for population cancer burden).

In summary, Table 3.1-18 shows the following health risk analysis results for the Proposed Project:

In relation to the 2021 Baseline and the Floating Future Baseline, the maximum incremental cancer risk for the Proposed Project is calculated to be less than the 10-in-a-million significance threshold for residential, non-residential sensitive, and occupational receptors. Therefore, impacts associated with individual cancer risk for the Proposed Project would be less than significant.

Cancer risks for the maximum exposed individual (MEI) residential and non-residential sensitive receptors for the Proposed Project are primarily driven by emissions from tanker ships and barges while at the berth. Cancer risk for the MEI occupational receptor is also primarily driven by the same source. DPM from these sources is the dominant risk driver among all modeled toxic air pollutants.

Figure 3.1-2 shows the individual residential 10-in-a-million cancer risk contour generated using the incremental CEQA cancer risk estimates under the default 30-year residential exposure assumptions at each modeled receptor (regardless of whether it is an

actual residential receptor) in relation to the 2021 Baseline. This figure also shows the locations of the MEI receptors for the residential and non-residential sensitive receptors for the Proposed Project. As shown in this figure, the ten-in-a-million contour does not overlap with any residential zones. The CEQA cancer risk increment for the MEI residential receptor is estimated to be 3.1 in a million (in comparison to the 10-in-a-million significance threshold) and is located southwest of the Proposed Project facility in a residential neighborhood near W. Amar Street and N. Palos Verdes Street in San Pedro. The CEQA cancer risk increment for the MEI non-residential sensitive receptor is estimated to be 6.4 in a million (in comparison to the 10 in a million threshold) and is located south of the Proposed Project facility at the Los Angeles World Cruise Center.

Figure 3.1-3 shows the individual residential 10-in-a-million cancer risk contour generated using the future CEQA incremental cancer risk estimates calculated based on the default 30-year residential assumptions at each modeled receptor regardless of whether it is an actual residential receptor in relation to the Floating Future Baseline. This figure also shows the locations of the MEI receptors for the residential and non-residential sensitive receptors for the Proposed Project. The future CEQA cancer risk increment for the MEI residential receptor is estimated to be 3.2 in a million (in comparison to the 10 in a million threshold) and is located south of the Proposed Project facility in a residential neighborhood near West Amar Street and North Palos Verdes Street. The future CEQA cancer risk increment for the MEI non-residential sensitive receptor is estimated to be 6.9 in a million (in comparison to the 10 in a million threshold) and is located south of the Proposed Project facility at the Los Angeles World Cruise Center.

Figure 3.1-4 shows the individual worker 10-in-a-million cancer risk contour generated using the incremental CEQA cancer risk estimates calculated based on the default occupational exposure assumptions at each modeled receptor (regardless of whether it is an actual occupational receptor) in relation to the 2021 Baseline. This figure also shows the location of the MEI occupational receptor for the Proposed Project. The CEQA cancer risk increment for the MEI occupational receptor is estimated to be 6.0 in a million (in comparison to the 10 in a million threshold) and is located immediately outside the eastern boundary of the Proposed Project facility (i.e., at the building at Berth 153).

Figure 3.1-5 shows the individual worker 10-in-a-million cancer risk contour generated using the future CEQA incremental cancer risk estimates calculated based on the default occupational exposure assumptions at each modeled receptor (regardless of whether it is an actual occupational receptor) in relation to the Future CEQA Baseline. This figure also shows the location of the MEI occupational receptor for the Proposed Project. The future CEQA cancer risk increment for the MEI occupational receptor is estimated to be 6.0 in a million (in comparison to the 10 in a million threshold) and is located just outside the eastern boundary of the Proposed Project facility.

Mitigation Measures

Although impacts would be less than significant and no mitigation is required under CEQA, potential impacts of Project construction emissions would be reduced by implementation of mitigation measures MM AQ-1 through MM AQ-5 as described above. Impacts of Project operational emissions would be limited by Mitigation Measure MM AQ-6 (Vessel Speed Reduction Program) and potentially be further reduced by LM AQ-1 (Periodic Review of New Technology).

Due to uncertainties in the timing and availability of emission reduction technologies and overlapping requirements with existing regulations, including requirements of mitigation measures MM AQ-1through MM AQ-5 and LM AQ-1, it is not possible to quantify any potential emission reductions resulting from these measures at this time. Nevertheless, it is expected that any new technology measures implemented pursuant to these measures would further reduce future air quality emissions and serve to comply with the Port's air quality goals.

As noted above, Project TAC impacts are driven by DPM (i.e., by PM_{10} diesel engine exhaust emissions), nearly all of which is from barges and associated harbor craft and tanker ships. For reasons described under impacts AQ-3 and AQ-4 above, no additional feasible mitigations of Project diesel exhaust emissions, and therefore of Project TAC impacts, are available.

Residual Impacts

Impacts would be less than significant.

Figure 3.1-2. Isopleth of 30-Year Residential Cancer Risk – Proposed Project Minus CEQA Baseline Increment

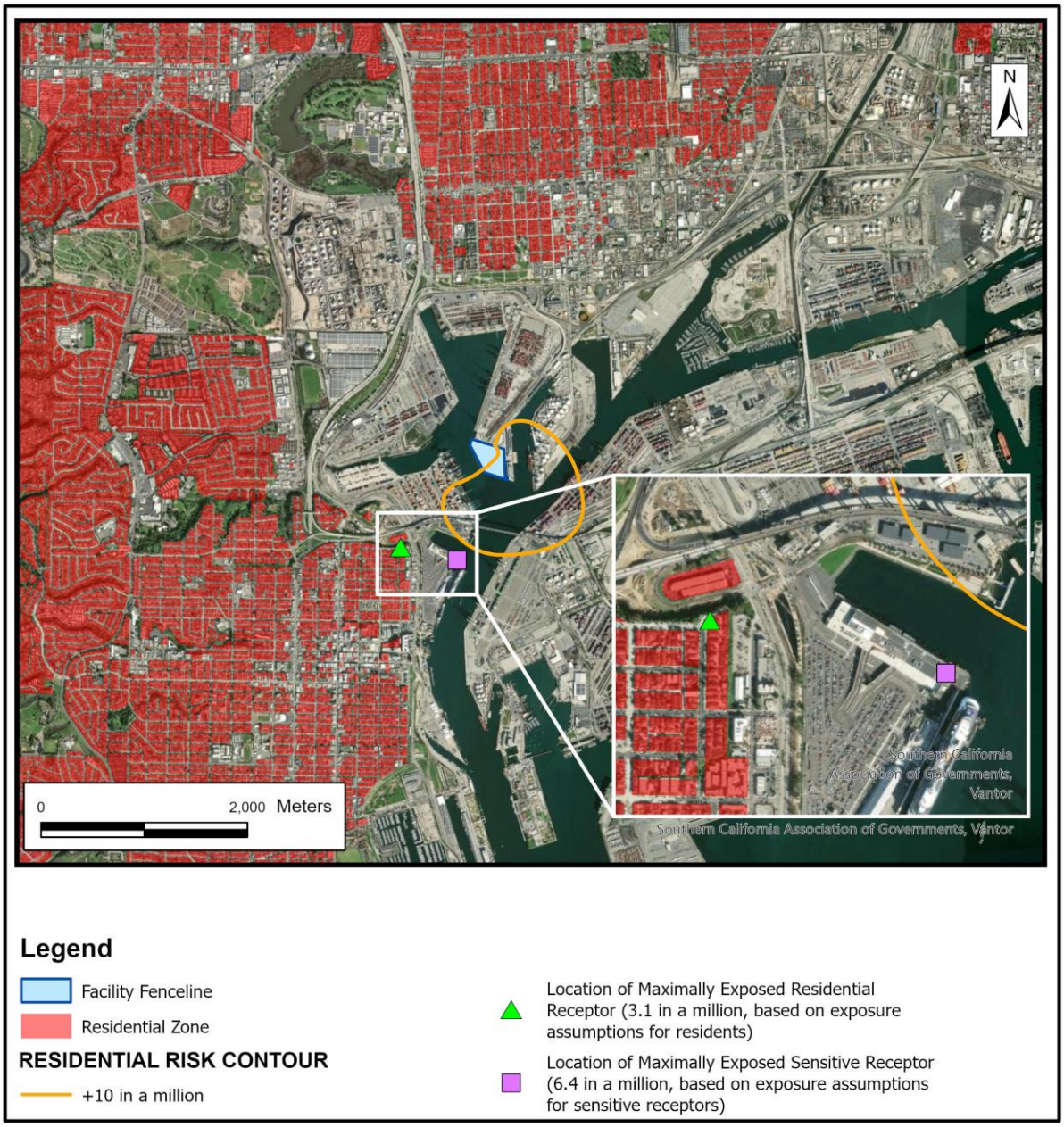


Figure 3.1-3. Isopleths of 30-Year Incremental Residential Cancer Risks – Proposed Project Minus Future Floating Baseline

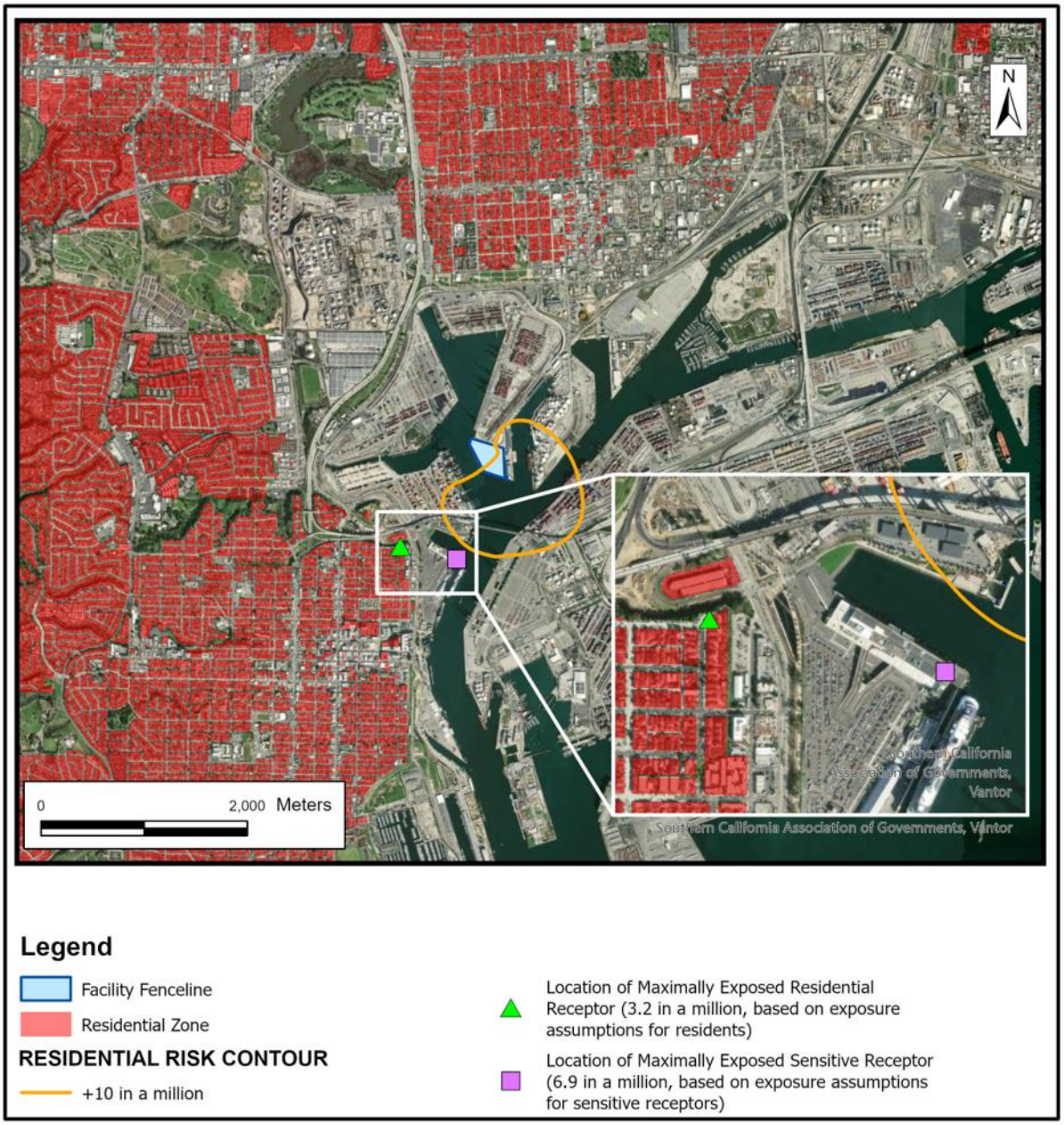


Figure 3.1-4. Isopleth of 25-Year Occupational Cancer Risk – Proposed Project Minus CEQA Baseline Increment



Figure 3.1-5. Isopleth of 25-Year Occupational Cancer Risk – Proposed Project Minus the Future Floating Baseline



Population Cancer Burden

In relation to the 2021 Baseline, the cancer burden is predicted to be 0.18 and in relation to the Future Adjusted Baseline the cancer burden is predicted to be 0.42. These impacts are both less than the significance threshold of 0.5. Therefore, the Proposed Project's cancer burden impact would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Chronic and Acute Hazard Indices

Because chronic and acute hazard indices are based on annual- and peak-hour emissions instead of multiple-year emissions like cancer risk, they are determined by comparing impacts only to the 2021 Baseline.

The predicted maximum chronic hazard index increment of 0.14 and the predicted acute hazard index increment of 0.048 are both less than the significance threshold of 1 for all receptor types. Therefore, the Proposed Project would result in less than significant chronic and acute noncancer impacts.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact AQ-6: Would the Proposed Project conflict with or obstruct implementation of an applicable air quality plan?

The SCAQMD updates the AQMP periodically; the most recent update (the Final 2022 AQMP) was adopted on December 2, 2022 (SCAQMD 2022).

The 2022 AQMP and former iterations propose emission reduction measures that are designed to bring the SCAB into attainment of the state and national ambient air quality standards. The 2022 AQMP, as well as the CARB Mobile Source Strategy, contains key control measures related to ports, which include the following: Emission Reductions at Commercial Marine Ports, Tier 4 Commercial Harbor Craft Standards, At-Berth Regulation Amendments, Accelerated Retirement of Older On-Road Heavy-Duty Vehicles, Pacific Rim Initiative for Maritime Emission Reductions, Emission Reductions from Incentive Programs, and Zero Emission Infrastructure for Mobile Sources.

The SCAQMD also adopts AQMP control measures into the SCAQMD rules and regulations, which are then used to regulate sources of air pollution in the SCAB. Therefore, compliance with SCAQMD regulations and control programs (see Section 3.1.3.4) would ensure that the Proposed Project would not conflict with or obstruct implementation of the AQMP. In addition, LAHD regularly provides SCAG with its Port-wide cargo forecasts for development of the AQMP. Therefore, the attainment demonstrations included in the AQMP account for the emissions generated by projected future growth at the Port. As analyzed for purposes of this Draft EIR, the Proposed Project would increase throughput at the Port above 2021 Baseline levels. However, this increase is within limits established under Phillips 66's current SCAQMD operating permit for the MOT, and the resulting emissions are included in the budgets established

in the 2022 AQMP (SCAQMD 2022). Therefore, the Proposed Project would not conflict with or obstruct implementation of the AQMP.

In addition to the region-wide AQMP, SCAQMD has prepared the Community Emissions Reduction Plan (CERP) for the communities nearest to the Proposed Project site, i.e., Wilmington, Carson, and West Long Beach (SCAQMD 2019). Chapter 5c of the plan addresses air quality and emissions issues associated with the ports of Los Angeles and Long Beach that affect those communities. It identifies three air quality priorities (zero- and near-zero-emissions technology, oil tanker leaks, and targeted enforcement of existing CARB regulations) and presents opportunities for action to address those priorities. The plan identifies three actions that would address those priorities: Action 1 targeting fugitive emission leaks from oil tankers, Action 2 targeting exhaust emissions from ships and harbor craft, and Action 3 targeting cargo-handling equipment and drayage trucks. The actions include measures such as supporting the Port's clean air initiatives and CAAP measures, conducting emissions monitoring, identifying and implementing demonstration and incentive programs, and supporting and enforcing CARB rules and rule development. The Proposed Project would not conflict with or obstruct any of these actions.

Furthermore, LAHD, in conjunction with the Port of Long Beach, implements the 2017 CAAP Update, which sets goals and implementation strategies that reduce air emissions and health risks from Port operations. Operational activities associated with the Proposed Project would comply with the applicable source-specific performance standards identified in the 2017 CAAP Update as described in Section 3.1.3.5. Specifically, the Proposed Project includes as a mitigation measure compliance with the MM AQ-6 (Vessel Speed Reduction Program), reduction of at-berth OGV emissions (via compliance with CARB's revised at-berth rule), use of low-sulfur fuel for OGV engines (via compliance with CARB's OGV low-sulfur fuel rule), compliance with the Port's Clean Truck Program, and implementation of LM AQ-1 (Periodic Review of New Technology).

Impact Determination

Because the Proposed Project would incorporate CAAP control measures, would not conflict with or obstruct the CERP, and would comply with the applicable AQMP control measures for Port activities, the Proposed Project would not conflict with or obstruct implementation of the applicable air quality plans. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

3.1.5.2 Discussion of Health Effects Related to Pollutant Impacts

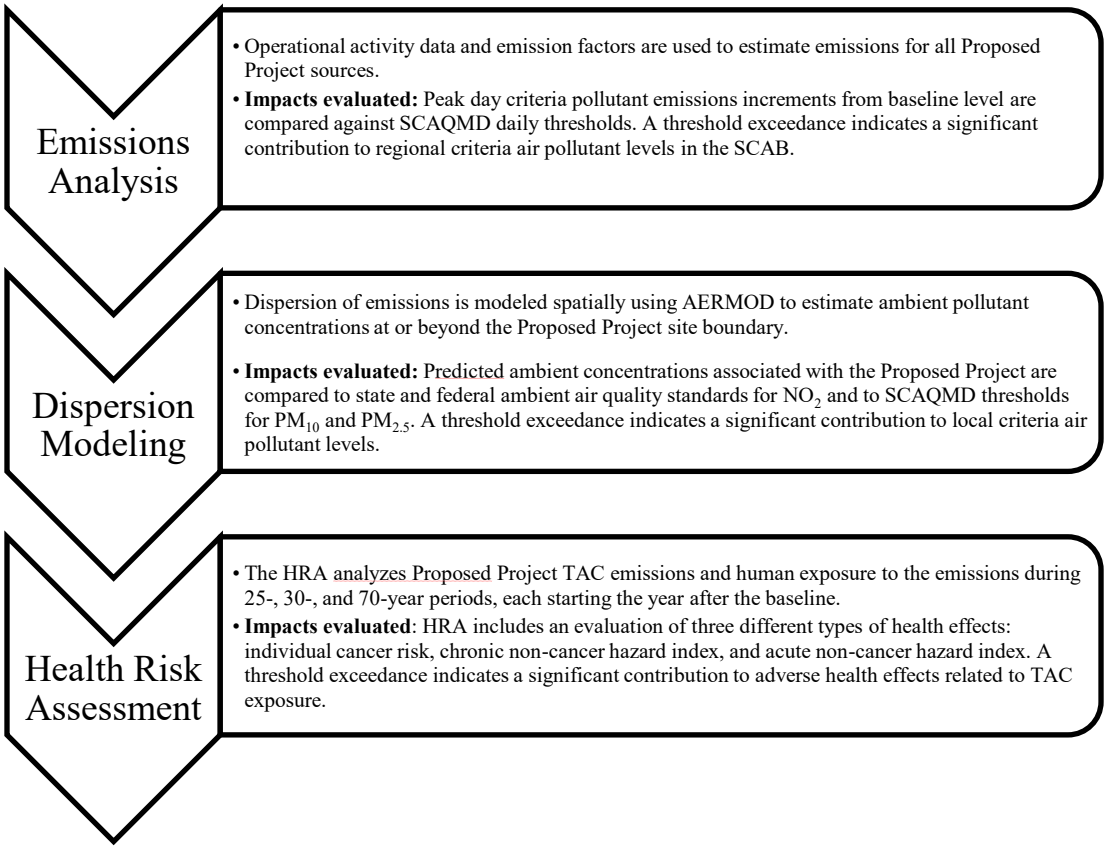
This section includes a discussion of the potential health effects of air pollutant impacts. Potential health effects are described for the Proposed Project's significant operational emissions identified in Impact AQ-3 and significant ambient concentrations associated with Proposed Project operations identified in Impact AQ-4. This discussion is not a new impact assessment but rather provides supplemental information related to the significant impacts already identified in the Draft EIR. The discussion considers potential links between the Proposed Project's emissions of priority pollutants and human health effects.

Information about health effects was acquired through a review of available literature published by the SCAQMD, CARB, and USEPA.

The discussion of health effects is also guided by the step-wise process depicted in Figure 3.1-6 that is used for assessing air quality impacts in this Draft EIR. The first step, emissions analysis, is presented in Impact AQ-3 for Proposed Project operations and is indicative of *regional* air quality impacts because the analysis determines the quantity of pollutants released into the SCAB from Proposed Project-related sources operating throughout the SCAB. The second step, dispersion modeling, is presented in Impact AQ-4 for Proposed Project operations. The analysis is indicative of *local* impacts because the analysis estimates the ambient pollutant concentrations to which persons would be exposed, and the highest concentrations are predicted to occur in close proximity to the Project site. Therefore, the health effects discussion considered both regional health effects (i.e., effects that could be experienced throughout the SCAB) and local health effects (i.e., effects in the vicinity of the Phillips 66 Terminal) related to the Proposed Project operation.

The third step, HRA is presented in Impact AQ-5. The results for individual cancer risk and population cancer burden (presented in Table 3.1-18) are already direct estimates of the health effects associated with exposure to the Proposed Project's TAC emissions. Therefore, no further discussion of health effects related to the Proposed Project's TAC emissions is necessary for the HRA.

Figure 3.1-6. Air Quality Analysis Key Elements and Progression



Regional Health Effects

This section discusses the relationship between the Proposed Project's regional criteria pollutant emissions and the potential for adverse health effects to occur for persons exposed to the emitted pollutants. The Proposed Project would produce significant regional emissions of NO_X in all operating years but emissions of the other pollutants of concern in the SCAB (i.e., CO, respirable and fine particulate matter [PM_{10} and $PM_{2.5}$], SO_X, lead [Pb], and VOCs) would not exceed significance thresholds. Accordingly, this discussion of regional health effects focuses on NO_X and ozone because the primary component of NO_X is NO_2, a criteria pollutant. This discussion also focuses on ozone because NO_X (along with VOC) is a precursor of ozone, which is a criteria pollutant that is photochemically formed from precursors in the atmosphere in the presence of sunlight (USEPA 2020). The ozone discussion also considers VOCs because they, too, are a precursor of ozone.

In an *Amicus Curiae* brief submitted to the California Supreme Court in the *Sierra Club v. County of Fresno ("Friant Ranch")* case, the SCAQMD explained that it did not know of a way to accurately quantify health impacts caused by emissions produced on a scale as small as individual projects (Attachment 2 in City of Los Angeles 2019). The SCAQMD's observations on the infeasibility of linking project-specific emissions to specific health impacts were echoed by *amicus curiae* submitted by other air pollution control authorities (see attachments 1 through 4 in City of Los Angeles 2019).

One existing tool can model changes in ozone or PM concentrations on a regional scale and use that data to calculate the number of the resulting air pollution-related deaths and illnesses (USEPA 2019a). The tool consists of USEPA's CMAQ (Community Multiscale Air Quality) and BenMAP (Benefits Mapping and Analysis Program) models used together. These models are designed to estimate health impacts over a large scale (e.g. city-wide, state-wide) and some of their data inputs are either not generally accessible or not relevant to project-level analyses (City of Los Angeles 2019). The expected changes in regional ozone concentrations associated with an individual project, such as the Proposed Project, would be so low that, as City of Los Angeles (2019) points out, BenMAP would likely produce estimates of health effects that are near zero and thus would not be informative for the public.

The City of Los Angeles (2019) evaluated 11 other tools and models used in air quality and public health assessments and found that they all, for various reasons, do not connect mass emissions or pollutant concentrations with specific health effects. Accordingly, at this time neither the SCAQMD, CARB, "nor any air district currently have methodologies that would provide Lead Agencies and CEQA practitioners with a consistent, reliable, and meaningful analysis to correlate specific health impacts that may result from a proposed project's mass emissions," (City of Los Angeles 2019).

As a result of expert agencies determining that any individual project's contribution to health effects will be so small that none of the existing models can provide helpful information and the lack of a reliable methodology for linking project-level pollutant concentrations attributable to an individual project to specific health effects in the regional population, the extent to which regional adverse health effects can be identified in this section is limited to (a) discussing the Proposed Project's potential impact on regional pollutant levels; and (b) generally describing the types of adverse health effects associated with exposure to the pollutants of concern.

Nitrogen Dioxide (NO_2)

Impact on Regional NO_2 Concentrations. The SCAB is currently designated as "in attainment" of NO_2 concentration standards. The most stringent state and federal NO_2 standards are 0.18 ppm for a 1-hour average (state 1-hour standard), 0.100 ppm for a three-year average of the 98th percentile of the annual distributions of daily maximum 1-hour average concentrations (federal 1-hour standard), and 0.030 ppm for an annual average (state standard).

The highest NO_2 concentrations recorded anywhere in the SCAB over the last 3 available years (2022-2024) were 0.095 ppm for the state 1-hour average, 0.076 ppm for the federal 1-hour average, and 0.029 ppm for an annual average (SCAQMD 2024). These pollutant levels are 53, 76, and 97 percent of the state 1-hour, federal 1-hour, and annual standards, respectively. All of the maximum values occurred at a monitoring station along I-710 in north Long Beach (SCAQMD 2024).

According to the most recent USEPA-approved SCAB emissions inventory, the total NO_X emissions within the SCAB in 2018 were 351 tons/day (SCAQMD 2022, Table 3-1A). By comparison, the highest NO_X emissions increment associated with the Proposed Project with overlapping construction was 0.53 tons/day on a peak day, which is 0.1 percent of the total SCAB emissions.

Potential Health Effects. In developing the NO_2 standards, the USEPA (2016) and CARB (2007) have prepared comprehensive reports on the possible health effects associated with NO_2 exposure. The main conclusions of these agencies are:

- USEPA (2016) concluded that a causal relationship exists between short-term NO_2 exposure and respiratory effects such as asthma attacks. There is likely to be a causal relationship between long-term NO_2 exposure and respiratory effects based on the evidence for development of asthma. For short-term and/or long-term NO_2 exposure, evidence is suggestive of, but not sufficient to imply, a causal relationship with cardiovascular effects, diabetes, mortality, adverse birth outcomes, and cancer. People with asthma, children, and older adults are at increased risk for NO_2-related health effects.
- CARB (2007) concluded that, in controlled human exposure studies, asthmatics appear to be especially sensitive to NO_2. Asthmatic volunteers have experienced short-term effects at NO_2 concentrations as low as 0.26 ppm. There is evidence that a subset of asthmatics may experience increased airway reactivity at concentrations of 0.2 to 0.3 ppm for 30 minutes to 2 hours. Generally, no clinical effects are reported in non-asthmatic volunteers in conditions below 1 ppm. Epidemiological studies have shown an association between NO_2 and both hospital admissions and emergency room visits for asthma at 24-hour average concentrations ranging from 0.018 to 0.036 ppm. Less robust evidence suggests associations with mortality, hospitalization for cardiovascular disease, and low birth weight.

Ozone

The discussion below describes regional ozone concentrations and standards, considers whether the Proposed Project's emissions of ozone precursors would have a substantial impact on regional ozone concentrations, and discusses known human health effects of exposure to ozone.

Impact on Regional Ozone Concentrations. The SCAB is currently designated as in "nonattainment" of ozone concentration standards. The most stringent state and federal

ozone standards are 0.09 ppm for a 1-hour average, 0.070 ppm for the three-year average of the fourth-highest 8-hour concentration each year (known as the federal 8-hour standard), and 0.07 ppm for an 8-hour average (known as the state 8-hour standard).

The highest 1-hour ozone concentration recorded in the SCAB over the last three available years (2022-2024) is 0.155 ppm, which is 1.72 times greater than the standard. This concentration occurred in 2022 at the Northwest San Bernardino Valley monitoring site and in 2023 at the East San Gabriel Valley 2 monitoring site. The standard was exceeded somewhere in the SCAB on 25 percent of days during that same three-year period (SCAQMD 2024).

The highest federal 8-hour ozone concentration recorded in the SCAB over the last three available years (2022-2024) is 0.117 ppm, which is 1.67 times greater than the standard (SCAQMD 2024). This concentration occurred in 2024 but at the East San Bernardino Valley monitoring site. The threshold of 0.070 ppm was exceeded at one or more locations in the SCAB on 24 percent of days during that same three-year period.

The highest state 8-hour ozone concentration recorded in the SCAB over the last three available years (2022-2024) is 0.131 ppm, which is 1.87 times greater than the standard. This concentration also occurred in 2024 at the East San Bernardino Valley monitoring site. The standard was exceeded at one or more locations in the SCAB on 35 percent of days during that same three-year period (SCAQMD 2024).

As noted above, NO_X and VOC are ozone precursors. Because ozone is generally formed sometime later and downwind from its precursor emission source, ozone behaves as a regional pollutant rather than a local pollutant. For example, the highest ozone concentrations are not found in urban areas close to the concentrated sources of its precursors, but rather in suburban and rural areas downwind of these sources (USEPA 2020). The feasibility of considering potential health effects associated with ozone exposure were addressed above.

According to the most recent USEPA-approved SCAB emissions inventory, the total VOC emissions within the SCAB in 2018 were 406 tons/day (SCAQMD 2022). By comparison, the highest VOC emissions increment associated with the Proposed Project overlapping construction is anticipated to be 0.02 tons/day, which comprises 0.01 percent of the total SCAB emissions. As discussed above for NO_2, the Proposed Project's anticipated NO_X emissions increment makes up 0.1 percent of the total SCAB emissions.

Potential Health Effects. In developing the ozone standards, USEPA (2020) has prepared a comprehensive report on the possible health effects associated with ozone exposure. The main conclusions of the agency's' report are:

- A causal relationship exists between short-term ozone exposure and respiratory effects. A causal relationship is likely to exist between short-term ozone exposure and cardiovascular effects and mortality. Evidence is suggestive of a causal relationship between short-term ozone exposure and central nervous system effects. A causal relationship is likely to exist between long-term ozone exposure and respiratory effects. Evidence is suggestive of a causal relationship between long-term ozone exposure and cardiovascular effects, reproductive and developmental effects, central nervous system effects, and mortality. There is little evidence for a relationship between long-term ozone exposure and increased risk of lung cancer. The populations and life stages that have adequate evidence for increased ozone-related health effects are individuals with certain genotypes, individuals with asthma, younger and older age groups, individuals with reduced

intake of Vitamins E and C, and outdoor workers.

In summary, the Proposed Project would produce emissions of NO_X that exceed SCAQMD's project significance threshold and less than significant emissions of VOCs. In both cases, however, these emissions would make relatively small contributions to regional levels of NO_2 and ozone. There is currently no methodology available that can accurately quantify regional health effects from NO_2 or ozone exposure associated with an individual project's emissions. Therefore, the above discussion is limited to identifying the Proposed Project's potential contribution to regional pollutant levels and generally describing the types of adverse health effects associated with exposure to those pollutants.

Local Health Effects

This section discusses the relationship between the Proposed Project's local criteria pollutant emissions and the potential for adverse health effects to occur for persons exposed to those emissions in the Proposed Project vicinity. The dispersion modeling results in Tables 3.1-12, 3.1-15, and 3.1-16 show significant local concentration impacts due to construction for PM_{10} in 2026 through 2028 and due to operation overlapping with construction for NO_2 and PM_{10} in 2027. Therefore, the criteria pollutants evaluated for local health effects are NO_2 and PM_{10}.

There is currently no methodology available that can accurately quantify local health effects from ambient NO_2 or PM_{10} concentrations associated with an individual project. Therefore, the extent to which local adverse health effects can be identified in this section is limited to generally describing the types of adverse health effects associated with exposure to NO_2 and PM_{10}.

NO_2 is also an ozone precursor. However, because ozone is generally formed sometime later and downwind from its precursor emission source, ozone behaves as a regional pollutant rather than a local pollutant. For example, the highest ozone concentrations are not found in urban areas close to the concentrated sources of its precursors, but rather in suburban and rural areas downwind of these sources (USEPA 2013). Therefore, the potential health effects associated with ozone exposure were addressed under Regional Health Effects.

Nitrogen Dioxide (NO_2)

The SCAB is currently designated attainment of the NO_2 concentration standards. Locally, Table 3.1-2 shows that the Wilmington Community Station, approximately one mile north of the Project site, did not exceed the federal and state standards in any of the 3 most recent years (2023-2025) for which monitoring data are available.

Magnitude of Local Impact. The maximum NO_2 concentrations to which individuals in the local area would be exposed are shown in Table 3.1-15. Two of those concentrations – the federal 1-hour and state annual in 2027 – exceed the significance thresholds. The area over which the federal 1-hour NO_2 significance threshold would be expected to be exceeded is shown in Appendix B2, Figure B2-10. This area is limited to the Phillips 66 MOT itself and the immediately surrounding industrial and overwater areas. Dispersion modeling results show that the state annual NO_2 significance threshold would only be exceeded at a single model receptor point as shown in Figure B2-10.

Potential Health Effects. The potential health effects associated with NO_2 exposure are described above under Regional Health Effects above.

Particulate Matter Less than 10 Microns (PM_{10})

The SCAB is currently classified as nonattainment for the state 24-hour and annual PM_{10} standards. Locally, Table 3.1-2 shows that the Wilmington Community Station, approximately one mile north of the Project site, exceeded the 24-hour standard on at least one day in two of the last three years with available data (2023-2025). The highest observed concentration of 67.6 ug/m^3 is 35 percent higher than the standard of 50 ug/m^3. The Wilmington Community Station exceeded the annual PM_{10} standard in all three years. The highest observed concentration of 23.0 ug/m^3 is 15 percent higher than the standard of 20 ug/m^3.

Magnitude of Local Impact. The maximum PM_{10} concentrations to which individuals in the local area would be exposed were estimated by adding the Proposed Project's concentration increments from Table 3.1-16 to the highest background PM_{10} concentration measured at the Wilmington Community Station (70.6 ug/m^3; Table 3.1-2). This approach assumes that the background concentration at the Wilmington Station would remain at the maximum observed throughout the life of the Proposed Project and therefore may over-estimate future local concentrations. Accordingly, the maximum 24-hour PM_{10} local concentration during operation of the Proposed Project was determined to be 99.7 ug/m^3 in 2027 (an increase of 41 percent above background and equivalent to 199 percent of the state standard and 66 percent of the federal standard). Similarly, the highest PM_{10} annual average concentration measured at the Wilmington Community Station was 27.2 ug/m^3 which, when added to the Project's concentration increment of 0.78 ug/m^3 (Table 3.1-16) results in a maximum annual PM_{10} local concentration of 28.0 ug/m^3 in in 2027 (and increase of 3 percent above background and 140 percent of the state standard). As shown in Appendix B2, Figure B2-10, these maximum values would be experienced at the property line of the Proposed Project and the area over which the significance thresholds are exceeded would be limited to immediately adjacent industrial land use areas; locations farther from the Project site would experience lower concentrations.[6]

Potential Health Effects. In developing the PM_{10} standards, USEPA (2019b, 2022c) has prepared comprehensive reports on the possible health effects associated with PM_{10} exposure. The SCAQMD also reviewed PM_{10}-related health effects in Appendix I of its *Final 2022 Air Quality Management Plan* (SCAQMD 2022). Most of the health effects findings made by these agencies focus on $PM_{2.5}$, which is a subset of PM_{10}. Although the local $PM_{2.5}$ impacts from the Proposed Project would be less than significant, the $PM_{2.5}$-related health effects are included in the following bullets as part of the overall health effects from PM_{10}. The main conclusions of the agencies and their reports are:

- USEPA (2019b, 2022c) concluded that a causal relationship exists between $PM_{2.5}$ exposure (both short- and long-term) and cardiovascular effects and mortality. A causal relationship is likely to exist between $PM_{2.5}$ exposure (both short- and long-term) and respiratory effects. Evidence is suggestive of a causal relationship between long-term $PM_{2.5}$ exposure and reproductive and developmental effects, cancer, mutagenicity, and genotoxicity. For the portion of PM_{10} greater than 2.5 microns ($PM_{10-2.5}$), USEPA concluded that evidence is suggestive of a causal relationship between short-term $PM_{10-2.5}$ exposure and cardiovascular effects, respiratory effects, and mortality. Older adults have heightened responses for

[6] Note that the blue isopleth in Figure B2-10 depicts the area over which the incremental increase in 24-hour PM_{10} concentrations from operation of the Proposed Project with overlapping construction alone (i.e., without addition of any background concentration) is calculated to exceed the significance threshold.

cardiovascular morbidity with PM exposure. Children are at an increased risk of PM-related respiratory effects. Individuals with underlying cardiovascular disease or asthma may be at an increased risk for adverse effects.

- SCAQMD (2022) concluded that there is a causal relationship between $PM_{2.5}$ exposure and cardiovascular effects and mortality. Specific cardiovascular effects include cardiovascular deaths, hospital admissions for ischemic heart disease and congestive heart failure, changes in heart rate variability and markers of oxidative stress, and markers of atherosclerosis. A causal relationship is likely to exist between $PM_{2.5}$ exposure and respiratory effects, such as hospital admissions for chronic obstructive pulmonary disease (COPD) or respiratory infections, asthma development, asthma or allergy exacerbation, lung cancer, impacts on lung function, lung inflammation, oxidative stress, and airway hyperresponsiveness. Both short-term and long-term PM exposures are linked to health effects in humans. Young children, older adults, and people with pre-existing respiratory or cardiovascular health conditions are among those who may be more susceptible to the adverse effects of PM. SCAQMD's Multiple Air Toxics Exposure Study V (MATES V) (SCAQMD 2021) found that the DPM portion of PM_{10} is a significant contributor to the cancer risk associated with toxic air contaminants in the SCAB. For example, the average lifetime risk for excess cancer cases in the SCAB from all sources is estimated to be 455 per million and that DPM is responsible for about 50 percent of the risk.

In summary, the construction of the Proposed Project would produce significant local concentration impacts for 24-hour PM_{10} and the operation and overlapping construction of the Proposed Project would produce significant local concentration impacts of NO_2 and PM_{10}. The Proposed Project's significant impact areas would extend over industrial land uses near the Phillips 66 terminal as described above. There is currently no methodology available that can accurately quantify local health effects from ambient NO_2 or PM_{10} concentrations associated with an individual project. Therefore, the above discussion is limited to defining the geographical area of significant local impacts, presenting the magnitude of significant local impacts and generally describing the types of adverse health effects associated with exposure to NO_2 and PM_{10}. As guidance from the City of Los Angeles (2019) concludes,

> "For local plans or projects that exceed any identified SCAQMD air quality threshold, City EIR documents typically identify and disclose generalized health effects of certain air pollutants but are currently unable to establish a reliable connection between any local plan or project and a particular health effect. … A number of factors contribute to this uncertainty, including the regional scope of air quality monitoring and planning, technological limitations for modeling at a local plan- or project-level, and the intrinsically complex nature between air pollutants and health effects in conjunction with local environmental variables."

3.1.5.3 Summary of Alternatives

Alternative 1 – No Project Alternative

Under the No Project Alternative (Alternative 1), no construction or new operational activities would occur at the Project site. The existing Berths 148-151 MOT would permanently close, and the site is assumed to be idle for the foreseeable future. The No Project Alternative (Alternative 1) would not preclude future improvements at the site,

but any such improvements would need to be analyzed in a separate environmental document as a new project.

Because there would be no construction or vessel operations at Berths 148-151, there would not be any activities resulting in air emissions.Therefore, there would be no impacts on air quality.

Alternative 2 – Reduced Project Alternative

Under the Reduced Project Alternative (Alternative 2), all the physical features of the Proposed Project would be constructed except the refurbishment of 11 idle tanks. Accordingly, the operational activities would be the same as those of the Proposed Project (see Section 2.5.2); only the construction would differ from the Proposed Project.

The impacts of construction of the Reduced Project Alternative (Alternative 2) would be somewhat less than those of the Proposed Project (Section 3.14.1.), but the in-water components would be the same. Tank farm refurbishment is only a portion of the construction work which would be conducted in 2027. Accordingly, impacts from Project construction (Impact AQ-2) under the Reduced Project Alternative (Alternative 2) would be significant and unavoidable. The Reduced Project Alternative (Alternative 2) would result in the same operational activities as the Proposed Project. Accordingly, impacts from Project operations and overlapping construction activities would be significant and unavoidable.

3.1.5.4 Summary of Impact Determinations

Table 3.1-19 summarizes the CEQA impact determinations of the Proposed Project related to Air Quality and Meteorology. This table is meant to allow easy comparison of the potential impacts of the Proposed Project with respect to air quality. Identified potential impacts may be based on federal, state, or City of Los Angeles significance criteria, LAHD criteria, and the scientific judgment of the report preparers.

For each type of potential impact, the table describes the impact, notes the CEQA impact determinations, describes any applicable mitigation measures, and notes the residual impacts (i.e., the impact remaining after mitigation). All impacts, whether significant or not, are included in this table.

Table 3.1-19. Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation Measures	Residual Impacts After Mitigation	Lease Measure
Proposed Project	**AQ-1:** Would the Proposed Project result in construction-related emissions that exceed an SCAQMD localized threshold of significance in Table 3.1-4?	Less than significant	Mitigation not required	Less than significant	N/A
Alternative 1: No Project	**AQ-1:** Would the No Project Alternative result in construction-related emissions that exceed an SCAQMD localized threshold of significance in Table 3.1-4?	No impact	Mitigation not required	No impact	N/A
Alternative 2: Reduced Project	**AQ-1:** Would the Reduced Project Alternative result in construction-related emissions that exceed an SCAQMD localized threshold of significance in Table 3.1-4?	Less than significant	Mitigation not required	Less than significant	N/A
Proposed Project	**AQ-2:** Would Proposed Project construction result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance?	Construction 24-hour ambient PM_{10} concentrations would be significant in 2026, 2027, and 2028	**MM AQ-1:** On-Road Used Trucks During Construction, **MM AQ-2:** Non-Road Construction Equipment, **MM AQ-3:** Port of Los Angeles Sustainable Construction Guidelines, **MM AQ-4:** General Construction Mitigation Measure, **MM AQ-5:** Renewable Diesel Fuel for Construction Equipment and On-Road Trucks	Impacts would remain significant and unavoidable for PM_{10}	**LM AQ-1**: Periodic Review of New Technology
Alternative 1: No Project	**AQ-2:** Would construction of the No Project Alternative result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance?	No impact	Not applicable	No impact	N/A

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation Measures	Residual Impacts After Mitigation	Lease Measure
Alternative 2: Reduced Project	**AQ-2:** Would construction of the Reduced Project Alternative result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance?	Construction 24-hour ambient PM_{10} concentrations would be significant in 2026, 2027, and 2028	**MM AQ-1:** On-Road Used Trucks During Construction, **MM AQ-2:** Non-Road Construction Equipment, **MM AQ-3:** Port of Los Angeles Sustainable Construction Guidelines, **MM AQ-4:** General Construction Mitigation Measure, **MM AQ-5:** Renewable Diesel Fuel for Construction Equipment and On-Road Trucks	Impacts would remain significant and unavoidable for PM_{10}	**LM AQ-1**: Periodic Review of New Technology
Proposed Project	**AQ-3:** Would the Proposed Project result in operational emissions that exceed an SCAQMD regional threshold of significance in Table 3.1-6?	Operation emissions would be significant for NO_X in all operational years	**MM AQ-6:** Vessel Speed Reduction Program (VSRP)	Impacts would remain significant and unavoidable for NO_X for all operational years	**LM AQ-1**: Periodic Review of New Technology
Alternative 1: No Project	**AQ-3:** Would the No Project Alternative result in operational emissions that exceed an SCAQMD regional threshold of significance in Table 3.1-6?	No impact	Not applicable	No impact	N/A

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation Measures	Residual Impacts After Mitigation	Lease Measure
Alternative 2: Reduced Project	**AQ-3:** Would the Reduced Project Alternative result in operational emissions that exceed an SCAQMD regional threshold of significance in Table 3.1-6?	Operation emissions would be significant for NO_X in all operational years	**MM AQ-6:** Vessel Speed Reduction Program (VSRP)	Impacts would remain significant and unavoidable for NO_X for all operational years	**LM AQ-1**: Periodic Review of New Technology
Proposed Project	**AQ-4:** Would Proposed Project operations result in off-site ambient air pollutant concentrations that exceed a SCAQMD localized threshold of significance in Table 3.1-9?	Operation-related ambient pollutant concentrations with overlapping construction emissions in 2027 would be significant for 1-hour and annual NO_2 and 24-hr PM_{10} Less than significant for operational emissions in 2057	**MM AQ-6:** Vessel Speed Reduction Program (VSRP)	Impacts would remain significant and unavoidable	**LM AQ-1**: Periodic Review of New Technology
Alternative 1: No Project	**AQ-4:** Would No Project Alternative operations result in off-site ambient air pollutant concentrations that exceed a SCAQMD localized threshold of significance in Table 3.1-9?	No impact	Not applicable	No impact	N/A
Alternative 2: Reduced Project	**AQ-4:** Would Reduced Project Alternative operations result in off-site ambient air pollutant concentrations that exceed a SCAQMD localized threshold of significance in Table 3.1-9?	Operation-related ambient pollutant concentrations with overlapping construction emissions in 2027 would be significant for 1-hour and annual NO_2 and 24-hr PM_{10} Less than significant with operational emissions in 2057	**MM AQ-6:** Vessel Speed Reduction Program (VSRP)	Impacts would remain significant and unavoidable	**LM AQ-1**: Periodic Review of New Technology

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation Measures	Residual Impacts After Mitigation	Lease Measure
Proposed Project	**AQ-5:** Would the Proposed Project expose receptors to significant levels of TACs?	Maximum incremental cancer risk for all impacts (individual impacts for residential, sensitive, and occupational receptors, population cancer burden, and chronic and acute hazard indices) are less than significant.	Mitigation not required but the following measures would further reduce impacts: **MM AQ-1:** On-Road Used Trucks During Construction **MM AQ-2:** Non-Road Construction Equipment **MM AQ-3:** Port of Los Angeles Sustainable Construction Guidelines **MM AQ-4:** General Construction Mitigation Measure **MM AQ-5:** Renewable Diesel Fuel for Construction Equipment and On-Road Trucks **MM AQ-6:** Vessel Speed Reduction Program (VSRP)	Less than significant	**LM AQ-1**: Periodic Review of New Technology
Alternative 1: No Project	**AQ-5:** Would the No Project Alternative expose receptors to significant levels of TACs?	No impact	Not applicable	No impact	N/A

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation Measures	Residual Impacts After Mitigation	Lease Measure
Alternative 2: Reduced Project	**AQ-5:** Would the Reduced Project Alternative expose receptors to significant levels of TACs?	Maximum incremental cancer risk for all impacts (individual impacts for residential, sensitive, and occupational receptors, population cancer burden, and chronic and acute hazard indices) are less than significant.	Mitigation not required but the following measures would further reduce impacts: **MM AQ-1:** On-Road Used Trucks During Construction, **MM AQ-2:** Non-Road Construction Equipment, **MM AQ-3:** Port of Los Angeles Sustainable Construction Guidelines, **MM AQ-4:** General Construction Mitigation Measure, **MM AQ-5:** Renewable Diesel Fuel for Construction Equipment and On-Road Trucks, **MM AQ-6:** Vessel Speed Reduction Program (VSRP)	Less than significant	**LM AQ-1**: Periodic Review of New Technology
Proposed Project	**AQ-6:** Would the Proposed Project conflict with or obstruct implementation of an applicable AQMP?	Less than significant	Mitigation not required	Less than significant	N/A
Alternative 1: No Project	**AQ-6:** Would the No Project Alternative conflict with or obstruct implementation of an applicable AQMP.	No impact	Not applicable	No impact	N/A
Alternative 2: Reduced Project	**AQ-6:** Would the Reduced Project Alternative conflict with or obstruct implementation of an applicable AQMP?	Less than significant	Mitigation not required	Less than significant	N/A

3.1.6 Mitigation and Lease Measure Monitoring

The mitigation monitoring program below is applicable to the mitigation and lease measures of the Proposed Project.

Mitigation Measure	**MM AQ-1: On-Road Trucks Used During Construction.** 1. Trucks hauling materials such as debris or fill shall be fully covered while operating off Port property. 2. Idling shall be restricted to a maximum of 5 minutes when not in use. 3. Tier Specifications: • Until December 31, 2026: All on-road heavy-duty diesel trucks with a gross vehicle weight rating (GVWR) of 19,500 pounds or greater used on site or to transport materials to and from the site shall comply with 2012 emission standards, or newer, where available. • Post January 1, 2027: All on-road heavy-duty diesel trucks used on site or to transport materials to and from the site shall comply with 2015 emission standards, or newer, where available. • A copy of each unit's certified U.S. Environmental Protection Agency (USEPA) rating, Best Available Control Technology (BACT) documentation, and CARB or South Coast Air Quality Management District (SCAQMD) operating permit shall be provided at the time of mobilization of each applicable unit of equipment.
Timing	During construction
Methodology	LAHD will include this measure in the permit with Phillips 66. Phillips 66 will include this measure in the contract specifications for construction. LAHD will review the contract specifications prior to construction and will monitor implementation of the measure during construction.
Mitigation Measure	**MM AQ-2: Non-Road Construction Equipment.** 1. Construction equipment shall incorporate, where feasible, emissions savings technology such as hybrid drives and specific fuel economy standards. 2. Idling shall be restricted to a maximum of 5 minutes when not in use. 3. Tier Specifications: • All offroad diesel-powered construction equipment greater than 50 horsepower shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations. • A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment. The construction equipment measures shall be met, unless one of the following circumstances exist and the contractor is able to provide proof that any of these circumstances exists:

	• A piece of specialized equipment is unavailable in a controlled form within the state of California, including through a leasing agreement. • A contractor has applied for necessary incentive funds to put controls on a piece of uncontrolled equipment planned for use on the project, but the application process is not yet approved, or the application has been approved, but funds are not yet available. • A contractor has ordered a control device for a piece of equipment planned for use on the project, or the contractor has ordered a new piece of controlled equipment to replace the uncontrolled equipment, but that order has not been completed by the manufacturer or dealer. In addition, for this exemption to apply, the contractor must attempt to lease controlled equipment to avoid using uncontrolled equipment, but no dealer within 200 miles of the project has the controlled equipment available for lease.
Timing	During construction
Methodology	LAHD will include this measure in the permit with Phillips 66. Phillips 66 will include this measure in the contract specifications for construction. LAHD will review the contract specifications prior to construction and will monitor implementation of the measure during construction
Mitigation Measure	**MM AQ-3: Port of Los Angeles Sustainable Construction Guidelines.** The Proposed Project shall implement and comply with all measures as required by the Los Angeles Harbor Department's Sustainable Construction Guidelines adopted in February 2008 and updated in November 2009 during Project construction activities. These requirements shall be included in the construction contracts and bid documents for the Proposed Project.
Timing	During construction
Methodology	LAHD will include this measure in the permit with Phillips 66. Phillips 66 will include this measure in the contract specifications for construction. LAHD will review the contract specifications prior to construction and will monitor implementation of the measure during construction.
Mitigation Measure	**MM AQ-4: General Construction Mitigation Measure.** For MM AQ-1 through MM AQ-3, if a CARB-certified technology becomes available that is as good as or better than the existing measure in terms of emissions performance, the technology could replace the existing technology if approved by LAHD.
Timing	During construction
Methodology	LAHD will include this measure in the permit with Phillips 66. Phillips 66 will include this measure in the contract specifications for construction. LAHD will review the contract specifications prior to construction and will monitor implementation of the measure during construction.
Mitigation Measure	**MM AQ-5: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks.** The Tenant shall fuel diesel-powered construction equipment and on-road trucks with renewable diesel fuel during

	construction. The renewable diesel product that is used shall comply with American Society for Testing and Materials (ASTM) fuel standards. In the event of renewable diesel supply challenges or disruptions, the Tenant shall use ultra-low sulfur diesel (ULSD) as a secondary fuel. The Tenant shall demonstrate to LAHD substantial evidence of a supply disruption or event in a timely manner.
Timing	During construction
Methodology	LAHD will include this measure in the permit with Phillips 66. Phillips 66 will include this measure in the contract specifications for construction. LAHD will review the contract specifications prior to construction and will monitor implementation of the measure during construction.
Mitigation Measure	**MM AQ-6: Vessel Speed Reduction Program (VSRP).** 100 percent of vessels calling at the Phillips 66 MOT will be required to comply with the expanded VSRP at 12 knots between 40 nautical miles (nm) from Point Fermin and the Precautionary Area. Vessels experiencing a maritime emergency[1] prevents compliance with the expanded VSRP may be exempt from this measure. [1]Maritime emergencies may include, but are not limited to, suspicious activity, drone/plane activity, security breaches or attempts, United States Coast Guard (USCG) safety/security/protection zone violations, crimes on land and water, navigation rule violations, vessels in distress, rescues, fires and emergencies, as defined by the Port of Los Angeles Mariners Guide.
Timing	During Project operation.
Methodology	LAHD will include this measure in the permit with Phillips 66cementi. The Environmental Management Division (EMD) will independently monitor through monitoring data provided by the Marine Exchange. Biannual tenant compliance forms shall be supplied to EMD. Enforcement shall include oversight by the Real Estate Division.
Lease Measure	LM AQ-1: Periodic Review of New Technology and Regulations. The Tenant will conduct a periodic review of any Port-identified or other new emissions-reducing technology and report to the LAHD on the feasibility of any new technology advancements that may reduce emissions not less frequently than once every five years following the effective date of the entitlement. The technology review would be subject to approval by LAHD and would involve consulting with appropriate resources (e.g., consultants, engineers, regulators) to validate the findings. If the review demonstrates the new technology would be effective in reducing emissions and is determined by the LAHD to be feasible, including but not limited to, financial, technical and operational considerations, the Tenant will implement the new air quality technological advancements, subject to mutual agreement, the implementation which shall not be unreasonably withheld by the Tenant.
Timing	At least once every five years starting from date of entitlement.
Methodology	LAHD will include this measure in the permit with Phillips 66. LAHD will monitor implementation of the measure during operation. Phillips 66 will conduct new technology review and submit to Port for review and approval. Measures found to be effective and feasible will be implemented by Phillips 66.

3.1.7 Significant Unavoidable Impacts

This section summarizes significant and unavoidable impacts of the Proposed Project and Reduced Project Alternative (Alternative 2). Because the No Project Alternative (Alternative 1) does not have any significant and unavoidable impacts, it has not been included in the subsections below.

3.1.7.1 Emissions Impacts

Table 3.1-20 and Table 3.1-21 summarizes the CEQA impacts of construction and incremental operations emissions for each criteria pollutant and scenario for the Proposed Project. Impacts for the Reduced Project (Alternative 2) are the same as for the Proposed Project. This table provides CEQA impacts and residual impacts during construction years 2024 - 2029 and operational years 2027 and 2057.

Table 3.1-20. Summary of Construction Emission Impacts[a]

Year	Impact	Significant Unavoidable Impact?					
		VOC	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_X
2024	AQ-1	No	No	No	No	No	No
	AQ-2	No	No	No	No	No	No
2025	AQ-1	No	No	No	No	No	No
	AQ-2	No	No	No	No	No	No
2026	AQ-1	No	No	No	No	No	No
	AQ-2	No	No	No	**Yes**	No	No
2027	AQ-1	No	No	No	No	No	No
	AQ-2	No	No	No	**Yes**	No	No
2028	AQ-1	No	No	No	No	No	No
	AQ-2	No	No	No	**Yes**	No	No
2029	AQ-1	No	No	No	No	No	No
	AQ-2	No	No	No	No	No	No

Note:
[a] Impacts for the Reduced Project (Alternative 2) are the same as for the Proposed Project.

Table 3.1-21. Summary of Operational Emission Impacts

Scenario	Year	Significant Unavoidable Impact?					
		VOC	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_X
Proposed Project	2027	No	No	**Yes**	No	No	No
	2057	No	No	**Yes**	No	No	No
Alternative 2: Reduced Project	2027	No	No	**Yes**	No	No	No
	2057	No	No	**Yes**	No	No	No

Ambient Pollutant Concentration Impacts

Table 3.1-22 summarizes the CEQA impact of incremental ambient pollutant concentrations related to construction and Table 3.1-23 presents results for operations for the Proposed Project and alternatives. These tables provide CEQA impacts and residual impacts for each year of construction and the two analyzed years of Project operations (2027 and 2057).

Table 3.1-22. Summary of Ambient Pollutant Concentrations Impacts for Construction[a]

Pollutant	Averaging Period	Analysis Year	Significant Unavoidable Impact?	
			Proposed Project	Alternative 2 (Reduced Project)
NO_2	Federal 1-hour	2024	No	No
		2025	No	No
		2026	No	No
		2027	No	No
		2028	No	No
		2029	No	No
	State 1-hour	2024	No	No
		2025	No	No
		2026	No	No
		2027	No	No
		2028	No	No
		2029	No	No
	Annual	2024	No	No
		2025	No	No
		2026	No	No
		2027	No	No
		2028	No	No
		2029	No	No
PM_{10}	24-hour	2024	No	No
		2025	No	No
		2026	**Yes**	**Yes**
		2027	**Yes**	**Yes**
		2028	**Yes**	**Yes**
		2029	No	No
	Annual	2024	No	No
		2025	No	No
		2026	No	No
		2027	No	No
		2028	No	No
		2029	No	No
$PM_{2.5}$	24-hour	2024	No	No
		2025	No	No
		2026	No	No
		2027	No	No
		2028	No	No
		2029	No	No

Note:
[a] Impacts of the (Reduced Project Alternative (Alternative 2) are the same as for the Proposed Project.

Table 3.1-23. Summary of Ambient Pollutant Concentrations Impacts for Operations[a]

Pollutant	Averaging Period	Analysis Year	Significant Unavoidable Impact?	
			Proposed Project	Alternative 2: Reduced Project
NO_2	Federal 1-hour	2027[b]	**Yes**	**Yes**
		2057	No	No
	State 1-hour	2027[b]	No	No
		2057	No	No
	Federal Annual	2027[b]	No	No
		2057	No	No
	State Annual	2027[b]	**Yes**	**Yes**
		2057	No	No
PM_{10}	24-hour	2027[b]	**Yes**	**Yes**
		2057	No	No
	Annual	2027[b]	No	No
		2057	No	No
$PM_{2.5}$	24-hour	2027[b]	No	No
		2057	No	No

Notes:
[a] Impacts of the Reduced Project Alternative (Alternative 2) are the same as for the Proposed Project.
[b] Impacts for 2027 include overlapping construction. As described in more detail in Section 3.1.3.3, the first year of operation is assumed to be 2027 because the analysis was conducted before project delays caused delays in the release of this Draft EIR. The analysis is conservative because the equipment and vehicles that would actually be used would be cleaner than is assumed in these analyses.

Health Impacts

Health risk impacts of the Proposed Project are summarized in Table 3.1-24.

Table 3.1-24. Summary of Health Risk Impacts for the Proposed Project.

Health Impact	Receptor Type	Threshold Exceeded?
Individual Cancer Risk	Residential	No
	Non-Residential Sensitive	No
	Occupational	No
Chronic Hazard Index	Residential	No
	Non-Residential Sensitive	No
	Occupational	No
Acute Hazard Index	All Populations	No
		No
		No
Population Cancer Burden	All Populations	No

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