Section 3.1
Air Quality and Meteorology

SECTION SUMMARY

Section 3.1, Air Quality and Meteorology, provides the following:

- 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 191-194 Ecocem Low-Carbon Cement Processing Facility (Proposed Project) as well as the alternatives;
- A discussion on the methodology used to determine whether the Proposed Project, the two build alternatives (Reduced Project and Product Import Terminal [Alternative 2]), and the No Project Alternative [Alternative 3]) would result in an impact on air quality from air emissions (a full description is in Appendix B1-B3 of this Draft EIR); and
- An impact analysis of the Proposed Project and alternatives.

Key Points of Section 3.1

The construction and operation of the Proposed Project would result in emissions of criteria pollutants, in the form of off-road construction equipment and construction vehicles exhaust, as well as from fugitive dust from earthmoving activities. During operation, the Proposed Project would process granulated blast furnace slag (GBFS), a coarse-grained moist raw material unloaded from marine vessels and stored in open stockpiles that are handled by the off-road backland equipment. There would be emissions from sources such as trucks hauling raw material (gypsum), the product binder (ground granulated blast furnace slag [GGBFS]), dry bulk ocean-going vessels (OGVs), associated tugboats, process sources including a natural gas-fuelled dryer, fugitive dust from the grinding mill and material handling, and on-site mobile equipment front end loader (FEL), and excavator. In the Reduced Project Alternative (Alternative 2), all of the elements of the Proposed Project described above would be built, but the capacity of the facility to produce GGBFS would be reduced. In the Product Import Terminal Alternative (Alternative 3), there would not be any processing of raw materials and the finished product (GGBFS) would come from overseas by vessel. The operations would consist of the import of the product, temporary storage, and the loading of customer trucks.

Construction-Related Mass Emissions and Ambient Pollutant Concentration Impacts

Construction of the Proposed Project, the Reduced Project Alternative (Alternative 2), and the Product Import Terminal Alternative (Alternative 3) would result in daily mass emissions that are below the South Coast Air Quality Management District (SCAQMD) regional significance thresholds for each of the following criteria pollutants: Nitrogen oxides (NOx), volatile organic compounds (VOC), carbon monoxide (CO), sulfur oxide (SOx), particulate matter (PM) PM_{10}, and $PM_{2.5}$.

The Proposed Project includes compliance with the 2009 Los Angeles Harbor Department (LAHD), updated from 2008, Sustainable Construction Guidelines which include control measures requiring construction equipment and practices cleaner than those reflected in an average regional fleet.

This Draft Environmental Impact Report (EIR) evaluates the localized ambient air quality impacts from onsite construction activities using SCAQMD's localized significance threshold (LST) methodology (SCAQMD 2008). The estimated maximum onsite daily construction emissions are below the applicable SCAQMD mass-rate LSTs for NO_2, CO, PM_{10}, and $PM_{2.5}$. Since this screening analysis shows that construction emissions would be below the mass-rate LSTs, further air dispersion modelling was not required.

Operations-Related Mass Emissions and Ambient Pollutant Concentration Impacts

Operation of the Proposed Project and build alternatives (Alternatives 2 and 3) would result in exceedance of the SCAQMD regional significance thresholds for NOx operations-related emissions. The largest contributors to peak daily emissions of NOx would be vessel transit and vessel hoteling. The Proposed Project and alternatives would not result in significant regional impacts from emissions of VOC, CO, SOx, PM_{10}, and $PM_{2.5}$.

Based on the SCAQMD's LST methodology, the estimated maximum onsite daily operational emissions are below the applicable SCAQMD mass-rate LSTs for CO, but above the LSTs for NO_2, PM_{10}, and $PM_{2.5}$. Accordingly, further air dispersion modeling was conducted to assess localized ambient pollutant concentrations associated with operational emissions. Operation of the Proposed Project and Reduced Project (Alternative 2) alternatives would result in significant localized ambient air concentrations of PM_{10} (annual average, 24-hour) and $PM_{2.5}$ (24-hour average). Operation of the Product Import Terminal Alternative (Alternative 3) would result in significant localized ambient air concentrations of PM_{10} (annual average and 24-hour) and $PM_{2.5}$ (24-hour average). The largest contributor to the significant impact for PM_{10} and $PM_{2.5}$ off-site pollutant concentrations in the Proposed Project and Reduced Project (Alternative 2) is fugitive dust from material handling and the FEL movements between the piles and the process hoppers. The largest contributor to the significant impact for PM_{10} and $PM_{2.5}$ off-site pollutant concentrations in the Product Import Terminal (Alternative 3) is fugitive dust from on-site delivery trucks and emissions from material transport to storage silos. These emissions (as currently estimated) would be controlled by water flushing/spray or fully covered during conveyance. In addition, the material transfer via air slide or within the mill building (another source of PM_{10} and $PM_{2.5}$) is controlled by Best Available Control Technologies (BACT) such as dust collector or process bag filters.

Localized ambient air concentrations of NO_2 (1-hour, annual average) related to operations of the Proposed Project and both build alternatives (Reduced Project Alternative [Alternatives 2] and Product Import Terminal [Alternative 3]) would be less than significant.

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 population receptor types (residential, non-residential sensitive and occupational receptors). After a comparison to the SCAQMD significant thresholds, the health impacts for all four health effects on all evaluated populations (i.e., occupational, residential, and non-residential sensitive receptors) would be less than significant for the Proposed Project, the Reduced Project Alternative (Alternative 2), and Product Import Terminal Alternative (Alternative 3). Diesel particulate matter (DPM) is the dominant risk driver among all toxic air pollutants, coming mainly from construction off-road equipment, vessel hoteling and the front-end loader operation.The No Project Alternative (Alternative 1) would have no air quality impacts.

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 and B2, respectively. Appendix B3 presents the detailed 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 Existing Air Quality

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. 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), carbon monoxide (CO), nitrogen dioxide (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 ($PM_{2.5}$). Nitrogen oxides (NOx**)** and sulfur oxides (SOx) 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 NOx and total SOx emissions, rather than being listed by individual compound.

Regional Air Quality

The United States Environmental Protection Agency (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.

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 the 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}, $PM_{2.5}$, ad NO_2. The air basin 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).

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 NOx. VOC and NOx 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 NOx to daily emission thresholds set by the South Coast Air Quality Management District (SCAQMD). These emission thresholds are discussed in Section 3.2.3.4.

Generally, concentrations of photochemical pollutants, such as ozone, are highest during the summer and coincide with the season of maximum solar insolation. Concentrations of inert pollutants 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.

Because most of the Proposed Project's emission sources would be diesel-powered (as described in Section 3.1.4.2 below), diesel particulate matter (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.

Local Air Quality

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 Clean Air Action Plan (CAAP) 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 set of air pollutants within the Port's region of influence. The program includes a number of real-time air quality measurements: ozone (O_3), sulfur dioxide (SOx), nitrogen dioxide (NO_2), carbon monoxide (CO), two sizes of particulate matter (PM_{10} or coarse particles, and $PM_{2.5}$ or fine particles), 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.

Table 3.1-1: Adverse Effects Associated with Criteria Pollutants

Pollutant[d]	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})[a]	(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 ($PM_{2.5}$)[a]	(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[b]	(a) Increased body burden; (b) Impairment of blood formation and nerve conduction, and neurotoxin.
Sulfates[c]	(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] More detailed discussions on the health effects associated with exposure to suspended particulate matter can be found in USEPA (2009).

[b] Lead is not a pollutant of concern for the Proposed Project.

[c] Sulfate is not a pollutant of concern for the Proposed Project. SCAQMD has not established an emissions thresholds for sulfates.

[d] 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.

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 terminal in accordance with the Bay-wide Sphere of Influence analysis (LAHD 2010) and was used in this air quality analysis to model human health risks and criteria pollutant impacts 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 2020 through 2022 – the most recent complete 3-year period of data available.

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

Pollutant	Averaging Period	National Standard	State Standard	Highest Monitored Concentration		
				2020 [e]	2021 [e]	2022 [e]
Ozone (ppm)	1-hour	--	0.09	0.077	0.089	0.072
	8-hour National [a]	0.070	--	0.061	0.059	0.058
	8-hour State	--	0.07	0.062	**0.077**	0.059
CO (ppm)	1-hour	35	20	2.7	3.0	7.7
	8-hour	9	9.0	1.6	2.0	2.2
NO_2 (ppm)	1-hour National [b]	0.100	--	0.059	0.054	0.055
	1-hour State	--	0.18	0.068	0.071	0.060
	Annual	0.053	0.030	0.008	0.013	0.014
SO_2 (ppm)	1-hour National [c]	0.075	--	0.018	0.016	0.011
	1-hour State	--	0.25	0.024	0.021	0.01
	24-hour	--	0.04	0.008	0.003	0.007
PM_{10} ($\mu g/m^3$)	24-hour	150	50	**54.3**	**70.6**	44.6
	Annual	--	20	**22.4**	**27.2**	**24.7**
$PM_{2.5}$ ($\mu g/m^3$)	24-hour [d]	35	--	22.6	25.9	22
	Annual	12	12	6.4	7.8	6.2

Source: POLA 2021. Notes:

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

[a] 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 each year.

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

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

[d] 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.

[e] Year 2020 represents the period May 2019-April 2020, year 2021 represents the period May 2020-April 2021, and yea 2022 represents the period May 2021-April 2022.

Toxic Air Contaminants (TAC)

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. Compared to the MATES IV[2] (SCAQMD 2015a) 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 EIR develops an HRA that evaluates potential public health effects from TAC emissions that would be generated during construction and operation of the Proposed Project and alternatives. 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 are described in Section 3.1.4.2.

Receptor Populations

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

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

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. The residential receptors near the Proposed Project facility were identified based on zoning information (see Appendix B2 Figure B2-7), including the nearest residential development in Wilmington. In addition to the residential receptors, other non-residential sensitive receptors include schools, child care centers, elder care facilities, hospitals, and recreational areas (e.g., parks, marinas, and public waterfront areas). The non-residential sensitive receptor locations near the Project site were identified and conservatively evaluated using residential exposure assumptions.[4] This approach is conservative and overestimates cancer risk for the non-

[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.

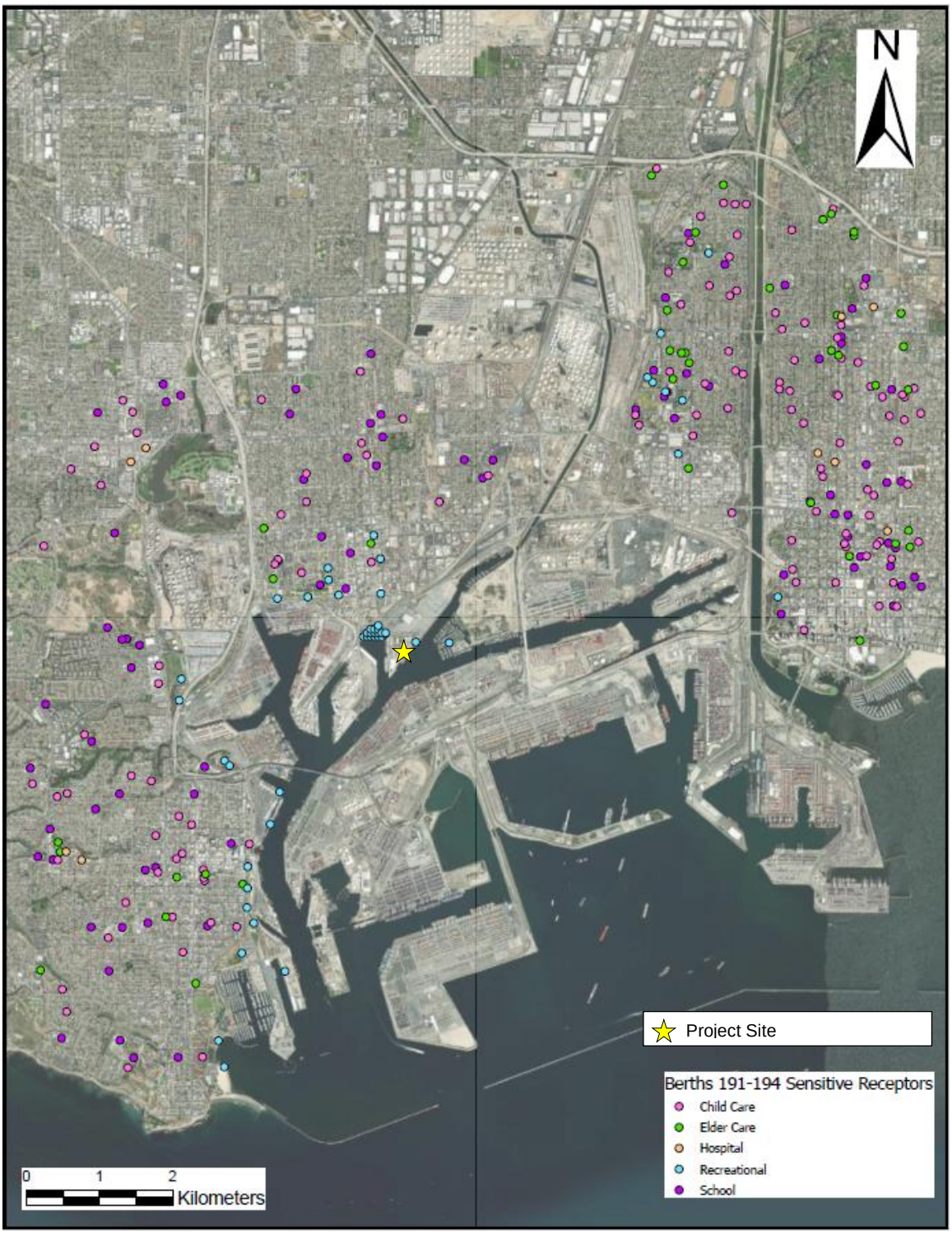
[3] The MATE II analysis was based on sampling data from 1998-1999.

[4] Except for Banning's Landing and University of Southern California (USC) Boathouse receptors. Banning's Landing currently is not hosting events or activities; it was conservatively assumed that children that may be present at this site in a future afterschool program could be exposed up to 12 hr/day, 180 days/year, for 12 years, starting at age 5 based on historic use and anticipated future use of the site . USC Boathouse students training at the facility are assumed to be exposed 4 hr/day, 6 days/week, from January to May, and August to November

residential sensitive receptors because the exposure rates (e.g., exposure time, exposure frequency, and exposure duration) for these receptors in reality are much lower than for the residents. Additional information regarding this methodology can be found in Appendix B3. The remaining off-site areas in the modeling domain that are not identified under residential land use or are 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 USC Boathouse (classified as recreational) at 400 Yacht St, Wilmington, CA 90744, and Banning's Landing Community Center (classified as childcare/recreational) at 100 E Water Street, Wilmington, CA 90744.

per year for a total of five years for the USC students based on site-specific information. The live-aboard residents at the California Yacht Marina were classified as sensitive receptors and evaluated using residential assumptions.

Figure 3.1-1: Non-Residential Sensitive Receptors near Berths 191-194



3.1.3 Regulatory Setting

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 Air Emissions (with the exception of OEHHA and SCAQMD's air toxic guidelines, which are described in Appendix B3 Health Risk Assessment). Below is a list of applicable programs and rules that were incorporated into the air quality analysis. Additional regulations that would be expected to influence sources of the Proposed Project, but for which, no credit was taken are discussed in Appendix B1, Section 2.0.

International Rules, Policies, and Agreements:

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

Federal Rules, Policies, and Agreements:

- USEPA Emissions Standards for Marine Diesel Compression Ignition Engines – Categories 1and 2;
- USEPA Emission Standards for Large Marine Diesel Engines – Category 3 Engines;
- USEPA Emission Standards for Non-Road Diesel Engines;
- USEPA Emission Standards for On-Road Trucks;
- 40 Code of Federal Regulations (C.F.R.), Part 60, Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants; and
- 40 C.F.R. Part 60, Subpart UUU, Standard of Performance for Calciners and Dryers in Mineral Industries.

State Rules, Policies, and Agreements:

- California Clean Air Act;
- AB 2650 (2002), California Port Community Air Quality Program;
- CARB Heavy Duty Diesel Vehicle Idling Emission Reduction Regulation;
- CARB California Diesel Fuel Regulation;
- CARB General Requirements for In-Use Off-Road Diesel-Fueled Fleets Regulation; and
- 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
- CARB On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation—Truck and Bus Regulation
- CARB Regulation to Reduce Emissions from Diesel Engines on Commercial Harbor Craft
- OEHHA's Air Toxics Hot Spots Program Risk Assessment Guidelines.1

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 404 – Particulate Matter – Concentration;
  - SCAQMD Rule 405 – Solid Particulate Matter – Weight;
  - SCAQMD Rule 431.1 – Sulfur Content of Gaseous Fuels;
- SCAQMD Regulation IX Standards of Performance for New Sources:
  - 40 CFR 60 Part OOO Standards of Performance for Nonmetallic Mineral Processing Plants;
  - 40 CFR 60 Part UUU Standards of Performance for Calciners and Dryers in Mineral Industries;
- SCAQMD Regulation XI Source Specific Standards:
  - SCAQMD Rule 1147.1 - Emissions from Gaseous - and Liquid-Fueled Engines;
  - SCAQMD Rule 1155 – Particulate Matter (PM) Control Devices;
- SCAQMD Regulation XIII – New Source Review;
- SCAQMD Regulation XIV Toxic and Other Non-Criteria Pollutants:
  - SCAQMD Rule 1401 – New Source Review of Toxic Air Contaminants; and
  - SCAQMD's Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spot" Information Assessment Act.[5]

[5] See Health Risk Assessment Appendix B3 for more information about OEHHA's and SCAQMD's guidelines.

LAHD Emission Reduction Programs:

- San Pedro Bay Ports Clean Air Action Plan (CAAP) (2006, 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

This section presents a discussion of the potential air quality impacts associated with construction and operation of the Proposed Project. For purposes of defining the CEQA baseline for impact analyses, LAHD's normal practice is to define the baseline as the existing conditions in the first full year calendar year preceding publication of the NOP, which was 2021. Because activities at the Project site during 2021 were negligible as discussed in more detail in Section 3.1.4.5, the baseline for air quality impacts is essentially zero emissions.

3.1.4.1 General Approach and Methods

The methodologies used to assess air quality impacts under CEQA are described in detail in Appendix B1 – Air Emissions Analysis, Appendix B2 – 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:" estimated through the methods described below, with additional detail provided in the noted technical appendices; and 2) "Residual Impacts:" quantifying the effects after application of any feasible mitigation or lease measures.

3.1.4.2 Methodology for Determining Emissions

For the Proposed Project and alternatives, construction emissions would be generated by off-road equipment, on-road vehicles, harbor crafts (HCs), and fugitive dust. The

emissions would result from engine exhaust and fugitive dust associated with off-road construction equipment, trucks, and worker vehicles, and HCs used in the wharf repair activities. The majority of these sources are fueled by diesel fuel, with a few being gasoline (worker vehicles). The byproduct of fuel combustion from these sources include CO, VOC, NOx, SOx, PM_{10}, and $PM_{2.5}$. Construction emissions were analyzed for construction years 2024 and 2025. Off gassed GHGs and TAC emissions from architectural coating were deemed negligible due to the relative proportion of the emission source and square footage of the office building. Similarly, off gassed emissions from asphalt paving were not applicable as concrete would be used per Proposed Project specifications.

The operational emissions would be generated by ocean going vessels (OGVs), HCs, off-road equipment, on-road vehicles, and stationary sources. Most equipment would be fueled by marine diesel and on-road diesel, but the dryer in the grinding mill would be gas-fired, and worker vehicles would be gasoline powered. In addition to combustion exhaust emissions, particulates in the form of road and fugitive dust would be produced by several of the operational equipment movements, the material stockpiles (GBFS and gypsum) and material handling steps throughout the GGBFS manufacturing process.

Operational emissions were analyzed for the years 2025 (first year of operations), 2027 (first year at maximum throughput), and 2049 (last year of occupational receptor 25-year exposure period). Both the construction and operational emission source assumptions and activities are described in more detail in Appendix B1 Air Emissions. Any postponement of construction activities would not likely result in any higher emissions as increasingly stringent regulatory requirements related to construction equipment and cleaner engines from turnover are implemented compared to those assumed in the analyzed years.

Information regarding the activity and emissions characteristics of the Proposed Project and alternatives was obtained primarily from Ecocem, LAHD staff, and the 2021 Port Emissions Inventory (POLA 2022). Activity and utilization assumptions used to estimate peak daily 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 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 Emissions Inventory Methodology Report (SPBP 2022) and updated to reflect Ecocem specific Project design data when available. Methodologies for stationary sources and fugitive dust are consistent with USEPA's AP-42 methods. The CEQA thresholds for operations and construction are discussed in Section 3.2.4.4.

Ocean Going Vessels (OGVs) – Dry Bulk Vessels

The Proposed Project and alternatives operations rely on dry bulk oceangoing vessels to bring raw materials (or finished product in the case of the Product Import Terminal Alternative [Alternative 3]) to the site. No OGV activity occurred in the baseline or would occur during construction; vessel emissions would only occur during operations (2025 and beyond).The summary of key activity for the Proposed Project and alternatives are shown in Table 3.1-3.

Bulk vessels operational activity for 2025, 2027, and 2049, as well as engine tier breakdown and vessel characteristics, were provided by Ecocem on the basis of the design for the Proposed Project and the Reduced Project Alternative (Alternative 2). For the Product Import Terminal Alternative (Alternative 3), the 2021 POLA Emissions Inventory was used for vessel characteristics and engine tier breakdown data for dry bulk

OGVs (POLA 2022). The dry bulk vessel fleet tier mix was conservatively assumed to remain constant over the duration of the Project timeline; i.e., no assumptions regarding improvements in engine tier, and therefore emissions, were included. Vessel emissions were calculated from 40-nautical miles from Point Fermin, where it approximately coincides with the SCAB overwater boundary, to Berth 191, which included the fairway, precautionary, maneuvering, and anchorage zones. In all analysis years, vessel transit speeds were assumed to match the Port's Vessel Speed Reduction Program (VSRP) compliance levels for 2021 recorded by POLA (LAHD 2022).

Harbor Craft (HC) – Assist Tugs

During construction and operation of the Proposed Project and alternatives, harbor craft would consist of tugboats/assist tugs used to support wharf repairs and other in-water work during construction, to assist bulk vessels while maneuvering and docking during operations, and to install/remove Yokohama fenders during operations. One tugboat was assumed to be required for assistance of each bulk vessel arrival/departure, along with an additional tugboat to install and remove Yokahama fenders before arrival and after departure of the vessels. Yokohama fenders are used to protect the vessels from impacting the dock upon docking and while docked. HC main and auxiliary engine sizes and load factors, and other vessel operational characteristics were obtained from the 2021 Port Emissions Inventory (POLA 2022).

Off-Road Equipment – Construction Equipment and Operations Backland Equipment

For construction, off-road construction equipment characteristics and activity were provided by Ecocem for wharf repairs and backlands construction, as described in detail in Appendix B1. During operation, off-road equipment for the Proposed Project and Reduced Project Alternative (Alternative 2) would consist of a diesel-powered excavator and a diesel-powered front-end loader moving material between stockpiles and the process hoppers. Off-road activity (hours per day) was derived based on projected terminal throughput as estimated by Ecocem. Off-road emission factors were derived from the rates associated with the CARB Emissions Inventory Model - EMFAC2021 – (CARB 2021), in the case of the excavator and construction equipment, and project specific engineer certification data, in the case of the FEL. All construction equipment emissions reflect compliance with the Port's Sustainable Construction Guidelines requirements as described in Section 3.2.3.

On-Road Vehicles – Construction Trucks and Operations Delivery Trucks

Emissions from on-road vehicles during construction and operation of the Proposed Project and alternatives were calculated using emission factors generated by the 2021 CARB Emissions Factor Model (CARB 2021) for on-road mobile sources. During construction, on-road vehicles are represented by hauling and material delivery heavy duty diesel trucks. During operations, on-road vehicles would be diesel heavy heavy-duty trucks hauling totally enclosed tanker-type trailers to pick up product (GGBFS) from and deliver gypsum to the site. The default EMFAC2021 fleet mix for the SCAB heavy-duty trucks is 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 (EPA 2006b).

Truck activity on-site included idling and on-site driving. Truck activity off-site included truck travel along roadway links as determined by the assigned truck routes provided by POLA (see Section 3.3). The geographical scope of the analysis of truck emissions from

predicted Project traffic covers trips within the SCAB boundary (the greenhouse gas analysis considered emissions out to the California state boundary; see Section 3.5).

Worker Vehicles

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

Stationary Sources – Operational Process Sources and Fugitive Dust

Combustion emissions from stationary sources would consist of the dryer combustion exhaust; all other stationary sources would be electrically powered. In general, natural gas combustion emissions of PM_{10}, CO, SOx, and VOCs from the dryer were based on the SCAQMD's Annual Emissions Report (AER) default emission factors (SCAQMD 2022), and the NOx emission were based on the emission factor referenced from the manufacturer's guarantee (Thyssenkrupp 2022).

Emissions of particulate matter from stationary sources were calculated as fugitive dust from the mill process, material handling equipment, storage and loading silos, stockpiles, and as lifted dust from on-site surfaces through vehicle traffic and backland offroad equipment movements. Particulate matter (PM) emissions factors were based on the SCAQMD's Annual Emissions Report (AER) default emission factors (SCAQMD 2022), and manufacturer outlet PM concentration guarantees for dust collector and process bag filters. Fugitive PM emissions from material handling were based on USEPA's AP-42 Chapter 13.2.4 Aggregated Handling and Storage Piles (USEPA 2006a) with the addition of water application controls or full cover on the conveyor where applicable, as explained more thoroughly in Appendix B1 (Section 5.5). Stockpile wind erosion fugitives were calculated based on USEPA AP-42 Chapter 13.2.5 Industrial Wind Erosion with considerations for the stockpile shape and exposure to the surface wind layer. PM emissions from paved roads on-site were calculated based on USEPA AP-42 Chapter 13.2.1 for paved roads (USEPA 2011). PM dust emissions from excavator movement on the GBFS stockpile were calculated based on USEPA AP-42 Chapter 13.2.2 for unpaved roads (EPA 2006).

Table 3.1-3 summarizes key activity parameters that shape the operational emissions and air quality impacts disclosed in Section 3.1.5. Impact Determination. Detailed assumptions on emissions estimation are described in Appendix B1 methodology and throughout the appendix tables, which are organized by source category.

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

Scenarios	Years	GBFS Delivery via OGV [b] – metric tons/year	Product Throughput (GGBFS-metric tons/year)	Total HD Trucks [a] (one-way trips/year)	Vessel calls per Year [b]	Tug transits per year [b]	Front End Loader [a] Hours per Year	Natural Gas Dryer Fuel Consumption (MMBtu/year)[c]
Proposed Project	2025	400,000	387,500	32,975	12	72	3,822	97,500
	2027	800,000	775,000	65,950	24	144	7,644	195,000
	2049	800,000	775,000	65,950	24	144	7,644	195,000
Reduced Project	2025	270,000	261,475	22,253	8	48	2,579	65,325
	2027	540,000	522,950	44,506	16	96	5,158	130,650[c]
	2049	540,000	522,950	44,506	16	96	5,158	130,650
Product Import Terminal	2025	0	387,500	31,000	12	72	0	0
	2027	0	775,000	62,000	23	138	0	0
	2049	0	775,000	62,000	23	138	0	0
No Project	2025	0	0	0	0	0	0	0
	2027	0	0	0	0	0	0	0
	2049	0	0	0	0	0	0	0

Fuel Types: [a] Diesel, [b] Marine Distillate, [c] Natural Gas

Notes:

It is assumed there to be six tug boat transits per vessel call as there are two to assist the vessel to berth and one to install and take down Yokohama fenders with each vessel requiring two transits to and from the point of need.

Construction activity details related to air quality can be found in Appendix B1, but for comparison purposes, the construction activity to build the facility, and therefore emissions, of the Proposed Project and Reduced Project Alternative (Alternative 2) were assumed to be equivalent, as the Reduced Project Alternative (Alternative 2) would require the same type of process infrastructure and equipment as those of the Proposed Project. As described in Chapter 2, the Product Import Terminal Alternative (Alternative 3) would require slightly less intense construction activity to build the facility since some Proposed Project elements would not be required (see Chapter 2 for more details). Accordingly, the construction emissions related to the Product Import Terminal Alternative (Alternative 3) would reflect a simpler construction plan, as described in Chapter 2.

3.1.4.3 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; the complete dispersion modeling report 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 Project footprint boundary and excluded receptors over-water and on roads.
- The significance concentration thresholds for PM_{10} and $PM_{2.5}$ are incremental thresholds, meaning that the modelled Project concentrations are compared directly to the thresholds without adding ambient background concentrations.
- The significance concentration thresholds for NO_2 are absolute thresholds based on the ambient air quality standards, meaning that the modelled Project concentrations are added to the ambient background concentrations for the 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-northwest 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 2005a), 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.

3.1.4.4 Health Risk Assessment Methodology

To inform the public and decision-makers of the Proposed Project's environmental impacts, the method for estimating the predicted health risks under CEQA associated with TAC emissions from the Proposed Project, the Reduced Project Alternative (Alternative 2), and the Product Import Terminal Alternative (Alternative 3) is described below. 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 Health Risk Assessment (HRA) Report is presented in Appendix B3.

The USEPA dispersion model, AERMOD version 21112, 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 output 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. The period from 2024 to 2054 was used as the 30-year residential period with greatest diesel exhaust emissions from Proposed Project construction and operations (diesel exhaust is the dominant TAC for cancer risk). The diesel exhaust emissions from the construction activities are comparable to those from the on-site operational sources close to the maximally impacted receptors when the project throughput peaks in 2027. Because the majority of the mass annual operational emissions occur off-site and far away from the receptors towards the ocean, such as vessel transit and harbor craft transit, it is more conservative to include the years with emissions that occur nearest to the sensitive receptors, such as those when construction takes place. Therefore, setting the starting year of the HRA to 2024 would account for the health impact from the construction while still yielding conservative risk estimates for the risk assessment.
- Cancer burden is an estimate of the expected number of additional cancer cases in a population exposed to 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 census block level. For purposes of calculating the cancer burden, a residential lifetime exposure period of 70 years (2024-2094) was assumed in accordance with OEHHA's guidance (OEHHA 2015); exposures beyond 2049 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, tugboats, off-road equipment, and heavy-duty trucks on the Project site. For cancer risk and the chronic hazard index, CARB uses diesel particulate matter (DPM) as a surrogate for total diesel exhaust. TAC emissions from non-diesel sources (such as the natural gas-fired dryer), as well as fugitive dust from material handling of the raw materials (GBFS and gypsum) and product (GGBFS) also were evaluated in the HRA.

To determine significance, this HRA evaluated the health effects associated with the Proposed Project and each alternative. The resulting health effects 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 2024 to 2054.[6] To estimate occupational cancer risk impacts, TAC emissions were projected over a 25-year period, from 2024 through 2049. To calculate the 30-year and 25-year emissions, estimates of activity levels and emission factors were made for the years 2024, 2025, 2027, and 2049 and interpolated for other years. For the 30-year period used in the individual residential cancer risk analysis and 70-year period used in the cancer burden analysis, emissions were assumed to remain constant after 2049. The HRA was conducted following the methodology as recommended by the Office of Environmental Health Hazard Assessment (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 the OEHHA (OEHHA 2009). This approach accounted for an "anticipated special sensitivity to carcinogens" by infants and children. The detailed discussion of the HRA methodology can be found in Appendix B3.

As discussed at the beginning of Section 3.1.4, for this analysis, emissions at the Project site during the baseline year of 2021 were essentially zero; therefore, health effects for the baseline were not evaluated.

$PM_{2.5}$ Morbidity and Mortality

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 already addressed in Impact AQ-4. Per LAHD policy, 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 µg/m3 project increment isopleth identified during the dispersion modeling. The Port evaluates mortality and morbidity effects for all areas (with residential populations) where the maximum 24-hour $PM_{2.5}$concentrations exceed the SCAQMD threshold (SCAQMD 2020). For the Proposed Project and alternatives, the residential population is zero within the isopleth of 2.5 $\mu g/m^3$ which is in the vicinity of the terminal boundary, surrounded by industrial land uses; accordingly, analyses of $PM_{2.5}$ morbidity and mortality were not conducted.

3.1.4.5 CEQA Baseline

CEQA Guidelines, Section 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.

[6] Except for Banning's Landing and USC Boathouse receptors. Banning's Landing currently is not hosting events or activities; it was conservatively assumed that children who may be present at Banning's Landing in a future afterschool program could be exposed up to 12 hours/day, 180 days/year, for 12 years, starting at age 5. USC Boathouse students are assumed to be exposed 4 hours/day, 6 days/week, from January to May, and August to November per year for a total of five years.

The LAHD's normal practice is to define the baseline as the conditions in the first full year calendar year preceding publication of the NOP, which was 2021. Since the NOP was released in March 2022, the LAHD has determined that 2021 is the baseline year for the CEQA analysis. In 2021, activity within the boundaries of the Project site (i.e., the Berth 191 and the backlands at Berths 192-194 per Figure 2-2) was nil as the site is vacant and there were no vessel calls at Berth 191. Activity on the waterfront of Berth 192-194 consisted of operation of the boat restoration and equipment storage uses. That activity involved operation of a few light- and medium-duty vehicles and equipment such as lifts and powered tools, and use of small amounts of chemicals and materials associated with marine repair operations. However, for purposes of defining the CEQA Baseline, it is considered that annual activities at the Project site during 2021 were negligible, resulting in a baseline of zero emissions.

3.1.4.6 Thresholds of Significance

CEQA Guidelines Appendix G (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 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) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

d) Expose sensitive receptors to substantial pollutant concentrations?

e) Create objectionable odors affecting a substantial number of people?

The Initial Study in the Notice of Preparation (Appendix A) eliminated CEQA Checklist item (e) from further consideration as it was determined that odors from operation of the Proposed Project would be similar to odors produced from the surrounding terminal as well as the distance from the nearest sensitive receptors would allow adequate dispersion of emission to below objectionable odor levels. 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 City of Los Angeles in the *L.A. CEQA Thresholds Guide* (City of Los Angeles 2006), which incorporates, by reference, the CEQA Air Quality Handbook and associated significance thresholds developed by the SCAQMD (SCAQMD 1993; SCAQMD 2023b).

Construction Thresholds

The *L.A. CEQA Thresholds Guide* (City of Los Angeles 2006) references the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993) and USEPA AP-42 (EPA 2011) for calculating and determining the significance of construction emissions. The SCAQMD significance thresholds are updated as necessary on the district's web page to address new regulations and standards (SCAQMD 2023b).

Construction-related air impacts would be considered significant if:

Criterion AQ-1: The Proposed Project or alternative would 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, Reduced Project Alternative (Alternative 2), or Product Import Terminal Alternative (Alternative 3) 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 (NOx)	100
Sulfur Oxides (SOx)	150
Particulates (PM_{10})	150
Particulates ($PM_{2.5}$)	55

Source: SCAQMD 2023b.

Criterion AQ-2: Construction of the Proposed Project or alternatives would result in off-site ambient air pollutant concentrations that exceed the SCAQMD thresholds of significance in Table 3.1-6.

SCAQMD has developed a localized significance threshold methodology (LST), 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. Even though ambient concentration thresholds evaluate off-site concentrations, SCAQMD LST guidance uses on-site emission levels to screen out whether emissions may reach off-site receptors. For determining whether construction emissions from the Proposed Project could produce significant off-site ambient concentration impacts, they are evaluated against the SCAQMD LSTs. The selection of LSTs depends on site area (acres) and distance to nearest off-site receptor; for this Project, the applicable LSTs correspond to a 5-acre site in source receptor area (SRA) 4 with off-site receptors located 25 meters away, shown in Table 3.1-5 (SCAQMD 2008). Given that the Project site is greater than 5 acres, using the thresholds for 5 acres is conservative as this would assume all activity would be concentrated within a smaller area. 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 and Operations

Project Size (acres)	Source Receptor Area	Distance To Receptor (m)	SCAQMD LSTs (lb/day)			
			CO	NOx	PM_{10}	$PM_{2.5}$
Construction [a,b]						
5	4	25	1530.0	123.0	14.0	8.0
Operations [c]						
5	4	25	1530.0	123.0	4.0	2.0

Notes:
[a] Represents the maximum of on-site construction emissions that would not violate ambient air quality standards without the need for a more thorough demonstration using dispersion modeling.
[b] LSTs based on a receptor located 25 meters from the Project site within SRA 4 (South Los Angeles County Coastal). Distance was measured using Google Earth. LSTs were obtained from the 2008 SCAQMD Final Localized Significance Threshold Methodology, Appendix C, Mass Rate LST Look-up Tables (SCAQMD 2008).
[c] Represents the maximum on-site operational emissions that would not violate ambient air quality standards without the need for a more thorough demonstration using dispersion modeling..

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)
Sulfate[f]	
24-hour average	25 µg/m^3
Carbon Moeide (CO)	
1-hour average	20 ppm (23,000 µg/m^3)
8-hour average	9.0 ppm (10,000 µg/m^3)
Particulates (e 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
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 and alternatives operations 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.

Sources: SCAQMD, 2023b.

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

Operational Thresholds

The *LA CEQA Thresholds Guide* (City of Los Angeles 2006) provides specific significance thresholds for operational air quality impacts that also are based on SCAQMD standards. For the purpose of this draft EIR, operations-related air impacts would be considered significant if:

Criterion AQ-3: The Proposed Project or alternatives would 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 CEQA 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 (NOx)	55
Sulfur oxides (SOx)	150
Particulates (PM_{10})	150
Particulates ($PM_{2.5}$)	55

Source: SCAQMD 2023b.

Criterion AQ-4: The Proposed Project or alternatives operation would result in offsite ambient air pollutant concentrations that exceed any of the SCAQMD thresholds of significance in Table 3.1-8

Similar to criterion AQ-2, SCAQMD's LSTs are first evaluated as a screening of whether the operational emissions may generate significant localized air quality impacts. Peak daily operational emissions occurring on-site are compared to operations-related LSTs in Table 3.1-5.

If operational emissions are above operational LSTs, then localized ambient pollutant concentrations are modeled through dispersion and evaluated against thresholds in Table

3.1-8. 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 3.1-8: 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 (PM10 or PM2.5) 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)
Sulfatee	
24-hour average	25 µg/m^3
Leade	
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 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.

Sources: SCAQMD 2023b; USEPA 2022b.

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

Criterion AQ-5: The Proposed Project or alternatives would expose receptors to significant levels of toxic air contaminants (TACS).

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).

Criterion AQ-6: The Proposed Project or alternatives would conflict with or obstruct implementation of an applicable air quality plan.

The consistency of the Proposed Project or alternative with an applicable air quality management plan (AQMP) is assessed qualitatively. The Proposed Project or alternative would be considered consistent with the local AQMP and not interfere with attainment goals if the Project's activities (e.g., throughput, ship calls) are consistent with the projections utilized in the formulation of the AQMP; in other words, if the Project's activities do not exceed the assumptions in the latest AQMP (SCAQMD 2022).

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, would generate criteria pollutant air emissions. Therefore, potential air quality impacts are evaluated in this section. In summary, the major construction elements of the Proposed Project that would generate air emissions would be diesel-powered on-road trucks delivering materials and hauling soil, diesel-powered off-road construction equipment such cranes, forklifts, generators, pavers, and excavators, and diesel-powered harbor craft involved in wharf repairs.

Emissions would include fuel combustion pollutants and fugitive dust. Major operational elements that would generate air emissions include oceangoing vessels delivering GBFS and the associated tugboats fueled by marine diesel, on-site equipment handling raw materials such as a front-end loader and excavator, the natural-gas-fueled dryer, the conveyors and grinding mill that could generate particulate matter through material handling, and the diesel-powered on-road trucks delivering gypsum and transporting the GGBFS product from the facility.

Under the Proposed Project, the Ecocem facility in 2027 and onward would handle a throughput of 775,000 metric tons/year of GGBFS product, derived from 800,000 metric tons/year of GBFS and 39,500 metric tons/year of gypsum raw materials received per year. The difference in mass from raw materials to product is related to moisture loss. For more information see Chapter 2.

Impact AQ-1: Would the 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. Key construction activities of the Proposed Project include construction of backlands and wharf repairs. Emissions produced by trucks, off-road equipment, and harbor craft involved in these activities make up the Proposed Project construction emissions inventory for years 2024 and 2025. Table 3.1-9 presents peak-day criteria pollutant emissions associated with construction of the Proposed Project. These emissions reflect compliance with the LAHD Sustainable Construction

Guidelines for Reducing Air Emissions (LAHD 2009), which impose requirements of meeting stringent emission standards (or model year requirements) on construction equipment, and heavy-duty vehicles. The guidelines also describe Best Management Practices (BMPs) for all construction projects on Port property. 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. In addition, the Guidelines describe certain practices for fugitive dust watering control, which are quantified in this analysis.

Table 3.1-9: Peak Daily Construction Emissions — Proposed Project (lbs/day)

Source Category	Proposed Project (lbs/day)					
	VOC	CO	NOx	SOx	$PM_{2.5}$	PM_{10}
Construction Year 2024						
Fugitive Dust	n/a	n/a	n/a	n/a	<1	1.1
Harbor Craft	1.5	9.6	44.7	<1	<1	<1
Off-road Construction Equipment	1.0	35.6	33.3	<1	1.2	1.3
Onroad Worker Vehicles and Trucks	<1	2.9	2.3	<1	1.2	8.5
Construction Year 2024 Total	**2.6**	**48.1**	**80.3**	**<1**	**2.9**	**10.3**
Impacts						
Regional Significance Threshold	75	550	100	150	55	150
Significant?	No	No	No	No	No	No
Construction Year 2025						
Fugitive Dust	n/a	n/a	n/a	n/a	<1	1.1
Harbor Craft	0.0	0.0	0.0	0.0	0.0	0.0
Off-road Construction Equipment	<1	32.7	26.3	<1	<1	1.0
Onroad Worker Vehicles and Trucks	<1	2.1	6.1	<1	1.0	3.4
Construction Year 2025 Total	**1.1**	**34.8**	**32.4**	**<1**	**2.0**	**5.5**
Impacts						
Regional Significance Threshold	75	550	100	150	55	150
Significant?	No	No	No	No	No	No

Note: Due to rounding numbers shown, values may not add up perfectly with results.

Impact Determination

Table 3.1-9 shows that peak daily construction emissions are below the regional significance threshold and therefor there is no significant impact.

Mitigation Measures

No mitigation is required, however, the Proposed Project includes compliance with the LAHD 2009 Sustainable Construction Guidelines (SCGs) which include control measures requiring construction sources and practices cleaner than those reflected in an

average regional fleet. In order to monitor progress of application of SCGs, the following lease measure will be part of the Proposed Project and alternatives.

> **LM AQ-4: Port of Los Angeles Sustainable Construction Guidelines**. The 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 stipulated in the construction contracts and bid documents.

This analysis of mitigation measures feasibility and application of lease measures is also applicable to Reduced Project Alternative (Alternative 2) and Product Import Terminal Alternative (Alternative 3).

Residual Impacts

Impacts would be less than significant.

Impact AQ-2: Would the construction of the Proposed Project result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-6?

Impact Determination

As shown in Table 3.1-10, estimated maximum onsite daily construction emissions are below the applicable SCAQMD mass-rate LSTs for NOx, CO, PM_{10}, and $PM_{2.5}$. Emissions considered onsite during construction were those that fell within the bounds of the Project site, which included onsite trucks, construction equipment, harbor crafts used for quay repairs, and fugitive dusts from sources such as material handling and wind erosions. For this analysis, it was assumed that 10% of construction harbor craft activity to occur right at berth (i.e., onsite), while dropping off barge equipment, and the rest were assumed to occur during transit (i.e., offsite). Since this screening analysis shows that construction emissions are below the mass-rate LSTs, further air dispersion modeling was not required and localized impacts would be less than significant. Note that SO_2 is not modeled as SO_2 emissions are expected to be insignificant due to sulfur content limit for liquid fuels (MARPOL Annex VI, SCAQMD Rule 431.2). For this reason, SO_2 is not expected to cause any exceedance of NAAQS or CAAQS.

Table 3.1-10: Comparison of Construction Peak Day Emissions to SCAQMD LST Thresholds

Construction Impacts	Year	Maximum Daily On-site Emissions [a] (lb/day)			
		CO	NOx	$PM_{2.5}$	PM_{10}
SCAQMD LSTs [a,b]	--	1530.0	123.0	8.0	14.0
Construction On-Site Emissions	2024	43.0	45.9	2.3	9.8
	2025	38.6	32.0	1.2	2.2
Exceeds SCAQMD LSTs?	2024	No	No	No	No
	2025	No	No	No	No

Notes:
[a] Emissions are the maximum of on-site construction. PM fugitive dust emissions during construction include a 55% reduction (for watering at least two times daily to comply with SCAQMD Rule 403).

[b] LSTs based on a receptor located 25 meters from a 5-acre project site within SRA 4 (South Los Angeles County Coastal). Distance was measured using Google Earth. LSTs were obtained from the 2008 SCAQMD Final Localized Significance Threshold Methodology, Appendix C, Mass Rate LST Look-up Tables (SCAQMD 2008).

Mitigation Measures

No mitigation required, however, the Proposed Project includes compliance with the LAHD 2009 Sustainable Construction Guidelines which include control measures requiring construction sources and practices cleaner than those reflected in an average regional fleet.

> **LM AQ-4: Port of Los Angeles Sustainable Construction Guidelines**. The 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 stipulated in the construction contracts and bid documents.

This analysis of mitigation measures feasibility and application of lease measures is also applicable to Reduced Project Alternative (Alternative 2) and Product Import Terminal Alternative (Alternative 3).

Residual Impacts

Impacts would be less than significant.

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

Table 3.1-11 presents peak daily criteria pollutant emissions associated with terminal operations of the Proposed Project. Emissions were estimated for 2025, 2027, and 2049 operational years. Operational sources of emissions at the Ecocem facility would be comprised of oceangoing vessels, harbor crafts, heavy-duty trucks, off-road equipment, worker vehicles, and stationary sources. Operational peak daily emissions of mobile sources are tracked outside of the terminal (referred to as off-site) up to the SCAB border. Peak daily emissions represent upper-bound estimates of activity levels at the terminal and as such would occur infrequently. The CEQA baseline emissions are expected to be negligible as there was essentially no activity at the Project site during the CEQA baseline year 2021. The 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.

Table 3.1-11: Peak Daily Operational Emissions – Proposed Project (lbs/day)

Source Category	Proposed Project (lbs/day)					
	VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SOx
Year 2025						
OGV Transit	9	40	566	6	6	14
OGV Hotelling/Anchorage	6	16	152	3	3	6
Harbor Craft	2	12	75	1	1	<1
Trucks	<1	3	21	3	2	<1

Source Category	Proposed Project (lbs/day)					
	VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SOx
Worker Vehicles	<1	<1	<1	<1	<1	<1
Offroad Equipment	<1	2	<1	<1	<1	<1
Road Dust	0	0	0	1	<1	0
Dryer Combustion	3	14	9	0	0	<1
Stationary Source – Mill	0	0	0	3	3	0
Material Handling	0	0	0	3	<1	0
Storage Silos	0	0	0	2	2	0
GBFS Storage Pile	0	0	0	<1	<1	0
Gypsum Storage Pile	0	0	0	<1	<1	0
Total Operational Year 2025	**20**	**89**	**823**	**22**	**17**	**21**
CEQA Baseline Emissions	0	0	0	0	0	0
Project Minus CEQA Baseline	20	89	823	22	17	21
Regional Significance Threshold	55	550	55	150	55	150
Significant?	No	No	**Yes**	No	No	No
Year 2027						
OGV Transit	9	40	566	6	6	14
OGV Hotelling/Anchorage	6	16	152	3	3	6
Harbor Craft	2	12	75	<1	1	<1
Trucks	<1	5	41	5	4	<1
Worker Vehicles	<1	<1	<1	<1	<1	<1
Offroad Equipment	<1	4	1	<1	<1	<1
Road Dust	0	0	0	2	<1	0
Dryer Combustion	6	29	17	0	0	<1
Stationary Source – Mill	0	0	0	6	6	0
Material Handling	0	0	0	6	<1	0
Storage Silos	0	0	0	4	4	0
GBFS Storage Pile	0	0	0	<1	<1	0
Gypsum Storage Pile	0	0	0	<1	<1	0
Total Operational Year 2027	**24**	**108**	**852**	**34**	**26**	**21**
CEQA Baseline Emissions	0	0	0	0	0	0
Project Minus CEQA Baseline	24	108	852	34	26	21
Regional Significance Threshold	55	550	55	150	55	150
Significant?	No	No	**Yes**	No	No	No
Year 2049						
OGV Transit	9	40	566	6	6	14
OGV Hotelling/Anchorage	6	16	152	3	3	6
Harbor Craft	<1	9	32	<1	<1	<1
Trucks	<1	4	31	5	4	<1
Worker Vehicles	<1	<1	<1	<1	<1	<1

Source Category	Proposed Project (lbs/day)					
	VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SOx
Offroad Equipment	1	5	1	<1	<1	<1
Road Dust	0	0	0	2	<1	0
Dryer Combustion	6	29	17	0	0	<1
Stationary Source – Mill	0	0	0	6	6	0
Material Handling	0	0	0	6	<1	0
Storage Silos	0	0	0	4	4	0
GBFS Storage Pile	0	0	0	<1	<1	0
Gypsum Storage Pile	0	0	0	<1	<1	0
Total Operational Year 2049	**23**	**104**	**800**	**34**	**25**	**21**
CEQA Baseline Emissions	0	0	0	0	0	0
Project Minus CEQA Baseline	23	104	800	34	25	21
Regional Significance Threshold	55	550	55	150	55	150
Significant?	No	No	**Yes**	No	No	No

Impact Determination

Table 3.1-11 shows that Proposed Project peak daily operational emissions would exceed the SCAQMD daily emission threshold for NOx shown in Table 3.1-6. Therefore, impacts would be significant for NOx in 2025, 2027, and 2049 under the Proposed Project. Emissions of particulate matter (PM_{10} and $PM_{2.5}$) would remain below the SCAQMD significance thresholds, largely because the coarse-grained, moist nature of the GBFS storage piles as well as application of water spray and the use of enclosed conveyances such as air slides for GGBFs that would minimize mobilization and dispersion of particulate matter. In addition, the material transfer (another source of PM_{10} and $PM_{2.5}$) is controlled by Best Available Control Technologies (BACT) including dust collector and process bag filters as described on page 35 of Appendix B1. All dust generated within the mill building (e.g., bucket elevator, air slides, etc.) and the GGBFS material transfer to and from silos (e.g., bucket elevator, air slides, etc.) would be captured by filters. In other words, based on closed loop project design, and filter efficiency, there would be no dust emissions from these particular sources that do not go through a filter. However, there are other sources of fugitive emissions such as material handling via conveyance from OGVs to storage pile, the FEL and conveyor transfer from storage pile to mill building, and road dust. These sources are controlled by covers and/or water spray, but the control/capture efficiency is less than 100% and varies among the sources (see Appendix B1 Calculation Inputs by Source Category – Stationary Sources). Mobile sources, such as off-road equipment, and operation of the natural-gas dryer would also generate criteria pollutant emissions but levels would be substantially below the SCAQMD significance thresholds as shown in the table above.

The largest contributors to peak daily operational emissions of NOx in analysis years 2025, 2027, and 2049 would be ocean-going vessels transit. Ocean going vessels hoteling emissions are the second largest source of NOx in each year evaluated.

Mitigation Measures

Review of Potential Air Quality Mitigation

The largest contributor to the significant impact for peak daily NOx emissions are the vessels emissions related to transit and hoteling. The peak day captures a full vessel transit from the 40 nautical mile (nm) boundary to Berth 191, which translates into sizeable daily emissions related to the use of the vessel propulsion engines. The NOx transit emissions can be reduced, to an extent, by limiting vessel transit speeds, and controlling the tier mix (age) of the fleet. In terms of the speed, the vessels were modeled at the average speeds observed at the 20 nm and 40 nm marks listed in the Port's 2021 VSRP compliance report (LAHD 2022). Due to high compliance of this program in recent years (approximately 95% on average), the speeds in the analysis were estimated to be near the 12 knots voluntary compliance speed (specifically a 12.1 knots average speed in 2021). Therefore, the analysis essentially already accounted for compliance with the VSR program of 12 knots within 40 nm of Point Fermin. In terms of the fleet mix, Orcem has noted that the vessel fleet provider expects a 50/50 Tier 2/Tier 3 vessel fleet mix, which is the current basis for the analysis. The analysis, conservatively, does not credit for potential future turnover of the fleet (to a higher Tier 3 percentage), as Ecocem cannot affect or control the Tier level of the third-party vessel fleet that would call at Berth 191. Based on this, there is no current feasible mitigation for these sources for which the Proposed Project can claim additional reduction credits.

Hoteling emissions from oceangoing vessels are another major contributor of NOx. Potential control measures could be either connecting a vessel to shorepower, i.e., the electrical grid, while at berth, or to a bonnet exhaust capture system that may be land-based or barge-mounted. Currently, CARB does not require dry bulk vessels, such as those that would service the Proposed Project, to control their emissions under the Ocean-Going Vessels At-Berth Regulation. Therefore, bulk vessels are not currently certified to use available capture technologies. However, as required by LM AQ-2 (see below) Orcem plans to implement capture systems, if proven feasible, to control the hoteling emissions of the oceangoing vessels as part of its SCAQMD air quality permit approach Although hoteling emissions may be reduced as part of Orcem's future air permit approach, this analysis does not take credit for those potential reductions.

Use of an electric alternative for the dryer in the grinding mill was considered as a means to reduce combustion emissions from the natural gas dryer. However, electric alternatives large enough to meet the specification required by the Project are not available. Accordingly, an electric-powered dryer was deemed infeasible as mitigation.

Lastly, the analysis assumes the natural future turnover of the current average (as of 2021) engine age mix of the Port's assist tug fleet (harbor craft category), per the Port's 2021 Emissions Inventory (POLA 2022). CARB recently approved the 2022 Amendments to the Commercial Harbor Craft (CHC) Regulation, which may result in a quicker turnover, and therefore lower future emissions, for harbor craft sources in California. However, because there is not yet an enforceable mechanism for this rule, the analysis does not quantify potential reductions benefits of it.

Other potential sources of emissions reductions are LAHD's standard lease measures LM AQ-2. Because there is some timeline uncertainty about the timing of availability for these measures, the analysis does not quantify their potential benefits, regardless, it is expected that these measures would further reduce future air quality emissions and serve to comply with the Port's air quality requirements.

LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment. Tenant shall replace cementitious material handling equipment used for operation with the cleanest available equipment, that meets operating and safety requirements, anytime new or replacement equipment is purchased, with a first preference for zero-emission equipment, a second preference for near-zero equipment (such as, hybrid or low-NOx equipment), and third for the cleanest available if zero or near-zero equipment is not feasible, provided that LAHD shall conduct engineering assessments to confirm that such equipment is capable of installation at the facility. Tenant may make a recommendation to LAHD for LAHD's concurrence as to which equipment is available and is feasible.

Starting one year after the effective date of a new entitlement between the Tenant and the LAHD, Tenant shall submit to the Port an equipment inventory and 5-year procurement plan for new equipment, and infrastructure, and will update the procurement plan annually in order to assist with planning for transition of equipment to zero emissions in accordance with the foregoing paragraph.

LM AQ-2: 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 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, which shall not be unreasonably withheld.

LM AQ-3: At-Berth Vessel Emissions Control Pilot Study. The Tenant shall complete a pilot study to evaluate the feasibility of implementing an at-berth vessel emissions capture and control system within 3 years of entitlement execution. If proven to be feasible, including but not limited to financial, technical, and operational considerations, and upon California Air Resources Board certification, the Tenant will be required to implement the technology when operationally feasible as described in Tenant's pilot study. This measure will rely on the Tenant's pilot study evaluation and determination, and is subject to mutual agreement between the Tenant and LAHD, which shall not be unreasonably withheld or unreasonably required.

LM AQ-5: **Vessel Speed Reduction Program (VSRP).** 95 percent of vessels calling at the Ecocem Dry Bulk Processing Facility will be required to comply with the expanded VSRP at 12 knots between 40 nautical miles (nm) from Point Fermin and the Precautionary Area.

LM AQ-6: Front End Loader Replacement Schedule. The tenant shall maintain a replacement schedule of the off-road diesel front end loader of every two years, where an equivalent new piece that meets operational requirements and meets Tier 4 Final standards or cleaner, would be procured.

This analysis of mitigation measures feasibility and application of lease measures is also applicable to Reduced Project Alternative (Alternative 2) and Product Import Terminal Alternative (Alternative 3).

Residual Impacts

Impacts would be significant and unavoidable for NOx in 2025, 2027, and 2049 under the Proposed Project.

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

Peak daily operational emissions were compared to SCAQMD operational LSTs shown in Table 3.1-6. On-site emissions exclude emission sources from trucks driving offsite and OGV vessels in transit. The SCAQMD LST screening analysis showed the estimated maximum daily operational emissions are above the applicable SCAQMD mass-rate LSTs for NOx, PM_{10}, and $PM_{2.5}$ but not for CO emissions. For this reason, dispersion modeling of onsite and offsite Proposed Project emissions for NO_2, PM_{10}, and $PM_{2.5}$ was performed to assess the impact of the Proposed Project on local ambient air concentrations for each analysis year (2025, 2027, and 2049). The impact was assessed by comparing maximum modeled concentrations against the SCAQMD thresholds presented in Table 3.1-8. A summary of the dispersion modeling results is presented here; the complete dispersion modeling report is included in Appendix B2.

Impact Determination

Table 3.1-12 presents the maximum off-site concentrations of NO_2, from operational activities. Table 3.1-13 presents the maximum off-site concentrations of PM_{10} and $PM_{2.5}$ from operational activities. Construction is assumed to last 18 months starting in 2024, and concluding in 2025; therefore, 2025 would be a partial year of construction and partial year of operation. Therefore, to capture a full year of Proposed Project impacts, annual average concentrations in 2025 include construction impacts from January 2025 through July 2025 and operational impacts from August 2025 through December 2025. Although analysis assumed construction would start at this anticipated dates and years, any shift of the schedule into the future is expected to result in equal or lesser emissions as some of the equipment/sources of emissions would naturally turnover and become cleaner.

Table 3.1-12: Maximum Localized Off-site Ambient NO_2 Concentrations — Proposed Project Operation

Pollutant	Averaging Time	Analysis Years	Background Concentration (µg/m³) [b]	Maximum Modeled Project Concentration (µg/m³) [c, d]	Total Ground-Level Concentration (µg/m³)	SCAQMD Threshold (µg/m³)	Concentration above Threshold? [c]
NO_2	Federal 1-hour [a]	2025	113	24	137	188	No
		2027	113	43	156	188	No
		2049	113	39	152	188	No
	State 1-hour	2025	136	38	174	338	No
		2027	136	54	190	338	No
		2049	136	49	185	338	No
	Federal annual	2025	27	2	29	100	No
		2027	27	1	28	100	No
		2049	27	1	28	100	No
	State annual	2025	27	2	29	57	No
		2027	27	1	28	57	No
		2049	27	1	28	57	No

Notes:

[a] The federal 1-hour NO_2 modeled concentration represents the 98th percentile of the daily maximum 1-hour averages.

[b] The background concentrations for NO_2 were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

[c] Exceedances of the thresholds are determined by comparing "Total Ground-Level Concentration" to SCAQMD threshold.

[d] 2025 annual average concentrations include construction impacts from January 2025 through July 2025 and operational impacts from August 2025 through December 2025.

Table 3.1-13: Maximum Localized Off-site Ambient PM_{10} and $PM_{2.5}$ Concentrations — Proposed Project Operation

Pollutant	Averaging Time	Analysis Years	Ground-Level Concentration (µg/m^3) [a,d]	SCAQMD Threshold (µg/m^3)[b]	Concentration above Threshold?
PM_{10}	24-hour	2025	**10.9**	2.5	**Yes**
		2027	**21.6**	2.5	**Yes**
		2049	**21.5**	2.5	**Yes**
	Annual	2025[c]	**1.6**	1	**Yes**
		2027	**7.0**	1	**Yes**
		2049	**7.0**	1	**Yes**
$PM_{2.5}$	24-hour	2025	**3.3**	2.5	**Yes**
		2027	**6.6**	2.5	**Yes**
		2049	**6.6**	2.5	**Yes**

Notes:
[a] Exceedances of the thresholds are indicated in **bold**.
[b] Because the thresholds for PM_{10} and $PM_{2.5}$ are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration.
[c] 2025 annual average concentrations include construction impacts from January 2025 through July 2025 and operational impacts from August 2025 through December 2025.
[d] 24-hr concentrations were evaluated for off-site locations where persons may be exposed to the emissions from project activities, based on SCAQMD's Final Localized Significance Threshold Methodology (SCAQMD 2008). Commercial and industrial land uses were conservatively included for all averaging times.

Table 3.1-13 shows that the maximum off-site incremental PM_{10} (annual and 24-hour average) and $PM_{2.5}$ (24-hour average) concentrations from operational activities would exceed SCAQMD thresholds. Therefore, the maximum localized off-site ambient pollutant concentrations associated with operation of the Proposed Project would be significant for PM_{10} (annual and 24-hour average) and $PM_{2.5}$ (24-hour average). The largest contributors of maximum annual PM_{10} concentrations due to Project operation would be fugitive dust emissions from material handling through process hoppers and the movements by the FEL. The largest contributors of maximum daily PM_{10} concentrations due to Project operation would be fugitive dust emissions from material handling through conveyors and hoppers. The largest contributors of maximum daily $PM_{2.5}$ concentrations due to Project operation would be fugitive emissions from paved road dust sourced from on-site delivery trucks, transport of gypsum to storage silos, and loading chutes. Maximum annual PM_{10} exceedances are located on the site boundary. Maximum daily PM_{10} and $PM_{2.5}$ impacts would occur on Berths 191-194. Figure B2-8 in Appendix B2 shows the locations of maximum air quality impacts on Berths 191-194. Figure B2-8 in Appendix B2 shows the locations of maximum air quality impacts. Ambient concentrations of NOx would be below significance thresholds, and therefore, the impact would be less than significant.

Mitigation Measures

Review of Potential Air Quality Mitigation

The largest contributor to the significant impact for PM_{10} and $PM_{2.5}$ off-site pollutant concentrations is fugitive dust from material handling and the FEL movements between the piles and the process hoppers, and road dust. These emissions are already estimated to be controlled by water flushing/spray which would reduce emissions by 25-98 percent, depending on the source of fugitive dust, based on AP-42 guidance. In addition, the material transfer (another source of PM_{10} and $PM_{2.5}$) is controlled by Best Available Control Technologies (BACT), such as dust collector, process bag filters, and automated watering spray systems. One additional control measure for particulate emissions that was considered would be to cover the raw material stockpiles. This measure was considered as an alternative to the Proposed Project but was rejected because a cover would not avoid or substantially reduce any significant environmental effects, and the limited emission reduction benefits it would provide would not justify its considerable cost (see Section 5.4.3).

Therefore, since emissions are already controlled to the extent feasible, no additional mitigation is available at this time. However, lease measure LM AQ-2: Periodic Review of New Technology is in place to ensure potential solutions to reduce emissions in the future are evaluated as new technology and guidance becomes available. In addition, the ambient pollution concentrations would be further reduced due to the implementation of the following lease measures.

LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment.

LM AQ-2: Periodic Review of New Technology.

LM AQ-3: At-Berth Vessel Emissions Control Pilot Study.

LM AQ-5: Vessel Speed Reduction Program (VSRP).

LM AQ-6: Front End Loader Replacement Schedule.

This analysis of mitigation measures feasibility and application of lease measures is also applicable to the Reduced Project Alternative (Alternative 2) and the Product Import Terminal Alternative (Alternative 3).

Residual Impacts

Localized off-site ambient pollutant concentrations associated with operation of the Proposed Project would be significant and unavoidable for PM_{10} (annual and 24-hour average) and $PM_{2.5}$ (24-hour average).

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. An HRA was conducted to address potential public health effects from TACs generated by the Proposed Project. As discussed at the beginning of Section 3.1.4, for this analysis, activities at the Project site for the baseline are considered as zero emissions, therefore the health effects for the CEQA baseline were not evaluated. The results of the HRA are summarized below. The general approach for a CEQA HRA analysis is discussed in detail in Section 3.1.4.4, HRA Methodology. Details of the analysis, including TAC emissions and the risk calculation approach, are presented in Appendix B3.

Impact Determination

Table 3.1-14 presents the maximum predicted CEQA health impacts associated with the Proposed Project. 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 health impacts to the SCAQMD significance thresholds.

Table 3.1-14: Maximum Health Impacts Estimated for Construction and Operation of the Proposed Project

Health Impact [a]	Receptor Type	Proposed Project	Significance Threshold	Threshold Exceeded?
Individual Cancer Risk	Residential	1.2×10^{-6} (1.2 in a million)	10×10^{-6} (10 in a million)	No
	Non-Residential Sensitive [b]	8.8×10^{-6} (8.8 in a million)		No
	Occupational	5.2×10^{-6} (5.2 in a million)		No
Chronic Hazard Index	Residential	0.0068	1	No
	Non-Residential Sensitive	0.10		No
	Occupational	0.23		No
Acute Hazard Index	All Populations	0.17	1	No
Population Cancer Burden	0.0021		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 non-residential sensitive receptor location with the maximum cancer risk is located at the Wilmington Waterfront Promenade which is currently under development and located approximately 400 meters northwest of the Project site.

Figures 3.1-2 and 3.1-3 show the individual cancer isopleths of one in a million and 10 in a million cancer risk for the Proposed Project, for residential cancer risk and occupational cancer risk, respectively. The locations of the maximum exposed individual (MEI) for residential receptor, non-residential sensitive receptor and occupational receptors are also included in these figures.

Table 3.1-14 shows the following health risk analysis results for the Proposed Project:

Individual Cancer Risk

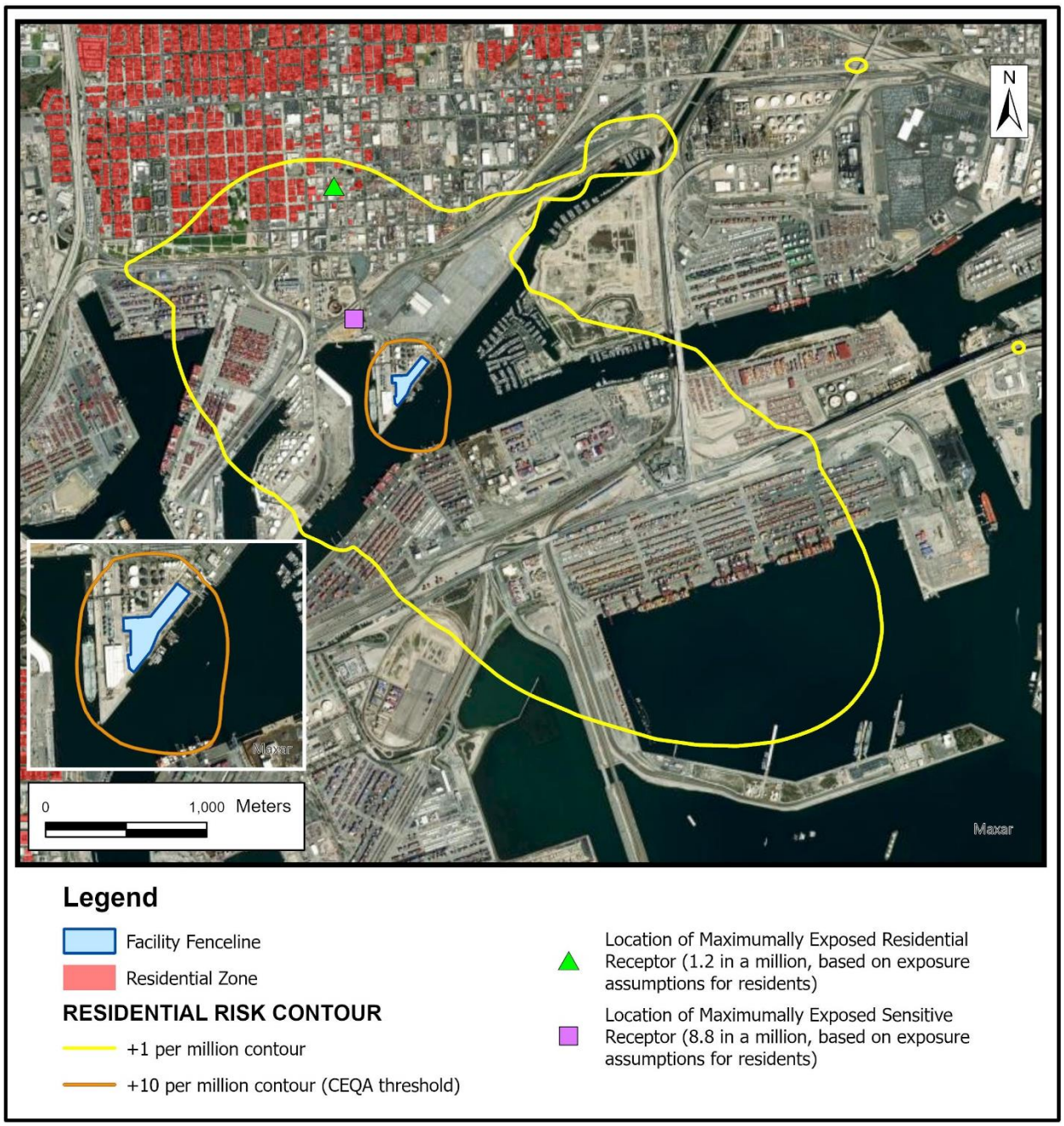
The maximum cancer risk for the Proposed Project is predicted to be less than the 10-in-million significance threshold for all evaluated populations (i.e., occupational, residential, and non-residential sensitive receptors). Therefore, the impact of individual cancer risk for the Proposed Project would be less than significant.

Cancer risk for the maximum exposed individual (MEI) non-residential sensitive receptor for the Proposed Project is primarily driven by the construction off-road equipment, with the second and third largest contributions being emissions from vessel hoteling exhaust during operations and operational use of the off-road FEL. Cancer risk for the MEI residential receptor is primarily driven by vessel hoteling exhaust during operations, with the second and third largest contributions from construction off-road equipment and truck emissions during operations. Cancer risk for the MEI occupational receptor is primarily driven by the construction off-road equipment, with the second largest contributor from the operational use of the FEL. DPM from these sources is the dominant risk driver among all toxic air pollutants.

Figure 3.1-2 shows the individual residential cancer risk contour of one in a million and the locations of the MEI residential receptor and the MEI non-residential sensitive receptor for the Proposed Project. Because the individual cancer risk estimated at all residential and non-residential sensitive receptors for the Proposed Project are below the significance threshold of 10-in a-million, a contour for 10-in- a-million residential risk is not drawn in Figure 3.1-2.

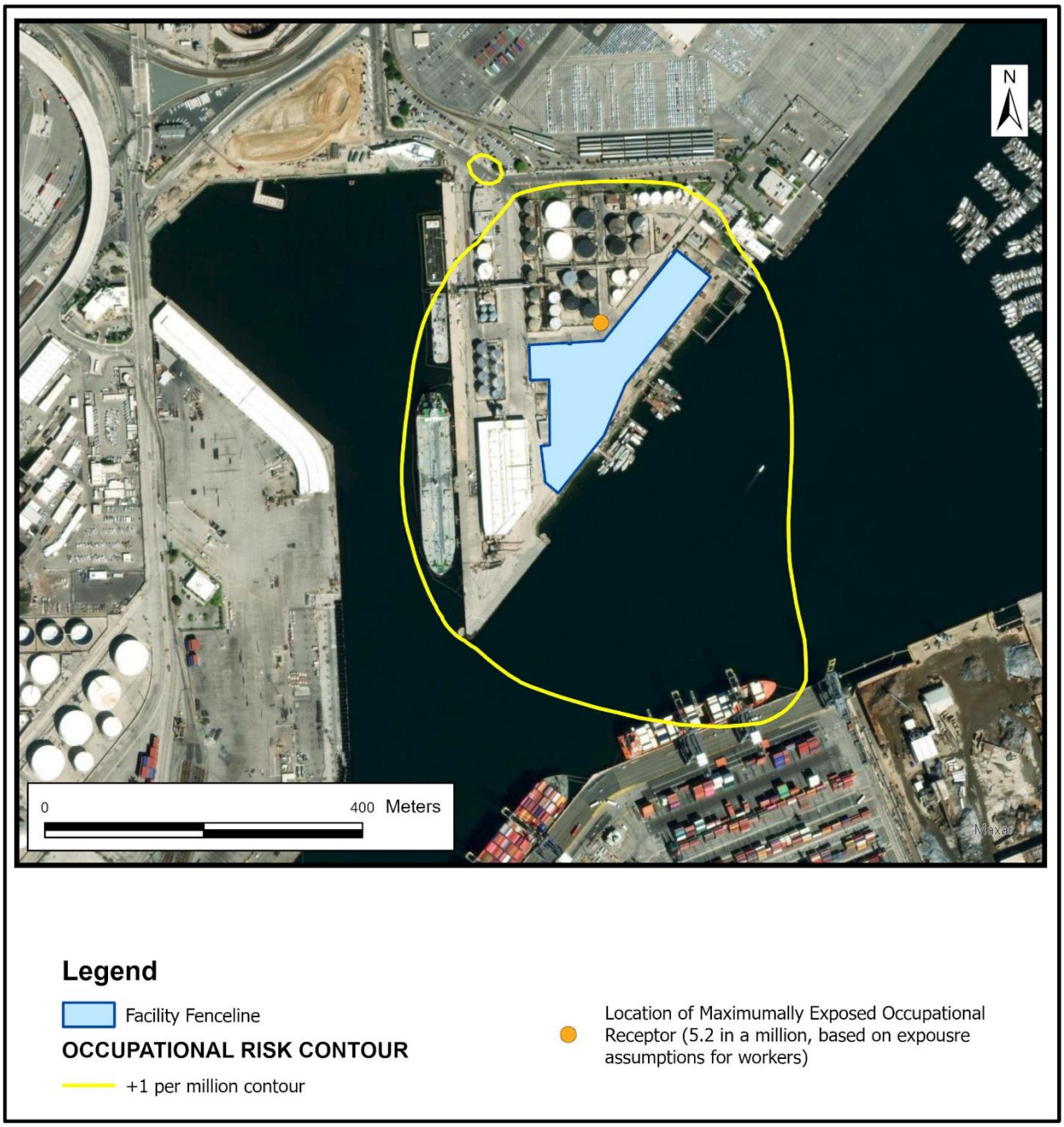
The one in a million residential risk contour was generated using cancer risk estimates calculated based on the default 30-year residential assumptions at each modeled receptor regardless of whether it is an actual residential receptor. As shown in Figure 3.1-2 (as a red land use overlay), only a small area within the one in a million contour overlaps with the residential zone in Wilmington near Wilmington Waterfront Park. The residential MEI receptor for cancer risk (with an estimated cancer risk of 1.2 in a million, well below the 10-in-a-million threshold), is located in the vicinity of Fries Avenue and West E Street in Wilmington. The MEI non-residential sensitive receptor with an estimated cancer risk of 8.8 in a million (also below the 10-in-a-million threshold) is located at the Wilmington Waterfront Promenade which is currently under development and located approximately 400 meters northwest of the Project site. Because the cancer risk for this receptor location was conservatively evaluated as residents assuming continuous exposure for 30 years, the actual risks for the future recreational users at this location are expected to be much lower.

Figure 3.1-2: Isopleths of 30-Year Residential Cancer Risk – Proposed Project



Notes: Contours (isopleths) reflect 30-year residential exposure assumptions in all areas, including areas where there are no residents. The CEQA threshold for cancer risk is 10 in a million. Maximum exposed residential and sensitive receptors are below the threshold.

Figure 3.1-3: Isopleth of 25-Year Occupational Cancer Risk – Proposed Project



Note: The maximum individual cancer risk at a hypothetical occupational receptor location for the Proposed Project is 9.8 (at facility fenceline), therefore, no +10 per million contour is generated.

Figure 3.1-3 shows the individual worker cancer risk contour of one in a million and the location of the MEI occupational receptor for the Proposed Project. The one in a million worker risk contour was generated using cancer risk estimates calculated based on the default occupational exposure assumptions at each modeled receptor (regardless of whether it is an actual occupational receptor). The occupational MEI receptor for cancer risk, which is estimated to be 5.2 in a million (below the 10 in a million threshold), is located to the north of the project facility near the southern edge of Vopak's tank farm.

Population Cancer Burden

The cancer burden is predicted to be 0.0021, well below the significance threshold of 0.5 (see Table 3.1-14). Therefore, the Proposed Project's cancer burden impact would be less than significant.

Chronic and Acute Hazard Indices

The maximum chronic hazard indices for the residential, non-residential sensitive, and occupational receptors are predicted to be 0.0068, 0.10, and 0.23, respectively, below the significance threshold of 1 (see Table 3.1-14) for all receptor types. Therefore, the Proposed Project's chronic noncancer impact would be less than significant.

The maximum acute hazard index is predicted to be 0.17, below the significance threshold of 1 (see Table 3.1-14) for all receptor types. Therefore, the Proposed Project's acute noncancer impact would be less than significant.

Mitigation Measures

Even though no mitigation is required, a discussion of feasible mitigation to further reduce health effects is included below.

Review of Potential Air Quality Mitigation

One of the three largest contributors to the significant impact in the occupational health risk assessment would be the diesel particulate matter (DPM) from the front-end loader (FEL). The state-of-the-industry for such equipment is Tier 4 diesel-powered engines. The primary equipment suppliers of this category of machine for sales and service in southern California are Caterpillar (USA), Komatsu (Japan), and Liebherr (Swiss). None of these companies, or any other suppliers in the USA are offering machines above Tier 4 at this time. Caterpillar announced their intention to "go all in on (natural) gas" as far back as 2012, and recently they announced upcoming hydrogen-fueled power generators, but to date, they have no products available (Heavy Equipment Guide 2012). Discussions between Ecocem and Southern California dealers noted that manufacturers are optimizing the equipment and still plan to bring CNG equipment to market. Another equipment producer – CASE, a division of CNH Industrial – is making smaller wheel loaders and recently stated that the power source of the future for large machines is not electricity, but liquified natural gas (LNG), compressed natural gas (CNG), and biomethane (International Vehicle Technology 2019).

The primary obstacle to the use of natural gas is that CNG is more than five times lower in energy density and LNG, and at least two times lower than diesel fuel. This feature makes on-site refueling challenging as it would require larger fuel storage volumes. CASE is moving forward with its Project Tetra for this heavy-duty, natural-gas-fueled FELs, which it states will reduce carbon emissions by 96% and particulate emissions by 80%, but currently does not offer a large enough wheel loader for the operations needed for the Proposed Project.

Accordingly, Ecocem plans to obtain their equipment from Caterpillar on a revolving two-year lease program, and will be open to switch to the lower emission wheel-loaders when they come to the market. The FEL model selected by Orcem will be a diesel Tier 4 piece by Caterpillar (medium wheel loader 966 XE) certified by CARB under Executive Order U-R-001-00-0662, which is the basis for this air quality analysis.

Although mitigation is not required and no additional feasible mitigation is available at the moment, the LAHD's standard lease measure LM AQ-1, LM AQ-2, LM AQ-3, LM AQ-4, LM AQ-5 and LM AQ-6 would be included in the tenant lease. Because there is some timeline uncertainty about the timing of availability for these measures, the analysis does not quantify the potential benefits of lease measures LM AQ-1, LM AQ-2 and LM AQ-3, regardless, it is expected that these measures would further reduce future air quality emissions and serve to comply with the Port air quality requirements.

LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment.

LM AQ-2: Periodic Review of New Technology.

LM AQ-3: At-Berth Vessel Emissions Control Pilot Study.

LM AQ-4: Port of Los Angeles Sustainable Construction Guidelines.

LM AQ-5: Vessel Speed Reduction Program (VSRP).

LM AQ-6: Front End Loader Replacement Schedule.

This analysis of mitigation measure feasibility and application of lease measures is also applicable to Reduced Project Alternative (Alternative 2) and Product Import Terminal Alternative (Alternative 3).

Residual Impacts

Impacts of the Proposed Project on individual cancer risk, chronic noncancer hazard index, and acute noncancer hazard index at the maximally exposed residential, occupational, and non-residential sensitive receptors 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 these SCAQMD regulations and control programs 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. The Proposed Project would increase bulk cargo throughput at the Port, and the emissions are included in the budgets established in the 2022 AQMP (SCAQMD 2022).

In addition to the region-wide AQMP, the SCAQMD, in response to Assembly Bill (AB) 617, has prepared the Community Emissions Reduction Plan (CERP) for the communities nearest to the 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 oil tanker priority is not applicable to the Proposed Project, but the other two priorities are, to an extent. The plan identifies two actions that would address those priorities: Action 2 targeting 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, identifying and implementing demonstration and incentive programs, and supporting and enforcing CARB rules and rule development. The Proposed Project is consistent with applicable provisions of the CERP because it includes the deployment of the cleanest available equipment (i.e., cleanest diesel tier the front-end loader, electric-powered conveyors and mill), albeit not directly qualified as "cargo handling". In terms of the vessels, the Ecocem would, consistent with LM AQ-2 and the anticipated provisions of the AQMD permit, investigate implementing at-berth emission controls (not currently required by CARB for dry bulk vessel category), although not potential reductions are quantified in this analysis. Accordingly, vessel activities would not conflict with goals of the CERP.

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 emission reduction strategies identified in the 2017 CAAP Update and the 2022 AQMP. Specifically, the Proposed Project includes a high degree of electrically-powered stationary equipment, compliance with the Vessel Speed Reduction Voluntary Program, and implementation of Best Available Control Technologies (BACT) for stationary sources operating at the Proposed Project facility. For example, the lease measures requiring Orcem to modernize the materials handling fleet and review new technology (LM AQ-1, LM AQ-2, and LM AQ-5) would conform to the CAAP terminal equipment strategies aimed at ensuring that new equipment purchases are zero- or near-zero-emissions, as feasible, and at accelerating replacement of existing equipment with near-zero- and zero-emissions equipment. Through LM AQ-3, requiring a pilot study of at-berth emissions control technology, the Proposed Project would be consistent with the CAAP strategy aimed at accelerating utilization of such technologies, including by non-containership vessels. In addition, as the port-wide harbor craft fleet becomes cleaner through CAAP actions, the Proposed Project operations dependent on that fleet would see a reduction of related emissions. Because the Proposed Project would incorporate CAAP control measures and would comply with the applicable AQMP control measures for Port activities, the Proposed Project would not conflict with or obstruct implementation of the any of these applicable air quality plans.

Impact Determination

The Proposed Project would not conflict with or obstruct implementation of the regional/local applicable air quality plans, therefore the impact would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

3.1.5.2 Alternative 1 – No Project Alternative

Under the No Project Alternative (Alternative 1), the Project site would remain largely unused as no future development has been permitted or approved. Accordingly, none of the Proposed Project's construction activities would occur in backlands or at the wharf. In addition, none of the Proposed Project's operational activities, including oceangoing vessel activity, raw material handling, product milling, and truck loading, would occur.

Impact AQ-1: Would the No Project Alternative (Alternative 1) result in construction-related emissions that exceed the SCAQMD threshold of significance in Table 3.1-4?

Because no construction would occur, no construction-related emissions would be generated by the No Project Alternative (Alternative 1).

Impact Determination

Because the No Project Alternative (Alternative 1) would not generate construction emissions, there would be no impact.

Mitigation Measures

Mitigation is not applicable.

Residual Impacts

There would be no impacts.

Impact AQ-2: Would construction of the No Project Alternative (Alternative 1) result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-6?

Because no construction would occur, no construction-related emissions that could result in off-site pollution concentrations would be generated by the No Project Alternative (Alternative 1).

Impact Determination

Because the No Project Alternative (Alternative 1) would not generate off-site construction emissions, there would be no impact.

Mitigation Measures

Mitigation is not applicable.

Residual Impacts

There would be no impacts.

Impact AQ-3: Would operations of the No Project Alternative (Alternative 1) result in operational emissions that exceed an SCAQMD regional thresholds of significance in Table 3.1-7?

Because no operational activities would occur under the No Project Alternative (Alternative 1), no operational emissions would be generated.

Impact Determination

The No Project Alternative (Alternative 1) would not generate operational emissions that would exceed SCAQMD's thresholds of significance. Accordingly, Alternative 1 would create no impact**.**

Mitigation Measures

Mitigation is not applicable.

Residual Impacts

There would be no impacts.

Impact AQ-4: Would operation of the No Project Alternative (Alternative 1) result in offsite ambient air pollutant concentrations that exceed a SCAQMD threshold of significance?

No operational activities would occur under the No Project Alternative (Alternative 1). Accordingly, no operational emissions that could result in off-site pollution concentrations would be generated by the No Project Alternative (Alternative 1).

CEQA Impact Determination

Because operation of the No Project Alternative (Alternative 1) would not result in offsite ambient air pollutant concentrations, the No Project Alternative (Alternative 1) would create no impact.

Mitigation Measures

Mitigation is not applicable.

Residual Impacts

There would be no impacts.

Impact AQ-5: Would the No Project Alternative (Alternative 1) expose receptors to significant levels of TACs?

No construction or operational activities would occur under the No Project Alternative (Alternative 1). Accordingly, no emissions of toxic air contaminants would be generated by the No Project Alternative (Alternative 1).

CEQA Impact Determination

Because the No Project Alternative (Alternative 1) would not generate emissions of toxic air contaminants, the No Project Alternative (Alternative 1) would not expose receptors to significant levels of TACs.

Mitigation Measures

Mitigation is not applicable.

Residual Impacts

There would be no impacts.

Impact AQ-6: Would the No Project Alternative (Alternative 1) conflict with or obstruct implementation of an applicable AQMP?

The No Project Alternative (Alternative 1) would not include activities that would generate air emissions. Accordingly, the goals and measures included in the 2022 AQMP would not apply to the No Project Alternative (Alternative 1), and there would be no conflict with the AQMP.

CEQA Impact Determination

Because Alternative 1 would not conflict with or obstruct implementation of the AQMP, there would be no impacts.

Mitigation Measures

Mitigation is not applicable.

Residual Impacts

There would be no impacts.

3.1.5.3 Alternative 2 – Reduced Project Alternative

In Alternative 2 – the "Reduced Project Alternative" – all of the elements of the Proposed Project described above would be built, but the capacity of the facility to produce GGBFS would be reduced. However, the logistics of stockpiling GBFS delivered by oceangoing vessels and the economies that could arise from simply operating the mill fewer hours per day mean that it is likely that the Reduced Project Alternative (Alternative 2) would construct a facility very similar in size and configuration to the Proposed Project. Under this alternative, the Ecocem facility would produce 522,950 metric tons/year of GGBFS product, derived from 540,000 metric tons/year of GBFS and 26,700 metric tons/year of gypsum raw material received per year. This reduced capacity, compared to the Proposed Project, would result from using fewer vessels to import the GBFS and operating the processing mill fewer hours per day. For more information on the Reduced Project Alternative (Alternative 2), see Section 2.7.1.

The major elements of the Reduced Project Alternative (Alternative 2) that would generate air emissions during construction would be diesel-powered on-road trucks delivering materials and hauling soil, diesel-powered off-road construction equipment such as excavators, graders, generators, pile drivers, and drilling rigs, and diesel-powered small harbor craft involved in wharf construction and clean-up dredging. Emissions would include fuel combustion products and fugitive dust. Major operational elements

that would generate air emissions include oceangoing vessels delivering GBFS and the associated tugboats fueled by marine diesel, on-site equipment handling raw materials, such as a front-end loader, the natural-gas-fueled air heater, the electric-powered conveyors and grinding mill that could generate particulate matter, and diesel-powered on-road trucks delivering gypsum and transporting the GGBFS product from the facility.

Impact AQ-1: Would construction of the Reduced Project Alternative (Alternative 2) result in emissions that exceed the SCAQMD threshold of significance in Table 3.1-4?

Construction activities for the Reduced Project Alternative (Alternative 2) would build a facility very similar in size and configuration to the Proposed Project, therefore construction emissions were estimated be the same as those of the Proposed Project, shown in Table 3.1-9 of the Proposed Project Impact AQ-1. These emissions reflect compliance with the LAHD Sustainable Construction Guidelines for Reducing Air Emissions (LAHD 2009), which impose requirements of meeting stringent emission standards (or model year requirements) on construction equipment, heavy duty vehicles, and harbor craft as described in Table B1-2 of Appendix B1. In addition, the guidelines describe certain practices for fugitive dust watering control, which are quantified in this analysis.

Impact Determination

Table 3.1-9 shows that peak daily construction emissions are below the regional significance threshold and therefor there is no significant impact.

Mitigation Measures

No mitigation required, however, the Proposed Project includes compliance with the LAHD 2009 Sustainable Construction Guidelines which include control measures requiring construction sources and practices cleaner than those reflected in an average regional fleet.

LM AQ-4: Port of Los Angeles Sustainable Construction Guidelines.

The analysis of mitigation measures feasibility and application of lease measures can be found in Section 3.1.5.1, and the description of measures can be found in Section 3.16 Mitigation Monitoring

Residual Impacts

Impacts would be less than significant.

Impact AQ-2: Would construction of the Reduced Project Alternative (Alternative 2) result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-6?

Table 3.1-10 presents a comparison of Proposed Project emissions to SCAQMD LSTs. As shown in Table 3.1-10, estimated maximum onsite daily emissions are below the applicable SCAQMD mass-rate LSTs for NOx, CO, PM_{10}, and $PM_{2.5}$. Given that the construction emissions for Proposed Project and the Reduced Project Alternative (Alternative 2) are the same, as an equivalent facility would need to be built under the Reduced Project Alternative (Alternative 2), and given that the screening analysis shows that construction emissions are below the mass-rate LSTs for the Proposed Project,

further air dispersion modeling for the Reduced Project Alternative (Alternative 2) was not required.

Impact Determination

The Reduced Project Alternative's (Alternative 2) construction activities would cause no exceedances of off-site ambient air concentrations under CEQA. Therefore, maximum off-site ambient pollutant concentrations associated with construction of the Reduced Project Alternative (Alternative 2) would be less than significant under CEQA.

Mitigation Measures

No mitigation required, however, the Reduced Project (Alternative 2) includes compliance with the Sustainable Construction Guidelines (LAHD 2009), which include control measures requiring construction sources and practices cleaner than those reflected in an average regional fleet.

LM AQ-4: Port of Los Angeles Sustainable Construction Guidelines.

The analysis of mitigation measures feasibility and application of lease measures can be found in Section 3.1.5.1, and the description of measures can be found in Section 3.16 Mitigation Monitoring.

Residual Impacts

Impacts would be less than significant.

Impact AQ-3: Would operation of the Reduced Project Alternative (Alternative 2) result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.1-7?

Table 3.1-15 presents peak daily criteria pollutant emissions associated with terminal operations of the Reduced Project Alternative (Alternative 2). Emissions were evaluated for 2025, 2027, and 2049 operational years. Operational source of emissions at the Ecocem facility would be comprised of oceangoing vessels, harbor crafts, heavy-duty trucks, off-road equipment, worker vehicles, and stationary sources. Operational peak daily emissions of mobile sources are tracked outside of the terminal (referred to as off-site) up to the SCAB border. Peak daily emissions represent upper-bound estimates of activity levels at the terminal and as such would occur infrequently. The CEQA baseline emissions are expected to be negligible as there is negligible activity at the Project site during the baseline year 2021.

Table 3.1-15: Peak Daily Operational Emissions – Reduced Project (lbs/day)

Source Category	Reduced Project (lbs/day)					
	VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SOx
Year 2025						
OGV Transit	9	40	566	6	6	14
OGV Hotelling/Anchorage	6	16	152	3	3	6
Harbor Craft	2	12	75	1	1	<1
Trucks	<1	2	14	2	1	<1
Worker Vehicles	<1	<1	<1	<1	<1	<1
Offroad Equipment	<1	2	<1	<1	<1	<1
Road Dust	0	0	0	<1	<1	0

Source Category	Reduced Project (lbs/day)					
	VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SOx
Dryer Combustion	2	10	6	0	0	<1
Stationary Source – Mill	0	0	0	2	2	0
Material Handling	0	0	0	2	<1	0
Storage Silos	0	0	0	1	1	0
GBFS Storage Pile	0	0	0	<1	<1	0
Gypsum Storage Pile	0	0	0	<1	<1	0
Total Operational Year 2025	**19**	**83**	**813**	**18**	**15**	**21**
CEQA Baseline Emissions	0	0	0	0	0	0
Project Minus CEQA Baseline	19	83	813	18	15	21
Significance Threshold	55	550	55	150	55	150
Significant?	No	No	**Yes**	No	No	No
Year 2027						
OGV Transit	9	40	566	6	6	14
OGV Hotelling/Anchorage	6	16	152	3	3	6
Harbor Craft	2	12	75	<1	<1	<1
Trucks	<1	3	28	3	3	<1
Worker Vehicles	<1	<1	<1	<1	<1	<1
Offroad Equipment	<1	4	1	<1	<1	<1
Road Dust	0	0	0	1	<1	0
Dryer Combustion	4	19	12	0	0	<1
Stationary Source – Mill	0	0	0	4	4	0
Material Handling	0	0	0	4	<1	0
Storage Silos	0	0	0	3	3	0
GBFS Storage Pile	0	0	0	<1	<1	0
Gypsum Storage Pile	0	0	0	<1	<1	0
Total Operational Year 2027	**22**	**97**	**833**	**26**	**20**	**21**
CEQA Baseline Emissions	0	0	0	0	0	0
Project Minus CEQA Baseline	22	97	833	26	20	21
Significance Threshold	55	550	55	150	55	150
Significant?	No	No	**Yes**	No	No	No
Year 2049						
OGV Transit	9	40	566	6	6	14
OGV Hotelling/Anchorage	6	16	152	3	3	6
Harbor Craft	<1	9	32	<1	<1	<1
Trucks	<1	3	21	4	3	<1
Worker Vehicles	<1	<1	<1	<1	<1	<1
Offroad Equipment	1	5	1	<1	<1	<1
Road Dust	0	0	0	1	<1	0
Dryer Combustion	4	19	12	0	0	<1
Stationary Source – Mill	0	0	0	4	4	0
Material Handling	0	0	0	4	<1	0

Source Category	Reduced Project (lbs/day)					
	VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SOx
Storage Silos	0	0	0	3	3	0
GBFS Storage Pile	0	0	0	<1	<1	0
Gypsum Storage Pile	0	0	0	<1	<1	0
Total Operational Year 2049	**21**	**93**	**784**	**26**	**20**	**21**
CEQA Baseline Emissions	0	0	0	0	0	0
Project Minus CEQA Baseline	21	93	784	26	20	21
Significance Threshold	55	550	55	150	55	150
Significant?	No	No	Yes	No	No	No

Impact Determination

Table 3.1-15 shows that the Reduced Project Alternative (Alternative 2) peak daily operational emissions would exceed the SCAQMD daily emission thresholds shown in Table 3.1-6. Therefore impacts would be significant for NOx in 2025, 2027, and 2049 under the Reduced Project Alternative (Alternative 2).

The largest contributor to peak daily operational emissions of NOx in analysis years 2025, 2027, and 2049 is ocean going (dry bulk) vessel transit. Vessel hoteling emissions are the second largest source of NOx in every analysis year. Detailed emission factors and activity for these sources in the Reduced Project Alternative (Alternative 2) can be found in Appendix B1.

Mitigation Measures

Given the similar operations, feasibility of mitigation analyzed under the Proposed Project (Impact AQ-3) would apply to this alternative as well. The LAHD's standard lease measure LM AQ-2 would be included in the tenant lease. In addition LM AQ-1, LM AQ-3, LM AQ-5 and LM AQ-6 would also be included. Because there is some uncertainty about the timing of availability for these measures, the analysis does not quantify the potential benefits of LM AQ-1, LM AQ-2 and LM AQ-3, regardless, it is expected that these measures would further reduce future air quality emissions and serve to comply with the Port air quality requirements.

LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment.

LM AQ-2: Periodic Review of New Technology.

LM AQ-3: At-Berth Vessel Emissions Control Pilot Study.

LM AQ-5: Vessel Speed Reduction Program (VSRP).

LM AQ-6: Front End Loader Replacement Schedule.

The analysis of mitigation measures feasibility can be found in Section 3.1.5.1, and the description of measures can be found in Section 3.16 Mitigation Monitoring.

Residual Impacts

Impacts would be significant and unavoidable for NOx in 2025, 2027, and 2049 under the Reduced Project Alternative (Alternative 2).

Residual Impacts

Impacts would be significant and unavoidable for NOx in 2025, 2027, and 2049 under the Reduced Project Alternative (Alternative 2).

Impact AQ-4: Would operations of the Reduced Project Alternative (Alternative 2) result in offsite ambient air pollutant concentrations that exceed a SCAQMD threshold of significance??

The SCAQMD LST screening analysis showed the estimated maximum daily Reduced Project Alternative (Alternative 2) operational emissions are above the applicable SCAQMD mass-rate LSTs for NOx, PM_{10}, and $PM_{2.5}$ but not for CO. For this reason, dispersion modeling of on- and off-site Reduced Project Alternative (Alternative 2) operational emissions was performed to assess the impact of the Reduced Project Alternative (Alternative 2) on local ambient air concentrations. A summary of the dispersion modeling results is presented here; the complete dispersion modeling report is included in Appendix B2.

Impact Determination

Tables 3.2-16 and 3.2-17 present the maximum off-site ground level concentrations of NO_2, PM_{10}, and $PM_{2.5}$ from operation of the Reduced Project Alternative (Alternative 2). Because construction is assumed to last 18 months starting in July 2024, 2025 would be a partial year of construction and partial year of operation; therefore, 2025 annual average concentrations in 2025 include construction impacts from January 2025 through July 2025 and operational impacts from August 2025 through December 2025. Although analysis assumed construction would start at this anticipated dates and years, any shift of the schedule into the future is expected to result in equal or lesser emissions as some of the equipment/sources of emissions would naturally turnover and become cleaner.

Tables 3.2-16 and 3.2-17 show that the maximum off-site PM_{10}, and $PM_{2.5}$ concentration (annual and 24-hour average) from operational activities would exceed SCAQMD thresholds, except for 24-hour $PM_{2.5}$ for year 2025. Therefore, the maximum off-site ambient pollutant concentrations associated with operation of the Reduced Project Alternative (Alternative 2) would be significant for PM_{10} (annual and 24-hour average) and 24-hour $PM_{2.5}$. The largest contributors of maximum annual PM_{10} concentrations due to project operation would be fugitive dust emissions from material handling through process hoppers and the movements by FEL. The largest contributors of maximum daily PM_{10} concentrations due to project operation would be fugitive dust emissions from material handling through conveyors and hoppers. The largest contributors of maximum daily $PM_{2.5}$ concentrations due to project operation would be fugitive emissions from on-site delivery trucks, emissions from transport to storage silos, and loading chutes emissions. Maximum annual PM_{10} exceedances are located on the site boundary. Maximum daily PM_{10} and $PM_{2.5}$ are located on Berths 191-194. Figure B2-9 in Appendix B2 shows the locations of maximum air quality impacts. Ambient concentrations of NOx would be below significance thresholds, and therefore, the impact would be less than significant.

Table 3.1-16: Maximum Localized Off-site Ambient NO_2 Concentrations—Reduced Project Alternative (Alternative 2) Operations

Pollutant	Averaging Time	Analysis Years	Background Concentration ($\mu g/m^3$) [b]	Maximum Modeled Concentration Increment ($\mu g/m^3$) [c, d]	Total Ground-Level Concentration ($\mu g/m^3$)	SCAQMD Threshold ($\mu g/m^3$)	Concentration above Threshold?) [c]
NO_2	Federal 1-hour [a]	2025	113	22	135	188	No
		2027	113	31	144	188	No
		2049	113	29	142	188	No
	State 1-hour	2025	136	37	173	338	No
		2027	136	40	176	338	No
		2049	136	39	175	338	No
	Federal annual	2025	27	2	29	100	No
		2027	27	1	28	100	No
		2049	27	1	28	100	No
	State annual	2025	27	2	29	57	No
		2027	27	1	28	57	No
		2049	27	1	28	57	No

Notes:

[a] The federal 1-hour NO_2 modeled concentration represents the 98th percentile of the daily maximum 1-hour averages.

[b] The background concentrations for NO_2 were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

[c] Exceedances of the thresholds are determined by comparing "Total Ground-Level Concentration" to SCAQMD thresholds**.**

[d] 2025 annual average concentrations include construction impacts from January 2025 through July 2025 and operational impacts from August 2025 through December 2025.

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Table 3.1-17: Maximum Localized Off-site Ambient PM_{10} and $PM_{2.5}$ Concentrations—Reduced Project Alternative (Alternative 2) Operation

Pollutant	Averaging Time	Analysis Years	Ground-Level Concentration CEQA Increment ($\mu g/m^3$) [a,d]	SCAQMD Threshold ($\mu g/m^3$)[b]	CEQA Concentration above Threshold?
PM_{10}	24-hour	2025	**7.4**	2.5	**Yes**
		2027	**14.6**	2.5	**Yes**
		2049	**14.6**	2.5	**Yes**
	Annual	2025[c]	**1.2**	1	**Yes**
		2027	**4.7**	1	**Yes**
		2049	**4.7**	1	**Yes**
$PM_{2.5}$	24-hour	2025	2.3	2.5	No
		2027	**4.5**	2.5	**Yes**
		2049	**4.5**	2.5	**Yes**

Notes:

[a] Exceedances of the thresholds are indicated in **bold**.
[b] Because the thresholds for PM_{10} and $PM_{2.5}$ are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration.
[c] 2025 annual average concentrations include construction impacts from January 2025 through July 2025 and operational impacts from August 2025 through December 2025.
[d] 24-hr concentrations were evaluated for off-site locations where persons may be exposed to the emissions from project activities, based on SCAQMD's Final Localized Significance Threshold Methodology (SCAQMD 2008). Commercial and industrial land uses were conservatively included for all averaging times.

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Mitigation Measures

Review of Potential Air Quality Mitigation

Largest contributors to the significant impact for PM_{10} and $PM_{2.5}$ off-site pollutant concentrations are similar to those in the Proposed Project (see Section 3.1.5.1 Impact AQ-4).

The ambient pollution concentrations will likely be reduced due to the implementation of the following lease measures.

LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment.

LM AQ-2: Periodic Review of New Technology.

LM AQ-3: At-Berth Vessel Emissions Control Pilot Study.

LM AQ-5: Vessel Speed Reduction Program (VSRP).

LM AQ-6: Front End Loader Replacement Schedule.

The analysis of mitigation measures feasibility and application of lease measures can be found in Section 3.1.5.1, and the description of measures can be found in Section 3.16 Mitigation Monitoring.

Residual Impacts

Localized off-site ambient pollutant concentrations associated with operation of the Reduced Project Alternative (Alternative 2) would be significant and unavoidable for PM_{10} (annual and 24-hour average) and $PM_{2.5}$ (24-hour average).

Impact AQ-5: Would the Reduced Project Alternative (Alternative 2) expose receptors to significant levels of TACs?

An HRA was conducted to address potential public health effects from TACs generated by Reduced Project Alternative (Alternative 2). As discussed at the beginning of Section 3.1.4, for this analysis, activities at the Project site for the baseline essentially has zero emissions, therefore the health effects for the CEQA and floating baselines were not evaluated. The results of the HRA are summarized below. The rationale for a CEQA analysis is discussed in detail in Section 3.1.4.1, Methodology. Details of the analysis, including TAC emissions, the dispersion modeling approach, 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 Reduced Project Alternative (Alternative 2). 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 health impacts to the significance thresholds.

Table 3.1-18: Maximum Health Impacts Estimated for Construction and Operation of the Reduced Project

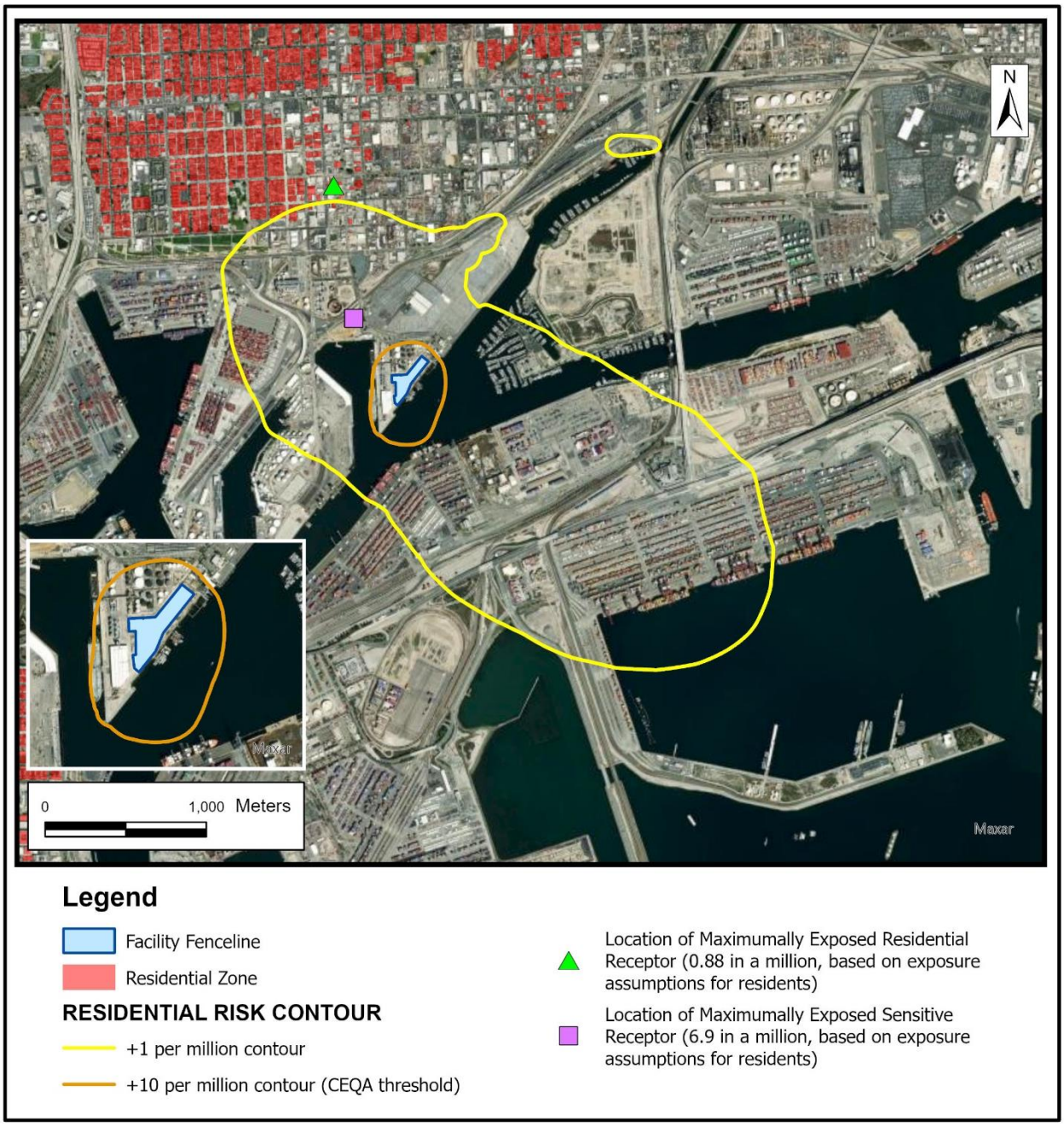
Health Impact [a]	Receptor Type	Reduced Project	Significance Threshold	Threshold Exceeded?
Individual Cancer Risk	Residential	0.88×10^{-6} (0.88 in a million)	10×10^{-6} (10 in a million)	No
	Non-Residential Sensitive [b]	6.9×10^{-6} (6.9 in a million)		No
	Occupational	4.5×10^{-6} (4.5 in a million)		No
Chronic Hazard Index	Residential	0.0046	1	No
	Non-Residential Sensitive	0.069		No
	Occupational	0.23		No
Acute Hazard Index	All Populations	0.17	1	No
Population Cancer Burden	0.00033		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.

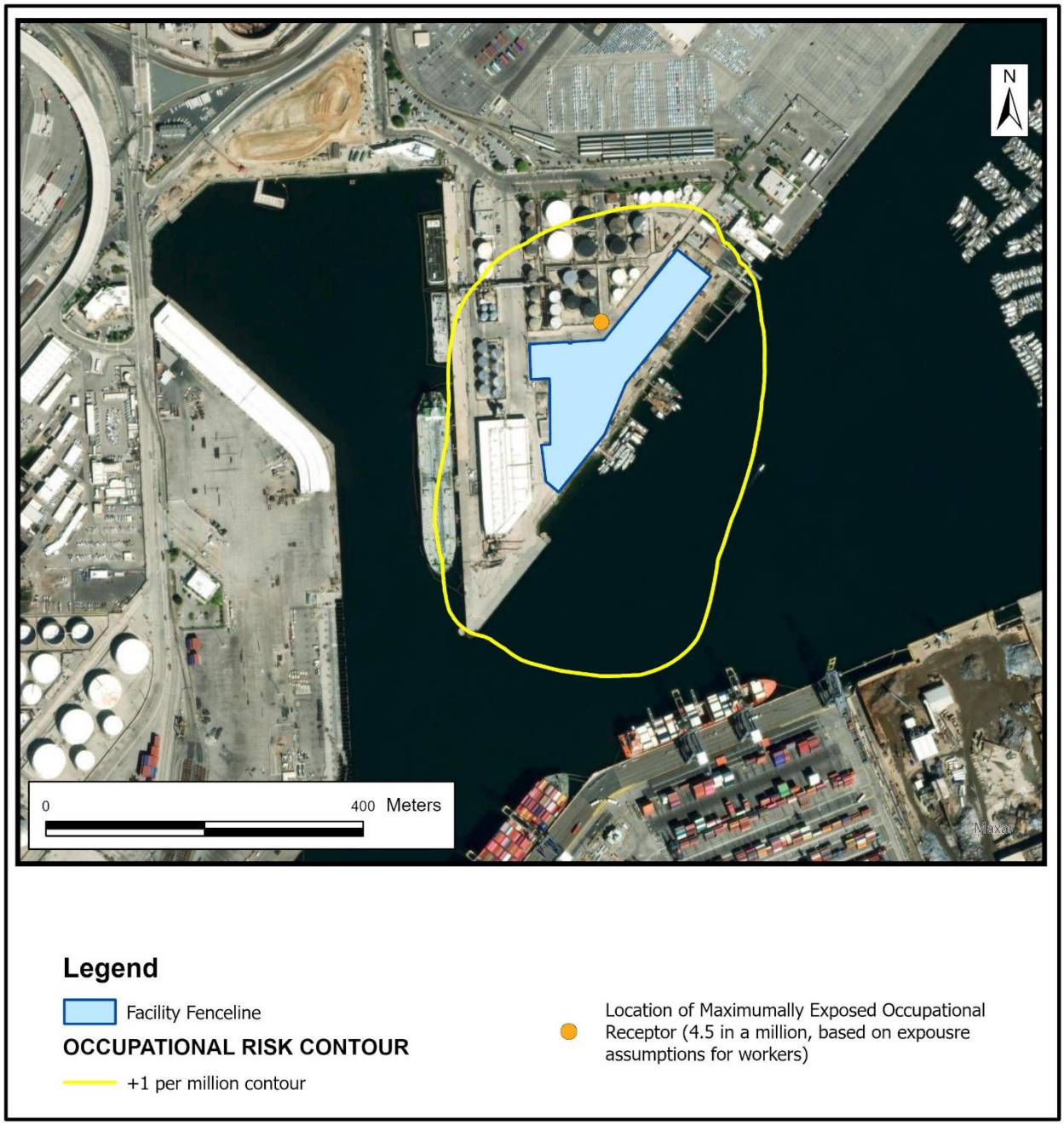
[b] The non-residential sensitive receptor location with the maximum cancer risk is located at the Wilmington Waterfront Promenade which is currently under development and located approximately 400 meters northwest of the Project site.

Figure 3.1-4: Isopleth of 30-year Residential Cancer Risk – Reduced Project Alternative (Alternative 2)



Notes: Contours (isopleths) reflect 30-year residential exposure assumptions in all areas, including areas where there are no residents. The CEQA threshold for cancer risk is 10 in a million. Maximum exposed residential and sensitive receptors are below the threshold.

Figure 3.1-5: Isopleth of 25-year Occupational Cancer Risk – Reduced Project Alternative (Alternative 2)



Note: The maximum individual cancer risk at a hypothetical occupational receptor location for the Reduced Project is 8.3 (at facility fenceline), therefore, no +10 per million contour is generated.

Table 3.1-18 shows that Reduced Project Alternative (Alternative 2) would produce the following health risk impacts under CEQA:

Individual Cancer Risk

The maximum cancer risk for the Reduced Project is predicted to be less than the 10 in a million significance threshold for all evaluated populations (i.e., occupational, residential, and non-residential sensitive receptors). Therefore, the impact of individual cancer risk for the Reduced Project Alternative (Alternative 2) would be less than significant.

Similar to the Proposed Project, but in lesser intensity, cancer risk for the MEI non-residential sensitive receptor for the Reduced Project Alternative (Alternative 2) is primarily driven by the construction off-road equipment, with the second and third largest contributions from vessel hoteling exhaust during operations and operational use of the off-road FEL. Cancer risk for the MEI residential receptor is primarily driven by vessel hoteling exhaust during operations, with the second and third largest contributions from construction off-road equipment and truck emissions during operations. Cancer risk for the MEI occupational receptor is primarily driven by the construction off-road equipment, with the second largest contribution from the operational use of the FEL. DPM from these sources is the dominant risk driver among all toxic air pollutants.

Figure 3.1-4 shows the individual residential cancer risk contour of one in a million and the locations of the MEI residential receptor and the MEI non-residential sensitive receptor for the Reduced Project Alternative (Alternative 2). Because the individual cancer risk estimated at all residential and non-residential sensitive receptors for the Reduced Project Alternative (Alternative 2) are below the significance threshold of 10 in a million – a contour for 10 in a million – residential risk is not drawn in Figure 3.1-4.

The one in a million residential risk contour was generated using 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. As shown in Figure 3.1-4 (as a red land use overlay), only a small area within the one in a million contour overlaps with a residential zone east of the Wilmington Waterfront Park. The residential MEI receptor for cancer risk (with an estimated cancer risk of 0.88 in a million, well below the 10 in a million threshold), is located in the vicinity of Fries Avenue and West E Street in Wilmington, right outside the northern boundary of the one in a million risk contour. The MEI non-residential sensitive receptor with an estimated cancer risk of 6.9 in a million (also below the 10 in a million threshold) is located at the Wilmington Waterfront Promenade which is currently under development and located approximately 400 meters northwest of the Project site. Because the cancer risk for this receptor location was conservatively evaluated as residents assuming continuous exposure for 30 years, the actual risks for the future recreational users at this location are expected to be much lower.

Figure 3.1-5 shows the individual worker cancer risk contour of one in a million and the location of the MEI occupational receptor for the Reduced Project Alternative (Alternative 2). The one in a million worker risk contour was generated using cancer risk estimates calculated based on the default occupational exposure assumptions at each modeled receptor (regardless of whether it is an actual occupational receptor). The occupational MEI receptor for cancer risk, which is estimated to be 4.5 in a million (below the 10 in a million threshold), is located to the north of the project facility near the southern edge of Vopak's tank farm.

Population Cancer Burden

In relation to the CEQA baseline, the cancer burden for this alternative is predicted to be 0.00033, well below the significance threshold of 0.5. Therefore, Reduced Project Alternative (Alternative 2) would result in a less-than-significant cancer burden impact.

Chronic and Acute Hazard Indices

The maximum chronic hazard indices for the residential, non-residential sensitive, and occupational receptors are predicted to be 0.0046, 0.069, and 0.23, respectively, less than the significance threshold of 1 for all receptor types (Table 3.1-18). Therefore, Reduced Project Alternative (Alternative 2) would result in a less-than-significant chronic noncancer impact.

The maximum acute hazard index is predicted to be 0.17, less than the significance threshold of 1 for all receptor types (Table 3.1-18). Therefore, Reduced Project Alternative (Alternative 2) would result in a less-than-significant acute noncancer impact.

Mitigation Measures

Although mitigation is not required and no additional feasible mitigation is available at the moment (as described in Section 3.1.5), the LAHD's standard lease measure LM AQ-2 would be included in the tenant lease. In addition, LM AQ-1, LM AQ-3, LM AQ-4, LM AQ-5 and LM AQ-6 would also be included. Because there is some timeline uncertainty about the timing of availability for these measures, the analysis does not quantify their potential benefits, regardless, it is expected that these measures would further reduce future air quality emissions and serve to comply with the Port air quality requirements:

LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment.

LM AQ-2: Periodic Review of New Technology.

LM AQ-3: At-Berth Vessel Emissions Control Pilot Study.

LM AQ-4: Port of Los Angeles Sustainable Construction

LM AQ-5: Vessel Speed Reduction Program (VSRP).

LM AQ-6: Front End Loader Replacement Schedule.

The analysis of mitigation measures feasibility and application of lease measures can be found in Section 3.1.5.1, and the description of measures can be found in Section 3.16 Mitigation Monitoring.

Residual Impacts

Impacts of the Reduced Project Alternative (Alternative 2) on individual cancer risk, chronic noncancer hazard index, and acute noncancer hazard index at the maximally exposed residential, occupational, and non-residential sensitive receptors would be less than significant.

Impact AQ-6: Would the Reduced Project Alternative (Alternative 2) conflict with or obstruct implementation of an applicable AQMP?

The Reduced Project Alternative's (Alternative 2) construction and operations would closely resemble those of the Proposed Project, differing only in that operational activity levels would be lower. Reduced Project Alternative (Alternative 2) would incorporate the same CAAP and AQMP measures as the Proposed Project. Accordingly, the discussion of the Proposed Project's consistency with the 2022 AQMP (see AQ-6 in Section 3.1.5.1) is equally applicable to Reduced Project Alternative (Alternative 2).

Impact Determination

Because the Reduced Project Alternative (Alternative 2) would not conflict with or obstruct implementation of the AQMP, impacts would be less than significant.

Mitigation Measures

Mitigation is not required.

Residual Impacts

Impacts would be less than significant.

3.1.5.4 Alternative 3 – Product Import Terminal Alternative

For the Product Import Terminal Alternative (Alternative 3), there would be no processing of raw materials on the Project site as the GGBFS product would come ready from overseas by vessel. The operations would be essentially the import of the product, storage and the product loading of customer trucks. The office building, truck-loading silos, and weighbridges of the Proposed Project would remain the same, but there would be no open storage piles for GBFS and gypsum and none of the mobile off-road equipment needed to manage the storage piles. Additionally, an electrical substation may be required for this alternative. In addition to the truck loading and office facilities, the Product Import Terminal Alternative (Alternative 3) would include a 60,000-ton bulk storage structure and a fixed, enclosed vacuum suction conveyor system connecting Berth 191 to the storage structure. Construction would be similar, albeit less intensive, to that the Proposed Project, as the bulk storage facility would require similar ground improvements and foundations. The finished powder product produced overseas would be transported by ocean-going bulk vessels to Berth 191, where it would be off-loaded to the storage dome by the vacuum conveyor system. Under the Product Import Terminal Alternative (Alternative 3), the maximum capacity of the Ecocem facility would be unchanged at 775,000 metric tons of GGBFS per year.

The major elements of Alternative 3 that would generate air emissions during construction would be diesel-powered on-road trucks delivering materials and hauling soil, diesel-powered off-road construction equipment such as excavators, graders, generators, pile drivers, and drilling rigs, and diesel-powered small harbor craft involved in wharf construction and clean-up dredging. Emissions would include fuel combustion products and fugitive dust. Major operational elements that would generate air emissions include marine-diesel-fueled oceangoing vessels delivering finished product and the associated tugboats, the electric-powered conveyors that could generate particulate matter, and diesel-powered on-road trucks transporting the GGBFS product from the facility.

Impact AQ-1: Would construction of the Product Import Terminal Alternative (Alternative 3) result in emissions that exceed the SCAQMD threshold of significance in Table 3.1-4?

Construction activities related to the Product Import Terminal Alternative (Alternative 3) are described in Section 2.5.1. Key construction activities of the Product Import Terminal Alternative (Alternative 3) include backlands construction and wharf repairs. Emissions produced by off-road equipment, onroad vehicles, and marine sources involved in these activities make up the construction emissions inventory for 2024 and 2025. Table 3.1-19 presents peak-day criteria pollutant emissions associated with construction of the Product

Import Terminal Alternative (Alternative 3). Emissions reflect compliance with the LAHD Sustainable Construction Guidelines for Reducing Air Emissions (LAHD 2009), which describe Best Management Practices (BMP) for all construction projects on Port property. Some of these guideline measures reduce air emissions from harbor craft, off-road equipment, and delivery trucks involved in construction.

Table 3.1-19: Peak Daily Construction Emissions — Product Import Terminal Alternative (Alternative 3) (lbs/day)

Source Category	Product Import Terminal (lbs/day)					
	VOC	CO	NOx	SOx	$PM_{2.5}$	PM_{10}
Construction Year 2024						
Fugitive Dust	n/a	n/a	n/a	n/a	<1	1.1
Harbor Craft	1.5	9.6	44.7	<1	<1	<1
Off-road Construction Equipment	<1	29.8	29.0	<1	1.0	1.1
Onroad Worker Vehicles and Trucks	<1	1.2	1.5	<1	<1	3.6
Construction Year 2024 Total	**2.4**	**40.6**	**75.2**	**<1**	**2.1**	**5.3**
Impacts						
Significance Threshold	75	550	100	150	55	150
Significant?	No	No	No	No	No	No
Construction Year 2025						
Fugitive Dust	n/a	n/a	n/a	n/a	<1	1.1
Harbor Craft	0.0	0.0	0.0	0.0	0.0	0.0
Off-road Construction Equipment	<1	26.8	22.3	<1	<1	<1
Onroad Worker Vehicles and Trucks	<1	<1	2.5	<1	<1	1.2
Construction Year 2025 Total	**<1**	**27.6**	**24.8**	**<1**	**1.3**	**3.2**
Impacts						
Significance Threshold	75	550	100	150	55	150
Significant?	No	No	No	No	No	No

Note:
Due to rounding numbers shown, values may not add up perfectly with results.

Impact Determination

Table 3.1-19 shows that peak daily construction emissions are below the regional significance threshold and therefor there is no significant impact.

Mitigation Measures

No mitigation required, however, the Proposed Project includes compliance with the LAHD 2009 Sustainable Construction Guidelines which include control measures requiring construction sources and practices cleaner than those reflected in an average regional fleet.

LM AQ-4: Port of Los Angeles Sustainable Construction Guidelines.

The analysis of mitigation measures feasibility and application of lease measures can be found in Section 3.1.5.1, and the description of measures can be found in Section 3.16 Mitigation Monitoring.

Residual Impacts

Impacts would be less than significant.

Impact AQ-2: Would construction of the Product Import Terminal Alternative (Alternative 3) result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-6?

Table 3.1-10 presents a comparison of Project construction emissions to SCAQMD LSTs. As shown in Table 3.1-10, estimated maximum onsite daily construction emissions are below the applicable SCAQMD mass-rate LSTs for NOx, CO, PM_{10}, and $PM_{2.5}$. Given that the construction emissions for Proposed Project emissions would be below the mass-rate LSTs, dispersion modeling was not conducted for the Product Import Terminal Alternative (Alternative 3) as this alternative would require lower construction activity levels than those of the Project, and therefore would also not exceed the SCAQMD LSTs.

Impact Determination

Product Import Terminal Alternative (Alternative 3) construction activities would cause no exceedances of off-site ambient air concentrations under CEQA. Therefore, maximum off-site ambient pollutant concentrations associated with construction of the Product Import Alternative (Alternative 3) would be less than significant under CEQA.

Mitigation Measures

No mitigation required, however, the Product Import Terminal (Alternative 3) includes compliance with the LAHD 2009 Sustainable Construction Guidelines which include control measures requiring construction sources and practices cleaner than those reflected in an average regional fleet.

LM AQ-4: Port of Los Angeles Sustainable Construction Guidelines.

The analysis of mitigation measures feasibility and application of lease measures can be found in Section 3.1.5.1, and the description of measures can be found in Section 3.16 Mitigation Monitoring.

Residual Impacts

Impacts would be less than significant.

Impact AQ-3: Would operations of the Product Import Terminal Alternative (Alternative 3) result in emissions that exceed an SCAQMD threshold of significance in Table 3.1-7?

Table 3.1-20 presents peak daily criteria pollutant emissions associated with terminal operations of the Product Import Terminal Alternative (Alternative 3). Emissions were evaluated for 2025, 2027, and 2049 operational years. Operational source of emissions at the Orcem facility would be comprised of ocean going vessels, harbor crafts, heavy-duty trucks, worker vehicles, fugitive dust sources, and other stationary sources. Operational peak daily emissions of mobile sources are tracked outside of the terminal (referred to as off-site) up to the SCAB border. Peak daily emissions represent upper-bound estimates of activity levels at the terminal and as such would occur infrequently. The CEQA baseline emissions are expected to be negligible as there is negligible activity at the Project site during the CEQA baseline year 2021.

Table 3.1-20 Peak Daily Operational Emissions – Product Import Terminal Alternative (Alternative 3) (lbs/day)

Source Category	Product Import Terminal (lbs/day)					
	VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SOx
Year 2025						
OGV Transit	8	40	599	6	5	14
OGV Hotelling/Anchorage	10	25	280	4	4	10
Harbor Craft	2	12	75	1	1	<1
Trucks	<1	1	19	2	2	<1
Worker Vehicles	<1	<1	<1	<1	<1	<1
Offroad Equipment	0	0	0	0	0	0
Road Dust	0	0	0	<1	<1	0
Dryer Combustion	0	0	0	0	0	0
Stationary Source – Mill	0	0	0	0	0	0
Material Handling	0	0	0	<1	<1	0
Storage Silos	0	0	0	<1	<1	0
Total Operational Year 2025	**20**	**79**	**972**	**17**	**15**	**24**
CEQA Baseline Emissions	0	0	0	0	0	0
Project Minus CEQA Baseline	20	79	972	17	15	24
Significance Threshold	55	550	55	150	55	150
Significant?	No	No	Yes	No	No	No
Year 2027						
OGV Transit	8	40	599	6	5	14
OGV Hotelling/Anchorage	10	25	280	4	4	10
Harbor Craft	2	12	75	1	1	<1
Trucks	<1	2	37	5	4	<1
Worker Vehicles	<1	<1	<1	<1	<1	<1
Offroad Equipment	0	0	0	0	0	0
Road Dust	0	0	0	<1	<1	0
Dryer Combustion	0	0	0	0	0	0
Stationary Source – Mill	0	0	0	0	0	0
Material Handling	0	0	0	1	1	0
Storage Silos	0	0	0	4	4	0
Total Operational Year 2027	**20**	**81**	**990**	**22**	**19**	**24**
CEQA Baseline Emissions	0	0	0	0	0	0
Project Minus CEQA Baseline	20	81	990	22	19	24
Significance Threshold	55	550	55	150	55	150
Significant?	No	No	Yes	No	No	No
Year 2049						
OGV Transit	8	40	599	6	5	14
OGV Hotelling/Anchorage	10	25	280	4	4	10

Source Category	Product Import Terminal (lbs/day)					
	VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SOx
Harbor Craft	<1	9	32	<1	<1	<1
Trucks	<1	2	29	5	4	<1
Worker Vehicles	<1	<1	<1	<1	<1	<1
Offroad Equipment	0	0	0	0	0	0
Road Dust	0	0	0	<1	<1	0
Dryer Combustion	0	0	0	0	0	0
Stationary Source – Mill	0	0	0	<1	<1	0
Material Handling	0	0	0	<1	<1	0
Storage Silos	0	0	0	<1	<1	0
Total Operational Year 2049	**19**	**77**	**939**	**21**	**19**	**24**
CEQA Baseline Emissions	0	0	0	0	0	0
Project Minus CEQA Baseline	19	77	939	21	19	24
Significance Threshold	55	550	55	150	55	150
Significant?	No	No	**Yes**	No	No	No

Impact Determination

Table 3.1-20 shows that the Product Import Terminal Alternative's (Alternative 3) peak daily operational emissions would exceed the SCAQMD daily emission thresholds for NOx shown in Table 3.1-6. Therefore impacts would be significant for NOx in 2025, 2027, and 2049 under the Product Import Terminal Alternative (Alternative 3).

The largest contributors to peak daily operational emissions of NOx in analysis years 2025, 2027, and 2049 would be hoteling and transit emissions from ocean going (dry bulk) vessels, while harbor craft would be the third largest source of NOx in every analysis year. The estimated vessel emissions under the Product Import Terminal Alternative (Alternative 3) are slightly larger than those of the Proposed Project as a result of the tier distribution for the type of dry bulk vessels, which may be a different configuration, and therefore are based on Port-wide bulk vessel fleet characteristics. Detailed emission factors and activity for these sources in the Product Import Terminal Alternative (Alternative 3) can be found in Appendix B1.

Mitigation Measures

Given the similar operations, feasibility of mitigation analyzed under the Proposed Project (Impact AQ-3) would apply to this alternative as well. The LAHD's standard lease measure LM AQ-2 would be included in the tenant lease. In addition LM AQ-1, LM AQ-3, and LM AQ- 5 would also be included. LM AQ-6 is not included as this Alternative would not need a front-end loader. Because there is some uncertainty about the timing of availability for these measures, the analysis does not quantify their potential benefits, regardless, it is expected that these measures would further reduce future air quality emissions and serve to comply with the Port air quality requirements:

LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment.

LM AQ-2: Periodic Review of New Technology.

LM AQ-3: At-Berth Vessel Emissions Control Pilot Study.

LM AQ-5: Vessel Speed Reduction Program (VSRP).

The analysis of mitigation measures feasibility and application of lease measures can be found in Section 3.1.5.1, and the description of measures can be found in Section 3.16 Mitigation Monitoring.

Residual Impacts

Impacts would be significant and unavoidable for NOx in 2025, 2027, and 2049 under the Product Import Terminal Alternative 3.

Impact AQ-4: Would operation of the Product Import Terminal (Alternative 3) result in offsite ambient air pollutant concentrations that exceed a SCAQMD threshold of significance??

The SCAQMD LST screening analysis showed the estimated maximum daily operational emissions are above the applicable SCAQMD mass-rate LSTs for NOx, PM_{10}, and $PM_{2.5}$ but not CO. For this reason, dispersion modeling of onsite and offsite Product Import Terminal Alternative (Alternative 3) emissions was performed to assess the impact of the Product Import Terminal Alternative (Alternative 3) on local ambient air concentrations for each analysis year (2025, 2027, and 2049). A summary of the dispersion modeling results is presented in Table 3.1-21 and Table 3.1-22; the complete dispersion modeling report is included in Appendix B2.

Impact Determination

Table 3.1-21 presents the maximum off-site concentrations of NO_2 from operational activities. Table 3.1-22 presents the maximum off-site concentrations of PM_{10} and $PM_{2.5}$ from operational activities. Because construction is assumed to last 18 months starting in 2024, and 2025 would be a partial year of construction and partial year of operation; therefore, annual average concentrations in 2025 include construction impacts from January 2025 through July 2025 and operational impacts from August 2025 through December 2025. Although analysis assumed construction would start at this anticipated dates and years, any shift of the schedule into the future is expected to result in equal or lesser emissions as some of the equipment/sources of emissions would naturally turnover and become cleaner.

Table 3.1-21: Maximum Localized Off-site Ambient NO_2 Concentrations — Product Import Terminal Alternative (Alternative 3) Operation

Pollutant	Averaging Time	Analysis Years	Background Concentration (µg/m^3) [b]	Maximum Modeled Project Concentration Increment (µg/m^3) [c,d]	Total Ground-Level Concentration (µg/m^3)	SCAQMD Threshold (µg/m^3)	Concentration above Threshold? [c]
NO_2	Federal 1-hour [a]	2022025	113	22	135	188	No
		2027	113	40	153	188	No
		2049	113	36	149	188	No
	State 1-hour	2025	136	37	173	338	No
		2027	136	50	186	338	No
		2049	136	45	181	338	No
	Federal annual	2025	27	1	28	100	No
		2027	27	1	28	100	No
		2049	27	1	28	100	No
	State annual	2025	27	1	28	57	No
		2027	27	1	28	57	No
		2049	27	1	28	57	No

Notes:
[a] The federal 1-hour NO_2 modeled concentration represents the 98th percentile of the daily maximum 1-hour averages.
[b] The background concentrations for NO_2 were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).
[c] Exceedances of the thresholds are determined by comparing "Total Ground-Level Concentration" to SCAQMD thresholds.
[d] 2025 annual average concentrations include construction impacts from January 2025 through July 2025 and operational impacts from August 2025 through December 2025.

Table 3.1-22 Maximum Localized Off-site Ambient PM_{10} and $PM_{2.5}$ Concentrations — Product Import Terminal Alternative (Alternative 3) Operation

Pollutant	Averaging Time	Analysis Years	Ground-Level Concentration CEQA Increment (µg/m^3) [a,d]	SCAQMD Threshold (µg/m^3)b	CEQA Concentration above Threshold?
PM_{10}	24-hour	2025	**4.8**	2.5	**Yes**
		2027	**9.4**	2.5	**Yes**
		2049	**9.4**	2.5	**Yes**
	Annual	2025[c]	**1.5**	1	**Yes**
		2027	**6.7**	1	**Yes**
		2049	**6.7**	1	**Yes**
$PM_{2.5}$	24-hour	2025	**2.9**	2.5	**Yes**
		2027	**5.6**	2.5	**Yes**
		2049	**5.6**	2.5	**Yes**

Notes:

[a] Exceedances of the thresholds are indicated in **bold**.

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

[c] 2025 annual average concentrations include construction impacts from January 2025 through July 2025 and operational impacts from August 2025 through December 2025.

[d] 24-hr concentrations were evaluated for off-site locations where persons may be exposed to the emissions from project activities, based on SCAQMD's Final Localized Significance Threshold Methodology (SCAQMD 2008). Commercial and industrial land uses were conservatively included for all averaging times.

Table 3.1-22 shows that the maximum off-site incremental PM_{10} and $PM_{2.5}$ concentrations from operational activities would exceed SCAQMD thresholds. Therefore, maximum off-site ambient pollutant concentrations associated with operation of the Product Import Terminal Alternative (Alternative 3) would be significant for PM_{10} (annual average and 24-hour) and 24-hour $PM_{2.5}$. The largest contributors of maximum annual PM_{10} concentrations due to Alternative 3 operation would be fugitive dust emissions from material handling through process hoppers. The largest contributors of maximum daily PM_{10} concentrations due to Project operation would be fugitive emissions from on-site delivery trucks and emissions from transport to storage silos. The largest contributors of maximum daily $PM_{2.5}$ concentrations due to Project operation would be fugitive emissions from on-site delivery trucks, emissions from transport to storage silos, and loading chutes emissions. Maximum annual PM_{10} exceedances are located on the site boundary. Maximum daily PM_{10} and $PM_{2.5}$ are located on Berths 191-194. Figure B2-10 in Appendix B2 shows the locations of maximum air quality impacts. Ambient concentrations of NOx would be below significance thresholds, and therefore, the impact would be less than significant.

Mitigation Measures

Review of Potential Air Quality Mitigation

The largest contributor to the significant impact for PM_{10} and $PM_{2.5}$ off-site pollutant concentrations is fugitive dust from material handling (for annual) and on-site delivery trucks (for daily). These emissions are already estimated to be controlled by Best Available Control Technologies (BACT), particularly dust collection and bag filters, throughout major process drop points like the hoppers and silos. Therefore, since emissions are already controlled to the extent feasible, no additional mitigation is available at this time. However, lease measure LM AQ-2: Periodic Review of New Technology is in place to ensure potential solutions to reduce emissions in the future are evaluated as new technology and guidance becomes available.

In addition, the ambient pollution concentrations will likely be reduced due to the implementation of the following lease measures.

LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment.

LM AQ-2: Periodic Review of New Technology.

LM AQ-3: At-Berth Vessel Emissions Control Pilot Study.

LM AQ-5: Vessel Speed Reduction Program (VSRP).

The analysis of mitigation measures feasibility and application of lease measures can be found in Section 3.1.5.1, and the description of measures can be found in Section 3.16 Mitigation Monitoring.

Residual Impacts

Localized off-site ambient pollutant concentrations associated with operation of the Product Import Terminal Alternative (Alternative 3) would be significant and unavoidable for PM_{10} (annual and 24-hour average) and $PM_{2.5}$ (24-hour average).

Impact AQ-5: Would the Product Import Terminal Alternative (Alternative 3) expose receptors to significant levels of TACs?

Operation of the Product Import Terminal Alternative (Alternative 3) would emit TACs that could affect public health. An HRA was conducted to address potential public health effects from TACs for this alternative. As discussed at the beginning of Section 3.1.4, for this analysis, activities at the Project site for the baseline essentially has zero emissions, therefore the health effects for the CEQA and floating baselines were not evaluated. The results of the HRA are summarized below. The rationale for a CEQA analysis is discussed in detail in Section 3.1.4.1, Methodology. Details of the analysis, including TAC emissions, the dispersion modeling approach, and the risk calculation approach, are presented in Appendix B3.

Impact Determination

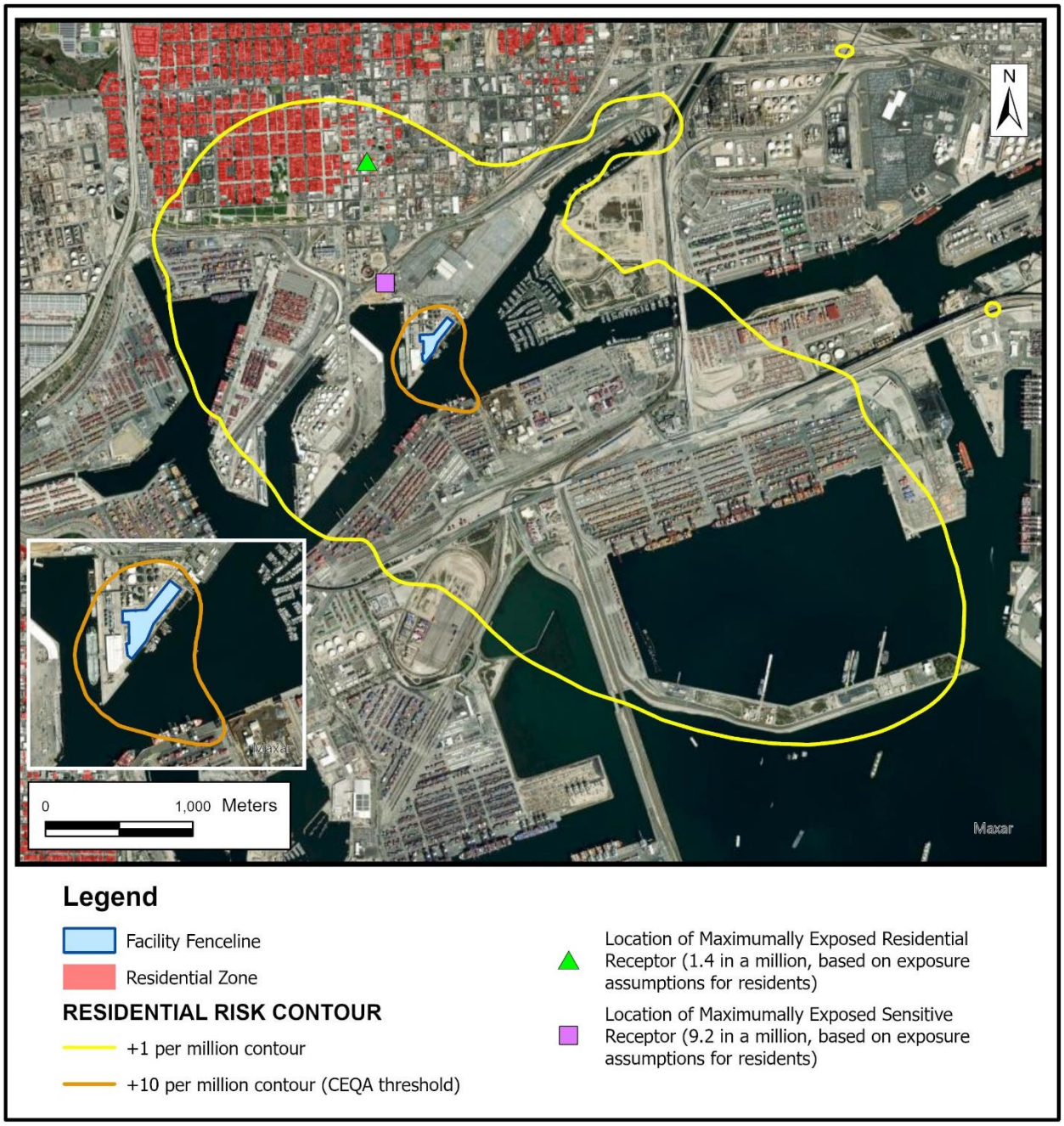
Table 3.1-23 presents the maximum predicted CEQA health impacts associated with the Product Import Terminal Alternative (Alternative 3). The table includes estimates of individual cancer risk, chronic noncancer hazard index, and acute noncancer hazard index at the maximally exposed residential, occupational, and non-residential sensitive receptors. The table also presents the population cancer burden. Significance findings are made by comparing the health impacts to the significance thresholds.

Table 3.1-23 Maximum Health Impacts Estimated for Construction and Operation of the Product Import Terminal Alternative (Alternative 3)

Health Impact [a]	Receptor Type	Proposed Project	Significance Threshold	Threshold Exceeded?
Individual Cancer Risk	Residential	1.4×10^{-6} (1.4 in a million)	10×10^{-6} (10 in a million)	No
	Non-Residential Sensitive [b]	9.2×10^{-6} (9.2 in a million)		No
	Occupational	4.2×10^{-6} (4.2 in a million)		No
Chronic Hazard Index	Residential	0.0022	1	No
	Non-Residential Sensitive	0.044		No
	Occupational	0.22		No
Acute Hazard Index	All Populations	0.16	1	No
Population Cancer Burden	0.0081		0.5	No

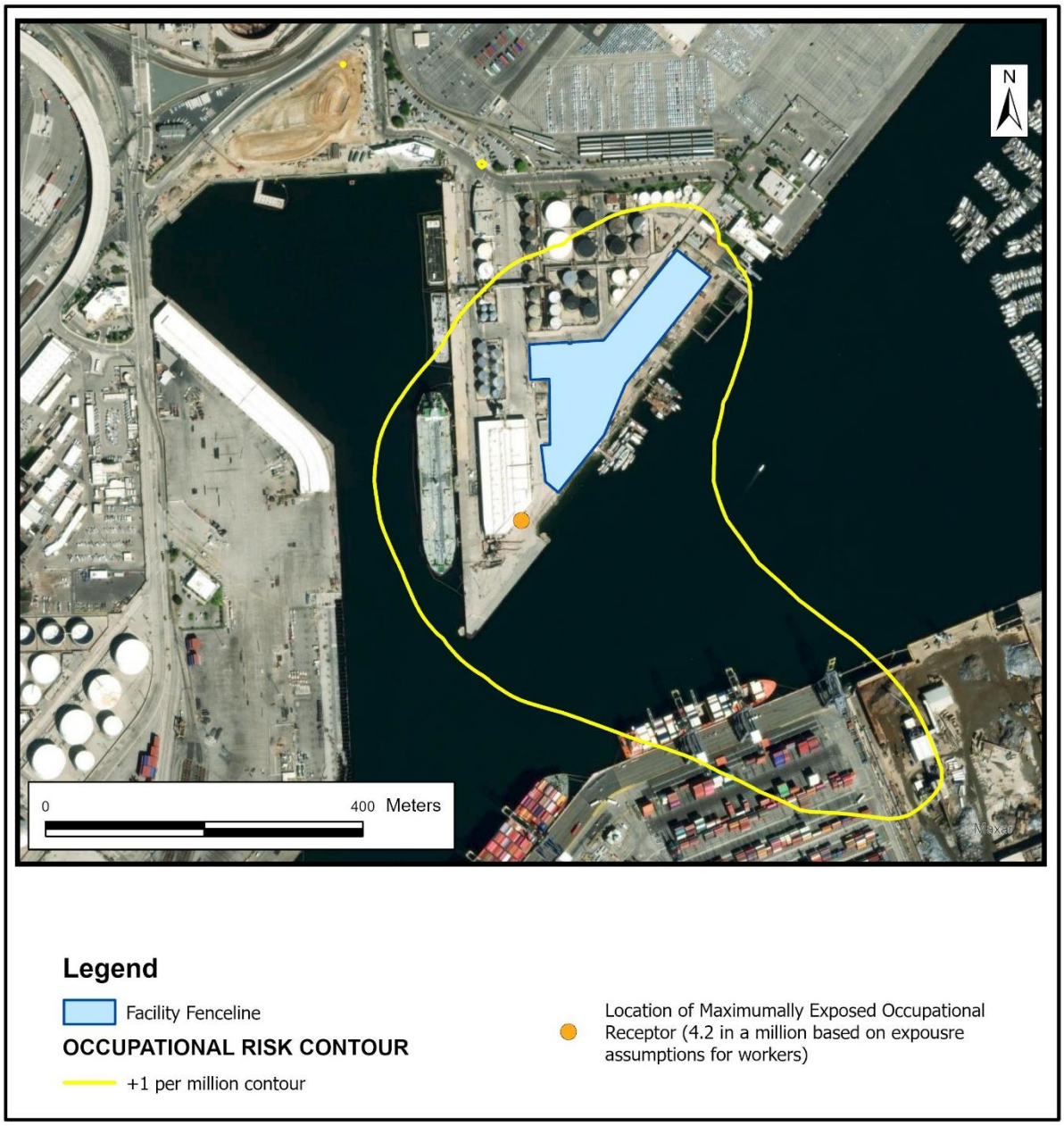
Notes:
[a] Each result shown in the table for cancer risk, chronic hazard index, and acute hazard index represents the receptor location with the maximum modeled health value. The health values at all other modeled receptors would be less than the values in the table.
[b] The sensitive receptor location with the maximum cancer risk is located at the Wilmington Waterfront Promenade which is currently under development and located approximately 400 meters northwest of the Project site.

Figure 3.1-6: Isopleth of 30-year Residential Cancer Risk – Product Import Terminal Alternative (Alternative 3)



Note: Contours (isopleths) reflect 30-year residential exposure assumptions in all areas, including areas where there are no residents. The CEQA threshold for cancer risk is 10 in a million. Maximum exposed residential and sensitive receptors are below the threshold.

Figure 3.1-7 Isopleth of 25-year Occupational Cancer Risk – Product Import Terminal Alternative (Alternative 3)



Note: The maximum individual cancer risk at a hypothetical occupational receptor location for the Product Import Terminal Alternative is 4.6 (at facility fenceline), therefore, no +10 per million contour is generated.

Table 3.1-23 shows that the Product Import Terminal Alternative (Alternative 3) would produce the following health risk impacts:

Individual Cancer Risk

The maximum cancer risk is predicted to be less than the significance threshold for the residential, non-residential sensitive, and occupational receptors. Therefore, the Product Import Terminal Alternative (Alternative 3) would result in a less than significant cancer risk impact.

Cancer risk for the MEI non-residential sensitive receptor for the Project Import Terminal Alternative (Alternative 3) is primarily driven by the vessel hoteling exhaust during operations, with the second and third largest contributions from construction off-road equipment and operational use of the trucks. Cancer risk for the MEI residential receptor is primarily driven by vessel hoteling exhaust during operations, with the second largest contribution from the construction off-road equipment. Cancer risk for the MEI occupational receptor is primarily driven by the vessel hoteling exhaust during operations, with the second and third largest contributions from construction off-road equipment and use of the tugboats during construction. DPM from these sources is the dominant risk driver among all toxic air pollutants.

Figure 3.1-6 shows the individual residential cancer risk contour of one in a million and the locations of the MEI residential receptor and the MEI non-residential sensitive receptor for the Project Import Terminal Alternative (Alternative 3). Because the individual cancer risk estimated at all residential and non-residential sensitive receptors for the Project Import Terminal Alternative (Alternative 3) are below the significance threshold of 10 in a million, a contour for 10 in a million residential risk is not drawn in Figure 3.1-6.

The one in a million residential risk contour was generated using 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. As shown in Figure 3.1-23 (as a red land use overlay), only a small area within the one in a million contour overlaps with the residential zone in Wilmington near the Wilmington Waterfront Park. The residential MEI receptor for cancer risk (with an estimated cancer risk of 1.4 in a million, well below the 10 in a million threshold), is located in the vicinity of Fries Avenue and West E Street in Wilmington. The MEI non-residential sensitive receptor with an estimated cancer risk of 9.2 in a million (also below the 10 in a million threshold) is located at the Wilmington Waterfront Promenade which is currently under development and located approximately 400 meters northwest of the Project site. Because the cancer risk for this receptor location was conservatively evaluated as residents assuming continuous exposure for 30 years, the actual risk for the future recreational users at this location is expected to be much lower.

Figure 3.1-7 shows the individual worker cancer risk contour of one in a million and the location of the MEI occupational receptor for the Reduced Project Alternative (Alternative 2). The one in a million worker risk contour was generated using cancer risk estimates calculated based on the default occupational exposure assumptions at each modeled receptor (regardless of whether it is an actual occupational receptor). The occupational MEI receptor for cancer risk, which is estimated to be 4.2 in a million (below the 10 in a million threshold), is located to the southwest of the project facility near the southern edge of Vopak's cement warehouse.

Population Cancer Burden

The cancer burden is predicted to be 0.0081, well below the significance threshold of 0.5 (Table 3.1-23). Therefore, the Product Import Terminal Alternative's (Alternative 3) cancer burden impact would be less than significant.

Chronic and Acute Hazard Indices

The maximum chronic hazard indices for the residential, non-residential sensitive, and occupational receptors are predicted to be 0.22, 0.44, and 0.22, respectively, below the significance threshold of 1 for all receptor types (Table 3.1-23). Therefore, the Product Import Terminal Alternative's (Alternative 3) chronic noncancer impact would be less than significant.

The maximum acute hazard index is predicted to be 0.16, below the significance threshold of 1 for all receptor types (Table 3.1-23). Therefore, the Product Import Terminal Alternative's (Alternative 3) acute noncancer impact would be less than significant.

Mitigation Measures

Although mitigation is not required and no additional feasible mitigation is available at the moment (as described throughout Section 3.1.5.), the LAHD's standard lease measure LM AQ-2 would be included in the tenant lease. In addition LM AQ-1, LM AQ-3, LM AQ-4, and LM AQ-5 would also be included. Because there is some timeline uncertainty about the timing of availability for these measures, the analysis does not quantify the potential benefits of LM AQ-1, LM AQ-2 and LM AQ-3, regardless, it is expected that these measures would further reduce future air quality emissions and serve to comply with the Port air quality requirements:

LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment.

LM AQ-2: Periodic Review of New Technology.

LM AQ-3: At-Berth Vessel Emissions Control Pilot Study.

LM AQ-4: Port of Los Angeles Sustainable Construction.

LM AQ-5: Vessel Speed Reduction Program (VSRP).

The analysis of mitigation measures feasibility and application of lease measures can be found in Section 3.1.5.1, and the description of measures can be found in Section 3.16 Mitigation Monitoring.

Residual Impacts

Impacts of the Product Import Terminal Alternative (Alternative 3) on individual cancer risk, chronic noncancer hazard index, and acute noncancer hazard index at the maximally exposed residential, occupational, and non-residential sensitive receptors would be less than significant.

Impact AQ-6: Would the Product Import Terminal Alternative (Alternative 3) conflict with or obstruct implementation of an applicable AQMP?

The Product Import Terminal Alternative's (Alternative 3) construction would closely resemble that of the Proposed Project, and operations would be generally similar, differing only in that operational activity levels would be lower, especially because no milling would occur on the site and no storage piles and offroad equipment will be necessary. The Product Import Terminal Alternative (Alternative 3) would incorporate the same CAAP and AQMP measures as the Proposed Project. Accordingly, the discussion of the Proposed Project's consistency with the 2022 AQMP (SCAQMD 2022; see AQ-6 in Section 3.1.5.1) is equally applicable to Product Import Terminal Alternative (Alternative 3), meaning that the Product Import Terminal Alternative (Alternative 3) would not conflict with or obstruct implementation of the AQMP.

Impact Determination

Because the Product Import Terminal Alternative (Alternative 3) would not conflict with or obstruct implementation of the AQMP, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

3.1.5.5 Summary of Impact Determinations

Table 3.1-24 summarizes the CEQA impact determinations of the Proposed Project and alternatives related to Air Quality and Meteorology. This table is meant to allow easy comparison of the potential impacts of the Proposed Project and alternatives 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 and lease measures, and notes the residual impacts (i.e., the impact remaining after mitigation and the application of lease measures). All impacts, whether significant or not, are included in this table.

Table 3.1-24 Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation/Lease Measures or Controls	Residual Impacts
Proposed Project	**AQ-1:** The Proposed Project would result in construction-related emissions that exceed an SCAQMD localized threshold of significance in Table 3.1-4	Less than significant	Mitigation not required although LM AQ-4: Port of Los Angeles Sustainable Construction Guidelines would be applied	Less than significant
	AQ-2: Proposed Project construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-6	Less than significant	Mitigation not required although LM AQ-4: Port of Los Angeles Sustainable Construction Guidelines would be applied	Less than significant
	AQ-3: The Proposed Project would result in operational emissions that exceed an SCAQMD regional threshold of significance in Table 3.1-7	Operation emissions would be significant for NOx in all operational years	LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology LM AQ-3: At-Berth Vessel Emissions Control Pilot Study LM AQ-5: Vessel Speed Reduction Program (VSRP) LM AQ-6: Front End Loader Replacement Schedule	Impacts would remain significant and unavoidable for NOx in all operational years
	AQ-4: Proposed Project operations would result in offsite ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-8	Operation-related ambient pollutant concentrations would be significant in all years for annual and 24-hr PM_{10} and 24-hr $PM_{2.5}$	LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology LM AQ-3: At-Berth Vessel Emissions Control Pilot Study LM AQ-5: Vessel Speed Reduction Program (VSRP) LM AQ-6: Front End Loader Replacement Schedule	Impacts would remain significant and unavoidable for operation-related ambient pollutant concentrations in all years for annual and 24-hr PM_{10} and 24-hr $PM_{2.5}$
	AQ-5: The Proposed Project would expose receptors to significant levels of TACs	Less than significant	Mitigation not required although LM AQ-1, LM AQ-2, LM AQ-3, LM AQ-4, LM AQ-5 and LM AQ-6 would be applied	Less than significant
	AQ-6: The Proposed Project would not conflict with or obstruct implementation of an applicable AQMP	Less than significant	Mitigation not required	Less than significant
	AQ-1: Alternative 1 would not result in construction-related emissions that exceed	No impact	Not applicable	No impact

Table 3.1-24 Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation/Lease Measures or Controls	Residual Impacts
Alternative 1 – No Project Alternative	an SCAQMD threshold of significance in Table 3.1-4			
	AQ-2: Alternative 1 construction would not result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-6	No impact	Not applicable	No impact
	AQ-3: Alternative 1 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.1-7	No impact.	Not applicable	No impact
	AQ-4: Alternative 1 operations would result in offsite ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-8	No impact	Not applicable	No impact
	AQ-5: Alternative 1 would not expose receptors to significant levels of TACs	No impact	Not applicable	No impact
	AQ-6: Alternative 1 would not conflict with or obstruct implementation of an applicable AQMP	No impact	Not applicable	No impact
Alternative 2 – Reduced Project Alternative	**AQ-1:** Alternative 2 would not result in construction-related emissions that exceed an SCAQMD threshold of significance in Table 3.1-4	Less than significant	Mitigation not required although LM AQ-4: Port of Los Angeles Sustainable Construction Guidelines would be applied	Less than significant
	AQ-2: Alternative 2 construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-6	Less than significant	Mitigation not required though LM AQ-4: Port of Los Angeles Sustainable Construction Guidelines would be applied	Less than significant
	AQ-3: Alternative 2 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.1-7	Operational emissions would be significant for NOx in all years	LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology LM AQ-3: At-Berth Vessel Emissions Control Pilot Study LM AQ-5: Vessel Speed Reduction Program (VSRP) LM AQ-6: Front End Loader Replacement Schedule	Operational emissions would remain significant and unavoidable for NOx in all years

Table 3.1-24 Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation/Lease Measures or Controls	Residual Impacts
	AQ-4: Alternative 2 operations would result in offsite ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-8	Operation-related ambient pollutant concentrations would be significant for annual and 24-hr PM_{10} in all years and 24-hr $PM_{2.5}$ in 2027 and 2049	LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology LM AQ-3: At-Berth Vessel Emissions Control Pilot Study LM AQ-5: Vessel Speed Reduction Program (VSRP) LM AQ-6: Front End Loader Replacement Schedule	Impacts would remain significant and unavoidable for operation-related ambient pollutant concentrations for annual and 24-hr PM_{10} in all years and 24-hr $PM_{2.5}$ in 2027 and 2049
	AQ-5: Alternative 2 would not expose receptors to significant levels of TACs	Health risks would be below the significance threshold for all receptor types.	Mitigation not required although LM AQ-1, LM AQ-2, LM AQ-3, LM AQ-4, LM AQ-5 and LM AQ-6 would be applied	Less than significant.
	AQ-6: Alternative 2 would not conflict with or obstruct implementation of an applicable AQMP	Less than significant	No mitigation required	Less than significant
Alternative 3-Product Import Terminal Alternative	**AQ-1:** Alternative 3 would not result in construction-related emissions that exceed an SCAQMD threshold of significance in Table 3.1-4	Less than significant	Mitigation not required although LM AQ-4: Port of Los Angeles Sustainable Construction Guidelines would be applied	Less than significant
	AQ-2: Alternative 3 construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-6	Less than significant	Mitigation not required although LM AQ-4: Port of Los Angeles Sustainable Construction Guidelines would be applied	Less than significant
	AQ-3: Alternative 3 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.1-7	Operational emissions would be significant for NOx in all years	LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment LM AQ-2: Periodic Review of New Technology LM AQ-3: At-Berth Vessel Emissions Control Pilot Study LM AQ-5: Vessel Speed Reduction Program (VSRP).	Impacts would remain significant and unavoidable for NOx in all years
	AQ-4: Alternative 3 operations would result in offsite ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.1-8	Operation-related ambient pollutant concentrations would be significant for annual and 24-hour PM_{10}	LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment	Impacts would remain significant and unavoidable for operation-related

Table 3.1-24 Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation/Lease Measures or Controls	Residual Impacts
		and 24-hour $PM_{2.5}$ in all years	LM AQ-2: Periodic Review of New Technology LM AQ-3: At-Berth Vessel Emissions Control Pilot Study LM AQ-5: Vessel Speed Reduction Program (VSRP)	ambient pollutant concentrations for annual and 24-hour PM_{10} and 24-hour $PM_{2.5}$ in all years
	AQ-5: Alternative 3 would not expose receptors to significant levels of TACs	Less than significant	Mitigation not required although LM AQ-1, LM AQ-2, LM AQ-3, LM AQ-4 and LM AQ-5 would be applied	Less than significant
	AQ-6: Alternative 3 would not conflict with or obstruct implementation of an applicable AQMP	Less than significant	No mitigation required	Less than significant

3.1.6 Mitigation Monitoring

The mitigation monitoring program below does not contain any mitigation measures, as none were found feasible. Instead, this section summarizes implementation of the applicable lease measures.

Lease Measure	**LM AQ-1: Fleet Modernization for Cementitious Material Handling Equipment.** Tenant shall replace cementitious material handling equipment used for operation with the cleanest available equipment, that meets operating and safety requirements, anytime new or replacement equipment is purchased, with a first preference for zero-emission equipment, a second preference for near-zero equipment (such as, hybrid or low-NOx equipment), and third for the cleanest available if zero or near-zero equipment is not feasible, provided that LAHD shall conduct engineering assessments to confirm that such equipment is capable of installation at the facility. Tenant may make a recommendation to LAHD for LAHD's concurrence as to which equipment is available and is feasible. Starting one year after the effective date of a new entitlement between the Tenant and the LAHD, Tenant shall submit to the Port an equipment inventory and 5-year procurement plan for new equipment, and infrastructure, and will update the procurement plan annually in order to assist with planning for transition of equipment to zero emissions in accordance with the foregoing paragraph.
Timing	During operation.
Methodology	LAHD will include this lease measure in lease agreements with tenants.

Lease Measure	**LM AQ-2: 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, which shall not be unreasonably withheld.
Timing	During operation.
Methodology	LAHD will include this lease measure in lease agreements with tenants.

Mitigation Measure	**LM AQ-3: At-Berth Vessel Emissions Control Pilot Study.** The Tenant shall complete a pilot study to evaluate the feasibility of implementing an at-berth vessel emissions capture and control system within 3 years of entitlement execution. If proven to be feasible, including but not limited to financial, technical, and operational considerations, and upon California Air Resources Board certification, the Tenant will be required to implement the technology when operationally feasible as described in Tenant's pilot study. This measure will rely on the Tenant's pilot study evaluation and determination, and is subject to mutual agreement between the Tenant and LAHD, which shall not be unreasonably withheld or unreasonably required.
Timing	During operation.
Methodology	LAHD will include this lease measure in lease agreements with tenants.

1

Mitigation Measure	**LM AQ-4: Port of Los Angeles Sustainable Construction Guidelines.** The 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 stipulated in the construction contracts and bid documents.
Timing	During operation.
Methodology	LAHD will include this lease measure in lease agreements with tenants.

2

Mitigation Measure	**LM AQ-5: Vessel Speed Reduction Program (VSRP):** 95 percent of vessels calling at the Ecocem Dry Bulk Processing Facility will be required to comply with the expanded VSRP at 12 knots between 40 nautical miles (nm) from Point Fermin and the Precautionary Area.
Timing	During operation.
Methodology	LAHD will include this lease measure in lease agreements with tenants.

3

Mitigation Measure	**LM AQ-6: Front End Loader Replacement Schedule.** The tenant shall maintain a replacement schedule of the off-road diesel front end loader of every two years, where an equivalent new piece that meets operational requirements and meets Tier 4 Final standards or cleaner, would be procured.
Timing	During operation.
Methodology	LAHD will include this lease measure in lease agreements with tenants.

4

3.1.7 Significant Unavoidable Impacts

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

Emissions Impacts

Table 3.1-25 and Table 3.1-26 summarizes the CEQA impacts of incremental construction emissions and operations emissions for each criteria pollutant and scenario for the Proposed Project and Alternatives. This table provides residual impacts during construction years 2024 and 2025 and operational years 2025, 2027, and 2049.

Table 3.1-25: Construction Emission AQ-1 Impacts Summary Table

Scenario	Year	Significant Unavoidable Impact?					
		VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SOx
Proposed Project	2024	No	No	No	No	No	No
	2025	No	No	No	No	No	No
Alternative 2: Reduced Project	2024	No	No	No	No	No	No
	2025	No	No	No	No	No	No
Alternative 3: Product Import Terminal	2024	No	No	No	No	No	No
	2025	No	No	No	No	No	No

Table 3.1-26: Operational Emission AQ-3 Impacts Summary Table

Scenario	Year	Significant Unavoidable Impact?					
		VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SOx
Proposed Project	2025	No	No	Yes	No	No	No
	2027	No	No	Yes	No	No	No
	2049	No	No	Yes	No	No	No
Alternative 2: Reduced Project	2025	No	No	Yes	No	No	No
	2027	No	No	Yes	No	No	No
	2049	No	No	Yes	No	No	No
Alternative 3: Product Import Terminal	2025	No	No	Yes	No	No	No
	2027	No	No	Yes	No	No	No
	2049	No	No	Yes	No	No	No

Ambient Pollutant Concentration Impacts

Table 3.1-27 summarizes the CEQA impact of incremental ambient pollutant concentrations related to operations for the Proposed Project and Alternatives. This table provides residual impacts for all analysis years.

Table 3.1-27: Summary of Ambient Pollutant Concentrations AQ-4 Impacts for Operations

Pollutant	Averaging Period	Analysis Year	Significant Unavoidable Impact?		
			Proposed Project	Alternative 2 Reduced Project	Alternative 3 Product Import Terminal
NO_2	Federal 1-hour	2025	No	No	No
		2027	No	No	No
		2049	No	No	No
	State 1-hour	2025	No	No	No
		2027	No	No	No
		2049	No	No	No
	Annual	2025	No	No	No
		2027	No	No	No
		2049	No	No	No
PM_{10}	24-hour	2025	Yes	Yes	Yes
		2027	Yes	Yes	Yes
		2049	Yes	Yes	Yes
	Annual	2025	Yes	Yes	Yes
		2027	Yes	Yes	Yes
		2049	Yes	Yes	Yes
$PM_{2.5}$	24-hour	2025	Yes	No	Yes
		2027	Yes	Yes	Yes
		2049	Yes	Yes	Yes

Health Impacts (AQ-5)

For the Proposed Project, Reduced Project Alternative (Alternative 2), and Product Import Terminal Alternative (Alternative 3), the maximum individual cancer risk for the residential, non-residential sensitive, and occupational receptors and other types of health impacts, including chronic hazard impacts, acute hazard impacts and population cancer burden would be less than significant under CEQA for all operational years.

For the No Project Alternative (Alternative 1) Project, there would be no health risk impacts.

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