Section 3.4
Greenhouse Gas Emissions

SECTION SUMMARY

This section describes greenhouse gas (GHG) emissions associated with the construction and operation of the Berths 148-151 (Phillips 66) Marine Oil Terminal (Proposed Project) and its two alternatives: No Project Alternative (Alternative 1) and Reduced Project Alternative (Alternative 2).

Section 3.4, Greenhouse Gas Emissions, provides the following:

- A description of the existing setting as it relates to Port of Los Angeles (Port) GHG emissions and climate change;
- A description of applicable local, state, and federal regulations and policies regarding GHGs;
- A discussion of the methodology used to determine whether the Proposed Project or alternatives would result in impacts to GHG emissions and climate change;
- A discussion of sea level rise;
- An impact analysis of the Proposed Project and alternatives; and
- A description of any mitigation measures proposed to reduce potential impacts and residual impacts, as applicable.

Key Points of Section 3.4:

As described in Section 2.5, the Proposed Project would correct the identified deficiencies of the current facilities by constructing and operating a new, Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS)-compliant berthing facility at Berths 150-151 (including a new mooring dolphin at Berth 149) and associated landside improvements. The Proposed Project and the construction of a new facility would result in emissions of GHGs, in the form of construction off-road equipment and vehicles exhaust. During operation, there would be emissions from tanker vessels and barges, associated harbor craft, on-road trucks, and vapor exhaust from storage tanks and other processes. In the Reduced Project Alternative (Alternative 2), all the elements of the Proposed Project described above would be built except for the refurbishment of 11 idle storage tanks as described in Section 2.5.1.2; Project operations would remain the same.

Based on the estimated yearly construction and operational GHG emissions, the Proposed Project and the Reduced Project Alternative (Alternative 2) would result in significant GHG emissions impacts under the California Environmental Quality Act (CEQA). Those impacts would be offset by the application of the air quality mitigation measure (MM) described in Section 3.1 and of MM GHG-1 (GHG Reduction Offsets) and MM GHG-2 (LED Lighting) described in Section 3.4.6.1.

3.4.1 Introduction

This section evaluates the GHG emissions and climate change impacts associated with the Proposed Project and the Reduced Project Alternative (Alternative 2). Activities from construction and operation of the Proposed Project would affect GHG emissions in the immediate Proposed Project area and the surrounding region. This section includes a description of the affected environment, including: a discussion of the state of climate change science; the regulatory setting; predicted impacts of the Proposed Project; presents a discussion of sea level rise; and reviews all feasible mitigation measures proposed to reduce those impacts.

3.4.2 Environmental Setting

The Proposed Project site is located at the Port of Los Angeles within the City of Los Angeles, which is in the southwest coastal area of 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 SCAB covers an area of approximately 15,500 square kilometers (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 San Diego County. The Project site is located at the southern end of Pier "A" Street on approximately 13.8 acres of land, including approximately 1,800 feet of Turning Basin waterfront. The Project site is bounded by the TraPac Container Terminal (Berths 135-147) to the north, the West Basin to the west, the Turning Basin to the south, and Slip No. 1 to the east, as described in Section 2.4.2.

3.4.3 Greenhouse Gas Pollutants

GHGs are defined as gases that have the capacity to trap heat in the atmosphere. This naturally occurring phenomena is primarily fueled by gases such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Artificially derived anthropogenic pollutants, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) also have the capabilities to trap infrared radiation in the atmosphere and contribute to atmospheric warming. Together, these six gases are recognized by the Kyoto Accords as major GHGs (United Nations 1998).

The cumulative impact each pollutant has on global warming is based on the volume of emissions and their 100-year global warming potential (GWP). GWP is a unitless quantity that measures how much a gas will contribute to global warming relative to the same mass of CO_2. For example, CH_4 and N_2O have 100-year horizon GWPs of 29.8 and 273, respectively (IPCC 2021). CO_2 has a GWP of 1. In other words, CH_4 and N_2O have 29.8 and 273 times the warming potential, respectively, of an equivalent amount of CO_2. Artificially derived pollutants such as SF_6, HFCs, and chlorofluorocarbons (CFCs), have been found to have substantially larger GWP values. Sulfur hexafluoride has one of the largest GWP values at 25,184, whereas CFCs and HFCs have GWPs as high as 13,902 and 14,590 (IPCC 2022). For consistency in comparing the impacts of different pollutants, total GHG emissions are typically reported in terms of carbon dioxide equivalents (CO_2e), which is the sum of mass emissions of each pollutant multiplied by its GWP. CO_2e emissions are normally reported in units of metric tons ("tonnes," or "MTon,", or "MT"; 1 MT is equivalent to 1,000 kilograms).

Arguably, the most important GHG contributing to global warming is carbon dioxide (CO_2). While many gases have much higher GWPs, CO_2 is emitted in much larger

quantities; accounting for 79 percent of the GWP of all GHGs emitted by the United States in 2020 (USEPA 2022). Fossil fuel combustion, a by-product of electricity generation and motor vehicle engines, has led to substantial increases in CO_2 emissions and thus global atmospheric concentrations over the last century. In 2022, the atmospheric CO_2 concentration was around 417 parts per million (ppm), exceeding the natural range over the last 800,000 years (NOAA 2022a). The accumulation of CO_2 in the atmosphere is a result of the increased rate of CO_2 emission paired with its relatively long atmosphere lifespan of 50 to 200 years.

Concentrations of the second most prominent GHG, methane (CH_4), have also increased due to the growing prevalence of anthropogenic sources such as rice production, degradation of waste in landfills, cattle farming, and natural gas mining. In 2021, the atmospheric level of CH_4 was 162 percent greater than pre-industrial level at 1,895 parts per billion (ppb) (NOAA 2022b). CH_4 has a relatively short atmospheric lifespan of 12 years but has a higher GWP than CO_2.

Concentrations of N_2O have increased from 270 parts per billion (ppb) in pre-industrial times to about 334 ppb in 2021 (NOAA 2022a). These elevated concentrations are attributed to shifting agricultural practices (such as soil and manure management), fossil-fuel combustion, and the production of acids such as adipic acid. N_2O is a significant contributor to atmospheric warming as a result of its long atmospheric lifespan (120 years) in conjunction with its relatively large GWP.

Lastly, SF_6, CFCs and HFCs, and PFCs are all artificially derived pollutants that contribute to atmospheric warming. These gases are most commonly used in electrical industries or as refrigerants. Though their presence in the atmosphere is proportionally small, these gases' long atmospheric lifespans have categorized them as significant contributors to global warming. Studies estimate that these gases can persist within the atmosphere between 32,000 and 50,000 years.

GHGs differ from criteria pollutants in that they do not directly impact human health. Rather, their indirect impacts to human health via global warming is a cause for concern. Elevated atmospheric temperatures are likely to contribute to the increased occurrence of extreme weather events such as heat waves and precipitation events. Rising temperatures related to human activities have likely contributed to Arctic sea-ice loss, an increase in upper ocean temperature, and global sea level rise during the latter half of the 20th century. As a result of continued growing concentrations of GHGs in the atmosphere, the trends observed over the past century such as oceanic warming and acidification, are expected to occur at a faster rate in the 21st century. (IPCC 2013, 2014, 2023)

Current predictions suggest that in the next 25 years California will experience longer and more extreme heat waves, greater frequency of heat waves, and longer dry periods. More specifically, California's Fourth Climate Change Assessment (OPR et al. 2018a) forecasts that California could witness the following events:

- Temperature rises of 2.7 to 8.8°F by the 2070 to 2100 time period;
- Sea level rises of 1.1 to 1.9 feet by 2050 and over 9 feet by 2100;
- Reductions in snowpack to less than two-thirds of the historical average by 2050 and to less than half or even one third by 2100; and
- Increased fire risk resulting in estimated burned area increases of 77 percent to 178 percent by the end of the century and increases in extreme wildfire frequency of 50 percent.

For the Port of Los Angeles specifically, data from the Cal-Adapt tool (CEC 2023) indicate that the harbor area could experience the following changes:

- Temperature increases of 3.2 to 3.9°F by mid-century (2035-2064) and 4.2 to 7.0°F by end of the century (2070-2099);
- Increases in the annual number of extreme heat days (i.e., days above the historical 98th percentile temperature of 93.7°F) of 3 to 4 days by mid-century and 5 to 12 days by the end of the century; and
- Small increases in the annual maximum 1-day precipitation of approximately 0.15 and 0.23 inches by the end of the century relative to the historical baseline (1961-1990) value of 1.63 inches.

In addition, the Port area is expected to experience rising sea levels by as much as 6 feet by 2100 as a result of warming caused by increased concentrations of GHGs in the atmosphere. Predictions of sea level rise at the Port are described in more detail in Section 3.4.7 below.

3.4.4 Applicable Regulations

3.4.4.1 Federal

The Supreme Court's Decision in *Massachusetts v. Environmental Protection Agency* (2007) 549 U.S. 497

In April 2007, the U.S. Supreme Court in *Massachusetts v. Environmental Protection Agency* (2007), ruled that: (i) GHGs were air pollutants within the meaning of the Clean Air Act; and, (ii) that the Act authorizes the United States Environmental Protection Agency (USEPA) to regulate CO_2 emissions from new motor vehicles, should those emissions endanger the public health or welfare. The Court did not mandate that the USEPA enact regulations to reduce GHG emissions but found that the only instances where the USEPA could avoid taking action were if the agency found that GHGs do not contribute to climate change or if it offered a "reasonable explanation" for not determining that GHGs contribute to climate change.

On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- "Endangerment Finding": the USEPA Administrator found that the current and projected concentrations of the six key well-mixed GHGs – CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6 – in the atmosphere threaten the public health and welfare of current and future generations.
- "Cause or Contribute Finding": the USEPA Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

The findings themselves did not impose any requirements on industry or other entities. However, this action was a prerequisite to finalizing the USEPA's proposed GHG emissions standards for light-duty vehicles (USEPA 2009).

Federal Vehicle Emissions Standards

In 1975, Congress enacted the Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States (i.e., the

corporate average fuel economy [CAFE] standards). Pursuant to the Act, the USEPA and the National Highway Traffic Safety Administration (NHTSA) are responsible for establishing additional vehicle standards. In August 2012, standards were adopted for model years 2017 through 2025 for passenger cars and light-duty trucks. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle (USEPA 2012). The State of California harmonized its vehicle efficiency standards through 2025 with the federal standards through the State's Advanced Clean Cars Program.

In 2019, the USEPA issued a final rule, known as the Safer Affordable Fuel-Efficient Vehicle (SAFE) Rule that established new fuel economy standards for light-duty vehicle fleets for the years 2021-2026, and rescinded the California waiver under the federal Clean Air Act, which had historically allowed California to issue its own motor vehicle emission standards for GHGs. The SAFE Rule was judicially challenged, and on March 9, 2022, the USEPA reinstated California's authority under the Clean Air Act to implement its own GHG emission standards and zero emission vehicle (ZEV) sales mandate. (*California v. EPA* (D.C. Cir. 2019) 940 F.3d 1342; *Union of Concerned Scientists et al. v. NHTSA* (D.C. Cir. 2019) Case No. 19-1230.)

In 2011, USEPA, along with the Department of Transportation's National Highway Traffic Safety Administration (NHTSA), adopted the first-ever greenhouse gas emission and fuel efficiency standards for heavy-duty engines and vehicles (76 FR 179, 15 September 2011). The Phase 1 Heavy-Duty Vehicle and Engine Greenhouse Gas Rule became mandatory in 2014 and fully phased-in by the 2017 model year. The Phase 2 Heavy-Duty Vehicle and Engine Greenhouse Gas Rule was adopted in 2016 (81 FR 206, 25 October 2016) and began implementation with the 2021 model year.

3.4.4.2 State

California has enacted a variety of laws and promulgated numerous rules and regulations that relate to climate change, many of which set aggressive goals for GHG reductions within the State. The discussion below provides a brief overview of the primary initiatives that relate to climate change and that may affect the GHG emissions associated with the Proposed Project or alternatives.

Assembly Bill 32 and Senate Bill 32 – Statewide GHG Reductions

The California Global Warming Solutions Act of 2006, widely known as Assembly Bill (AB) 32, requires the California Air Resources Board (CARB) to develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB was directed to set emissions limits to achieve 2000 levels of GHGs by 2010 and 1990 levels by 2020. This bill codified the 2020 target set in Executive Order (EO) S-3-05 (June 1, 2005), which included an additional goal of 80 percent below 1990 levels by 2050. CARB reported that the 2020 goal was achieved in 2016, four years ahead of the target date.

Senate Bill (SB) 32, enacted in 2016, codified the interim goal of 40 percent below 1990 levels by 2030 set in EO B-30-15 (enacted in 2015). This interim target was established to ensure the state meets the EO S-3-05 target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. To facilitate achievement of this goal, EO B-30-15 called for an update to CARB's Climate Change Scoping Plan (see below).

Renewable Portfolio Standard, Senate Bill 100 & Executive Order B-55-18

California's Renewable Portfolio Standard (RPS) was first established in 2002 through Senate Bill 1078, as a regulation requiring electric utilities and retail electricity providers to provide customers with a stated minimum share of electricity generated from renewable resources. The RPS was revisited, and its goals accelerated through SB 350. The latest revisions affecting RPS were implemented through SB 100 and Executive Order B-55-18.

On September 10, 2018, Governor Brown signed SB 100, which established that 100 percent of all electricity in California must be obtained from renewable and zero-carbon resources by December 31, 2045. SB 100 also created new standards for the RPS goals that were separately established by SB 350, increasing electricity from renewable sources from 50 percent to 60 percent by 2030 with specific interim targets.

On the same day that SB 100 was signed, Governor Brown signed Executive Order B-55-18 with a new state-wide goal to achieve carbon neutrality (zero-net GHG emissions) by 2045. Specifically, it set a 2045 goal of powering all retail electricity sold in California and state agency electricity needs with renewable and zero-carbon resources, including those such as solar and wind energy that do not emit climate-altering GHGs.

Executive Order N-79-20

Governor Newsom signed EO N-79-20 in September 2020, which states that "clean renewable fuels play a role as California transitions to a decarbonized transportation sector." EO N-79-20 directed that, "to support the transition away from fossil fuels consistent with the goals established in this Order and California's goal to achieve carbon neutrality by no later than 2045, the California Environmental Protection Agency and the California Natural Resources Agency, in consultation with other state, local and federal agencies, shall expedite regulatory processes to repurpose and transition upstream and downstream oil production facilities..." EO N-79-20 also directed CARB to "develop and propose strategies to continue the State's current efforts to reduce the carbon intensity of fuels beyond 2030 with consideration of the full life cycle of carbon."

CARB Climate Change Scoping Plan

A specific requirement of AB 32 was to prepare a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emissions reduction by 2020. CARB developed and approved the initial Scoping Plan in 2008, outlining the regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs that would be needed to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives (CARB 2009a, 2009b). CARB reported that this goal was achieved in 2016, four years ahead of the target of 2020.

In December 2017, CARB approved the 2017 Climate Change Scoping Plan Update (CARB 2017), which built upon the 2009 scoping plan and provided guidance to meet the new statewide GHG reduction goal under SB 32 of 40 percent below 1990 emission levels by 2030.

In December 2022, CARB released the 2022 Scoping Plan Update (CARB 2022). The 2022 Scoping Plan Update assesses progress towards achieving the SB 32 2030 target and lays out a path to achieve carbon neutrality no later than 2045. The 2022 Scoping Plan Update outlines a sector by-sector roadmap for California to achieve carbon neutrality by 2045 or earlier. It aims to reduce anthropogenic emissions to 85 percent below 1990 levels by 2045 using technically feasible and cost-effective solutions. The 2022 Scoping Plan

Update focuses on electrification of transportation, homes and buildings, and phasing out fossil fuels. In hard-to-electrify sectors, new solutions such as renewable hydrogen and biomethane are leveraged to achieve emissions reductions.

CARB's 2022 Scoping Plan Update outlines a number of actions for the Scoping Plan Scenario in Table 2-1. The list below represents the actions which are most relevant to the Proposed Project:

- GHG Emissions Reductions Relative to the SB 32 Target – 40 percent below 1990 levels by 2030.
- Light-duty Vehicle (LDV), ZEVs – 100 percent of LDV sales are ZEV by 2035.
- Truck ZEVs – 100 percent of medium-duty (MDV)/heavy-duty vehicles (HDV) sales are ZEV by 2040 (AB 74 University of California Institute of Transportation Studies [ITS] report).
- Construction Equipment – 25 percent of energy demand electrified by 2030 and 75 percent electrified by 2045.
- Low Carbon Fuels for Transportation - Biomass supply is used to produce conventional and advanced biofuels, as well as hydrogen.
- Low Carbon Fuels for Buildings and Industry - In the 2030s, biomethane blended in pipeline; renewable hydrogen blended in fossil gas pipeline at 7 percent energy (~20 percent by volume), ramping up between 2030 and 2040.

California Climate Adaptation Strategy

Executive Order S-13-08 directed the California Natural Resources Agency, through the Climate Action Team and in coordination with local, regional, state, federal, and private entities, to develop a statewide Climate Adaptation Strategy. In response, the California Natural Resources Agency coordinated development of California's first Climate Adaptation Strategy in 2009. The Strategy assessed anticipated climate change impacts and identified actions and policies to reduce climate-related risks and increase the State's resilience (CNRA 2024a).

In 2015, Assembly Bill 1482 (Gordon) established a statutory requirement for the California Natural Resources Agency to update the State's Climate Adaptation Strategy every three years in coordination with other state agencies. The Strategy has evolved into California's overarching framework for building community, economic, and environmental resilience to climate impacts, including wildfire, flooding, extreme heat, drought, and sea-level rise (CNRA 2024b). The Strategy is organized around six statewide climate resilience priorities (CNRA 2024c):

- Strengthen Protections for Climate Vulnerable Communities;
- Bolster Public Health and Safety to Protect Against Increasing Climate Risks;
- Build a Climate Resilient Economy;
- Accelerate Nature-Based Climate Solutions and Strengthen Climate Resilience of Natural Systems;
- Making decisions based on the best available climate science; and
- Partner and Collaborate to Leverage Resources.

The Strategy primarily addresses adaptation and resilience to the existing and anticipated effects of climate change. It complements California's broader climate mitigation policies

and programs aimed at reducing greenhouse gas emissions by coordinating state actions intended to reduce climate risks and strengthen the long-term resilience of California's communities, economy, infrastructure, and natural systems.

Low Carbon Fuel Standard

Executive Order S-01-07 established a statewide goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent from 2005 levels by 2020. The Low Carbon Fuel Standard (LCFS), a discrete early action item in the original Scoping Plan, was approved by CARB in 2009, with amendments implemented on January 1, 2013. In September 2018, CARB extended the LCFS program to 2030, making significant changes to the design and implementation of the program including doubling the statewide carbon intensity reduction to 20 percent by 2030. The extension also added new crediting opportunities to promote zero-emission vehicle adoption and advanced technologies to achieve deep decarbonization in the transportation sector. Compliance with the LCFS will be based on a combination of strategies involving lower carbon fuels and more efficient, advanced technology vehicles.

Commercial Harbor Craft Regulation

In 2022, CARB approved amendments to the Regulation to Reduce Emissions from Diesel Engines on Commercial Harbor Craft (Cal. Code Regs. Tit.13, §2299.5; Tit. 17 § 93118.5) which expand the applicability of the regulation to more vessel types and require cleaner upgrades and newer technology, including adoption of zero emission options where feasible. These amendments also require that effective January 2023, all commercial harbor craft operating within regulated California Waters must comply with the renewable diesel fuel requirements as set forth in Section 93118.5. Similarly, under the amendment, new and newly acquired engines are required to meet the most stringent marine standards (Tier 4 for most applications, and Tier 3 or cleaner for commercial fishing) based on the rule’s implementation schedule that begins in 2024 (CARB 2023). On January 6, 2025, CARB received partial authorization covering most elements of its revised 2022 Commercial Harbor Craft (CHC) Regulation amendments.

Ocean-Going Vessels At-Berth Regulation

In December 2007, the original Ocean-Going Vessels At-Berth Regulation was approved by CARB, which set control requirements for emissions from container, refrigerated cargo(reefer), and cruise vessels while hoteling at berth. The At-Berth Regulation was amended on December 30, 2020, increasing its requirements for already-covered vessel types, and expanding its requirements to include auto carriers (roll-on/roll-off vessels) and tanker ships to control hoteling emissions at-berth starting in 2025 for the Ports of Los Angeles and Long Beach. Although this regulation is meant to curtail local criteria pollutant emissions, it may have some co-benefits for reducing GHG emissions if ocean-going vessel (OGV) auxiliary engine and boiler power is replaced using low carbon intensity energy sources.

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

The CARB adopted the Airborne Toxic Control Measure (ATCM) to Limit Diesel-Fueled Commercial Motor Vehicle Idling to reduce public exposure to diesel particulate matter and other air contaminants associated with unnecessary idling of diesel-fueled commercial motor vehicles. The ATCM is codified in the California Code of Regulations (CCR)Title 13, §2485.

The ATCM applies to diesel-fueled commercial motor vehicles with a gross vehicle weight rating greater than 10,000 pounds that are licensed for operation on highways, including California-based and non-California-based vehicles. The regulation generally prohibits subject vehicles from idling their primary diesel engines for more than five consecutive minutes at any location in California, subject to specified exceptions. These exceptions include certain traffic and queuing conditions, adverse weather and emergency conditions, vehicle maintenance and servicing activities, and operation of equipment for which the vehicle engine is required to perform work, among other circumstances specified in the regulation.

The ATCM also establishes requirements for certain alternative idle-reduction technologies, including auxiliary power systems and fuel-fired heaters, and allows the use of other technologies such as battery-electric auxiliary power systems, fuel cells, and electrical power infrastructure to reduce primary engine idling and associated emissions.

Advanced Clean Fleets Regulations

In April 2023, the Advanced Clean Fleets (ACF) regulation was approved by CARB, with the goal of achieving a zero-emission truck and bus California fleet for certain market segments such as government fleets, last mile delivery, and drayage applications. All drayage trucks will be required to be zero-emission trucks by 2035.

Per the Clean Air Act, California must seek a waiver from the USEPA to enact emissions standards that are more stringent than those enacted at the federal level. California is granted this ability because of its unique air quality issues, but for each California regulation CARB must seek a waiver from the USEPA. On January 13, 2025, CARB withdrew its request for a waiver and authorization to USEPA for its Advanced Clean Fleets Regulation. Therefore, no emissions reduction credits from this rule, or the related Advanced Clean Trucks rule, were quantified in this analysis of Project GHG emissions.

3.4.4.3 Local and Regional

South Coast Air Quality Management District

On December 5, 2008, the South Coast Air Quality Management District (SCAQMD) Governing Board adopted its staff proposal for an interim CEQA GHG significance threshold of 10,000 metric tons per year (mty) CO_2e emissions for industrial projects for which SCAQMD is the lead agency. This threshold has been included as part of the SCAQMD Air Quality Thresholds since 2008 (SCAQMD 2008).

Senate Bill 375 – Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Connect SoCal

Pursuant to SB 375 (the Sustainable Communities and Climate Protection Act of 2008), the Southern California Association of Government (SCAG) prepared, and on April 7, 2016, adopted the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS; SCAG 2016). The RTP/SCS was the culmination of a multi-year effort involving stakeholders from across the SCAG Region, and contained, among other policies, a regional commitment for the broad deployment of zero- and near-zero emission transportation technologies in the 2020-2040 timeframe and clear steps to move toward this objective.

The RTP was updated in 2020 as “Connect SoCal” (SCAG 2020), which sets forth the long-range regional plan, policies, and strategies for transportation improvements and

regional growth throughout the SCAG region through the horizon year of 2045. Connect SoCal includes regional growth forecasts, financial plans, and a strategic plan to support identified transportation projects and facilitate coordinated implementation of those projects. One of the plan's guiding principles is to encourage transportation investments that will result in improved air quality and public health and reduced GHG emissions.

City of Los Angeles

General Plan

The Mobility Element of the General Plan (City of Los Angeles 2016) contains general policies and objectives related to GHGs. Specifically, one of the document's overall policies calls for the city to target GHG reductions through more sustainable transportation systems. One of the goals articulated in Chapter 5, Clean Environments and Healthy Communities, is to meet a 19 percent per capita GHG reduction by 2035, consistent with the SCAG RTP (i.e., Connect SoCal).

Green LA

The City of Los Angeles released its climate action plan, Green LA: An Action Plan to Lead the Nation in Fighting Global Warming, in May 2007 (City of Los Angeles 2007). The Green LA plan is a voluntary program that sets a goal of reducing the City's GHG emissions to 35 percent below 1990 levels by 2030. The Green LA plan has been superseded by LA's Sustainable City pLAn, described in the following section.

The Sustainable City pLAn (pLAn)

In April 2015, the City of Los Angeles developed the Sustainable City pLAn (pLAn) as a roadmap towards a cleaner environment and a stronger economy through 2035. The pLAn contains strategies to address current and future climate change impacts and to reduce air quality emissions and sets aspirational goals in 14 target areas. Of these, three are applicable to Port activities: energy-efficient buildings; carbon and climate leadership; and mobility and transit. In particular, the pLAn projects the Port-related goods movement trips that use zero-emissions technology to increase by 15 percent by 2025 and to 25 percent by 2035 (City of Los Angeles 2015).

Green New Deal Sustainable City pLAn

In 2019, Mayor Eric Garcetti launched an update to the Sustainable City pLAn: LA's Green New Deal Sustainable City pLAn, aiming to model local governments' consistency with the Paris Climate Agreement (City of Los Angeles 2019). Among its milestones and chapter goals related to goods movement are:

- Identify air quality hotspots in impacted communities from goods movement, ports, and refineries by 2021;
- Develop an electric freight and commercial vehicle billing rate by 2035; and
- By 2050, reduce Port-related GHG emissions by 80 percent by:
    - Incorporating sustainable practices in tenant lease agreements at cargo terminals by 2030;
    - Developing technology and pilot at-berth controls for liquid bulk vessels by 2028;
    - Deploying 50-100 zero emission trucks in a clean truck pilot by 2035; and
    - Implementing an updated Clean Truck Program with prioritization on zero emission trucks.

Port of Los Angeles

Port Climate Action Plan

The 2007 Green LA Plan led to the Los Angeles Harbor Department (LAHD)'s development of an individual Climate Action Plan, consistent with the goals of Green LA, to examine opportunities to reduce GHG emissions from Port operations (such as Port buildings and Port workforce operations).

In accordance with this directive, the Port's Climate Action Plan, developed in December 2007, covers GHG emissions related to the Port's municipal activities (such as Port buildings and Port workforce operations). The Climate Action Plan outlines specific steps that LAHD has taken and will take to address global climate change. These steps include specific actions that will be taken for energy audits, green building policies, onsite photovoltaic solar energy, green energy procurement, tree planting, water conservation, alternative fuel vehicles, increased recycling, and green procurement. The Climate Action Plan also identifies San Pedro Bay Ports Clean Air Action Plan (CAAP) measures that have significant GHG reduction co-benefits, such as the MM AQ-6 (Vessel Speed Reduction Program [VSRP]) and Alternative Marine Power (AMP). GHG emission reduction needs associated with Port's tenant activities are recognized in the Port Climate Action Plan, but are deferred to the CAAP, which addresses tenant operations.

In addition, the June 2008 Port of Los Angeles Sustainability Assessment contains an assessment of existing programs and policies against the eight goals that were identified in Executive Directive No. 10 on Sustainability Practices in the City of Los Angeles. LAHD has also completed annual GHG inventories of the Port's municipal activities and reported these to third-party registries since 2006. LAHD's Annual Inventory of Air Emissions also included GHG emissions estimates for transportation activities associated with goods movement for OGVs, harbor craft, trucks, locomotives, and cargo handling equipment since 2006. LAHD expanded the GHG emissions inventories to include an expanded geographical delineation for OGVs, trucks, and locomotives. These annual inventories and their methodology reports can be found on the Port's website.[1]

San Pedro Bay Ports Clean Air Action Plan (CAAP)

The Ports of Los Angeles and Long Beach, with the participation and cooperation of the USEPA, CARB, and SCAQMD staff, developed the San Pedro Bay Ports CAAP, a planning and policy document that sets goals and implementation strategies to reduce air emissions and health risks associated with port operations while allowing port development to continue (POLA and POLB 2006). Each individual CAAP measure is a proposed strategy for achieving these emissions reduction goals.

The CAAP was updated in 2010 and most recently in 2017. The 2017 CAAP Update (POLA and POLB 2017) aligns with the California Sustainable Freight Action Plan, supports the zero-emissions and freight efficiency targets set by the State and other agencies, and contains a new focus on GHG emissions reductions with a 2050 emissions reductions target. The 2017 CAAP emissions reduction targets include:

- Reduce population-weighted residential cancer risk of Port-related diesel particulate matter (DPM) emissions by 85 percent by 2020, compared to 2005 conditions;

[1] https://www.portoflosangeles.org/environment/air-quality/air-emissions-inventory

- Reduce Port-related emissions by 59 percent for NO_X, 93 percent for SO_X and 77 percent for DPM emissions by 2023, compared to 2005 conditions;
- Reduce GHGs from Port related sources to 40 percent below 1990 levels by 2030; and
- Reduce GHGs from Port related sources to 80 percent below 1990 levels by 2050.

The 2017 CAAP Update strategies may result in GHG emissions reductions as older technologies are replaced with cleaner technologies.

City of Los Angeles Actions to Reduce Greenhouse Gas Emissions by 2050

The "Actions to Reduce Greenhouse Gas Emissions by 2050" report (LAHD 2014) outlines actions/strategies that are either being implemented or evaluated to continue the reduction of GHG emissions and meet a target of 35 percent below 1990 levels by 2035 and 80 percent below 1990 levels by 2050. The report lists GHG emissions reduction strategies for Port operations as well as the applicable implementing programs. The report does not identify new programs or measures. It lists existing initiatives and reiterates the Port's commitment to continued collaboration with the international maritime community, as well as between all stakeholders and regulators.

Los Angeles Harbor Department Sustainable Construction Guidelines

As part of LAHD's overall environmental goals and CAAP strategies, any construction at the Port must follow the Department's Sustainable Construction Guidelines, initially adopted in February 2008 and revised in 2009 (LAHD 2009). The guidelines reinforce and require sustainability measures under construction contracts, addressing a variety of emission sources that operate at the Port during construction. Examples of affected sources include ships and barges used to deliver construction related materials, harbor craft, dredging equipment, haul and delivery trucks, and off-road construction equipment. With respect to GHG emissions, the most relevant Guideline requirements include limitation on equipment and truck idling, measures to improve the flow of construction traffic, and use of electrically powered instead of diesel-powered equipment wherever possible. The guidelines are described in detail in Table B1-1 in Appendix B1: Air Quality Regulations/Methodology and Air Quality and GHG Emissions/Energy.

Additional Rules, Regulations and Policies

In addition to the above rules, regulations, and policies that primarily focus on GHG emission reductions, many of the rules, regulations and policies discussed in Appendix B1 to reduce fossil fuel combustion would have the co-benefit of reducing GHG emissions.

3.4.5 Greenhouse Gases and Climate Impacts

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

3.4.5.1 Methodology for Estimating Greenhouse Gas Emissions

GHG emissions associated with a project can be classified into three broad categories or "scopes" based on the level of ownership or control of emitting sources (USEPA 2024):

Scope 1: GHGs directly emitted by project sources

Scope 2: Indirect GHG emissions resulting from offsite generation of electricity (and where applicable steam, heat, or cooling) purchased for use by the project

Scope 3: Indirect GHG emissions associated with activities involved in producing goods and services used by the project, but which are not a part of the project.

For purposes of this analysis, Scope 1 GHG emissions were calculated as described below. Scope 2 and 3 emissions are not quantified. In the case of Scope 2 emissions, preliminary calculations indicated that their inclusion would result in a net decrease in emissions compared to baseline because of the substantially lower emission rate calculated based on the National Renewable Energy Laboratory (NREL) emission factor changes for the 2027 and 2057 future electrical generation. To ensure a conservative impact assessment, therefore, Scope 2 emissions are not included in this Draft EIR. Data needed to calculate reasonably accurate estimates of Scope 3 GHG emissions for a specific project are not readily available as they may involve complex supply chains and proprietary information on third-party business practices. As a result, quantification of Scope 3 emissions would be speculative and as such is not required under CEQA (CEQA Guidelines §15145). In addition, many if not all Scope 3 emission sources are too far removed from use by the Project to be able to reasonably be attributable to the Project (AEP 2017).

For the Proposed Project, direct (Scope 1) GHG emissions related to construction would be generated from engine exhaust associated with off-road construction equipment, delivery/hauling trucks, and worker vehicles, and harbor craft (HC) used in the wharf repair and construction activities. The byproduct of fuel combustion from these sources are greenhouse gases like CO_2, CH_4, and N_2O. Construction emissions were analyzed for construction years 2024 through 2029. (As described in Section 2.5.1, the assumed dates are for analytical purposes only and mean that the analysis is conservative, as a later start date would result in cleaner construction and operational equipment being used.)

Direct (Scope 1) GHG emissions from operation of the Proposed Project would be generated by OGVs, HC, and on-road vehicles (tanker trucks and worker vehicles). Consistent with the air quality analysis (Section 3.1), operational emissions were analyzed for the years 2027 (first year of operations) and 2057 (the 30-year exposure period for the HRA).

Information regarding the activity and emissions characteristics of the Proposed Project construction and operational activities was obtained primarily from Phillips 66, LAHD staff, and the 2021 Port Emissions Inventory (LAHD 2022). 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 specific Proposed Project design data from Phillips 66 when available. Details are provided in Appendix B1.

GHG emissions are analyzed on an annual basis. GHG emissions for the entire construction period are amortized across the life of the Project (conservatively assume for the purposes of this analysis to be 30 years), and added to the operational annual emissions, as will be shown in Section 3.4.6 Impact Determination. Travel emissions from mobile sources are tracked as far as the California state water or land boundary, consistent with the CEQA Guidelines and the Governor's Office of Planning and Research (OPR)'s Discussion Draft CEQA and Climate Change Advisory (OPR 2018b). This means vessel and truck travel is estimated within California state boundaries, when applicable. A brief

high-level description of the sources of GHG emissions follows. Assumptions and emission factors for both operational and construction sources are described in more detail in Appendix B1.

Tanker Vessels and Barges

The Proposed Project operations involve import and export of petroleum-based and renewable transportation fuel feedstocks and products (exclusive of crude oil or liquid petroleum gas) via ocean-going tanker vessels. Additional product movement is made via ocean-going barges, articulated tug barges (ATBs), and bunker barges which are propelled by assist tugs. Under the Proposed Project, the total number of vessel visits is expected to increase above 2021 baseline levels as described in Section 2. Data on vessel operations during 2021 were provided by the Port and Phillips 66. Projected future vessel activities under the Proposed Project were determined as described in Section 3.1.

GHG emissions from ocean-going tanker vessels were calculated from berth to the state overwater boundary, approximately 178 nautical miles (nm) offshore (130 nm beyond the SCAB overwater boundary).

Harbor Craft (HC) – Assist Tugs

During construction and operation of the Proposed Project, harbor craft activity would consist of tugboats/assist tugs used to support in-water work during construction, to assist tanker ships while maneuvering and docking, and to propel ocean-going barges, ATBs, and bunker barges during operations. Details on HC activities during construction and operations are described in Section 3.1.4.3. HC main and auxiliary engine sizes and load factors, and other vessel operational characteristics were obtained from the 2021 Port Emissions Inventory (LAHD 2022). All construction HC emissions were adjusted to comply with the Port's Sustainable Construction Guidelines requirements as described in Table B1-1 of Appendix B1.

Off-Road Equipment

Off-road construction equipment characteristics and activities were provided by Phillips 66 as described in detail in Appendix B1. No off-road mobile sources other than marine vessels will be involved in operation of the Proposed Project. Data and procedures used to calculate off-road equipment emissions are described in Section 3.1.4.3 and Appendix B1. All construction equipment emissions were adjusted to comply with the Port's Sustainable Construction Guidelines requirements as described in Table B1-1 of Appendix B1.

On-Road Vehicles

During Project construction, on-road vehicle activity would consist of construction and worker vehicle trips. During operations, on-road vehicles would be diesel heavy heavy-duty tanker trucks used to haul lube oil deliveries from the terminal to various locations in the Los Angeles area. Data and procedures used to calculate on-road vehicle GHG emissions are described in Section 3.1.4.3 and Appendix B1. Direct GHG emissions from on-road vehicle exhaust were calculated for travel distances within the California state boundary. All construction vehicle emissions were adjusted to comply with the Port's Sustainable Construction Guidelines requirements as described in Table B1-1 of Appendix B1.

GHG emissions from worker vehicles would be associated with employee commutes during construction and operation of the Proposed Project. Data and procedures used to calculate worker vehicle emissions are described in Section 3.1.4.3 and Appendix B1.

Stationary Sources – Operational Process Sources

There are no stationary sources (i.e., sources other than on-road or off-road mobile vehicles or equipment) of direct GHG emissions at the Phillips 66 Marine Oil Terminal (MOT).[2]

3.4.5.2 Geographic Boundaries

For the purpose of assessing GHG impacts under CEQA, operational GHG emissions of the Proposed Project from OGVs were calculated along the northeastern 178 nm shipping route since it represents the longest distance that ships would travel to and from the Port while remaining within CARB's 24 nm California over-water boundary. This differs from limiting OGV emissions to within the SCAB over-water boundary as was done for other air emissions (see Section 3.1). Other mobile source trips associated with Proposed Project construction and operation are all expected to fall within California state boundaries and were calculated using available information on source trips as described in Section 3.1 and Appendix B1. This document acknowledges that some Proposed Project-related GHG emissions from OGV transits may extend beyond state borders. However, origin and destination data for out-of-state emissions over the life of the Proposed Project do not exist and would be speculative on a project-specific level. Estimation of out-of-state GHG emissions is not required by CEQA, nor feasible due to speculative nature of OGV's that would service the Proposed Project, their proposed routes, their points-of-origin, and other extenuating factors that would be necessary to estimate their GHG emissions accurately.

3.4.5.3 CEQA Baseline

CEQA Guidelines, §15125, subdivision (a), provides that an Environmental Impact Report (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.

The LAHD's practice is to define the baseline as the conditions in the first full year calendar year preceding preparation of the Initial Study/Notice of Preparation (IS/NOP). Since preparation of the IS/NOP commenced in 2022, the LAHD has determined that 2021 is the baseline year for the CEQA analysis. Baseline activity levels are summarized in Table 3.1-9 and consisted of tanker vessel loading and unloading and tanker truck loading as further described in Sections 2 and 3.1. Existing electrical loads for the Marine Terminal include transfer pumps (loading/offloading product), lube oil pumps, sump pumps, instrument air compressor and lighting. Total consumption of electricity for the Marine Terminal in 2021 was 596,800 kWh.

3.4.5.4 Thresholds of Significance

CEQA Guidelines Appendix G suggests two criteria for determining the significance of impacts related to greenhouse gases:

- *VII(a). Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

[2] GHG emissions associated with use of emergency generators are not included in the inventory.

VII(b). Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The Guidelines do not specify significance thresholds and afford the lead agency with discretion in how to address and evaluate significance based on these criteria. To provide guidance to local lead agencies regarding determining significance for GHG emissions in CEQA documents, SCAQMD convened the GHG CEQA Significance Threshold Working Group. Members of the working group included government agencies that implement CEQA and representatives from various stakeholder groups that provide input to SCAQMD staff members regarding developing the GHG CEQA significance thresholds.

On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal regarding an interim GHG significance threshold for projects where SCAQMD is lead agency. For stationary sources/industrial sector projects, a significance threshold of 10,000 mty of CO_2e emissions was established. Construction GHG emissions, amortized over project life, are required to be included in a project's annual GHG emissions totals (SCAQMD 2008). LAHD has determined that the SCAQMD-adopted 10,000 mty CO_2e threshold is suitable for all LAHD industrial projects for the following reasons:

- The SCAQMD industrial source threshold is appropriate for projects with future operations continuing as far out as 2050. The SCAQMD threshold development methodology (SCAQMD 2008) used the EO S-3-05 emission reduction targets as the basis in developing the threshold, with the AB 32 reduction requirements (2020) incorporated as a subset of EO S-3-05. EO S-3-05 sets an emission reduction target of 80 percent below 1990 levels by 2050. AB 32 required California to reduce its GHG emissions to 1990 levels by 2020 and this goal was achieved (CARB 2022).
- The SCAQMD industrial source threshold is appropriate for projects with both stationary and mobile sources, both of which are components of LAHD projects. California Air Pollution Control Officers Association (CAPCOA) guidance (CAPCOA 2008) considers industrial projects to include substantial GHG emissions associated with mobile sources. SCAQMD, on industrial projects for which it is the lead agency, uses the 10,000 mty threshold to determine CEQA significance by combining a project's stationary source and mobile source emissions. Although the threshold was originally developed for stationary sources, SCAQMD staff views the threshold as conservative for projects with both stationary and mobiles sources because it is applied to a larger set of emissions, and therefore captures a greater percentage of projects than would be captured if the threshold was only used for stationary sources (SCAQMD pers. comm. 2016).
- The SCAQMD industrial source threshold is appropriate for projects with sources that use primarily diesel fuel. Although most of the sources that were considered by the SCAQMD (2008) in the development of the 10,000 mty threshold are natural gas-fueled, both natural gas and diesel combustion produce CO_2 as the dominant GHG (The Climate Registry 2016). Furthermore, the conversion of all GHG species into a CO_2e ensures that the GHG emissions from any source, regardless of fuel type, can be evaluated equitably.
- The SCAQMD industrial source threshold is conservative for LAHD projects. Based on the 10,000 mty threshold, it would be exceeded by approximately 90 percent of regulated, permitted industrial facilities subject to the SCAQMD's Annual Emission Reporting (AER) program (SCAQMD 2008). LAHD projects subject to CEQA review usually far exceed this threshold because of their large

size and large number of mobile sources such as OGVs, harbor craft, and trucks. A review of LAHD CEQA documents certified between 2007 and 2018 (POLA 2023; note GHG emissions were not quantified in Port CEQA documents before 2007) shows that the 10,000 mty threshold would have been exceeded by projects representing 98 percent of LAHD project CO_2e emissions.

After considering these guidelines and LAHD-specific climate change impact issues, LAHD has set the following threshold for use in this EIR to determine the significance of potential Proposed Project-related GHG impacts.

GHG-1: Would the Proposed Project generate GHG emissions that, either directly or indirectly, may have a significant impact on the environment?

Impacts under GHG-1 are determined by comparing the combined amortized construction and future operational emissions with the baseline scenario. Total construction emissions are amortized over the life of the Proposed Project or Alternative and included in the CEQA impact determination. As noted above, CEQA Guidelines §15064.4(b) provides that one factor to be considered in assessing the significance of GHG emissions on the environment is "the extent to which a project complies with regulations or requirements adopted to implement a statewide, regional or local plan for the reduction or mitigation of GHG emissions."

Several state, regional and local plans have been developed that set goals for the reduction of GHG emissions over the next few years and decades. Some of these plans and policies (notably, EO S-3-05 and AB 32) were taken into account by the SCAQMD in developing the 10,000 $MTCO_2e$/year threshold. However, no regulations or requirements have been adopted by relevant public agencies to implement those plans for specific projects, within the meaning of CEQA Guidelines §15064.4(b)(3). Consequently, no CEQA significance assessment based upon compliance with such regulations or requirements can be made for the Proposed Project. Nevertheless, for the purpose of disclosure, LAHD has considered for informational purposes only, whether the Proposed Project activities, mitigations, and lease measures are consistent with federal, state or local plans, policies or regulations for the reduction of GHG emissions, as set forth below.

Finally, CEQA Guidelines §15126.2(a) identifies the need to evaluate potential impacts of locating development in areas that are vulnerable to climate change effects. The EIR "should evaluate any potentially significant impacts of locating development in other areas susceptible to hazardous conditions (e.g., floodplains, coastlines, and wildfire risk areas)." Although no significance thresholds are defined for evaluating the potential impacts of locating development in areas that are vulnerable to climate change effects, the analysis addresses this evaluation qualitatively.

For determining significance of the impact on the environment caused by GHG emissions, the Proposed Project GHG emissions are compared with a screening threshold of 10,000 $MTCO_2e$/year developed by the SCAQMD for industrial facilities (SCAQMD 2023).

GHG-2: Would the Proposed Project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

Analysis of this impact is presented as an informational assessment; the information provided is not meant to produce an impact determination for the Proposed Project and therefore no impact thresholds are applicable in this case.

Finally, CEQA Guidelines §15126.2(a) identifies the need to evaluate potential impacts of locating development in areas that are vulnerable to climate change effects. The EIR "should evaluate any potentially significant impacts of locating development in other areas susceptible to hazardous conditions (e.g., floodplains, coastlines, wildfire risk areas)." Although no quantitative significance thresholds are defined for evaluating the potential impacts of locating development in areas that are vulnerable to climate change effects, the analysis addresses this evaluation qualitatively under the subsections on sea level rise (Section 3.4.7).

3.4.6 Impact Determination

3.4.6.1 Proposed Project

As described in more detail in Section 3.4.5.1, construction of the Proposed Project would include demolishing the existing timber wharf at Berths 150-151 and replacing it with a new, MOTEMS-compliant concrete loading platform and associated topside equipment. Construction would also include various landside improvements including refurbishment of 11 currently idle storage tanks. Emissions produced by off-road equipment, hauling/delivery trucks, worker vehicles and harbor craft involved in these activities make up the Proposed Project's construction emissions inventory. Operational direct sources of GHG emissions at the Phillips 66 MOT would be comprised of fuel combustion emissions from ocean-going (tanker) vessels, harbor craft, heavy-duty tanker trucks, and worker vehicles. Indirect (Scope 2) sources of GHG emissions include those related to operations electricity consumption; construction related electricity consumption is expected to be minimal.

Impact GHG-1: Would the Proposed Project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Table 3.4-1 presents amortized annual GHG emissions associated with construction of the Proposed Project. Total amortized construction emissions were determined by summing over yearly emissions associated with all construction elements and amortizing (dividing) over the life of the Proposed Project (30 years). Amortized construction emissions are calculated as metric tons of CO_2 equivalence (CO_2e) using the 100-year GWP conversion for each pollutant as described in Section 3.4.3. Table 3.4-2 shows amortized annual GHG emissions associated with construction, annual GHG emissions associated with operational activities and comparison to SCAQMD's industrial sector significance threshold. Emission sources and calculation methods are summarized in Sec. 3.1.4.3; details are provided in Appendix B1.

Table 3.4-1. Construction GHG Emissions – Proposed Project (CO_2e mty)

Year[a]	Off-road Construction Equipment	Harbor Craft	On-Road Construction Vehicles[b]	Total
2024	106	70	86	262
2025	1,185	143	311	1,639
2026	887	0	110	998
2027	451	0	54	505
2028	517	0	43	560

Year[a]	Off-road Construction Equipment	Harbor Craft	On-Road Construction Vehicles[b]	Total
2029	301	0	18	319
			Amortized Construction[c]	143

Notes:
Emissions might not add precisely due to rounding.
a. Construction emissions reflect the construction activities for the Proposed Project.
b. On-road construction vehicle emissions include exhaust emissions from haul and material delivery trucks and construction worker commute.
c. Amortization period is 30 years.

Table 3.4-2. Amortized Construction and Operational GHG Emissions – Proposed Project (mty)

Source Category				CO_2e
Amortized Construction (Table 3.4-1)				143
Operational Year – 2027	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
OGV – Transit	15,255	<1	<1	15,462
OGV – Hoteling/Anchoring	10,670	<1	<1	10,854
Harbor Craft	793	<1	<1	804
ECS Barge Generators	608	<1	<1	615
Trucks	97	<1	<1	102
Worker Vehicles	5	<1	<1	5
Total Direct Operations with Amortized Construction	**27,428**	**<1**	**1**	**27,984**
CEQA Baseline: Direct Emissions				8,469
Project minus Baseline				**19,515**
Total GHG emissions above SCAQMD's 10,000 MT CO_2e threshold?				***Yes***
Year – 2057	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
OGV - Transit	15,255	<1	<1	15,462
OGV – Hoteling/Anchoring	10,670	<1	<1	10,854
Harbor Craft	793	<1	<1	804
ECS Barge Generators	608	<1	<1	615
Trucks	80	<1	<1	84
Worker Vehicles	4	<1	<1	4
Total Direct Operations with Amortized Construction	**27,410**	**<1**	**1**	**27,965**
CEQA Baseline: Direct Emissions				8,469
Project minus Baseline				**19,496**
Total GHG emissions above SCAQMD's 10,000 MT CO_2e threshold?				***Yes***

Notes:
1. Truck and vessel travel emissions include transport outside of the SCAB boundary and up to the California State Boundary, as applicable (see Appendix B1).
2. $CO_2e = CO_2 + 29.8*CH4 + 273*N_2O$ (see text).
3. Emissions might not precisely add due to rounding.

The annual GHG emissions increase from the Proposed Project would exceed the SCAQMD mass emissions threshold in 2027 and 2057. The largest contributors to annual GHG emissions would be vessel transiting followed by vessel hoteling and anchoring during operations.

Impact Determination

Table 3.4-2 shows that the Proposed Project's incremental GHG mass emissions would exceed the GHG threshold of 10,000 mty in the 2027 and 2057 analysis years. Therefore, GHG emissions of the Proposed Project would be significant under CEQA.

Although not considered for the significance determination, direct GHG emissions per unit of product throughput would decrease under the Proposed Project, thereby demonstrating an improvement in GHG emissions efficiency compared to baseline conditions. Table 3.4-3 shows direct emissions of the Proposed Project per barrel (bbl) of product throughput. These data show that per unit emissions would be reduced by up to 13 percent under the Project, primarily as a result of an increase in the average amount of product moved per vessel call.

Table 3.4-3. Greenhouse Gas Emissions for Proposed Project per Unit of Throughput

Years	CO_2e Emissions (mty)	Throughput (bbl)	MT CO_2e per 1,000 bbl
Baseline	8,469	6,359,423	1.33
2027	27,841	23,761,500	1.17
2057	27,823	23,761,500	1.17

Note:
MT: metric ton

Mitigation Measures

Proposed Project construction activities would comply with the following mitigation measures, although the reductions from MM GHG-2 cannot be quantified:

> **MM GHG-1: GHG Reduction Offsets.** The Tenant shall be required to purchase and retire carbon offsets related to activities that reduce, avoid, destroy, or sequester an amount of GHG emissions in an off-site location to offset the equivalent amount of GHG emissions generated by the Project in excess of LAHD's significance threshold of 10,000 metric tons of CO_2 equivalent ($MTCO_2e$) per year. From the first year of the Permit through the end of the term of the Permit, the Tenant shall purchase and retire carbon offsets each year in an amount that would be the equivalent of the Project's estimated residual GHG emissions. The estimated residual emissions for each calendar year shall be based upon the calculations in Appendix C prepared for the Project, except as adjusted in accordance with paragraph (a) or (b), below.
>
> The LAHD is in the process of developing a Greenhouse Gas Program. The Program shall be used for GHG-reducing projects and programs approved by the LAHD. If that Program is established during the term of the Permit, the Tenant shall have the option to offset the required amount of GHG emissions through a funding contribution to the Greenhouse Gas Program rather than towards purchasing carbon offsets from a CARB-recognized registry.

While the LAHD Greenhouse Gas Program is currently under development, the Tenant shall purchase and retire carbon offsets from a CARB-recognized offset registry as follows:

Carbon offsets: The Tenant shall purchase and retire carbon offsets from a CARB-recognized registry to ensure that offsets will result in real, permanent, additional, quantifiable, verifiable, and enforceable reductions.

The carbon offsets shall be verifiable and enforceable in accordance with the registry's applicable standards, practices, or protocols.

The order of priority for purchasing (any one or more) carbon offsets shall be considered as follows:

i. Originating within the local area;
ii. Originating within the South Coast Air Basin;
iii. Originating within the state of California; or
iv. If sufficient local and in-state offsets are not available, the Project shall purchase conforming national offsets registered with a CARB-recognized registry.

Adjustment of Tenant's Required Offsets through Other Verified GHG Emission Reductions: The Tenant may pursue the following modifications to the Project's total estimated GHG emissions identified in this measure. These modifications may be pursued in conjunction with or independent of each other on an up to annual basis.

(a) Adjustment in GHG Emissions

In the event of changes in activities, efficiency, reduced operations, or for any other purpose, an adjustment of the required carbon offsets may be requested based on an evaluation of actual GHG emissions rather than future projected GHG emission calculations in this EIR. If the actual annual GHG emissions, minus the CEQA Baseline, do not exceed the significance threshold of 10,000 $MTCO_2e$ per year, no carbon offsets shall be required. To adjust the required number of carbon offsets for purchase by the Tenant, the Tenant shall make a request in writing to the LAHD for review and approval for the calendar year under consideration and shall submit a report within 60 days that quantifies the actual greenhouse gas emissions by an expert or an independent, qualified third-party. The evaluation of actual greenhouse gas emissions must be performed using acceptable industry standards and protocols for all sources that were included in the Project's GHG emissions calculations under Impact GHG-1. LAHD review shall occur within 30 days of receipt of the submitted report. Any expenses incurred by LAHD in processing the Tenant's request, including retaining an independent third-party verifier to peer review the report, shall be borne by the Tenant. Alternatively, LAHD may implement a review for its own purpose, subject to the same quantification process described above, to adjust GHG emissions at any time during the life of the Project.

or

(b) Implementation of Additional GHG Reduction Methods

In addition, the Tenant may request a reevaluation of required carbon offsets to be purchased according to this paragraph. The Tenant may implement different and additional GHG reduction methods if new technology and/or other feasible measures become available during the term of the Permit. To adjust the required number of carbon offsets for purchase, the Tenant shall identify such additional GHG reduction

actions and must quantify the GHG emission reductions from these GHG reduction actions by an independent, qualified third-party verifier. Once the GHG reduction actions are found to be feasible and are reviewed and approved by LAHD staff, the Tenant may request that LAHD reduce its required purchase of carbon offsets by the equivalent amount of demonstrated reduction. Any expenses incurred by LAHD in processing the Tenant's request, including retaining a third-party verifier, shall be borne by the Tenant.

MM GHG-2: LED Lighting. All lighting within the interior of buildings on the premises and outdoor high mast terminal lighting will be replaced with LED lighting or a technology with similar energy-saving capabilities by the first year after completion of construction for the Proposed Project or alternative.

Impacts of GHG emissions from the Project would be additionally offset by Mitigation Measures MM AQ-1 through MM AQ-6.

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

1. Trucks hauling materials such as debris or fill shall be fully covered while operating off Port property.
2. Idling shall be restricted to a maximum of 5 minutes when not in use.
3. Tier Specifications:

- Until December 31, 2026: All on-road heavy-duty diesel trucks with a gross vehicle weight rating (GVWR) of 19,500 pounds or greater used on site or to transport materials to and from the site shall comply with 2012 emission standards, or newer, where available.
- Post January 1, 2027: All on-road heavy duty diesel trucks used on site or to transport materials to and from the site shall comply with 2015 emission standards, or newer, where available.

A copy of each unit's certified U.S. Environmental Protection Agency (USEPA) rating, Best Available Control Technology (BACT) documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

MM AQ-2: Non-Road Construction Equipment.

1. Construction equipment shall incorporate, where feasible, emissions savings technology such as hybrid drives and specific fuel economy standards.
2. Idling shall be restricted to a maximum of 5 minutes when not in use.
3. Tier Specifications:

- All offroad diesel-powered construction equipment greater than 50 horsepower shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
- A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

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

- A piece of specialized equipment is unavailable in a controlled form within the state of California, including through a leasing agreement.
- A contractor has applied for necessary incentive funds to put controls on a piece of uncontrolled equipment planned for use on the project, but the application process is not yet approved, or the application has been approved, but funds are not yet available.
- A contractor has ordered a control device for a piece of equipment planned for use on the project, or the contractor has ordered a new piece of controlled equipment to replace the uncontrolled equipment, but that order has not been completed by the manufacturer or dealer. In addition, for this exemption to apply, the contractor must attempt to lease controlled equipment to avoid using uncontrolled equipment, but no dealer within 200 miles of the project has the controlled equipment available for lease.

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

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

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

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

While the above mitigation measures would primarily target reductions in criteria pollutants, certain requirements such as idling reduction, use of fuel-saving hybrid drives (where feasible) and use of renewable diesel fuel have some potential to reduce GHG emissions from construction. However, given uncertainties in, for example, the timing and availability of fuel-saving technologies and future carbon content of renewable diesel fuel, it is not feasible to quantify GHG reductions from implementation of these mitigation measures.

In addition, Project construction activities would comply with the following lease measure:

LM AQ-1: Periodic Review of New Technology. The Tenant will conduct a periodic review of any Port-identified or other new emissions-reducing technology and report to the LAHD on the feasibility of any new technology advancements that may reduce emissions not less frequently than once every five years following the effective date of

the entitlement. The technology review would be subject to approval by LAHD and would involve consultation with appropriate resources (e.g., consultants, engineers, regulators) to validate the findings. If the review demonstrates the new technology would be effective in reducing emissions and is determined by the LAHD to be feasible, including but not limited to, financial, technical and operational considerations, the Tenant will implement the new air quality technological advancements, subject to mutual agreement, the implementation which shall not be unreasonably withheld by the Tenant.

The largest source of operational GHG emissions under the Proposed Project would be vessel transiting (see Table 3.4-2). Vessel transiting GHG emissions would be reduced by Mitigation Measure MM AQ-6 (Vessel Speed Reduction Program):

MM AQ-6: Vessel Speed Reduction Program (VSRP). 100 percent of vessels calling at the Phillips 66 MOT will be required to comply with the expanded VSRP at 12 knots between 40 nautical miles (nm) from Point Fermin and the Precautionary Area. Vessels experiencing a maritime emergency[3] that prevents compliance with the expanded VSRP may be exempt from this measure.

By reducing vessel speeds while transiting to and from the Port in compliance with the VSRP, vessel main engine power loads are reduced, thus reducing fuel consumption and resulting GHG emissions. Vessel transiting records maintained by the Port show that 96.9 percent of vessels calling at the Phillips 66 MOT in 2021 complied with the VSRP 12 kt speed guidance inside the 20 nm zone and 94.1 percent complied inside the 40 nm zone. Compliance in recent years has been higher: 100 percent inside the 20 nm zone in 2023 through 2025 and from 95 percent in 2023 to 100 percent in 2025 in the 20-40 nm zone (POLA 2026). For purposes of this analysis, vessel visits to the MOT during Project operation were assumed to be the same as for the 2021 baseline. Therefore, GHG emission reductions resulting from implementation of MM AQ-6 (Vessel Speed Reduction Program) have been approximately accounted for in this GHG emissions impact analysis.

The second largest operational source of GHG emissions under the Proposed Project would be vessel hoteling and anchoring. As described in Section 3.1, tanker ship hoteling emissions of some pollutants would be reduced via compliance with the At-Berth emission control regulation adopted by the CARB in 2020. Phillips 66 submitted a Terminal Plan to CARB describing how vessel visits to the MOT will comply with the At-Berth rule. The Terminal Plan was accepted as final by CARB on December 29, 2022. Phillips 66 subsequently prepared a revised plan dated January 8, 2024. According to this plan, Phillips 66 will comply with the rule either by 1) operating under the rule's "low use" exception from control requirements by limiting the number of annual vessel visits to no more than nineteen, or 2) using a third-party barge-based emissions capture and control system (ECS) approved by CARB and the International Maritime Organization that is accepted for safe interfacing with tanker vessels. However, use of a barge-based ECS would not result in reductions in GHG emissions as these systems are only designed to control emissions of criteria pollutants (primarily NO_X and PM). Accordingly, vessel hoteling controls are not a feasible mitigation for reducing GHGs at this time. To be consistent with the emissions analysis presented in Section 3.1, the GHG emissions analysis presented above is based on the assumption that the terminal would operate at the maximum levels described in the Project Description (Section 2) which includes 75 tanker

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

ship calls per year. If the number of tanker ship calls during initial years of Project operation were limited to 19 (due, for example, to the unavailability of a CARB-approved ECS barge at the time the new MOTEMS compliant terminal becomes operational), then the incremental increase in annual GHG emissions shown in Table 3.4-2 would be reduced by 14,805 metric tons CO_2e in any year in which tanker ship calls to the terminal are limited to 19.

Residual Impacts

With application of mitigation measures MM GHG-1 (GHG Reduction Offsets), MM GHG-2 (LED Lighting), and the air quality mitigation measures, Project net GHG emissions (after application of offsets) would not exceed the SCAQMD 10,000 MT CO_2e significance threshold and therefore would be less than significant for all analyzed years.

Impact GHG-2: Would the Proposed Project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

The State of California is leading the way in the United States with respect to GHG emissions reductions. As described in Section 3.4.4, several legislative and municipal targets for reducing GHG emissions below 1990 levels have been established but no regulations or requirements have been adopted by relevant public agencies to implement those plans for specific projects, within the meaning of CEQA Guidelines Section §15064.4(b)(3)[4]. However, there are GHG emissions reduction measures contained in state and local plans, strategies, policies, and regulations that directly or indirectly affect the Proposed Project's construction and operation GHG emissions source sectors or specific types.

Table 3.4-4 summarizes the consistency of the Proposed Project with key relevant GHG reduction strategies.

[4] Center for Biological Diversity v. Cal. Dept. of Fish and Wildlife [Newhall Ranch] [2015] 62 Cal.4th 204, 223

Table 3.4-4. Key Applicable GHG Emissions Reduction Strategies

Strategy	Discussion
State AB 32 Plan Strategies (CARB 2017)	
Limited Idling Time for Commercial Vehicles (13 CCR § 2485) and Off-Road Equipment (13 CCR § 2449)	*No Conflict.* Construction contractors and lube oil haul truck operators would be required under CARB regulations to comply with applicable idling regulations for on-road vehicles. Off-road equipment would also be required to comply with applicable idling restrictions during construction and operation.
Use of Low Carbon or Alternative Fuels (Low Carbon Fuel Standard)	*No Conflict.* The primary source of GHG emissions by the Proposed Project is transportation fuel use. The off-road equipment and the haul trucks used both during construction and operations would use California fuels that are subject to the Low-Carbon Fuel Standard regulations. Over the life of the facility, therefore, GHG emissions by facility activities would decrease as low-carbon/renewable fuel availability and use increase statewide.
Electricity Use/Renewables Performance Standard	*No Conflict.* The Proposed Project would use electricity supplied by LADWP, a public utility subject to the Renewables Performance Standard (RPS) that requires increasing renewable energy procurement over time, thus reducing GHG emissions from electricity generation and complying with state GHG reduction strategies.
Advance Clean Truck/Advanced Clean Fleet Regulation	*No Conflict.* These regulations establish goals for the electrification of California's heavy-duty truck fleet. They do not specifically address tanker trucks which would be calling at the Phillips 66 MOT, but those trucks, which tend to be Class 8 vehicles, may be affected as electric or other ZE models of Class 8 vehicles spread throughout the market in the future.
Port of Los Angeles and City of Los Angeles Plans and Strategies	
LA's Green New Deal/ Sustainable City pLAn	*No Conflict.* The City of Los Angeles' Sustainable City pLAn is intended to guide operational, policy, and financial decisions to create a more sustainable Los Angeles. Although the Plan is mostly focused on city property, buildings, and public transportation, it includes a goal of 80 percent reduction from baseline emissions in part by incorporating sustainable practices in tenant lease agreements at cargo terminals, developing technology and pilot at-berth controls for liquid bulk vessels and measures to promote use of zero-emission trucks. Consistency with the pLAn's initiative related to sustainable practices in Port leases would be achieved by Lease Measure LM AQ-1 (Periodic Review of New Technology), MM AQ-3 (Port of Los Angeles Sustainable Construction Guidelines), and MM AQ-6 (Vessel Speed Reduction Program [VSRP]).
San Pedro Bay Ports Clean Air Action Plan	*No Conflict.* The CAAP has several policy initiatives related to GHG emissions reductions. The CAAP initiatives that would apply to the Proposed Project's GHG emissions sources include the Vessel Speed Reduction Program which is a mitigation measure (MM AQ-6) of the Proposed Project.

Strategy	Discussion
Port of Los Angeles Sea Level Rise Adaptation Study	*No Conflict.* The Adaptation Study identifies a set of governance, initiative, and infrastructure strategies to mitigate the impact of sea level rise on Port assets and operations. Specifically, the Study includes an infrastructure strategy for the area including the location of the Proposed Project (Berths 148-151) which includes constructing a temporary or semi-permanent flood protection barrier along the terminal shoreline to protect against future flooding during extreme high tides. Construction of the MOTEMS-compliant berth and other terminal improvements which would be made under the Project would not conflict with construction of such a flood protection barrier. The Project would also not conflict with any of the plans, studies, or other initiatives included in the Adaptation Study.

Other regulatory programs targeting GHG emissions were discussed in Section 3.4.4, such as federal vehicle emissions standards, the governor's Executive Orders, CARB's 2022 Climate Change Scoping Plan Update, and SCAG's RTP/Connect SoCal plan. These are not directly relevant to the Proposed Project because they target GHG reductions at large geographic scales or for activities that do not pertain to the Proposed Project, such as the rail sector, residential and commercial buildings, and transportation infrastructure and policies.

Impact Determination

As shown in Table 3.4-4, the Proposed Project does not conflict with any of the relevant regulatory programs. Accordingly, impacts related to conflict with regulatory programs would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

3.4.6.2 Summary of Alternatives

Alternative 1 – No Project Alternative

Under the No Project Alternative (Alternative 1), no construction or new operational activities would occur at the Project site. The existing Berths 148-151 MOT would cease operations and termination clauses associated with existing entitlement would be carried out. The No Project Alternative (Alternative 1) would not preclude future improvements at the site, but any such improvements would need to be analyzed in a separate environmental document as a new project.

Because there would be no construction or vessel operations at Berths 148-151, there would be no activities resulting in direct or indirect emissions of greenhouse gases.

Alternative 2 – Reduced Project Alternative

Under the Reduced Project Alternative (Alternative 2), all the physical features of the Proposed Project would be constructed except the refurbishment of 11 idle tanks.

Accordingly, the operational activities would be the same as those of the Proposed Project (see Section 2.5.2); only the construction would differ from the Proposed Project.

The GHG emissions impacts of construction of the Reduced Project Alternative (Alternative 2) would be somewhat less than those of the Proposed Project, but the in-water components would be the same. The Reduced Project Alternative (Alternative 2) would result in the same operational activities and implement the same mitigation and lease measures and project design features as the Proposed Project. Accordingly, GHG impacts under the Reduced Project Alternative (Alternative 2) would be less than significant.

3.4.7 Sea-Level Rise

Consideration of the Proposed Project's vulnerability to SLR and the potential consequences of that vulnerability are presented in this Draft EIR for informational purposes.

3.4.7.1 Background

As summarized by Sweet et al (2022), SLR driven by global climate change (i.e., the effects of GHGs, see Section 3.4.3) has been documented and represents a risk to coastal communities and resources now and for the foreseeable future. Sea levels will continue to rise due to the ocean's sustained response to the warming that has already occurred, and this will occur even if climate change mitigation succeeds in limiting surface air temperatures in the coming decades. Accordingly, facility planning in coastal areas must incorporate a consideration of likely SLR.

For the Port of Los Angeles, the Sea Level Rise Adaptation Study (LAHD 2025) noted that mean sea levels have already risen four inches in the past 100 years. The study characterized SLR as a significant risk that necessitates pre-emptive planning to ensure that the Port's operations are not compromised. The study considers available SLR data and forecasts, classifies port assets in terms of criticality, and projects consequences for the various areas of the harbor under several scenarios of SLR.

SLR can have two types of effects on coastal resources and surrounding communities. First, inundation of a project site due to SLR alone or SLR combined with extreme high tides and/or storm surge could damage facilities, resulting in financial loss and even injury or death to workers and visitors. Second, damage caused by flooding could result in releases to the environment of, for example, hazardous materials, cargos, and raw materials. These releases could involve harbor waters as elements are washed away, or the air as tanks or other containers ruptured by flood waters release volatile materials. These possibilities are considered below to the extent they would apply to the Proposed Project.

3.4.7.2 Methodology

The most relevant studies of SLR are the updated guidance from the State of California (OPC 2024) and the Port's adaptation study (LAHD 2025). Both studies recognize the uncertainty of SLR projections, particularly beyond approximately 2050, and offer multiple potential future scenarios of SLR under different assumptions of GHG emissions, ice cap melting, and other factors. The Port's SLR estimates do not include consideration of risk aversion probability but do incorporate SLR projections equivalent to a high-emissions scenario. The Port's study considers horizon years of 2050, 2100, and 2150 and three scenarios of global warming (intermediate, intermediate-high, and high). The Port's

study focuses on Port infrastructure by predicting inundation and flooding under various scenarios of SLR, high tides, and storm tides, whereas the state's study is a more general consideration of SLR alone along the California coast.

To evaluate the effects of SLR on a project, the state's study recommends considering project life when selecting horizon years and SLR scenarios. For purposes of this analysis, the Proposed Project is conservatively expected to have a maximum service life of 50 years and is therefore assumed to operate at least until 2050, but not past 2100. Therefore, the vulnerability of the Proposed Project to SLR and potential associated consequences are discussed here relative to SLR estimates for both the 2050 and 2100 time horizons.

The state's study predicts the following sea level rise above the 2000 level at the Los Angeles tide gauge: in 2050, 0.9 ft for the intermediate-high SLR scenario and 1.1 ft for the high scenario; in 2100, 4.5 ft and 6.3 ft, respectively, and in 2150, 7.7 and 11.3 feet, respectively (see OPC [2024] Appendix 2 Table 12).

3.4.7.3 Discussion

The area specifically referenced for Berths 148-151 in the Port's study indicates that SLR alone would not cause daily tidal inundation or shoreline overtopping until it reaches 4.5 feet (the Intermediate-High-range prediction for 2100; see LAHD 2025, page 33). Accordingly, SLR alone would potentially threaten the landside facilities at the Project site by 2100. Under 100-year storm tide conditions, shoreline overtopping and temporary flooding of up to two feet could occur with just 2.8 feet of SLR (the Intermediate prediction for the year 2100; see LAHD [2024], page 32). Accordingly, extreme storm events coupled with projected SLR by 2100 would cause additional flooding of backland facilities, with concomitant impacts on terminal activities by 2100 unless flood protection measures are put in place. The Port's study notes that the containment walls that surround the liquid bulk storage tanks would prevent substantial damage and escape of product under flood conditions, as they would not be overtopped during the expected life of the Proposed Project. An adaptation strategy to address flooding at the terminal under storm tide conditions consists of building or reinforcing floodproof walls and possibly installing pump stations (LAHD 2024).

Access roads on Pier A would experience flooding under the 100-year storm tide and 2.8 feet of SLR scenario, but they would not be very sensitive to damage as a result of temporary flooding unless high flood water velocities occurred. Pier A Street is a Port owned street with well-equipped storm drain infrastructure. This infrastructure can accommodate high velocity water. Furthermore, although traffic would be blocked by water depths of more than a few inches, vehicle movement should be able to resume quickly after waters have receded.

Since the facility, like all Port facilities, operates under various contingency and emergency prevention and response plans that would mandate shutdown of infrastructure such as gas lines and electrical facilities in anticipation of flooding, the presence of low levels of flood water on the site would not pose a serious risk of rupture or electrical hazard. Although traffic would be blocked by water depths of more than a few inches, vehicle movement should be able to resume quickly after waters have receded, which would likely be a matter of hours, given daily tidal cycles. However, given the projected SLR by 2100 of 4.5 feet under the intermediate-high SLR scenario, some issues with facilities and operations at the Berths 148-151 terminal would be expected by 2100 unless additional flood protection measures are put in place.

Although projected SLR is expected to result in flooding of the Phillips 66 MOT without construction of protective measures as described above, the Proposed Project itself does not increase any consequent risk of the release of pollutants into the environment due to flooding. This is because the Proposed Project is limited to making modifications to the existing MOT to bring it into compliance with the MOTEMS safety standards (and thereby actually reducing the risk of accidents at the terminal relative to CEQA baseline conditions). The terminal's backland facilities would remain largely as under existing conditions and would continue to be subject to applicable state and federal regulations designed to minimize risk of any spills leading to environmental impacts such as the California Aboveground Petroleum Storage Act (CA Health and Safety Code § 25270) and the federal Spill Prevention, Control, and Countermeasures rule (40 Code of Federal Regulations §112.1). Accordingly, the risk of spills due to flooding would not be increased relative to baseline conditions as a result of the Proposed Project. The Proposed Project as described in Chapter 2 (Project Description) is almost entirely limited to wharf improvements.

Any future risk related to flooding could be reduced by construction of flood protection measures and modifications to terminal operating procedures, which are not part of the Proposed Project and would be evaluated in a future CEQA document if and when they are undertaken. Flood-preventative designs would be mandated by the State Lands Commission for the tenants to comply with thereby reducing the likelihood of a flooding event.

3.4.8 Summary of Impact Determinations

Table 3.4-5 provides a summary of the impact determinations of the Proposed Project related to GHGs and climate change. This table allows easy comparison of the potential impacts of the Proposed Project.

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

Table 3.4-5. Summary Matrix of Impacts and Mitigation Measures Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation Measures	Residual Impacts After Mitigation	Lease Measure
Proposed Project	**GHG-1**: Would the Proposed Project generate GHG emissions, either directly or indirectly, and may have a significant impact on the environment?	GHG emissions would be significant under CEQA.	**MM GHG-1**: GHG Reduction Offsets **MM GHG-2**: LED Lighting **MM AQ-1**: On-Road Trucks Used During Construction **MM AQ-2**: Non-Road Construction Equipment **MM AQ-3**: Port of Los Angeles Sustainable Construction Guidelines **MM AQ-4**: General Construction Mitigation Measure **MM AQ-5**: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks **MM AQ-6**: Vessel Speed Reduction Program (VSRP)	Less than Significant	**LM AQ-1**: Periodic Review of New Technology
	GHG-2: Would the Proposed Project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.	Less than significant	Mitigation not required	Less than significant	N/A

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation Measures	Residual Impacts After Mitigation	Lease Measure
Alternative 1: No Project	**GHG-1**: Would the No Project Alternative generate GHG emissions, either directly or indirectly, and may have a significant impact on the environment?	No impact	Mitigation not required	No impact	N/A
	GHG-2: Would the No Project Alternative conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?	No impact	Mitigation not required	No impact	N/A
Alternative 2: Reduced Project	**GHG-1**: Would the Reduced Project Alternative generate GHG emissions, either directly or indirectly, and may have a significant impact on the environment?	GHG emissions would be significant under CEQA.	**MM GHG-1**: GHG Reduction Offsets **MM GHG-2**: LED Lighting **MM AQ-1**: On-Road Trucks Used During Construction **MM AQ-2**: Non-Road Construction Equipment **MM AQ-3**: Port of Los Angeles Sustainable Construction Guidelines **MM AQ-4**: General Construction Mitigation Measure **MM AQ-5**: Renewable Diesel Fuel for Construction Equipment and On-Road Trucks,	Less than Significant	**LM AQ-1**: Periodic Review of New Technology

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation Measures	Residual Impacts After Mitigation	Lease Measure
			MM AQ-6: Vessel Speed Reduction Program (VSRP)		
	GHG-2: Would the Reduced Project Alternative conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?	Less than significant	Mitigation not required	Less than significant	N/A

3.4.9 Mitigation and Lease Measure Monitoring

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

Mitigation Measure	**MM GHG-1: GHG Reduction Offsets.** The Tenant shall be required to purchase and retire carbon offsets related to activities that reduce, avoid, destroy, or sequester an amount of GHG emissions in an off-site location to offset the equivalent amount of GHG emissions generated by the Project in excess of LAHD's significance threshold of 10,000 metric tons of CO_2 equivalent ($MTCO_2e$) per year. From the first year of the Permit through the end of the term of the Permit, the Tenant shall purchase and retire carbon offsets each year in an amount that would be the equivalent of the Project's estimated residual GHG emissions. The estimated residual emissions for each calendar year shall be based upon the calculations in Appendix C prepared for the Project except as adjusted in accordance with paragraph (a) or (b), below. The LAHD is in the process of developing a Greenhouse Gas Program. The Program shall be used for GHG-reducing projects and programs approved by the LAHD. If that Program is established during the term of the Permit, the Tenant shall have the option to offset the required amount of GHG emissions through a funding contribution to the Greenhouse Gas Program rather than towards purchasing carbon offsets from a CARB-recognized registry. While the LAHD Greenhouse Gas Program is currently under development, the Tenant shall purchase and retire carbon offsets from a CARB-recognized offset registry as follows: **Carbon offsets**: The Tenant shall purchase and retire carbon offsets from a CARB-recognized registry to ensure that offsets will result in real, permanent, additional, quantifiable, verifiable, and enforceable reductions. The carbon offsets shall be verifiable and enforceable in accordance with the registry's applicable standards, practices, or protocols. The order of priority for purchasing (any one or more) carbon offsets shall be considered as follows: i. Originating within the local area; ii. Originating within the South Coast Air Basin; iii. Originating within the state of California; or iv. If sufficient local and in-state offsets are not available, the Project shall purchase conforming national offsets registered with a CARB-recognized registry. **Adjustment of Tenant's Required Offsets through Other Verified GHG Emission Reductions:** The Tenant may pursue the following modifications to the Project's total estimated GHG emissions identified in this measure. These modifications may be pursued in conjunction with or independent of each other on an up to annual basis. *(a) Adjustment in GHG Emissions* In the event of changes in activities, efficiency, reduced operations, or for any other purpose, an adjustment of the required carbon offsets

	may be requested based on an evaluation of actual annual GHG emissions rather than future projected GHG emission calculations. If the actual GHG emissions, minus the CEQA Baseline, do not exceed the significance threshold of 10,000 $MTCO_2e$ per year, no carbon offsets shall be required. To adjust the required number of carbon offsets for purchase by the Tenant, the Tenant shall make a request in writing to the LAHD for review and approval for the calendar year under consideration and shall submit a report within 60 days that quantifies the actual greenhouse gas emissions by an expert or an independent, qualified third-party. The evaluation of actual greenhouse gas emissions must be performed using acceptable industry standards and protocols for all sources that were included in the Project's GHG emissions calculations under Impact GHG-1. LAHD review shall occur within 30 days of receipt of the submitted report. Any expenses incurred by LAHD in processing the Tenant's request, including retaining an independent third-party verifier to peer review the report, shall be borne by the Tenant. Alternatively, LAHD may implement a review for its own purpose, subject to the same quantification process described above, to adjust GHG emissions at any time during the life of the Project. *or* *(b) Implementation of Additional GHG Reduction Methods* In addition, the Tenant may request a reevaluation of required carbon offsets to be purchased according to this paragraph. The Tenant may implement different and additional GHG reduction methods if new technology and/or other feasible measures become available during the term of the Permit. To adjust the required number of carbon offsets for purchase, the Tenant shall identify such additional GHG reduction actions and must quantify the GHG emission reductions from these GHG reduction actions by an independent, qualified third-party verifier. Once the GHG reduction actions are found to be feasible and are reviewed and approved by LAHD staff, the Tenant may request that LAHD reduce its required purchase of carbon offsets by the equivalent amount of demonstrated reduction. Any expenses incurred by LAHD in processing the Tenant's request, including retaining a third- party verifier, shall be borne by the Tenant
Timing	Payable annually during operations on an annual basis.
Methodology	LAHD will include this measure in the permit with Phillips 66. LAHD shall compliance every 12 months during the term of the Permit.
Mitigation Measure	**MM GHG-2: LED Lighting.** All lighting within the interior of buildings on the premises and outdoor high mast terminal lighting will be replaced with LED lighting or a technology with similar energy-saving capabilities by the first year after completion of construction for the Proposed Project or alternative.
Timing	During construction.
Methodology	LAHD will include this measure in the permit with Phillips 66. Phillips 66 will include this measure in the contract specifications for construction. LAHD will review the contract specifications prior to construction and will monitor implementation of the measure during construction.

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Mitigation Measure	**MM AQ-1: On-Road Trucks Used During Construction.** 1. Trucks hauling materials such as debris or fill shall be fully covered while operating off Port property. 2. Idling shall be restricted to a maximum of 5 minutes when not in use. 3. Tier Specifications: • From January 1, 2024, to December 31, 2026: All on-road heavy-duty diesel trucks with a gross vehicle weight rating (GVWR) of 19,500 pounds or greater used on site or to transport materials to and from the site shall comply with 2012 emission standards, or newer, where available. • Post January 1, 2027: All on-road heavy duty diesel trucks used on site or to transport materials to and from the site shall comply with 2015 emission standards, or newer, where available. A copy of each unit's certified U.S. Environmental Protection Agency (USEPA) rating, Best Available Control Technology (BACT) documentation, and CARB or South Coast Air Quality Management District (SCAQMD) operating permit shall be provided at the time of mobilization of each applicable unit of equipment.
Timing	During construction.
Methodology	LAHD will include this measure in the permit with Phillips 66. Phillips 66 will include this measure in the contract specifications for construction. LAHD will review the contract specifications prior to construction and will monitor implementation of the measure during construction.
Mitigation Measure	**MM AQ-2: Non-Road Construction Equipment.** 1. Construction equipment shall incorporate, where feasible, emissions savings technology such as hybrid drives and specific fuel economy standards. 2. Idling shall be restricted to a maximum of 5 minutes when not in use. 3. Tier Specifications: • All offroad diesel-powered construction equipment greater than 50 horsepower shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations. • A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment. The construction equipment measures shall be met, unless one of the following circumstances exist and the contractor is able to provide proof that any of these circumstances exists: • A piece of specialized equipment is unavailable in a controlled form within the state of California, including through a leasing agreement. • A contractor has applied for necessary incentive funds to put controls on a piece of uncontrolled equipment planned for use

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

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

1

3.4.10 Significant Unavoidable Impacts

Construction and operational GHG emissions of the Proposed Project under Impact GHG-1 would not have significant and unavoidable impacts.

References

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