5.0 GREENHOUSE GAS EMISSIONS

This chapter describes existing greenhouse gas (GHG) emissions regulations and analyzes the project's potential impact on regional and global GHG conditions. Additional related discussion is presented in Chapter 4.0: Air Quality.

Guidelines and key sources of data used in the preparation of this chapter include:

- Bay Area Air Quality Management District (BAAQMD) California Environmental Quality Act (CEQA) Guidelines (version May, 2011 and version May, 2012)
- BAAQMD GHG Emission Model (version 1.1.9 Beta)
- California Climate Action Registry general reporting protocols, (version 3.1)
- California Emissions Estimator Model (CalEEMod) (version 2011.1)
- U.S. Environmental Protection Agency (EPA), AP-42, Compilation of Air Pollutant Emission Factors, Chapter 1 – External Combustion

5.1 ENVIRONMENTAL SETTING

GHG emissions from any single project are insignificant when considered in the context of global climate conditions. Rather, the cumulative effect of projects and operations around the world can combine to create impacts associated with an increase in atmospheric concentrations of GHG. Although the debate continues on the potential regional and global impacts of increasing GHG concentrations, a variety of international, federal, State, and regional initiatives have been developed to curb GHG emissions. These initiatives vary in their level of detail and authority to implement change.

5.1.1 Regulatory Context

5.1.1.1 Federal Regulations

Federal Clean Air Act

After a thorough scientific review ordered in 2007 by the U.S. Supreme Court, the EPA issued a proposed finding on April 17, 2009 under Section 202(a) of the Clean Air Act (CAA) that GHGs contribute to air pollution, and this increase in pollution may endanger public health or welfare. The EPA reviewed, considered, and incorporated public comments, and issued its final "endangerment finding" in December 2009. Adoption of this finding obligated the EPA to regulate carbon dioxide (CO_2) and other GHG emissions under the CAA.

Title V Operating Permits

Title V of the CAA requires the EPA to develop a federal operating permit program that is implemented under 40 CFR 70. This program is administered by

BAAQMD under Regulation II, Rule 6. Permits must contain emission estimates based on potential-to-emit, identification of all emission sources and controls, a compliance plan, and a statement indicating each source's compliance status. The permits must also incorporate all applicable federal, state, or air quality control district orders, rules, and regulations. For a new emission source to be considered "major" under Title V, it must have the potential to emit 100,000 tons per year or more of carbon dioxide equivalent (CO_2e) emissions. Because the proposed facility is not expected to be considered a "major" facility under Title V, it would not be subject to Title V permitting.

Mandatory Greenhouse Gas Reporting Program

In response to the Fiscal Year 2008 Consolidated Appropriations Act (House of Representatives 2764; Public Law 110–161), the EPA issued the Mandatory Reporting of Greenhouse Gases Rule (74 Federal Register 56260, codified as 40 Code of Federal Regulations, Part 98) in 2009, which requires reporting of GHG data and other relevant information from large sources and suppliers in the United States. The purpose of the rule is to collect accurate and timely GHG data to inform future policy decisions. In general, the rule is referred to as the federal Greenhouse Gas Reporting Program, or Part 98.

This program includes: suppliers of certain products that would result in GHG emissions if released, combusted, or oxidized; direct-emitting source categories; and facilities that inject CO_2 underground for geologic sequestration, or any other purpose. In general, facilities emitting 25,000 metric tons (MTs) or more per year of GHGs are required to submit annual reports to the EPA.

5.1.1.2 State Regulations

California Climate Action Registry

Established by the California Legislature in 2000, the California Climate Action Registry (CCAR) is a non-profit public-private partnership that maintains a voluntary registry for GHG emissions. The purpose of the CCAR is to help companies, organizations, and local agencies establish GHG emission baselines for purposes of complying with potential future GHG emission reduction requirements. The CCAR is transitioning its members to participation in the Climate Registry, a North American GHG emissions registry.

Executive Order S-3-05

On June 1, 2005, the Governor of California established, through Executive Order S-3-05, statewide GHG emission reduction targets as follows: By 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels. Executive Order S-3-05 directed the Secretary of the California Environmental Protection Agency (Cal-EPA), together with various State board and department decision makers, to coordinate oversight of efforts to meet the GHG emission reduction

targets. Furthermore, the Cal-EPA is responsible for leading the multi-agency Climate Action Team (CAT). In 2006, CAT representatives began reporting to the Governor and Legislature on State impacts of global warming. Since then, reporting on progress made toward meeting the established GHG emission targets takes place biannually.

Assembly Bill 32

The purpose of Assembly Bill (AB) 32, also known as the California Global Warming Solutions Act of 2006, was to develop a plan and policy to reduce statewide GHG emissions to 1990 levels by 2020. AB 32 instructed the California Air Resources Board (CARB) to adopt regulations that reduce emissions from significant sources of GHGs, and established a mandatory GHG emissions reporting and verification program. AB 32 required the CARB to prepare a Scoping Plan to outline the State's strategy to achieve the 2020 GHG emissions limit. The Scoping Plan was originally approved in 2008. In 2011, the Functional Equivalent Document (FED) for the Scoping Plan was amended. The Scoping Plan was re-approved by the CARB on August 24, 2011, including the Final Supplement to the FED. Some key elements of the Scoping Plan recommendations are:

- developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;

- establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;

- adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard (discussed below); and

- creating targeted fees, including a public goods charge on water use, fees on gases with high global warming potential, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

Under AB 32, CARB has the primary responsibility for reducing GHG emissions. However, CAT members also work to coordinate statewide efforts to implement global warming emission reduction programs and the State's Climate Adaptation Strategy. CAT Reports, which are mandated by Executive Order S-3-05, contain strategies that many other California agencies, such as the California State Lands Commission, can adopt in carrying out their authority.

Executive Order S-01-07

Executive Order S-01-07 was issued by the Governor on January 18, 2007. The order mandates that: (1) a statewide goal is established to reduce the carbon

intensity of California's transportation fuels by at least 10 percent by 2020; and (2) a Low Carbon Fuel Standard for transportation fuels is established for California. CARB identified the Low Carbon Fuel Standard as a Discrete Early Action item under AB 32, and the final resolution (09-31) was issued on April 23, 2009.

Senate Bill 97

Senate Bill (SB) 97, which was approved by the Governor on August 24, 2007, acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill required the Governor's Office of Planning and Research (OPR), by July 1, 2009, to prepare, develop, and transmit to the California Natural Resources Agency Guidelines (Guidelines) for the feasible mitigation of GHG emissions or the effects of GHG emissions, as would pertain to CEQA, including, but not limited to, effects associated with transportation or energy consumption. SB 97 also required the Natural Resources Agency to certify and adopt the Guidelines by January 1, 2010. The OPR submitted its proposed amendments to the CEQA Guidelines to the Secretary for Natural Resources Agency on April 13, 2009. These proposed amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The amendments became effective as part of the California Code of Regulations (Title 14, Division 6, Chapter 3) on March 18, 2010. The OPR recommended that the lead agencies under CEQA make a good-faith effort, based on available information, to estimate the quantity of GHG emissions that would be generated by a proposed project, including the GHG emissions associated with vehicular traffic, energy consumption, water usage, and construction activities, to determine whether the impacts have the potential to result in a project or cumulative impact, and to mitigate the impacts where feasible.

Senate Bill 375

SB 375, also known as California's Sustainable Communities and Climate Protection Act, was approved by the Governor in 2008. Its purpose is to enhance California's ability to reach its AB 32 goals by promoting sustainable community design at the planning stages. SB 375, which became effective January 1, 2009, is the nation's first legislation to link transportation and land use planning with global warming. It requires CARB to develop regional and GHG emission reduction targets for 2020 and 2035 and prompts the creation of regional plans to reduce vehicle-use GHG emissions throughout California.

California's 18 metropolitan planning organizations (MPO) have been tasked with creating Sustainable Community Strategies (SCS) within the region's federally enforceable Regional Transportation Plan. Collectively, these strategies and plans will demonstrate how regions will meet their 2020 and 2035 GHG reduction target utilizing integrated land use, housing, and transportation planning. CARB is also required to review each final SCS to determine whether it would, if

implemented, achieve the GHG emissions reduction target for its region. If the combination of measures in the region's SCS will not meet its GHG emission reduction target, CARB will require that the MPO prepare a separate, additional "alternative planning strategy" to meet the target.

5.1.1.3 Local Regulations

BAAQMD CEQA Guidelines

In May 2011, the BAAQMD released updated CEQA Guidelines requiring that the effects of climate change be addressed in CEQA documents. CEQA Guidelines: (1) specify the thresholds of significance for operations related to GHG emissions (see Table 5-1), (2) discuss how the BAAQMD established the thresholds of significance, (3) recommend that CEQA documents include a discussion of a project's GHG emissions from construction and operation, and (4) discuss GHG impact assessment and mitigation measures available. As mentioned in Chapter 4.0: Air Quality, although the BAAQMD's adoption of significance thresholds for air quality analysis in 2010 and 2011 are the subject of recent judicial actions, the City of Pittsburg Planning Department has determined that the BAAQMD CEQA Air Quality Guidelines (version May, 2011), in combination with BAAQMD's Revised Draft Options and Justification Report (BAAQMD, 2010), provide substantial evidence to support the BAAQMD recommended thresholds. Therefore, the Planning Department has determined they are appropriate for use in this analysis as standards of significance. These thresholds are adopted herein as thresholds of significance for this EIR. The CEQA guideline's GHG emissions thresholds for stationary and non-stationary sources are provided in Table 5-1.

BAAQMD Greenhouse Gas Fee for Stationary Sources

On May 21, 2008, the BAAQMD approved a new fee on air pollution sources in the region to help defray the costs associated with the BAAQMD's climate protection activities and programs, including environmental review, air pollution regulations, and emissions inventory development. Industrial facilities and businesses required to hold an air quality permit to operate pay a fee of 4.4 cents per MT of GHG emissions, in addition to the other costs of their permit.

City of Pittsburg Climate Action Plan Development

In 2005, the City of Pittsburg developed a GHG inventory that is currently being used as a baseline in the development of the City's Climate Action Plan (CAP). On October 6, 2010, a Climate Action Workshop organized by the Community Advisory Commission opened the CAP development process to the public for input and ideas as to how the City should move forward. As of June 2013, the CAP is still being developed.

Table 5-1: Bay Area Air Quality Management District Greenhouse Gas Emissions Significance Thresholds

Project Type	Construction-related	Operations-related[1]
Stationary source	None	10,000 MT CO_2e/yr
Non-stationary source	None	Compliance with qualified GHG reduction strategy OR 1,100 MT CO_2e/yr OR 4.6 MT CO_2e/yr/SP (residents and employees)

Source: BAAQMD, 2011

[1]Units/Acronyms:

CO_2e/yr =	carbon dioxide equivalent per year
GHG =	greenhouse gas
MT =	metric tons
CO_2e/yr/SP=	carbon dioxide equivalent per year per service population (including residents and employees)

5.1.2 Existing Conditions

5.1.2.1 Global Conditions

Global concentrations of CO_2, which is the most prevalent GHG, have risen steadily since the mid-1800s. This increase has been attributed to the increased consumption of fossil fuels that began with the industrial revolution. Air monitoring stations, including stations in California, have documented an increase in atmospheric concentrations of CO_2 from below 330 parts per million (ppm) to above 380 ppm in the last 50 years. In 1950, atmospheric CO_2 concentrations were estimated at approximately 280 ppm.

5.1.2.2 Regional Conditions

Meteorological conditions for the project area are discussed in Chapter 4.0: Air Quality. Due to the global nature of GHG impacts, regional meteorological characteristics would not be expected to have a direct effect on the impacts of GHG emissions.

5.1.2.3 Compliance Status

As discussed in Section 5.1.1.2, the California government set goals for GHG reductions for 2010, 2020, and 2050 under Executive Order S-3-05. The methods to achieve the 2020 emission reduction goals have not yet been finalized. It is understood that GHG emission reductions would be required from a wide variety of sources to meet the 2020 and 2050 goals.

The proposed project site is currently an unused portion of the NRG Energy, Inc. Pittsburg Generating Station. As such, it does not currently contribute to regional or global GHG emissions and is in default compliance with all GHG plans and regulations.

5.2 IMPACT ANALYSIS

5.2.1 Methodology for Impact Analysis

The construction of the proposed project would generate GHG emissions primarily from the engine exhaust of construction equipment. The operation of the proposed project would generate GHG emissions from various sources, including primarily marine vessels, tugboats, and locomotives. GHG emissions associated with the proposed project and Alternative 1 were quantified in the form of CO_2, methane (CH_4), and nitrous oxide (N_2O) and in the combined form as CO_2e, a unit of measure for GHG that uses CO_2 as the standard unit of reference. Emissions of CH_4 and N_2O would be relatively small in comparison to CO_2; however, these two components have high global warming potentials of 21 and 310, respectively, as compared to the global warming potential of 1 for CO_2. To compare the GHG emission impact from various emission sources, the calculated CO_2, CH_4, and N_2O emissions from each emission source were multiplied by the

corresponding global warming potentials, summed up, and reported as the total CO_2e associated with the construction and operation of the proposed project.

Project-generated GHG emission estimates were developed based on methodologies and emission factors recommended by the CCAR and other government agencies. Project-specific information was used to determine the total GHG emissions associated with the proposed project construction and operations. The following sections summarize the methodologies behind the impact analysis of GHG emissions associated with the construction and operations of the proposed project and alternatives. Additional details regarding the GHG emission calculations and the calculation assumptions are presented in Appendix C.

5.2.1.1 Project Construction Emissions

Construction activities for the proposed project would require the use of various types of heavy construction equipment that would generate GHG emissions. The project-related construction sources from which GHG emissions were generated include:

- Off-road diesel construction equipment operating at the proposed project site
- On-road trucks associated with project construction activities
- Harbor craft (e.g., tugs, dredging equipment) used for dredging activities
- Worker and vendor commute vehicles

As recommended by BAAQMD (V. Lau, personal communication, March 20, 2013), the CalEEMod air quality model was used to quantify GHG emissions associated with proposed project construction following the same estimation methodology and assumptions specified in Section 4.2.1.1. Within CalEEMod, CO_2, CH_4, and N_2O emissions factor data for construction equipment and motor vehicles are derived from the OFFROAD2007 and Emission Factors 2007 (EMFAC2007) models. CO_2, CH_4, and N_2O emission factors were selected for calculations based on the equipment type, horsepower rating, and corresponding engine tier emission standards. Maximum daily and annual CO_2, CH_4, N_2O, and CO_2e emissions from the proposed construction-related activities were quantified by the CalEEMod model for each construction year. Model outputs and detailed project-specific assumptions utilized for emission estimates for the project construction in CalEEMod are presented in Appendix C. Construction-generated GHG emissions were also calculated by CalEEMod for Alternative 1 with the assumption that construction duration and certain associated construction activities of the Storage Tank Retrofit construction would be proportionally reduced (refer to Section 2.4.10 in Chapter 2.0: Proposed Project and Alternatives). Assumptions regarding the reduction of construction activities for the reduced project alternative are summarized in Appendix C.

The CalEEMod model does not analyze emissions from construction-related electricity consumption, natural gas consumption, water use, or wastewater treatment. Construction-related emissions from the use of these utilities vary

based on the amount of power and water used during construction and other unknown factors that render them too uncertain to quantify. In addition, they are typically small contributors to construction GHG emissions. As such, these sources of GHG were not included in the quantification.

5.2.1.2 Project Operation Emissions

GHG emissions associated with project operation can be divided into two categories: direct and indirect emissions. Emissions from sources owned or operated by WesPac Energy–Pittsburg LLC (WesPac) as part of the WesPac Energy-Pittsburg Terminal (Terminal), or from sources owned or operated by others but directly involved in activities at the Terminal or Rail Transload Operations Facility (Rail Transload Facility), would be considered direct emissions. GHG emission sources related to project operation for which direct emissions are anticipated include:

- Marine vessels (main engines, auxiliary engines, and boilers)
- Tug boats (main engines and auxiliary engines)
- Locomotives (main engines)
- Vapor destruction units (thermal oxidizer)
- Crude oil heaters

Indirect emissions are emissions that occur as a consequence of project operation activities, but occur at sources owned or controlled by other entities. Indirect GHG emissions associated with the proposed project include:

- Electricity and water consumption from Terminal operation
- Waste generated from Terminal operation
- Employee motor vehicle commute trips

GHG emission estimates resulting from project operation were prepared based on a worst-case analysis. For example, the analysis assumes that all GHG emissions from the project would be new - meaning without the development of the proposed project, these emissions would not occur. In reality, however, the regional demand for imported crude oil would likely be met by one of the many existing facilities in the San Francisco Bay Area (Bay Area), and the related GHG emissions would occur at those facilities. This is discussed further in Section 5.2.3.1 and in Chapter 18.0: Cumulative Effects. Additionally, the emissions were estimated assuming that there would be no reductions in GHG-generating activities over time. This would be unlikely, and therefore, presents a conservative analysis, given the expected reductions in GHG emissions from most activities that would take place in coming years due to future regulations, development and advancement of green technologies, and the likely increasing costs of energy.

Direct Emissions

GHG emissions attributed to marine vessels and tug boats were calculated in the form of CO_2, CH_4, and N_2O following the same assumptions and estimation methodology used for tanker emissions, as described in Section 4.2.1.2. CO_2 and CH_4 emissions associated with the main engines and auxiliary engines of marine vessels were quantified using emission factors from the CARB's Emissions Estimation Methodology for Ocean-Going Vessels (2008), and N_2O emissions were estimated using emission factors from the CCAR General Reporting Protocol, Version 3.1 (2009). Emission factors for CO_2, CH_4, and N_2O from CCAR (2009) were also used to calculate GHG emissions related to the marine vessel boilers and tugboat main and auxiliary engines.

GHG emissions attributed to the proposed rail locomotive operations were calculated for the portion of locomotive emissions while the locomotives operate for the proposed project or project alternatives within Contra Costa County, which include transit emissions within Contra Costa County and operational emissions at the Rail Transload Facility. GHG emissions associated with locomotives were calculated following the same assumptions and estimation methodology described in Section 4.2.1.2. Emission factors for CO_2, CH_4, and N_2O were obtained from the Port of Long Beach 2011 Air Emission Inventory (2012). Detailed emission estimation assumptions are summarized in Appendix C.

GHG emissions that would result from the combustion of natural gas in the thermal oxidizer and heaters at the proposed project site were calculated using the same assumptions and estimation methodology as described in Section 4.2.1.2. Emission factors for CO_2, CH_4, and N_2O were obtained from the EPA document, AP-42, Chapter 1 – External Combustion (2010). Detailed emission calculations and assumptions are presented in Appendix C.

Indirect Emissions

As recommended by BAAQMD (V. Lau, personal communication, March 20, 2013), the CalEEMod air quality model was used to calculate indirect GHG emissions associated with the operation of the proposed project and alternatives. The CalEEMod model quantifies operational GHG emissions from land development projects based on GHG sources, including electricity use, water use, waste disposal, transportation, and other area sources, if applicable. Model default assumptions along with project-specific land use data for the proposed project and project alternatives were used to calculate the indirect emissions from different sources of GHG emissions.

Electricity Emissions

Because the consumption of fossil fuels to generate electricity and to provide heating and hot water result in CO_2, CH_4, and N_2O emissions, a major source of indirect emissions associated with the proposed project operation would occur through the use of purchased electricity. Therefore, the indirect GHG emissions

from electricity consumption would depend on the amount of electricity use (energy intensity) and the mix of fuel that goes into producing this electricity.

Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building, such as plug-in appliances. In California, Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting. The CalEEMod model was used to quantify the indirect GHG emissions from the electricity consumption for the proposed project operations based on the projected annual energy consumptions in terms of Title 24 electricity, non-Title 24 electricity, and the lighting energy, along with the model default emission calculation parameters for CO_2, CH_4, and N_2O. In calculating the GHG emissions in CalEEMod, it was estimated that the total annual Title 24, Non-Title 24, and lighting electrical energy usage for the proposed project (including the marine terminal and Rail Transload Facility) would be 48,000 kilowatt hours per year, 7,620,000 kilowatt hours per year, and 142,000 kilowatt hours per year, respectively.

Annual direct electricity usage associated with Alternative 1 at the Rail Transload Facility was estimated to be the same as that of the proposed project. Due to the reduction of total tank working capacity at the storage terminal, the annual electricity usage associated with Alternative 1 at the storage terminal was estimated to be proportionally reduced from that of the proposed project by approximately 22 percent, which equals the reduction ratio of tank working capacity for Alternative 1.

Water Use Emissions

Water use for the operations of the proposed project and alternatives would cause indirect GHG emissions related to the electricity used to power systems that pump, treat, and distribute water and wastewater. In addition to the indirect GHG emissions associated with electricity use, CH_4 and N_2O emissions could be generated from the decomposition of organic matter during wastewater treatment. The CalEEMod model was used to quantify the indirect GHG emissions associated with project water use based on the amount of electricity required to supply, convey, treat, and distribute water for indoor and outdoor use. In addition, the indirect GHG emissions associated with the electricity needed to process the resulting wastewater from project indoor water uses were also quantified in the CalEEMod model.

The indirect GHG emissions from project water use were calculated in CalEEMod using the annual indoor and outdoor water consumption rate along with the model default emission parameters corresponding to the region of the project location. It is estimated that approximately 0.675 million gallons of water per year would be required for the proposed project for indoor use at the marine terminal and at the Rail Transload Facility. Total outdoor water usage for the proposed project is expected to be approximately 5,000 gallons per year. Indirect

water usage associated with Alternative 1 was estimated to be the same as that of the proposed project.

Waste Disposal Emissions

Indirect GHG emissions would also result from solid waste generated from the proposed project operations. This is because municipal solid waste that is disposed of by land filling would generate GHG emissions in the form of CO_2 or CH_4 from the decomposition of the waste. CalEEMod was used to quantify the indirect GHG emissions associated with the solid waste generation for the operation of the proposed project and project alternatives. GHG emissions associated with the solid waste generation were estimated in CalEEMod using model default assumptions regarding CH_4 and CO_2 emission parameters along with the project-specific annual waste generation rate. As the magnitude and nature of waste generated during the operational phase of the proposed project is estimated to be minimal and of a household/commercial nature, it was assumed that approximately 24 tons per year of solid waste would be generated from project operation. Solid waste generation associated with Alternative 1 was estimated to be the same as that of the proposed project.

Transportation Emissions

Vehicular traffic generated by the proposed project operation would result in GHG emissions associated with the vehicle exhaust. Both onsite and offsite worker trips associated with project operation were used to quantify the GHG emissions related to project-generated transportation. It was estimated that when the proposed project becomes fully operational, there would be approximately 15 offsite worker commute trips per day with an average distance of 30 miles roundtrip. In addition, 15 onsite worker trips per day with an average distance traveled of 10 miles would also occur. Offsite vehicle trips were assumed to be at the proposed project site. Worker trip frequency and length associated with Alternative 1 were estimated to be the same as those of the proposed project. Following the same estimation methodology and assumptions described in Section 4.2.1.2, CalEEMod was used to quantify the GHG emissions related to the vehicle traffic generated by the operation of the proposed project and project alternatives.

5.2.2 Significance Criteria

For the purposes of this analysis, an impact was considered to be significant and to require mitigation if it would result in any of the following:

- Generate GHG emissions, during construction or operation, either directly or indirectly, that exceed the identified BAAQMD thresholds
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions

5.2.3 Impacts and Mitigation Measures

5.2.3.1 Proposed Project

Construction-related Impacts

Impact Greenhouse Gas Emissions (GG)-1: Generate GHG emissions that exceed the adopted BAAQMD thresholds. (Less than significant.) Table 5-2 provides the construction-related GHG emissions for the proposed project. The BAAQMD has not set thresholds for construction-related GHG emissions; therefore, this impact is less than significant.

The BAAQMD CEQA Guidelines encourage the incorporation of best management practices (BMPs) to reduce GHG emissions during construction. These BMPs may include: Using alternative fueled construction vehicles/equipment of at least 15 percent of the fleet; using local building materials of at least 10 percent; and recycling or reusing at least 50 percent of construction waste. Environmental Commitment Greenhouse Gas-1, as described in Section 2.7.3 of Chapter 2.0: Proposed Project and Alternatives, commits the project to complying with these BMP's to the maxim extent practicable.

Table 5-2: Construction-related Greenhouse Gas Emissions for the Proposed Project[1]

Year	CO_2e (metric tons per year)*	Significance Threshold[2]	Significance Threshold Exceeded (Yes/No)
2013	264	N/A	N/A
2014	5,726	N/A	N/A
2015	1,808	N/A	N/A

[1]Using Tier I or Tier II construction equipment
[2]N/A = Not applicable

Mitigation Measure: No mitigation measures are required.

Operational Impacts

Impact GG-2: Generate GHG emissions that exceed the adopted BAAQMD thresholds. (Significant and unavoidable.) Table 5-3 provides the estimated GHG emissions for the proposed project. The proposed project would generate emissions in excess of identified BAAQMD thresholds; therefore, it is considered to have a significant impact under CEQA. Prior to operation of the proposed project, BAAQMD air permit applications would be submitted and approved, and GHG emissions would be part of the BAAQMD's review of the permit applications.

Table 5-3: Operational Greenhouse Gas Emissions for the Proposed Project

CO_2e (MT/yr)*	Significance Threshold (MT/yr)	Significance Threshold Exceeded (Yes/No)
35,441	10,000	Yes

*CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year

The increase in GHG from the proposed project represents a small fraction of the region's overall GHG emissions and an even smaller fraction of State, national, and global GHG emissions. As discussed in Chapter 18.0: Cumulative Effects, the demand for oil in the Bay Area would not change if the project is constructed. Conversely, the demand for oil would also not change if the project is not constructed, as the additional oil would presumably be delivered to other existing marine, rail and storage terminals in the greater Bay Area. The potential GHG emissions from tanker vessels and locomotives delivering this oil would be a function of the amount of oil delivered and the number of trips required. Given that climate change from GHG emissions is considered a global challenge, the location at which tanker vessels or locomotives call in the Bay Area does not change the impact of their resultant emissions.

The overwhelming majority of the GHG impacts from this project are from tank vessel and tugboat traffic. Reducing the impacts of these vessels is outside the purview of the project. Therefore, no feasible mitigations are available to reduce project-related GHG emissions, and based on the above discussion, mitigations are not required.

Mitigation Measure: No mitigation measures available.

Impact GG-3: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. (Less than significant.) The State of California is committed to reducing GHG emissions statewide. AB 32, and its associated Scoping Plan, identifies the State's approach, as overseen by CARB, to track and reduce GHG emissions. The AB 32 Scoping Plan includes a number of strategies that are designed to reduce GHG emissions, including the Low Carbon Fuel Standard and Goods Movement Efficiency Measures discussed in Section 4.1.1.2 and Section 5.1.1.2. These measures are designed to address all potential sources of GHG emissions and drive reductions from each source type, including marine vessels. Crude oil transport has been considered and analyzed within the State's Goods Movement Plan, and overall reductions in statewide GHG emissions from this sector are planned for, while allowing for the necessary import of crude oil to supply the market for transportation fuels. As such, the

proposed project's GHG emissions would not impact the ability of the State of California to meets its 2020 reductions goals mandated under AB 32.

Mitigation Measure: No mitigation measures required.

5.2.3.2 Alternative 1: Reduced Onshore Storage Capacity

Construction-related Impacts

Impact GG-4: Generate GHG emissions that exceed the adopted BAAQMD thresholds. (Less than significant.) Table 5-4 provides the construction-related GHG emissions for Alternative 1. GHG emissions in 2013 and 2014 are expected to be the same as those of the proposed project. GHG emissions in 2015 are somewhat less, as compared to the proposed project. This is due to Alternative 1's reduced project scope of construction activities in 2015. The BAAQMD has not set thresholds for construction-related GHG emissions; therefore, this impact is less than significant.

The BAAQMD CEQA Guidelines encourage the incorporation of BMPs to reduce GHG emissions during construction. These BMPs may include: using alternative fueled construction vehicles/equipment of at least 15 percent of the fleet; using local building materials of at least 10 percent; and recycling or reusing at least 50 percent of construction waste.

Table 5-4: Construction-related Greenhouse Gas Emissions for Alternative 1

Year	CO_2e (metric tons per year)	Significance Threshold[1]	Significance Threshold Exceeded (Yes/No)
2013	263	N/A	N/A
2014	5,726	N/A	N/A
2015	1,604	N/A	N/A

[1]N/A = Not applicable

Mitigation Measure: No mitigation measures required.

Operational Impacts

Impact GG-5: Generate GHG emissions that exceed the adopted BAAQMD thresholds. (Significant and unavoidable.) Table 5-5 provides the estimated GHG emissions for Alternative 1. While lower than the proposed project, Alternative 1 would still generate emissions in excess of adopted BAAQMD thresholds; therefore, it is considered to have a significant impact under CEQA.

As with the proposed project, no feasible mitigation measures exist under Alternative 1 to reduce the direct project-related GHG emissions to a less-than-significant level. Refer to Impact GG-2 for details.

Table 5-5: Operational Greenhouse Gas Emissions for Alternative 1

CO_2e (MT/yr)*	Significance Threshold (MT/year)	Significance Threshold Exceeded (Yes/No)
27,571	10,000	Yes

*CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year

Mitigation Measure: No mitigation measures available.

Impact GG-6: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. (Less than significant.) Refer to discussion under Impact GG-3.

Mitigation Measure: No mitigation measures required.

5.2.3.3 Alternative 2: No Project

Under the No Project alternative, additional GHG emissions would not be generated as a specific result of the proposed project. However, as discussed in Impact GG-2, the demand for oil in the Bay Area would not change under the No Project alternative, and the additional oil would presumably be delivered to other existing marine terminals and rail transload operation facilities. As a result, and under certain traffic patterns potentially resulting from increased throughput at existing facilities, regional GHG emissions under the No Project alternative would not necessarily decrease relative to the proposed project.

It is possible, depending on the throughput capacity of existing marine terminals, that vessel congestion in some locations of the bay could increase under the No Project alternative. For example, a marine terminal's increase in throughput may result in tank vessels having to wait to unload their oil because another tank vessel is at the berth. The waiting tank vessel may then have to proceed to an anchorage, increasing overall vessel fuel consumption. A similar scenario is possible with

increased rail traffic causing delays at existing terminals. Increased time spent in the Bay Area by vessels or locomotives would increase GHG emissions from the vessels and trains, making the proposed project a more favorable scenario in terms of cumulative GHG emissions from crude oil delivery. As such, while the CEQA-required project-specific GHG emissions analysis shows an increase over published thresholds of significance, in reality, from a regional, national, and global perspective (rather than a project-specific perspective), GHG emissions may not increase, and may actually decrease.

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