APPENDIX D1 - SECTION 3
GHG EMISSION CALCULATIONS

Appendix D.1.3
Calculation Methodology for GHG

Contents

Stationary Source Combustion

Description

Stationary combustion includes the following sources operated at the project location.

Category Assumptions:

- Cargo handling equipment (CHE) and construction equipment within terminal boundaries.[1]
- The fuel used for this equipment will be diesel or liquefied propane gas (LPG).

Emission factors for CO_2 were provided directly by the OFFROAD2007 emission factor program in units of grams per horsepower-hour (g/hp-hr). Emission factors from the California Climate Action Registry's *General Reporting Protocol* (GRP) were used for CH_4 and N_2O. Originally in units of kilograms GHG per gallon fuel (kg/gal), the CH_4 and N_2O emission factors were converted to units of g/hp-hr to simplify the emission calculations. This conversion used default values of brake-specific fuel consumption (BSFC) by equipment horsepower category, from OFFROAD2007, and a fuel density value from the GRP. The emission factor conversion from kg/gal to g/hp-hr is shown in Table 7.

Equations

Mass Emissions Estimates

General Equation:

Total Emissions = Emission Factor (g GHG/hp-hr)
× Work Produced (hp-hr)
× 0.000001 (metric tons per gram)

Example:

Given: Equipment power output of 140,000 hp-hr per year

Total Emissions CO_2 = 568.3 (g CO_2/hp-hr) [from Table 7]
× 140,000 (hp-hr/year)
× 0.000001 (metric tons per gram)

Total Emissions CO_2 = 79.6 metric tons

Converting Mass Estimates to Carbon Dioxide Equivalent (CO_2e)

General Equation:

Metric Tons of CO_2e = Metric Tons of GHG × GWP

Global warming potentials (GWPs) are listed in Table 1.

[1] Although most CHE sources are mobile, they are classified as stationary for the purposes of GHG reporting because they remain onsite.

Example:

Given: GHG Emission Rate = 0.014 metric tons of CH_4; GWP = 21 (from Table 1)

Metric Tons of CO_2e = Metric Tons of GHG × GWP

Metric Tons of CO_2e = 0.014 Metric Tons of Methane × 21

Metric Tons of CO_2e = 0.29

Data Requirements – Cargo Handling and Construction Equipment

Fuel Usage:

Propane _____ gallons[2]
Diesel _____ gallons

OR

Propane _____ hp-hr
Diesel _____ hp-hr

Emission Factors

OFFROAD2007 for CO_2 emission factors (g/hp-hr)

Table 2 for original CH_4 and N_2O emission factors (kg/gal)

Table 7 for converted CH_4 and N_2O emission factors (g/hp-hr)

[2] Often, offroad equipment usage is provided in hp-hr rather than gallons of fuel consumed. In this case, the gallons of fuel consumed must be derived from the hp-hr by using a brake-specific fuel consumption (BSFC) value (in lb fuel per bhp-hr), which depends on the type of equipment. Offroad 2007 provides typical BSFC values by equipment horsepower category.

Mobile Source Combustion

Description

This source category includes mobile sources that travel both on- and off-site.

Category Assumptions:

- Primarily consists of locomotives, trucks, worker commute vehicles, ships, and tugboats.
- The fuel used will be diesel/distillate/residual fuel, gasoline, or liquefied natural gas (LNG).

For locomotives, emission factors from the GRP (kg/gal) were used for all GHGs. Originally in units of kg/gal, these emission factors were converted to units of g/hp-hr to simplify the emission calculations. This conversion used a manufacturer-provided BSFC value and a fuel density value from the GRP.

For trucks, CO_2 emission factors in units of grams per mile (g/mi) were obtained directly from the EMFAC2007 emission factor program. Emission factors from the GRP (g/mi) were used for CH_4 and N_2O.

For worker commute vehicles, emission factors from the GRP were used for all GHGs. The CO_2 emission factor, originally in units of kg/gal, was converted to units of g/mi by using average fuel economy data by model year category from the U.S. Department of Transportation, *Summary of Fuel Economy Performance* (October 2006). The CH_4 and N_2O emission factors were originally in units of g/mi. Finally, the CO_2, CH_4, and N_2O emission factors (in g/mi), which vary according to model year category, were combined into single fleet-average emission factors using EMFAC2007 default fleet mix data for the South Coast Air Basin.

For main and auxiliary engines on ships and tugboats, CO_2 emission factors in units of grams per kilowatt-hour (g/kWh) were obtained directly from Entec (2002) Tables 2.8, 2.9, and 2.10. Emission factors from the GRP (kg/gal) were used for CH_4 and N_2O. These emission factors were converted to units of g/kWh to simplify the emission calculations. This conversion used specific fuel consumption (SFC) values provided by Entec (2002) and fuel density values from the GRP. Emissions from ship boilers were calculated using emission factors from the GRP.

Equations

Mass Emissions Estimates

General Equations:

GHGs of Source Category CO_2, CH_4, N_2O

Total Emissions = Emission Factor (g GHG/hp-hr)
× Work Produced (hp-hr)
× 0.000001 (metric tons per gram)

OR

Total Emissions = *Emission Factor (g GHG/kWh)*
× *Power Output (kWh)*
× *0.000001 (metric tons per gram)*

OR

Total Emissions = *Emission Factor (g GHG/mile)*
× *Vehicle-Miles Traveled (VMT) (miles)*
× *0.000001 (metric tons per gram)*

Example:

Given: 1,000 truck trips and an average trip length of 20 miles.
Total VMT = 1,000 trips x 20 miles/trip = 20,000 mi

Total Emissions N_2O = 0.05 (g/mile) [from Table 4]
× *20,000 miles*
× *0.000001 (metric tons per gram)*

Total Emissions N_2O = 0.001 metric tons

Data Requirements – Locomotives

Fuel Usage:

LNG _____ gallons
Propane _____ gallons
Diesel _____ gallons
Gasoline _____ gallons

OR

LNG _____ hp-hr
Propane _____ hp-hr
Diesel _____ hp-hr
Gasoline _____ hp-hr

Data Requirements – Trucks and Worker Commute Vehicles

Miles traveled by fuel type:

LNG _____miles
Propane _____miles
Diesel _____miles
Gasoline _____miles

Fleet Est. Average miles per gallon by Fuel type

LNG _____miles/gallon
Propane _____miles/gallon
Diesel _____miles/gallon
Gasoline _____miles/gallon

(Note: EMFAC2007 output tables provide estimates of mpg)

Data Requirements – Ships and Tugboats

Main and Auxiliary Engines:

Residual Fuel _____ kWh engine output
Distillate Fuel _____ kWh engine output

Boilers:

Residual Fuel _____ gal fuel
Distillate Fuel _____ gal fuel

Emission Factors

Locomotives:

Table 2 for original emission factors (kg/gal)

Table 8 for converted emission factors (g/hp-hr)

Trucks:

EMFAC2007 for CO_2 emission factors (g/mile); summarized in Table 9

Table 4 for CH_4 and N_2O emission factors (g/mile)

Worker Commute Vehicles:

Table 2 for original CO_2 emission factors (kg/gal)

Table 4 for original CH_4 and N_2O emission factors (g/mile)

Fleet average emission factors by project year are summarized in Table 11 (g/mile)

Marine Vessel Main & Auxiliary Engines:

Table 2 for original CH_4 and N_2O emission factors (kg/gal)

Table 5 for CO_2 and converted CH_4 and N_2O emission factors (g/kWh)

Ship Boilers:

Table 2 for original emission factors (kg/gal)

Table 6 for converted emission factors (g/kWh)

Electricity Usage

Description

Electrical usage directly related to terminal operations.

Category Summary:

- Includes alternative maritime power (AMP) usage during ship hoteling, and on-terminal electricity consumption for lighting, electric gantry cranes, etc.
- Assumes on-grid consumption

Emission factors for electricity usage were obtained from the GRP.

Equations

Mass Emissions Estimates

General Equation:

GHGs of Source Category CO_2, CH_4, N_2O

Total Emissions = Emission Factor (lbs GHG/Megawatt-hour [MWh])
× Electricity Used (kWh)
× 0.001 MWh per kWh
÷ 2,204.62 lbs/metric ton

Example:

Given: Electricity Usage = 1,000,000 kWh

Total Emissions CO_2 = 804.54 (lbs CO_2/MWh) [from Table 3]
× 1,000,000 kWh)
× 0.001 MWh per kWh
÷ 2,204.62 lbs/metric ton

Total Emissions CO_2 = 364.9 metric tons

Data Requirements – Electricity Usage

Electricity Usage _____kilowatt- hours (kWh)

Emission Factors

Table 3

Refrigeration

Description

Fugitive emissions of hydrofluorocarbons (HFCs) from refrigerant leakage in refrigerated containers (reefers) while inside California borders.

Category Summary:

- Primarily consist of refrigerated container operation
- Does not include combustion or electrical sources to power refrigeration (calculated elsewhere)

Refrigeration losses were calculated using a mass balance approach. The GRP (Table III.11.1) recommends using an upper bound annual loss rate of 35 percent for commercial air conditioning systems.[3] An average reefer dwell time inside California boundaries was assumed to be 3 days per one-way trip. This estimate assumes an on-terminal reefer dwell time of 2 days, and 1 additional day for transport in and out of the terminal.

Equations

Mass Emissions Estimates

General Equation

HFC Emissions from Refrigeration Leakage (kg) =
Total Annual Refrigerant Charge (kg)
× Dwell time (days) / 365
× Assumed Annual Leakage (%)

Example:

Given: Annual throughput of 1,000 reefers with an average refrigerant charge of 6.35 kg HFC 134a per reefer (i.e., total annual refrigerant charge of 6,350 kg of HFC 134a).

HFC Emissions from Refrigeration Leakage (kg) =
6,350 kg HFC 134a
× 3 days / 365 days
× 35% annual loss rate

HFC Emissions from Refrigeration Leakage = 18.3 kg HFC 134a

[3] The 35% annual loss rate is a conservative assumption intended for use in *de minimis* determinations. Actual loss rates are expected to be much lower (roughly 2% per year), as presented in Table 3.9 of the *Guidance to the California Climate Action Registry: General Reporting Protocol* (California Energy Commission, June 2002).

Data Requirements – Refrigeration

Refrigerant Charge _____kg per reefer

Refrigerant Composition _____(by HFC listed in Attachment 1)

Table 1. Global Warming Potentials

Greenhouse Gas	GWP (SAR, 1996)
CO_2	1
CH_4	21
N_2O	310
HFC-123	11,700
HFC-125	2,800
HFC-134a	1,300
HFC-143a	3,800
HFC-152a	140
HFC-227ea	2,900
HFC-236fa	6,300
HFC-43-10mee	1,300
CF_4	6,500
C_2F_6	9,200
C_3F_8	7,000
C_4F_{10}	7,000
C_5F_{12}	7,500
C_6F_{14}	7,400
SF_6	23,900

Source: U.S. Environmental Protection Agency, U.S. Greenhouse Gas Emissions and Sinks: 1990-2000 (April 2002).

Note: This information is found in Table III.6.1 of the CCAR protocol.

Table 2. GHG Emission Factors for Liquid Fuels

Fuel	Fuel Density	Emission Factor		
		CO_2	CH_4	N_2O
Propane (LPG)	4.24 lb/gal [a]	5.67 kg/gal	0.000091 kg/gal	0.00041 kg/gal
CA Low Sulfur Diesel	7.46 bbl/metric ton	9.96 kg/gal	0.0014 kg/gal	0.0001 kg/gal
Non-CA Diesel/ Diesel No. 2	7.46 bbl/metric ton	10.05 kg/gal	0.0014 kg/gal	0.0001 kg/gal
Liquefied Natural Gas (LNG)	11.6 bbl/metric ton	4.37 kg/gal	0.0059 kg/MMBtu	0.0001 kg/MMBtu
Distillate Fuel Oil [#1, 2, 4, Diesel]	7.46 bbl/metric ton	10.15 kg/gal	0.0014 kg/gal	0.0001 kg/gal
Residual Fuel Oil [#5, 6]	6.66 bbl/metric ton	11.79 kg/gal	0.0015 kg/gal	0.0001 kg/gal
CA Reformulated Gasoline	8.53 bbl/metric ton	8.55 kg/gal	(see Table 4)	(see Table 4)

Source: California Climate Action Registry, *General Reporting Protocol* v2.2, March 2007. Tables C.3, C.5, and C.6 (unless otherwise noted).

[a] Source: *AP-42* Appendix A (January 1995).

Table 3. GHG Indirect Emission Factors for Electricity Consumption

Region	Emission Factor (lb/MWh)		
	CO_2	**CH_4**	**N_2O**
Los Angeles	804.54	0.0067	0.0037

Source: California Climate Action Registry, General Reporting Protocol v2.2, March 2007.

Table 4. CH_4 and N_2O Emission Factors for Mobile Sources

Vehicle Type/Model Years	Emission Factor (g/mile)	
	CH_4	N_2O
Passenger Cars - Gasoline		
Model Year 1966-1972	0.22	0.02
Model Year 1973-1974	0.19	0.02
Model Year 1975-1979	0.11	0.05
Model Year 1980-1983	0.07	0.08
Model Year 1984-1991	0.06	0.08
Model Year 1992	0.06	0.07
Model Year 1993	0.05	0.05
Model Year 1994-1999	0.05	0.04
Model Year 2000-present	0.04	0.04
Light Duty Trucks - Gasoline		
Model Year 1966-1972	0.22	0.02
Model Year 1973-1974	0.23	0.02
Model Year 1975-1979	0.14	0.07
Model Year 1980-1983	0.12	0.13
Model Year 1984-1991	0.11	0.14
Model Year 1992	0.09	0.11
Model Year 1993	0.07	0.08
Model Year 1994-1999	0.06	0.06
Model Year 2000-present	0.05	0.06
Heavy Duty Trucks		
Model Year 1966-1982 (Diesel)	0.10	0.05
Model Year 1983-1995 (Diesel)	0.08	0.05
Model Year 1996-present (Diesel)	0.06	0.05
CNG, LNG (all model years)	3.48	0.05

Source: California Climate Action Registry, General Reporting Protocol v2.2, March 2007. Table C.4.

Water vapor is the most abundant, important, and variable greenhouse gas in the atmosphere. It is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. The main source of water vapor is evaporation from the oceans (approximately 85%). Other sources include evaporation from other water bodies, sublimation (change from solid to gas) from ice and snow, and transpiration from plant leaves. Water vapor is not one of the six GHGs identified by the World Resources Institute (WRI) as a man-made contributor to global climate change.

Carbon dioxide (CO_2) is an odorless, colorless natural greenhouse gas. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic (human caused) sources of carbon dioxide are from burning coal, oil, natural gas, and wood. Concentrations are currently around 370 ppm; some say that concentrations may increase to 540 ppm by 2100 as a direct result of anthropogenic sources (IPCC 2001). Some predict that this will result in an average global temperature rise of at least 2° Celsius (IPPCC 2001).

Methane is a flammable gas and is the main component of natural gas. When one molecule of methane is burned in the presence of oxygen, one molecule of carbon dioxide and two molecules of water are released. There are no health effects from methane. A natural source of methane is from the anaerobic decay of organic matter. Geological deposits known as natural gas fields contain methane, which is extracted for fuel. Other sources are from landfills, fermentation of manure, and cattle.

Nitrous oxide (N_2O), also known as laughing gas, is a colorless greenhouse gas. Higher concentrations can cause dizziness, euphoria, and sometimes slight hallucinations. Nitrous oxide is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used in rocket engines, as an aerosol spray propellant, and in race cars.

Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone; therefore their production was stopped as required by the Montreal Protocol. CFCs are not one of the six GHGs identified by the World Resources Institute (WRI) as a man-made contributor to global climate change.

Hydrofluorocarbons (HFCs) are synthetic man-made chemicals that are used as a substitute for CFCs for automobile air conditioners and refrigerants.

Perfluorocarbons (PFCs) have stable molecular structures and do not break down though the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. PFCs have very long

lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane and hexafluoroethane. Concentrations of tetrafluoromethane in the atmosphere are over 70 ppt (EPA 2006d). The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

Sulfur hexafluoride (SF6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It also has the highest GWP of any gas evaluated, 23,900. Concentrations in the 1990s were about 4 ppt (EPA 2006d). Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Ozone is a greenhouse gas; however, unlike the other greenhouse gases, ozone in the troposphere is relatively short-lived and therefore is not global in nature. According to CARB, it is difficult to make an accurate determination of the contribution of ozone precursors (NOx and VOCs) to global warming (CARB 2004b). Therefore, project emissions of ozone precursors would not significantly contribute to global climate change. Ozone is not one of the six GHGs identified by the World Resources Institute (WRI) as a man-made contributor to global climate change.

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel with sulfur in it is burned. Black carbon (or soot) is emitted during bio mass burning incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing. Aerosols are not one of the six GHGs identified by the World Resources Institute (WRI) as a man-made contributor to global climate change.

Source: AEP, 2007.

Attachment 4 GHG Emission Calculations

Table XX-C-2. Cargo Vessel Propulsion Engine Usage per One-Way Ship Trip within CA Waters in the POLA Fairway Zone - Berths 136-147 Terminal Project Alternatives.

		Fairway (1)						
Vessel Type	Propulsion Max Hp (2)	Load Factor (3)	Modal Hp	Distance (NM)	Speed (Kts) (4)	Hours Per Trip	Hp-Hrs/ Trip	kW-Hrs/ Trip (5)
Non-Compliance with VSRP (6)								
General Cargo	10,993	0.83	9,135	127.4	14.7	8.67	79,185	59,072
Compliance with VSRP (7)								
General Cargo - Outside VSRPZ	10,993	0.83	9,135	105.4	14.7	7.17	65,505	48,867
General Cargo - In VSRPZ	10,993	0.45	4,975	22.0	12.0	1.83	9,121	6,804
General Cargo - Total kW-Hrs								55,671

Notes: (1) Vessel route between the boundary of California waters and the Precautionary Area. Based upon data from the Port of Los Angeles Baseline Air Emissions Inventory (PEI) (Starcrest 2005) Table 2.8 and expected usage of fairway routes for each vessel type (see Table C2-5a).

(2) Average maximum horsepower rating from Lloyds data, ship builders (Samsung Heavy Industries 2003), and PEI Table 2.26.

(3) PEI page 68.

(4) Represents service speed, which is 94% of maximum speed (PEI page 68).

(5) 1 kW-Hr = 0.746 Hp-Hrs.

(6) Length of fairway within the Vessel Speed Reduction Program (VSRP) Zone (VSRPZ) = 22 nautical miles (NM).

(7) Load factor derived from Propeller Law, where load factor = (actual speed/max. speed) ^{3} (PEI page 99).

Table XX-C-3. Cargo Vessel Propulsion Engine Usage per One-Way Ship Trip in the POLA Precautionary Area - Berths 136-147 Terminal Project Alternatives.

	Precautionary Area (1)							
Vessel Type	Propulsion Max Hp	Load Factor (2)	Modal Hp	Distance (NM)	Speed (Kts) (3)	Hours	Hp-Hrs/ Trip	kW-Hrs/ Trip
General Cargo	10,993	0.19	2,099	9.6	9.0	1.07	2,239	1,670

Notes: (1) Portion of the trip between the fairway and POLA breakwater.

(2) Load factor derived from Propeller Law, where load factor = (actual speed/max. speed) ^{3} (PEI page 99).

(3) Average transit speeds obtained from PEI Table 2.8.

Table XX-C-4. Cargo Vessel Propulsion Engine Usage per One-Way Ship Trip within the POLA Breakwater - Berths 136-147 Terminal Project Alternatives.

		Harbor (1)				
Vessel Type	Propulsion Max Hp	Load Factor (2)	Modal Hp	Hours (3)	Hp-Hrs/ Trip	kW-Hrs/ Trip
General Cargo	10,993	0.054	590	1.06	625	467

Notes: (1) Average one-way transit operations between the POLA breakwater and the Berth 136-149 Terminal.

(2) Based on average inbound, outbound, and docking load factors (PEI Table 2.46).

(3) Based upon average one-way transit + docking times (PEI Table 2.51).

Table XX-C-5. OGV Transit Distances in California Waters within the Fairway and Precautionary Areas - Berths 136-147 Terminal Project Alternatives.

Fairway 1-way Route Length (1)/ Percent in Route (2)				
	North	West	South	Ave.
Vessel Type	170.0	43.5	70.0	Length
Container	90.0	10.0	-	157.4
General Cargo	60.0	10.0	30.0	127.4
Auto	80.0	10.0	10.0	147.4
Precautionary Area 1-way Route Length (1)/Percent in Route (2)				
	North (3)	West (3)	South (3)	Ave.
	10.5	10.5	7.5	Length
Container	90.0	10.0	-	10.5
General Cargo	60.0	10.0	30.0	9.6
Auto	80.0	10.0	10.0	10.2

Notes: (1) Route lengths in units of nautical miles (nm) to CA overwater border.

(2) Based upon expected transit distribution patterns (TraPac 2004).

Table XX-C-6. Cargo Vessel Auxiliary Generator Usage per One-Way Fairway Transit within CA Waters - Berths 136-147 Terminal Project Alternatives.

Vessel Type	Auxiliary kW per Vessel (1)	Load Factor (2)	Hours/ Transit	kW-Hrs/ Transit
General Cargo	1,777	0.17	8.67	2,618

Notes: (1) PEI Table 2.18, except kW rating for 8,000-9,000 vessel estimated by extrapolation from 5,000-6,000 TEU vessel rating.
(2) PEI Table 2.19.

Table XX-C-7. Cargo Vessel Auxiliary Generator Usage per One-Way Precautionary Area Transit - Berths 136-147 Terminal Project Alternatives.

Vessel Type	Auxiliary kW per Vessel	Load Factor (1)	Hours/ Transit	kW-Hrs/ Transit
General Cargo	1,777	0.27	1.07	512

Notes: (1) PEI Table 2.19.

Table XX-C-8. Cargo Vessel Auxiliary Generator Usage per One-Way Transit within the POLA Breakwater - Berths 136-147 Terminal Project Alternatives.

Vessel Type	Auxiliary kW per Vessel	Load Factor (1)	Hours/ Transit	kW-Hrs/ Transit
General Cargo	1,777	0.45	1.06	848

Notes: (1) PEI Table 2.19.

Table XX-C-9. Cargo Vessel Hoteling Auxiliary Generator Usage per Ship Visit - Berths 136-147 Terminal Project Alternatives.

Vessel Type	Auxiliary kW per Vessel	Load Factor (1)	kW-Hrs/ Day
General Cargo	1,777	0.22	9,383

Notes: (1) PEI Table 2.19.

Table XX-C-10. Cargo Vessel Hoteling Auxiliary Boiler Usage per Ship Visit - Berths 136-147 Terminal Project Alternatives.

Vessel Type	Hourly Fuel Usage (1)
All Cargo Vessels	0.154

Notes: (1) Units in tons/hour of fuel consumption (PEI Section 2.5.6).

Table XX-C-11. Baseline Year 2003 Cargo Vessel Tugboat Assist Usage - Berths 136-147 Terminal Project Alternatives.

Vessel Type	Tugboat Max Hp (1)	Load Factor (2)	Hours/ Assist (3)	Hp-Hr/Vessel Assist	# of Assists/ Vessel Visit (4)	Total Hp-Hrs/ Vessel Visit	Total kW-Hrs/ Vessel Visit
General Cargo	4,106	0.31	1.38	1,754	3	5,262	3,925

Notes: (1) From PEI Table 3.1.

(2) From PEI, Table 3.9.

(3) Duration per 1-way vessel trip. Eqaul to cargo vessel Harbro transit durations presented in Table C2-4 times 1.3 to account for tug movement and assist time. General cargo and auto carrier vessels assumed to require the same tugboat assist usage as containerships <3,000 TEUs.

(4) Estimated by multiplying the ratio of 2003/2001 throughputs for the Berths 136-147 terminal by tug activitiy during the 2001 baseline year. This amounts to 2.8 tug assists per ship visit. Tug assist usages for future project years based upon 3 tug assists per ship visit.

Table XX-C-12. Baseline Year 2003 Tugboat Aux. Generator Usage during Cargo Vessel Assists - Berths 136-147 Terminal Project Alternatives.

Vessel Type	Aux. Engine Hp (1)	Load Factor (2)	Hours/ Assist (3)	Hp-Hr/Vessel Assist	# of Assists/ Vessel Visit (4)	Total Hp-Hrs/ Vessel Visit	Total kW-Hrs/ Vessel Visit
General Cargo	209	0.43	1.38	124	3	372	277

Notes: (1) From PEI Table 3.1.

(2) From PEI Table 3.9.

(3) Duration = 1.3 times tug assist time in Table C2-13 to account for usage when main engines are shut down in stand-by mode. General cargo/ auto carrier vessels would require the same usage as containerships <3,000 TEUs.

Table XX-C-13. Daily Cargo Vessel GHG Emissions - Berths 136-147 Terminal Construction - Proposed Project

	Pounds per Day		
Project Scenario/Vessel Type	CO2	CH4	N2O
Phase 1			
Delivery of Sheet Piles for Berth 144 Wharf Improvements			
Transit			
Ships - Fairway Transit	80,741.8	10.7	0.7
Ships - Aux. Sources w/i Fairway	4,051.5	0.5	0.0
Ships - Precautionary Area Transit	2,282.8	0.3	0.0
Ships - Aux. Sources w/i Precautionary Area	1,875.3	0.2	0.0
Ships - Maneuvering	701.5	0.1	0.0
Ships - Aux. Sources during Maneuvering	2,388.2	0.3	0.0
Tugboats - Cargo Vessel Assist	3,001.7	0.4	0.0
Subtotal - Transit	95,042.8	12.6	0.8
Hoteling			
Ships - Hoteling Aux. Sources (full day)	38,895.4	5.1	0.3
Ships - Hoteling Aux. Sources (time left after transit) (2)	31,164.9	4.1	0.3
Delivery of 3 Cranes for Berth 144			
Transit			
Ships - Fairway Transit	80,741.8	10.7	0.7
Ships - Aux. Sources w/i Fairway	4,051.5	0.5	0.0
Ships - Precautionary Area Transit	2,282.8	0.3	0.0
Ships - Aux. Sources w/i Precautionary Area	1,875.3	0.2	0.0
Ships - Maneuvering	701.5	0.1	0.0
Ships - Aux. Sources during Maneuvering	2,388.2	0.3	0.0
Tugboats - Cargo Vessel Assist	3,001.7	0.4	0.0
Subtotal - Transit	95,042.8	12.6	0.8
Hoteling			
Ships - Hoteling Aux. Sources	38,895.4	5.1	0.3
Ships - Hoteling Aux. Sources (time left after transit) (2)	31,164.9	4.1	0.3
Delivery of 2 Cranes, one each for Berths 136 & 144			
Transit			
Ships - Fairway Transit	80,741.8	10.7	0.7
Ships - Aux. Sources w/i Fairway	4,051.5	0.5	0.0
Ships - Precautionary Area Transit	2,282.8	0.3	0.0
Ships - Aux. Sources w/i Precautionary Area	1,875.3	0.2	0.0
Ships - Maneuvering	701.5	0.1	0.0
Ships - Aux. Sources during Maneuvering	2,388.2	0.3	0.0
Tugboats - Cargo Vessel Assist	3,001.7	0.4	0.0
Subtotal - Transit	95,042.8	12.6	0.8
Hoteling			
Ships - Hoteling Aux. Sources	38,895.4	5.1	0.3
Ships - Hoteling Aux. Sources (time left after transit) (2)	31,164.9	4.1	0.3
Phase 2			
Delivery of Sheet Piles for Berth 136 Wharf Extension			
Transit			
Ships - Fairway Transit	80,741.8	10.7	0.7
Ships - Aux. Sources w/i Fairway	4,051.5	0.5	0.0
Ships - Precautionary Area Transit	2,282.8	0.3	0.0
Ships - Aux. Sources w/i Precautionary Area	1,875.3	0.2	0.0
Ships - Maneuvering	701.5	0.1	0.0
Ships - Aux. Sources during Maneuvering	2,388.2	0.3	0.0
Tugboats - Cargo Vessel Assist	3,001.7	0.4	0.0
Subtotal - Transit	95,042.8	12.6	0.8
Hoteling			
Ships - Hoteling Aux. Sources	38,895.4	5.1	0.3
Ships - Hoteling Aux. Sources (time left after transit) (2)	20,857.7	2.7	0.2

Note: (1) Assumes 37/63% residual/diesel fuel usage in aux. gens (PEI Table 2.3).

(2) Ship takes 11.13 hours to transit one-way (9.00 Fairway, 1.07 Precautionary Area, 1.06 Manuevering), so ship spends 12.87 hours hotelling on day of transit.

Table XX-C-14. Total GHG Emissions for Wharf Improvements at Berths 144-147
Proposed Project Phase 1 (2007-2010) (Pg 1 of 3).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Wharf Demolition			
Air Compressor	1.5	0.000	0.0000
Crane - 220-Ton Manitowoc 888	31.4	0.005	0.0003
Derrick Barge	13.7	0.002	0.0002
Excavator - Cat 345B	7.3	0.001	0.0001
Forklift	2.0	0.000	0.0000
Generator	1.7	0.000	0.0000
Haul Truck - Demolished Materials (1)	1.0	0.000	0.0000
Loader - Cat 966E	20.9	0.003	0.0002
Tugboat	35.7	0.005	0.0004
Vibratory Hammer	3.8	0.001	0.0001
Subtotal	118.9	0.018	0.0013
Remove 2 Existing Cranes at Berth 144			
Crane - 50 ton	4.0	0.001	0.0000
Winch	1.5	0.000	0.0000
Tugboat	2.5	0.000	0.0000
Tugboat	0.4	0.000	0.0000
Subtotal	8.4	0.001	0.0001
Piledriving - Sheet Piles			
Derrick Barge Crane Hoist	30.7	0.005	0.0003
Generator - Pile Hammer	49.7	0.008	0.0006
Tugboat	13.8	0.002	0.0001
Cargo Ship - Transit - Sheetpile Delivery	95.0	0.013	0.0008
Tugboat - Cargo Vessel Assist	1.4	0.000	0.0000
Cargo Ship - Hotelling	15.6	0.002	0.0001
Subtotal	206.3	0.029	0.0020
Rip-Rap Placement			
Barge - Generator	13.7	0.002	0.0002
Barge - Generator	34.9	0.006	0.0004
Barge - Deck Winch	15.2	0.003	0.0002
Barge - Main Hoist	42.5	0.006	0.0004
Tracked Loader - Cat 973	26.6	0.004	0.0003
Tugboat - Generator	48.8	0.008	0.0006
Tugboat - Main Engines	412.6	0.057	0.0041
Subtotal	594.3	0.087	0.0062
Dredge and Disposal			
Derrick Barge - Crane Hoist	374.5	0.055	0.0039
Derrick Barge - Deck Winch	79.0	0.013	0.0009
Derrick Barge - Generator	344.2	0.049	0.0035
Derrick Barge - Generator	26.9	0.004	0.0003
Haul Trucks - Berth 205 to Anch. Rd. (1)	54.7	0.003	0.0014
Loader - 962G - Anchorage Rd.	88.5	0.015	0.0010
Tug Boat - Transport Barge to Berth 205	50.6	0.007	0.0005
Subtotal	1018.5	0.146	0.0116

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck

Table XX-C-15. Total GHG Emissions for Wharf Improvements at Berths 144-147
Proposed Project Phase 1 (2007-2010) (Pg 2 of 3).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Piledriving - Waterside Piles			
Derrick Barge Crane Hoist	11.7	0.002	0.0001
Generator - Pile Hammer	18.9	0.003	0.0002
Haul Trucks - Pile Deliveries (1)	48.6	0.003	0.0013
Jet Pump	28.8	0.004	0.0003
Tugboat	5.3	0.001	0.0001
Subtotal	113.1	0.012	0.0020
Piledriving - Landside Piles			
Crane - 220-Ton Manitowoc 888	44.7	0.006	0.0005
Forklift	14.2	0.002	0.0002
Generator - Pile Hammer	30.9	0.005	0.0004
Jet Pump	47.1	0.007	0.0005
Haul Trucks - Pile Deliveries (1)	75.1	0.004	0.0020
Subtotal	211.9	0.025	0.0035
Replace Existing Wharf			
Air Compressor - 185 CFM	33.7	0.006	0.0004
Air Compressor - 750 CFM	144.3	0.021	0.0015
Air Compressor - 825 CFM	161.2	0.023	0.0017
Air Compressor - 900 CFM	168.4	0.024	0.0017
Bulldozer - D6	5.4	0.001	0.0001
Bulldozer - D8	4.6	0.001	0.0000
Concrete Boom Pump	0.9	0.000	0.0000
Concrete Trucks (1)	2.9	0.000	0.0001
Crane - 220-Ton Manitowoc 888	66.2	0.009	0.0007
Crane - 275-Ton Manitowoc 999	518.4	0.074	0.0053
Crane - Manitowoc 4000	46.5	0.007	0.0005
Crew Boat	0.4	0.000	0.0000
Excavator - Cat 345B	58.1	0.008	0.0006
Excavator w/ Ram -Komatso PC 220 LC5	25.0	0.004	0.0003
Flat Bed	2.4	0.000	0.0000
Forklift - Cat 200	112.8	0.019	0.0013
Generator	2.2	0.000	0.0000
Haul Trucks - Material Deliveries (1)	18.7	0.001	0.0005
Loader - Cat 966E	3.7	0.001	0.0000
Subtotal	1375.7	0.200	0.0148

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck

Table XX-C-16. Total GHG Emissions for Wharf Improvements at Berths 144-147
Proposed Project Phase 1 (2007-2010) (Pg 3 of 3).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Upgrade Existing Wharf			
Crane - 220-Ton Manitowoc 888	38.0	0.005	0.0004
Compressor	0.6	0.000	0.0000
Concrete Boom Pump	0.6	0.000	0.0000
Concrete Trucks	17.8	0.001	0.0005
Excavator w/ Ram -Komatso PC 220 LC5	14.2	0.002	0.0002
Forklift - Cat 200	7.2	0.001	0.0001
Generator	1.4	0.000	0.0000
Loader - Cat 966E	2.8	0.000	0.0000
Material Truck (1)	5.7	0.000	0.0002
Subtotal	88.2	0.011	0.0013
Install 3 Cranes at Berth 144			
Crane - 50 ton	4.0	0.001	0.0000
Winch	1.1	0.000	0.0000
Cargo Ship - Transit - Crane Delivery	95.0	0.013	0.0008
Tugboat - Cargo Vessel Assist	1.4	0.000	0.0000
Cargo Ship - Hotelling	62.3	0.008	0.0006
Subtotal	163.8	0.022	0.0015

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck

Table XX-C-17. Total GHG Emissions for 89 Acres of Backland Improvements at Berths 142-147 -
Berths 136-147 Terminal Proposed Project Phase 1 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Building Demolition			
Bulldozer	17.5	0.003	0.0002
Backhoe	9.0	0.001	0.0001
Loader	18.2	0.003	0.0002
Crane w/Wrecking Ball	5.1	0.001	0.0001
Haul Truck (1)	9.3	0.001	0.0003
Building Demolition	---	---	---
Subtotal	59.2	0.008	0.0008
Backland Improvements	0.0	0.000	0.0000
Paving Machine	15.2	0.003	0.0002
Water Truck - 5000 Gallons	39.1	0.006	0.0005
Compactive Roller	37.7	0.006	0.0004
Scraper	44.5	0.007	0.0005
Grader	22.8	0.004	0.0003
Loader	27.3	0.004	0.0003
Backhoe	14.2	0.002	0.0002
Bulldozer - D6	14.7	0.002	0.0002
Haul Truck - Paving (1)	52.1	0.003	0.0014
Haul Truck - Base (1)	25.3	0.001	0.0007
Semi Truck (1)	33.5	0.002	0.0009
Fugitive Dust	---	---	---
Subtotal	326.5	0.042	0.0056

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck

Table XX-C-18. Total GHG Emissions to Construct a New Administration Building, Main Gate, and Wc
Berths 136-147 Terminal Proposed Project Phase 1 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Construct Administration Building			
Air Compressor - 100 CFM	7.4	0.001	0.0001
Concrete/Industrial Saw	15.2	0.003	0.0002
Crane	14.1	0.002	0.0002
Forklift	11.1	0.002	0.0001
Generator	8.9	0.002	0.0001
Concrete Trucks (1)	1.3	0.000	0.0000
Supply Trucks (1)	4.1	0.000	0.0001
Fugitive Dust	---	---	---
Subtotal	62.2	0.010	0.0009
Construct New Main Gate			
Air Compressor - 185 CFM	6.9	0.001	0.0001
Backhoe	6.0	0.001	0.0001
Compactive Roller	6.2	0.001	0.0001
Generator	6.7	0.001	0.0001
Concrete Trucks (1)	0.9	0.000	0.0000
Haul Trucks (1)	5.4	0.000	0.0001
Fugitive Dust	---	---	---
Subtotal	32.2	0.005	0.0005
Improve/Pave Demolished Areas and Parking Lot			
Paving Machine	5.7	0.001	0.0001
Water Truck - 5000 Gallons	14.5	0.002	0.0002
Compactive Roller	14.0	0.002	0.0002
Scraper	16.6	0.003	0.0002
Grader	8.5	0.001	0.0001
Loader	10.1	0.002	0.0001
Backhoe	5.3	0.001	0.0001
Bulldozer - D6	5.4	0.001	0.0001
Haul Truck - Paving (1)	19.4	0.001	0.0005
Haul Truck - Base (1)	9.4	0.001	0.0003
Semi Truck (1)	12.5	0.001	0.0003
Fugitive Dust	---	---	---
Subtotal	121.4	0.015	0.0021
Demolish Existing Admin. Bldg. and Gate			
Backhoe	3.6	0.001	0.0000
Bulldozer	6.9	0.001	0.0001
Crane w/Wrecking Ball	2.0	0.000	0.0000
Loader	7.2	0.001	0.0001
Haul Truck (1)	3.7	0.000	0.0001
Building Demolition	---	---	---
Subtotal	23.4	0.003	0.0003

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck

Table XX-C-19. Total GHG Emissions for Construction of a New Maintenance and Repair Facility Proposed Project Phase 1 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Construct Maintenance and Repair Facility			
Air Compressor - 100 CFM	22.8	0.004	0.0003
Concrete/Industrial Saw	62.2	0.011	0.0008
Crane	57.8	0.010	0.0007
Generator	27.4	0.005	0.0004
Rough Terrain Forklift	45.3	0.008	0.0006
Concrete Trucks (1)	4.0	0.000	0.0001
Supply Trucks (1)	12.6	0.001	0.0003
Fugitive Dust	---	---	---
Subtotal	232.2	0.038	0.0031
Improve/Pave Demolished Areas and M&R Area			
Paving Machine	2.7	0.000	0.0000
Water Truck - 5000 Gallons	7.0	0.001	0.0001
Compactive Roller	6.8	0.001	0.0001
Scraper	8.0	0.001	0.0001
Grader	4.1	0.001	0.0000
Loader	4.9	0.001	0.0001
Backhoe	2.6	0.000	0.0000
Bulldozer - D6	2.6	0.000	0.0000
Haul Truck - Paving (1)	9.4	0.001	0.0003
Haul Truck - Base (1)	4.5	0.000	0.0001
Semi Truck (1)	6.0	0.000	0.0002
Fugitive Dust	---	---	---
Subtotal	58.6	0.007	0.0010
Demolish Existing M&R Facility			
Backhoe	6.1	0.001	0.0001
Bulldozer	11.9	0.002	0.0001
Crane w/Wrecking Ball	3.5	0.001	0.0000
Loader	12.4	0.002	0.0001
Haul Truck (1)	6.3	0.000	0.0002
Building Demolition	---	---	---
Subtotal	40.3	0.006	0.0006

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck

Table XX-C-20. Total GHG Emissions for Harry Bridges Blvd. Realignment
Proposed Project Phase 1 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Street Removals			
Backhoe - 416D	2.8	0.000	0.0000
Bulldozer - D9	14.7	0.002	0.0002
Dump Truck - 16 CY (1)	65.5	0.009	0.0007
Fugitive Dust	---	---	---
Loader - 938G	23.3	0.004	0.0003
Water Truck - 5000 Gallons	20.4	0.003	0.0002
Subtotal	126.7	0.019	0.0014
Street Improvements			
Asphalt Spreader - BG 240C	8.3	0.001	0.0001
Concrete Truck - 9 CY (1)	8.7	0.000	0.0002
Concrete Truck - 9 CY	3.3	0.000	0.0000
Fugitive Dust (1)	---	---	---
Grader - 14H	9.7	0.002	0.0001
Haul Truck - Base (1)	107.0	0.006	0.0029
Haul Truck - Paving (1)	62.6	0.003	0.0017
Loader - 938G	7.2	0.001	0.0001
Oil Truck	5.4	0.001	0.0001
Vibratory Compactor - CB 355D	14.2	0.002	0.0002
Subtotal	226.3	0.018	0.0054
Sewer Installation			
Backhoe - 416D	2.3	0.000	0.0000
Dump Truck - 16 CY (1)	4.5	0.001	0.0000
Excavator Compactor - 320C	6.2	0.001	0.0001
Water Truck - 5000 Gallons	4.2	0.001	0.0000
Subtotal	17.3	0.003	0.0002
Water Systems Installation			
Backhoe - 416D	4.6	0.001	0.0001
Dump Truck - 16 CY (1)	9.0	0.001	0.0001
Excavator Compactor - 320C	12.4	0.002	0.0001
Water Truck - 5000 Gallons	8.4	0.001	0.0001
Subtotal	34.5	0.006	0.0004
Storm Drain Installation			
Backhoe - 416D	5.8	0.001	0.0001
Concrete Truck - 9 CY (1)	2.2	0.000	0.0001
Concrete Truck - 9 CY	0.8	0.000	0.0000
Dump Truck - 16 CY	45.1	0.006	0.0005
Excavator Compactor - 320C	15.6	0.003	0.0002
Pipelayer - 561M	8.3	0.001	0.0001
Water Truck - 5000 Gallons	10.5	0.002	0.0001
Subtotal	88.3	0.013	0.0010

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck

Table XX-C-21. Total GHG Emissions for Construction of a 46-Acre Rail Yard at Berth 200 - Berths 13(
Proposed Project Phase 1 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Crane	308.2	0.051	0.0036
Loader	84.3	0.014	0.0010
Paving Machine	52.7	0.009	0.0006
Grader	35.6	0.006	0.0004
Water Truck - 5000 Gallons	27.7	0.005	0.0003
Backhoe	84.3	0.014	0.0010
Roller	13.2	0.002	0.0002
Air Compressor	94.8	0.018	0.0013
Welding Machine	94.8	0.018	0.0013
Generator	47.4	0.009	0.0006
Material Truck (1)	710.8	0.039	0.0194
Fugitive Dust	---	---	---
Subtotal	1553.9	0.184	0.0297

Notes: (1) Within construction site area, assuming 1 mile of tı

Table XX-C-22. Total GHG Emissions for 5 Acres of Backland Improvements at Berths 134-135 - Berths 136-147 Terminal Proposed Project Phase 1 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Backland Improvements			
Paving Machine	1.8	0.000	0.0000
Water Truck - 5000 Gallons	4.5	0.001	0.0001
Compactive Roller	4.3	0.001	0.0001
Scraper	5.1	0.001	0.0001
Grader	2.6	0.000	0.0000
Loader	3.1	0.001	0.0000
Backhoe	1.6	0.000	0.0000
Bulldozer - D6	1.7	0.000	0.0000
Haul Truck - Paving (1)	6.0	0.000	0.0002
Haul Truck - Base (1)	2.9	0.000	0.0001
Semi Truck (1)	3.9	0.000	0.0001
Fugitive Dust	---	---	---
Subtotal	37.7	0.005	0.0006

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck

Table XX-C-23. Total GHG Emissions for Construction of the Berths 142-147 12-Acre ICTF and Assoc Berths 136-147 Terminal Proposed Project Phase 1 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Rail Track Removal			
Forklift	41.3	0.007	0.0005
Mobile Crane	45.1	0.007	0.0005
Haul Truck (1)	33.1	0.002	0.0009
Subtotal	119.5	0.016	0.0019
Rail Yard Construction			
Crane	80.4	0.013	0.0009
Loader	22.0	0.004	0.0003
Paving Machine	13.7	0.002	0.0002
Grader	9.3	0.002	0.0001
Water Truck - 5000 Gallons	7.2	0.001	0.0001
Backhoe	22.0	0.004	0.0003
Roller	3.4	0.001	0.0000
Air Compressor	24.7	0.005	0.0003
Welding Machine	24.7	0.005	0.0003
Generator	12.4	0.002	0.0002
Material Truck (1)	185.4	0.010	0.0051
Fugitive Dust	---	---	---
Subtotal	405.4	0.048	0.0078
Backland Improvements			
Paving Machine	3.7	0.001	0.0000
Water Truck - 5000 Gallons	9.5	0.002	0.0001
Compactive Roller	9.2	0.002	0.0001
Scraper	10.9	0.002	0.0001
Grader	5.6	0.001	0.0001
Loader	6.6	0.001	0.0001
Backhoe	3.5	0.001	0.0000
Bulldozer - D6	3.6	0.001	0.0000
Haul Truck - Paving (1)	12.7	0.001	0.0003
Haul Truck - Base (1)	6.2	0.000	0.0002
Semi Truck (1)	8.2	0.000	0.0002
Fugitive Dust	---	---	---
Subtotal	79.5	0.010	0.0014

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck

Table XX-C-24. Total GHG Emissions for Existing Cranes Removal at Berth 136 - Berths 136-147 Term Proposed Project Phase 1 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Existing Crane Removal			
Crane - 50 ton	4.0	0.001	0.0000
Winch	1.5	0.000	0.0000
Tugboat	2.5	0.000	0.0000
Tugboat	0.4	0.000	0.0000
Subtotal	8.4	0.001	0.0001

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck

Table XX-C-25. Total GHG Emissions for Construction of Harry Bridges Boulevard Buffer - Berths 13 Terminal Proposed Project Phase 1 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Landscape Installation			
Backhoe - 416D	277.8	0.048	0.0034
Dump Truck - 12 CY (1)	79.4	0.004	0.0022
Dump Truck - 12 CY	22.6	0.003	0.0002
Loader - 938G	96.2	0.016	0.0011
Trencher	95.6	0.016	0.0012
Material Truck (1)	64.8	0.004	0.0018
Water Truck - 5,000 Gallons	162.4	0.023	0.0017
Fugitive Dust	---	---	---
Subtotal	798.9	0.114	0.0115
Grading/Earthmoving			
Bulldozer - D9	81.2	0.012	0.0008
Compactor - CS431C	47.4	0.008	0.0006
Dump Truck - 20 CY (1)	82.7	0.005	0.0023
Dump Truck - 12 CY	23.5	0.003	0.0002
Fugitive Dust	---	---	---
Grader - 140H	33.1	0.005	0.0004
Loader - 938G	96.2	0.016	0.0011
Scraper - 637E	85.2	0.013	0.0009
Water Truck - 5,000 Gallons	72.2	0.010	0.0007
Subtotal	521.5	0.072	0.0071

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck

Table XX-C-26. Total GHG Emissions for Crane Installation at Berth 136 & Berth 144 - Berths 136-147

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Install Cranes at Berth 136 & Berth 144			
Crane - 50 ton	4.0	0.001	0.0000
Winch	0.8	0.000	0.0000
Cargo Ship - Transit - Crane Delivery (1)	95.0	0.013	0.0008
Tugboat - Vessel Assist	1.4	0.000	0.0000
Cargo Ship - Hotelling (1)	31.2	0.004	0.0003
Subtotal	132.3	0.018	0.0012

Table XX-C-27. Total GHG Emissions from Berths 136-147 Terminal Proposed Project Phase 1 Constr
Activities (2007-2010) .

	Tons		
Construction Project/Activity (2)	CO2	CH4	N2O
Wharf Improvments at Berths 144-147			
Wharf Demolition	118.9	0.018	0.0013
Remove 2 Existing Cranes at Berth 144	8.4	0.001	0.0001
Piledriving-Sheet Piles	206.3	0.029	0.0020
Rip-Rap Placement	594.3	0.087	0.0062
Dredge and Disposal	1,018.5	0.146	0.0116
Piledriving-Waterside Piles	113.1	0.012	0.0020
Piledriving-Landside Piles	211.9	0.025	0.0035
Replace Existing Wharf	1,375.7	0.200	0.0148
Upgrade Existing Wharf	88.2	0.011	0.0013
Install 3 Cranes at Berth 144	163.8	0.022	0.0015
89 Acres of Backland Improvement at Berths 142-147			
Building Demolition	59.2	0.008	0.0008
Backland Improvements	326.5	0.042	0.0056
Construct a New Administration Building, Main Gate, and Worker Parking Lot			
Construct Administration Building	62.2	0.010	0.0009
Construct New Main Gate	32.2	0.005	0.0005
Improve/Pave Demolished Areas and Parking	121.4	0.015	0.0021
Demolish Existing Administration Building and Gate	23.4	0.003	0.0003
Construct a New Maintenance and Repair Facility-Berths 136-147			
Construct Maintenance and Repair Facility	232.2	0.038	0.0031
Improve/Pave Demolished Areas and M&R	58.6	0.007	0.0010
Demolish Existing M&R Facility	40.3	0.006	0.0006
Harry Bridges Blvd. Realignment			
Street Removals	126.7	0.019	0.0014
Street Improvements	226.3	0.018	0.0054
Sewer Installation	17.3	0.003	0.0002
Water Systems Installation	34.5	0.006	0.0004
Storm Drain Installation	88.3	0.013	0.0010
Construction of a 46-Acre Rail Yard at Berth 200	1,553.9	0.184	0.0297
5 Acres of Backland Improvements at Berts 134-13	37.7	0.005	0.0006
Construction of the Berths 142-147 12-Acre ICTF and 19-Acre Backlands			
Rail Track Removal	119.5	0.016	0.0019
Rail Yard Construction	405.4	0.048	0.0078
Backland Improvements	79.5	0.010	0.0014
Existing Cranes Removal at Berth 136	8.4	0.001	0.0001
Construction of Harry Bridges Blvd. Buffer			
Landscape Installation	798.9	0.114	0.0115
Grading/Earthmoving	521.5	0.072	0.0071
Install Cranes at Berth 136 & Berth 144	132.3	0.018	0.0012
Total GHG Emissions	9,005	1.212	0.1287

Table XX-C-28. Total GHG Emissions for the 10-Acre Northwest Slip Fill - Berths 136-147 Proposed Project Phase 2 (2015).

	Tons		
Construction Activity/Equipment Type	CO2	CH4	N2O
Dredge Dike Toe			
Derrick Barge Crane Hoist	4.24	0.001	0.0000
Deck Winch	0.89	0.000	0.0000
Generator	3.90	0.001	0.0000
Generator	0.30	0.000	0.0000
Tug Boat - Transport Barge to Pier 400	1.50	0.000	0.0000
Subtotal	10.84	0.002	0.0001
Rip-Rap Placement			
Barge - Generator	7.95	0.001	0.0001
Barge - Generator	20.23	0.003	0.0002
Barge - Deck Winch	8.83	0.002	0.0001
Barge - Main Hoist	24.66	0.004	0.0003
Tracked Loader - Cat 973	15.46	0.003	0.0002
Tugboat - Generator	28.30	0.005	0.0003
Tugboat - Main Engines	239.40	0.033	0.0024
Subtotal	344.82	0.050	0.0036
Channel Dredging			
Derrick Hoist - Hydraulic Dredge	10.52	0.002	0.0001
Derrick Winch - Hydraulic Dredge	0.95	0.000	0.0000
Anchor Barge Winch - Hydraulic Dredge	7.89	0.001	0.0001
Generator - Hydraulic Dredge	1.80	0.000	0.0000
Tug Boat - Hydraulic Dredge	101.47	0.014	0.0010
Tug Boat - Hydraulic Dredge	83.57	0.012	0.0008
Subtotal	206.21	0.029	0.0021
Disposal into Dike			
Booster Pump	90.21	0.013	0.0009
Bulldozer - D8	16.79	0.002	0.0002
Tug Boat - Sediment Transport to Site	827.31	0.114	0.0082
Subtotal	934.30	0.130	0.0093

Table XX-C-29. Total GHG Emissions for 10 Acres of Backland Improvements at Berth 131 - Berths 136-147 Proposed Project Phase 2 (2015).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Backland Improvements			
Paving Machine	1.95	0.000	0.0000
Water Truck	11.63	0.002	0.0001
Compactive Roller	4.83	0.001	0.0001
Scraper	5.71	0.001	0.0001
Grader	2.93	0.000	0.0000
Loader	3.50	0.001	0.0000
Backhoe	1.82	0.000	0.0000
Bulldozer - D6	1.88	0.000	0.0000
Haul Truck - Paving (1)	6.68	0.000	0.0002
Haul Truck - Base (1)	3.24	0.000	0.0001
Semi Truck (1)	4.30	0.000	0.0001
Fugitive Dust	---	---	---
Subtotal	48.48	0.006	0.0008

Table XX-C-30. Total GHG Emissions for Berth 136 Wharf Extension - Berths 136-147 Proposed Project Phase 2 (2015).

	Tons		
Construction Activity/Equipment Type	CO2	CH4	N2O
Piledriving - Sheet Piles			
Derrick Barge Crane Hoist	6.99	0.001	0.0001
Generator - Pile Hammer	11.31	0.002	0.0001
Tugboat	3.15	0.000	0.0000
Cargo Ship - Transit - Sheetpile Delivery	95.04	0.013	0.0008
Tugboat - Cargo Vessel Assist	1.35	0.000	0.0000
Cargo Ship - Hotelling	10.43	0.001	0.0001
Subtotal	128.28	0.017	0.0012
Piledriving - Waterside Piles			
Derrick Barge Crane Hoist	5.03	0.001	0.0001
Generator - Pile Hammer	8.14	0.001	0.0001
Haul Trucks - Pile Deliveries (1)	20.17	0.001	0.0005
Jet Pump	12.43	0.002	0.0001
Tugboat	2.27	0.000	0.0000
Subtotal	48.04	0.005	0.0008
Piledriving - Landside Piles			
Crane - 220-Ton Manitowoc 888	10.64	0.002	0.0001
Forklift	3.38	0.001	0.0000
Generator - Pile Hammer	7.35	0.001	0.0001
Jet Pump	11.22	0.002	0.0001
Haul Trucks - Pile Deliveries (1)	17.78	0.001	0.0005
Subtotal	50.37	0.006	0.0008
Dike Filling			
Loader - 950G	8.08	0.001	0.0001
Haul Trucks - Fill (1)	15.05	0.001	0.0004
Subtotal	23.13	0.002	0.0005
Wharf Construction			
Air Compressor - 185 CFM	18.23	0.003	0.0002
Air Compressor - 750 CFM	78.12	0.011	0.0008
Air Compressor - 825 CFM	87.24	0.013	0.0009
Air Compressor - 900 CFM	91.14	0.013	0.0009
Bulldozer - D6	2.91	0.000	0.0000
Bulldozer - D8	2.48	0.000	0.0000
Concrete Boom Pump	0.46	0.000	0.0000
Concrete Trucks (1)	34.00	0.002	0.0009
Crane - 220-Ton Manitowoc 888	35.81	0.005	0.0004
Crane - 275-Ton Manitowoc 999	280.59	0.040	0.0029
Crane - Manitowoc 4000	25.16	0.004	0.0003
Crew Boat	0.21	0.000	0.0000
Excavator - Cat 345B	31.47	0.005	0.0003
Excavator w/ Ram -Komatso PC 220 LC5	13.54	0.002	0.0002
Flat Bed	1.32	0.000	0.0000
Forklift - Cat 200	61.03	0.010	0.0007
Generator	1.19	0.000	0.0000
Haul Trucks - Material Deliveries (1)	10.13	0.001	0.0003
Loader - Cat 966E	2.01	0.000	0.0000
Subtotal	777.03	0.110	0.0089

Table XX-C-31. Total GHG Emissions from Berths 136-147 Terminal Proposed Project Phase 2 Construction Activities (2015) .

Construction Proposed Project/Activity	Tons		
	CO2	CH4	N2O
10-Acre Northwest Slip Fill			
Dredge Dike Toe	10.84	0.002	0.0001
Rip-Rap Placement	344.82	0.050	0.0036
Channel Dredging	206.21	0.029	0.0021
Disposal into Dike	934.30	0.130	0.0093
10-Acres of Backland Improvement at Berth 131	48.48	0.006	0.0008
Berth 136 Wharf Extension			
Piledriving - Sheet Piles	128.28	0.017	0.0012
Piledriving - Waterside Piles	48.04	0.005	0.0008
Piledriving - Lanside Piles	50.37	0.006	0.0008
Dike Filling	23.13	0.002	0.0005
Wharf Construction	777.03	0.110	0.0089
Commuting Vehicles (both Phase I and II)	2,445.18	0.400	0.3873
Total GHG Emissions	5,016.69	0.758	0.4154

Table XX-C-32. Total GHG Emissions for Wharf Improvements at Berths 144-147

Alternative 2 (2007-2010) (Pg 1 of 3).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Wharf Demolition			
Air Compressor	1.5	0.000	0.0000
Crane - 220-Ton Manitowoc 888	31.4	0.005	0.0003
Derrick Barge	13.7	0.002	0.0002
Excavator - Cat 345B	7.3	0.001	0.0001
Forklift	2.0	0.000	0.0000
Generator	1.7	0.000	0.0000
Haul Truck - Demolished Materials (1)	1.0	0.000	0.0000
Loader - Cat 966E	20.9	0.003	0.0002
Tugboat	35.7	0.005	0.0004
Vibratory Hammer	3.8	0.001	0.0001
Subtotal	118.9	0.018	0.0013
Remove 2 Existing Cranes at Berth 144			
Crane - 50 ton	4.0	0.001	0.0000
Winch	1.5	0.000	0.0000
Tugboat	2.5	0.000	0.0000
Tugboat	0.4	0.000	0.0000
Subtotal	8.4	0.001	0.0001
Piledriving - Sheet Piles			
Derrick Barge Crane Hoist	30.7	0.005	0.0003
Generator - Pile Hammer	49.7	0.008	0.0006
Tugboat	13.8	0.002	0.0001
Cargo Ship - Transit - Sheetpile Delivery	95.0	0.013	0.0008
Tugboat - Cargo Vessel Assist	1.4	0.000	0.0000
Cargo Ship - Hotelling	15.6	0.002	0.0001
Subtotal	206.3	0.029	0.0020
Rip-Rap Placement			
Barge - Generator	13.7	0.002	0.0002
Barge - Generator	34.9	0.006	0.0004
Barge - Deck Winch	15.2	0.003	0.0002
Barge - Main Hoist	42.5	0.006	0.0004
Tracked Loader - Cat 973	26.6	0.004	0.0003
Tugboat - Generator	48.8	0.008	0.0006
Tugboat - Main Engines	487.1	0.084	0.0060
Subtotal	668.8	0.113	0.0081
Dredge and Disposal			
Derrick Barge - Crane Hoist	374.5	0.055	0.0039
Derrick Barge - Deck Winch	79.0	0.013	0.0009
Derrick Barge - Generator	344.2	0.049	0.0035
Derrick Barge - Generator	26.9	0.004	0.0003
Haul Trucks - Berth 205 to Anch. Rd. (1)	54.7	0.003	0.0014
Loader - 962G - Anchorage Rd.	88.5	0.015	0.0010
Tug Boat - Transport Barge to Berth 205	59.8	0.010	0.0007
Subtotal	1027.7	0.149	0.0119

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-33. Total GHG Emissions for Wharf Improvements at Berths 144-147

Alternative 2 (2007-2010) (Pg 2 of 3).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Piledriving - Waterside Piles			
Derrick Barge Crane Hoist	11.7	0.002	0.0001
Generator - Pile Hammer	18.9	0.003	0.0002
Haul Trucks - Pile Deliveries (1)	48.6	0.003	0.0013
Jet Pump	28.8	0.004	0.0003
Tugboat	5.3	0.001	0.0001
Subtotal	113.1	0.012	0.0020
Piledriving - Landside Piles			
Crane - 220-Ton Manitowoc 888	44.7	0.006	0.0005
Forklift	14.2	0.002	0.0002
Generator - Pile Hammer	30.9	0.005	0.0004
Jet Pump	47.1	0.007	0.0005
Haul Trucks - Pile Deliveries (1)	75.1	0.004	0.0020
Subtotal	211.9	0.025	0.0035
Replace Existing Wharf			
Air Compressor - 185 CFM	33.7	0.006	0.0004
Air Compressor - 750 CFM	144.3	0.021	0.0015
Air Compressor - 825 CFM	161.2	0.023	0.0017
Air Compressor - 900 CFM	168.4	0.024	0.0017
Bulldozer - D6	5.4	0.001	0.0001
Bulldozer - D8	4.6	0.001	0.0000
Concrete Boom Pump	0.9	0.000	0.0000
Concrete Trucks (1)	2.9	0.000	0.0001
Crane - 220-Ton Manitowoc 888	66.2	0.009	0.0007
Crane - 275-Ton Manitowoc 999	518.4	0.074	0.0053
Crane - Manitowoc 4000	46.5	0.007	0.0005
Crew Boat	0.4	0.000	0.0000
Excavator - Cat 345B	58.1	0.008	0.0006
Excavator w/ Ram -Komatso PC 220 LC5	25.0	0.004	0.0003
Flat Bed	2.4	0.000	0.0000
Forklift - Cat 200	112.8	0.019	0.0013
Generator	2.2	0.000	0.0000
Haul Trucks - Material Deliveries (1)	18.7	0.001	0.0005
Loader - Cat 966E	3.7	0.001	0.0000
Subtotal	1375.7	0.200	0.0148

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-34. Total GHG Emissions for Wharf Improvements at Berths 144-147
Alternative 2 (2007-2010) (Pg 3 of 3).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Upgrade Existing Wharf			
Crane - 220-Ton Manitowoc 888	38.0	0.005	0.0004
Compressor	0.6	0.000	0.0000
Concrete Boom Pump	0.6	0.000	0.0000
Concrete Trucks (1)	17.8	0.001	0.0005
Excavator w/ Ram -Komatso PC 220 LC5	14.2	0.002	0.0002
Forklift - Cat 200	7.2	0.001	0.0001
Generator	1.4	0.000	0.0000
Loader - Cat 966E	2.8	0.000	0.0000
Material Truck (1)	5.7	0.000	0.0002
Subtotal	88.2	0.011	0.0013
Install 3 Cranes at Berth 144			
Crane - 50 ton	4.0	0.001	0.0000
Winch	1.1	0.000	0.0000
Cargo Ship - Transit - Crane Delivery	95.0	0.013	0.0008
Tugboat - Cargo Vessel Assist	1.6	0.000	0.0000
Cargo Ship - Hotelling	62.3	0.008	0.0006
Subtotal	164.1	0.022	0.0015

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-35. Total GHG Emissions for 89 Acres of Backland Improvements at Berths 142-147 -
Berths 136-147 Terminal Project Alternative 2 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Building Demolition			
Bulldozer	17.5	0.003	0.0002
Backhoe	9.0	0.001	0.0001
Loader	18.2	0.003	0.0002
Crane w/Wrecking Ball	5.1	0.001	0.0001
Haul Truck (1)	9.3	0.001	0.0003
Building Demolition	--	--	--
Subtotal	59.2	0.008	0.0008
Backland Improvements			
Paving Machine	17.4	0.003	0.0002
Water Truck - 5000 Gallons	44.6	0.007	0.0005
Compactive Roller	43.0	0.007	0.0005
Scraper	50.8	0.008	0.0006
Grader	26.1	0.004	0.0003
Loader	31.1	0.005	0.0004
Backhoe	16.2	0.003	0.0002
Bulldozer - D6	16.7	0.003	0.0002
Haul Truck - Paving (1)	59.5	0.003	0.0016
Haul Truck - Base (1)	28.8	0.002	0.0008
Semi Truck (1)	38.3	0.002	0.0010
Fugitive Dust	---	---	---
Subtotal	372.5	0.047	0.0063

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-36. Total GHG Emissions to Construct a New Administration Building, Main Gate, and Worker Parking Lot - Berths 136-147 Terminal Project Alternative 2 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Construct Administration Building			
Air Compressor - 100 CFM	7.4	0.001	0.0001
Concrete/Industrial Saw	15.2	0.003	0.0002
Crane	14.1	0.002	0.0002
Forklift	11.1	0.002	0.0001
Generator	8.9	0.002	0.0001
Concrete Trucks (1)	1.3	0.000	0.0000
Supply Trucks (1)	4.1	0.000	0.0001
Fugitive Dust	---	---	---
Subtotal	62.2	0.010	0.0009
Construct New Main Gate			
Air Compressor - 185 CFM	6.9	0.001	0.0001
Backhoe	6.0	0.001	0.0001
Compactive Roller	6.2	0.001	0.0001
Generator	6.7	0.001	0.0001
Concrete Trucks (1)	0.9	0.000	0.0000
Haul Trucks (1)	5.4	0.000	0.0001
Fugitive Dust	---	---	---
Subtotal	32.2	0.005	0.0005
Improve/Pave Demolished Areas and Parking Lot			
Paving Machine	5.7	0.001	0.0001
Water Truck - 5000 Gallons	14.5	0.002	0.0002
Compactive Roller	14.0	0.002	0.0002
Scraper	16.6	0.003	0.0002
Grader	8.5	0.001	0.0001
Loader	10.1	0.002	0.0001
Backhoe	5.3	0.001	0.0001
Bulldozer - D6	5.4	0.001	0.0001
Haul Truck - Paving (1)	19.4	0.001	0.0005
Haul Truck - Base (1)	9.4	0.001	0.0003
Semi Truck (1)	12.5	0.001	0.0003
Fugitive Dust	---	---	---
Subtotal	121.4	0.015	0.0021
Demolish Existing Admin. Bldg. and Gate			
Backhoe	3.6	0.001	0.0000
Bulldozer	6.9	0.001	0.0001
Crane w/Wrecking Ball	2.0	0.000	0.0000
Loader	7.2	0.001	0.0001
Haul Truck (1)	3.7	0.000	0.0001
Building Demolition	---	---	---
Subtotal	23.4	0.003	0.0003

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-37. Total GHG Emissions for Construction of a New Maintenance and Repair Facility Alternative 2 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Construct Maintenance and Repair Facility			
Air Compressor - 100 CFM	22.8	0.004	0.0003
Concrete/Industrial Saw	62.2	0.011	0.0008
Crane	57.8	0.010	0.0007
Generator	27.4	0.005	0.0004
Rough Terrain Forklift	45.3	0.008	0.0006
Concrete Trucks (1)	4.0	0.000	0.0001
Supply Trucks (1)	12.6	0.001	0.0003
Fugitive Dust	---	---	---
Subtotal	232.2	0.038	0.0031
Improve/Pave Demolished Areas and M&R Area			
Paving Machine	2.7	0.000	0.0000
Water Truck - 5000 Gallons	7.0	0.001	0.0001
Compactive Roller	6.8	0.001	0.0001
Scraper	8.0	0.001	0.0001
Grader	4.1	0.001	0.0000
Loader	4.9	0.001	0.0001
Backhoe	2.6	0.000	0.0000
Bulldozer - D6	2.6	0.000	0.0000
Haul Truck - Paving (1)	9.4	0.001	0.0003
Haul Truck - Base (1)	4.5	0.000	0.0001
Semi Truck (1)	6.0	0.000	0.0002
Fugitive Dust	---	---	---
Subtotal	58.6	0.007	0.0010
Demolish Existing M&R Facility			
Backhoe	6.1	0.001	0.0001
Bulldozer	11.9	0.002	0.0001
Crane w/Wrecking Ball	3.5	0.001	0.0000
Loader	12.4	0.002	0.0001
Haul Truck (1)	6.3	0.000	0.0002
Building Demolition	---	---	---
Subtotal	40.3	0.006	0.0006

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-38. Total GHG Emissions for Harry Bridges Blvd. Realignment Alternative 2 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Street Removals			
Backhoe - 416D	2.8	0.000	0.0000
Bulldozer - D9	14.7	0.002	0.0002
Dump Truck - 16 CY	65.5	0.009	0.0007
Fugitive Dust	---	---	---
Loader - 938G	23.3	0.004	0.0003
Water Truck - 5000 Gallons	20.4	0.003	0.0002
Subtotal	126.7	0.019	0.0014
Street Improvements			
Asphalt Spreader - BG 240C	8.3	0.001	0.0001
Concrete Truck - 9 CY (1)	8.7	0.000	0.0002
Concrete Truck - 9 CY	3.3	0.000	0.0000
Fugitive Dust (1)	---	---	---
Grader - 14H	9.7	0.002	0.0001
Haul Truck - Base (1)	107.0	0.006	0.0029
Haul Truck - Paving (1)	62.6	0.003	0.0017
Loader - 938G	7.2	0.001	0.0001
Oil Truck	5.4	0.001	0.0001
Vibratory Compactor - CB 355D	14.2	0.002	0.0002
Subtotal	226.3	0.018	0.0054
Sewer Installation			
Backhoe - 416D	2.3	0.000	0.0000
Dump Truck - 16 CY	4.5	0.001	0.0000
Excavator Compactor - 320C	6.2	0.001	0.0001
Water Truck - 5000 Gallons	4.2	0.001	0.0000
Subtotal	17.3	0.003	0.0002
Water Systems Installation			
Backhoe - 416D	4.6	0.001	0.0001
Dump Truck - 16 CY	9.0	0.001	0.0001
Excavator Compactor - 320C	12.4	0.002	0.0001
Water Truck - 5000 Gallons	8.4	0.001	0.0001
Subtotal	34.5	0.006	0.0004
Storm Drain Installation			
Backhoe - 416D	5.8	0.001	0.0001
Concrete Truck - 9 CY (1)	2.2	0.000	0.0001
Concrete Truck - 9 CY	0.8	0.000	0.0000
Dump Truck - 16 CY	45.1	0.006	0.0005
Excavator Compactor - 320C	15.6	0.003	0.0002
Pipelayer - 561M	8.3	0.001	0.0001
Water Truck - 5000 Gallons	10.5	0.002	0.0001
Subtotal	88.3	0.013	0.0010

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-39. Total GHG Emissions for Construction of a 46-Acre Rail Yard at Berth 200 - Berths 136-147 Terminal Project Alternative 2 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Crane	308.2	0.051	0.0036
Loader	84.3	0.014	0.0010
Paving Machine	52.7	0.009	0.0006
Grader	35.6	0.006	0.0004
Water Truck - 5000 Gallons	27.7	0.005	0.0003
Backhoe	84.3	0.014	0.0010
Roller	13.2	0.002	0.0002
Air Compressor	94.8	0.018	0.0013
Welding Machine	94.8	0.018	0.0013
Generator	47.4	0.009	0.0006
Material Truck (1)	710.8	0.039	0.0194
Fugitive Dust	---	---	---
Subtotal	1553.9	0.184	0.0297

Notes: (1) Within construction site area, assuming 1 mile of tra

Table XX-C-40. Total GHG Emissions for 5 Acres of Backland Improvements at Berths 134-135 - Berths 136-147 Terminal Project Alternative 2 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Backland Improvements			
Paving Machine	1.0	0.000	0.0000
Water Truck - 5000 Gallons	2.5	0.000	0.0000
Compactive Roller	2.4	0.000	0.0000
Scraper	2.9	0.000	0.0000
Grader	1.5	0.000	0.0000
Loader	1.7	0.000	0.0000
Backhoe	0.9	0.000	0.0000
Bulldozer - D6	0.9	0.000	0.0000
Haul Truck - Paving (1)	3.3	0.000	0.0001
Haul Truck - Base (1)	1.6	0.000	0.0000
Semi Truck (1)	2.1	0.000	0.0001
Fugitive Dust	---	---	---
Subtotal	20.9	0.003	0.0004

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-41. Total GHG Emissions for Construction of the Berths 142-147 12-Acre ICTF and Associated 19-Acre Backland Berths 136-147 Terminal Project Alternative 2 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Rail Track Removal			
Forklift	41.3	0.007	0.0005
Mobile Crane	45.1	0.007	0.0005
Haul Truck (1)	33.1	0.002	0.0009
Subtotal	119.5	0.016	0.0019
Rail Yard Construction			
Crane	80.4	0.013	0.0009
Loader	22.0	0.004	0.0003
Paving Machine	13.7	0.002	0.0002
Grader	9.3	0.002	0.0001
Water Truck - 5000 Gallons	7.2	0.001	0.0001
Backhoe	22.0	0.004	0.0003
Roller	3.4	0.001	0.0000
Air Compressor	24.7	0.005	0.0003
Welding Machine	24.7	0.005	0.0003
Generator	12.4	0.002	0.0002
Material Truck (1)	185.4	0.010	0.0051
Fugitive Dust	---	---	---
Subtotal	405.4	0.048	0.0078
Backland Improvements			
Paving Machine	3.7	0.001	0.0000
Water Truck - 5000 Gallons	9.5	0.002	0.0001
Compactive Roller	9.2	0.002	0.0001
Scraper	10.9	0.002	0.0001
Grader	5.6	0.001	0.0001
Loader	6.6	0.001	0.0001
Backhoe	3.5	0.001	0.0000
Bulldozer - D6	3.6	0.001	0.0000
Haul Truck - Paving (1)	12.7	0.001	0.0003
Haul Truck - Base (1)	6.2	0.000	0.0002
Semi Truck (1)	8.2	0.000	0.0002
Fugitive Dust	---	---	---
Subtotal	79.5	0.010	0.0014

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-42. Total GHG Emissions for Existing Cranes Removal at Berth 136 - Berths 136-147 Terminal Project Alternative 2 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Existing Crane Removal			
Crane - 50 ton	4.0	0.001	0.0000
Winch	1.5	0.000	0.0000
Tugboat	2.5	0.000	0.0000
Tugboat	0.4	0.000	0.0000
Subtotal	8.4	0.001	0.0001

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-43. Total GHG Emissions for Construction of Harry Bridges Boulevard Buffer - Berths 136-147 Terminal Project Alternative 2 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Landscape Installation			
Backhoe - 416D	277.8	0.048	0.0034
Dump Truck - 12 CY (1)	79.4	0.004	0.0022
Dump Truck - 12 CY	22.6	0.003	0.0002
Loader - 938G	96.2	0.016	0.0011
Trencher	95.6	0.016	0.0012
Material Truck (1)	64.8	0.004	0.0018
Water Truck - 5,000 Gallons	162.4	0.023	0.0017
Fugitive Dust	---	---	---
Subtotal	798.9	0.114	0.0115
Grading/Earthmoving			
Bulldozer - D9	81.2	0.012	0.0008
Compactor - CS431C	47.4	0.008	0.0006
Dump Truck - 20 CY (1)	82.7	0.005	0.0023
Dump Truck - 12 CY	23.5	0.003	0.0002
Fugitive Dust	---	---	---
Grader - 140H	33.1	0.005	0.0004
Loader - 938G	96.2	0.016	0.0011
Scraper - 637E	85.2	0.013	0.0009
Water Truck - 5,000 Gallons	72.2	0.010	0.0007
Subtotal	521.5	0.072	0.0071

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-44. Total GHG Emissions for Crane Installation at Berth 136 & Berth 144 - Berths 136-147 Project (2012).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Install Cranes at Berth 136 & Berth 144			
Crane - 50 ton	4.0	0.001	0.0000
Winch	0.8	0.000	0.0000
Cargo Ship - Transit - Crane Delivery (1)	95.0	0.013	0.0008
Tugboat - Vessel Assist	1.4	0.000	0.0000
Cargo Ship - Hotelling (1)	31.2	0.004	0.0003
Subtotal	132.3	0.018	0.0012

Note: (1) See Table C1-XX for a summary of the associated activity data. Arrival/departure would not occur on the same day.

Table XX-C-45. Total GHG Emissions from Berths 136-147 Terminal Project Alternative 2 Construction Activities (2007-2010) .

	Tons		
Construction Project/Activity	CO2	CH4	N2O
Wharf Improvments at Berths 144-147			
Wharf Demolition	118.9	0.018	0.0013
Remove 2 Existing Cranes at Berth 144	8.4	0.001	0.0001
Piledriving-Sheet Piles	206.3	0.029	0.0020
Rip-Rap Placement	668.8	0.113	0.0081
Dredge and Disposal	1,027.7	0.149	0.0119
Piledriving-Waterside Piles	113.1	0.012	0.0020
Piledriving-Landside Piles	211.9	0.025	0.0035
Replace Existing Wharf	1,375.7	0.200	0.0148
Upgrade Existing Wharf	88.2	0.011	0.0013
Install 3 Cranes at Berth 144	164.1	0.022	0.0015
89 Acres of Backland Improvement at Berths 142-147			
Building Demolition	59.2	0.008	0.0008
Backland Improvements	372.5	0.047	0.0063
Construct a New Administration Building, Main Gate, and Worker Parking Lot			
Construct Administration Building	62.2	0.010	0.0009
Construct New Main Gate	32.2	0.005	0.0005
Improve/Pave Demolished Areas and Parking	121.4	0.015	0.0021
Demolish Existing Administration Building and Gate	23.4	0.003	0.0003
Construct a New Maintenance and Repair Facility-Berths 136-147			
Construct Maintenance and Repair Facility	232.2	0.038	0.0031
Improve/Pave Demolished Areas and M&R	58.6	0.007	0.0010
Demolish Existing M&R Facility	40.3	0.006	0.0006
Harry Bridges Blvd. Realignment			
Street Removals	126.7	0.019	0.0014
Street Improvements	226.3	0.018	0.0054
Sewer Installation	17.3	0.003	0.0002
Water Systems Installation	34.5	0.006	0.0004
Storm Drain Installation	88.3	0.013	0.0010
Construction of a 46-Acre Rail Yard at Berth 200	1,553.9	0.184	0.0297
5 Acres of Backland Improvements at Berts 134-135	20.9	0.003	0.0004
Construction of the Berths 142-147 12-Acre ICTF and 19-Acre Backlands			
Rail Track Removal	119.5	0.016	0.0019
Rail Yard Construction	405.4	0.048	0.0078
Backland Improvements	79.5	0.010	0.0014
Existing Cranes Removal at Berth 136	8.4	0.001	0.0001
Construction of Harry Bridges Blvd. Buffer			
Landscape Installation	798.9	0.114	0.0115
Grading/Earthmoving	521.5	0.072	0.0071
Install Cranes at Berth 136 & Berth 144	132.3	0.018	0.0012
Commuting of Workers (1)	1,778.3	0.291	0.2817
Total GHG Emissions	10,897	1.537	0.4131

Table XX-C-46. Total GHG Emissions for Wharf Improvements at Berths 144-147
Alternative 3 (2007-2010) (Pg 1 of 3).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Remove 2 Existing Cranes at Berth 144			
Crane - 50 ton	4.0	0.001	0.0000
Winch	1.5	0.000	0.0000
Tugboat	2.5	0.000	0.0000
Tugboat	0.4	0.000	0.0000
Subtotal	8.4	0.001	0.0001
Upgrade Existing Wharf			
Crane - 220-Ton Manitowoc 888	38.0	0.005	0.0004
Compressor	0.6	0.000	0.0000
Concrete Boom Pump	0.6	0.000	0.0000
Concrete Trucks (1)	17.8	0.001	0.0005
Excavator w/ Ram -Komatso PC 220 LC5	14.2	0.002	0.0002
Forklift - Cat 200	7.2	0.001	0.0001
Generator	1.4	0.000	0.0000
Loader - Cat 966E	2.8	0.000	0.0000
Material Truck (1)	5.7	0.000	0.0002
Subtotal	88.2	0.011	0.0013
Install 3 Cranes at Berth 144			
Crane - 50 ton	4.0	0.001	0.0000
Winch	1.1	0.000	0.0000
Cargo Ship - Transit - Crane Delivery	95.0	0.013	0.0008
Tugboat - Cargo Vessel Assist	1.6	0.000	0.0000
Cargo Ship - Hotelling	62.3	0.008	0.0006
Subtotal	164.1	0.022	0.0015

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-47. Total GHG Emissions for 89 Acres of Backland Improvements at Berths 142-147 -
Berths 136-147 Terminal Project Alternative 3 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Building Demolition			
Bulldozer	17.5	0.003	0.0002
Backhoe	9.0	0.001	0.0001
Loader	18.2	0.003	0.0002
Crane w/Wrecking Ball	5.1	0.001	0.0001
Haul Truck (1)	9.3	0.001	0.0003
Building Demolition	---	---	---
Subtotal	59.2	0.008	0.0008
Backland Improvements			
Paving Machine	17.4	0.003	0.0002
Water Truck - 5000 Gallons	44.6	0.007	0.0005
Compactive Roller	43.0	0.007	0.0005
Scraper	50.8	0.008	0.0006
Grader	26.1	0.004	0.0003
Loader	31.1	0.005	0.0004
Backhoe	16.2	0.003	0.0002
Bulldozer - D6	16.7	0.003	0.0002
Haul Truck - Paving (1)	59.5	0.003	0.0016
Haul Truck - Base (1)	28.8	0.002	0.0008
Semi Truck (1)	38.3	0.002	0.0010
Fugitive Dust	---	---	---
Subtotal	372.5	0.047	0.0063

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-48. Total GHG Emissions to Construct a New Administration Building, Main Gate, and Worker Parking Lot - Berths 136-147 Terminal Project Alternative 3 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Construct Administration Building			
Air Compressor - 100 CFM	7.4	0.001	0.0001
Concrete/Industrial Saw	15.2	0.003	0.0002
Crane	14.1	0.002	0.0002
Forklift	11.1	0.002	0.0001
Generator	8.9	0.002	0.0001
Concrete Trucks (1)	1.3	0.000	0.0000
Supply Trucks (1)	4.1	0.000	0.0001
Fugitive Dust	---	---	---
Subtotal	62.2	0.010	0.0009
Construct New Main Gate			
Air Compressor - 185 CFM	6.9	0.001	0.0001
Backhoe	6.0	0.001	0.0001
Compactive Roller	6.2	0.001	0.0001
Generator	6.7	0.001	0.0001
Concrete Trucks (1)	0.9	0.000	0.0000
Haul Trucks (1)	5.4	0.000	0.0001
Fugitive Dust	---	---	---
Subtotal	32.2	0.005	0.0005
Improve/Pave Demolished Areas and Parking Lot			
Paving Machine	5.7	0.001	0.0001
Water Truck - 5000 Gallons	14.5	0.002	0.0002
Compactive Roller	14.0	0.002	0.0002
Scraper	16.6	0.003	0.0002
Grader	8.5	0.001	0.0001
Loader	10.1	0.002	0.0001
Backhoe	5.3	0.001	0.0001
Bulldozer - D6	5.4	0.001	0.0001
Haul Truck - Paving (1)	19.4	0.001	0.0005
Haul Truck - Base (1)	9.4	0.001	0.0003
Semi Truck (1)	12.5	0.001	0.0003
Fugitive Dust	---	---	---
Subtotal	121.4	0.015	0.0021
Demolish Existing Admin. Bldg. and Gate			
Backhoe	3.6	0.001	0.0000
Bulldozer	6.9	0.001	0.0001
Crane w/Wrecking Ball	2.0	0.000	0.0000
Loader	7.2	0.001	0.0001
Haul Truck (1)	3.7	0.000	0.0001
Building Demolition	---	---	---
Subtotal	23.4	0.003	0.0003

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-49. Total GHG Emissions for Construction of a New Maintenance and Repair Facility Alternative 3 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Construct Maintenance and Repair Facility			
Air Compressor - 100 CFM	22.8	0.004	0.0003
Concrete/Industrial Saw	62.2	0.011	0.0008
Crane	57.8	0.010	0.0007
Generator	27.4	0.005	0.0004
Rough Terrain Forklift	45.3	0.008	0.0006
Concrete Trucks (1)	4.0	0.000	0.0001
Supply Trucks (1)	12.6	0.001	0.0003
Fugitive Dust	---	---	---
Subtotal	232.2	0.038	0.0031
Improve/Pave Demolished Areas and M&R Area			
Paving Machine	2.7	0.000	0.0000
Water Truck - 5000 Gallons	7.0	0.001	0.0001
Compactive Roller	6.8	0.001	0.0001
Scraper	8.0	0.001	0.0001
Grader	4.1	0.001	0.0000
Loader	4.9	0.001	0.0001
Backhoe	2.6	0.000	0.0000
Bulldozer - D6	2.6	0.000	0.0000
Haul Truck - Paving (1)	9.4	0.001	0.0003
Haul Truck - Base (1)	4.5	0.000	0.0001
Semi Truck (1)	6.0	0.000	0.0002
Fugitive Dust	---	---	---
Subtotal	58.6	0.007	0.0010
Demolish Existing M&R Facility			
Backhoe	6.1	0.001	0.0001
Bulldozer	11.9	0.002	0.0001
Crane w/Wrecking Ball	3.5	0.001	0.0000
Loader	12.4	0.002	0.0001
Haul Truck (1)	6.3	0.000	0.0002
Building Demolition	---	---	---
Subtotal	40.3	0.006	0.0006

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-50. Total GHG Emissions for Harry Bridges Blvd. Realignment Alternative 3 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Street Removals			
Backhoe - 416D	2.8	0.000	0.0000
Bulldozer - D9	14.7	0.002	0.0002
Dump Truck - 16 CY	65.5	0.009	0.0007
Fugitive Dust	---	---	---
Loader - 938G	23.3	0.004	0.0003
Water Truck - 5000 Gallons	20.4	0.003	0.0002
Subtotal	126.7	0.019	0.0014
Street Improvements			
Asphalt Spreader - BG 240C	8.3	0.001	0.0001
Concrete Truck - 9 CY (1)	8.7	0.000	0.0002
Concrete Truck - 9 CY	3.3	0.000	0.0000
Fugitive Dust (1)	---	---	---
Grader - 14H	9.7	0.002	0.0001
Haul Truck - Base (1)	107.0	0.006	0.0029
Haul Truck - Paving (1)	62.6	0.003	0.0017
Loader - 938G	7.2	0.001	0.0001
Oil Truck	5.4	0.001	0.0001
Vibratory Compactor - CB 355D	14.2	0.002	0.0002
Subtotal	226.3	0.018	0.0054
Sewer Installation			
Backhoe - 416D	2.3	0.000	0.0000
Dump Truck - 16 CY	4.5	0.001	0.0000
Excavator Compactor - 320C	6.2	0.001	0.0001
Water Truck - 5000 Gallons	4.2	0.001	0.0000
Subtotal	17.3	0.003	0.0002
Water Systems Installation			
Backhoe - 416D	4.6	0.001	0.0001
Dump Truck - 16 CY	9.0	0.001	0.0001
Excavator Compactor - 320C	12.4	0.002	0.0001
Water Truck - 5000 Gallons	8.4	0.001	0.0001
Subtotal	34.5	0.006	0.0004
Storm Drain Installation			
Backhoe - 416D	5.8	0.001	0.0001
Concrete Truck - 9 CY (1)	2.2	0.000	0.0001
Concrete Truck - 9 CY	0.8	0.000	0.0000
Dump Truck - 16 CY	45.1	0.006	0.0005
Excavator Compactor - 320C	15.6	0.003	0.0002
Pipelayer - 561M	8.3	0.001	0.0001
Water Truck - 5000 Gallons	10.5	0.002	0.0001
Subtotal	88.3	0.013	0.0010

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-51. Total GHG Emissions for Construction of a 46-Acre Rail Yard at Berth 200 - Berths 136-147 Terminal Project Alternative 3 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Crane	308.2	0.051	0.0036
Loader	84.3	0.014	0.0010
Paving Machine	52.7	0.009	0.0006
Grader	35.6	0.006	0.0004
Water Truck - 5000 Gallons	27.7	0.005	0.0003
Backhoe	84.3	0.014	0.0010
Roller	13.2	0.002	0.0002
Air Compressor	94.8	0.018	0.0013
Welding Machine	94.8	0.018	0.0013
Generator	47.4	0.009	0.0006
Material Truck (1)	710.8	0.039	0.0194
Fugitive Dust	---	---	---
Subtotal	1553.9	0.184	0.0297

Notes: (1) Within construction site area, assuming 1 mile of tra

Table XX-C-52. Total GHG Emissions for 5 Acres of Backland Improvements at Berths 134-135 - Berths 136-147 Terminal Project Alternative 3 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Backland Improvements			
Paving Machine	1.0	0.000	0.0000
Water Truck - 5000 Gallons	2.5	0.000	0.0000
Compactive Roller	2.4	0.000	0.0000
Scraper	2.9	0.000	0.0000
Grader	1.5	0.000	0.0000
Loader	1.7	0.000	0.0000
Backhoe	0.9	0.000	0.0000
Bulldozer - D6	0.9	0.000	0.0000
Haul Truck - Paving (1)	3.3	0.000	0.0001
Haul Truck - Base (1)	1.6	0.000	0.0000
Semi Truck (1)	2.1	0.000	0.0001
Fugitive Dust	---	---	---
Subtotal	20.9	0.003	0.0004

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-53. Total GHG Emissions for Construction of the Berths 142-147 12-Acre ICTF and Associated 19-Acre Backlands Berths 136-147 Terminal Project Alternative 3 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Rail Track Removal			
Forklift	41.3	0.007	0.0005
Mobile Crane	45.1	0.007	0.0005
Haul Truck (1)	33.1	0.002	0.0009
Subtotal	119.5	0.016	0.0019
Rail Yard Construction			
Crane	80.4	0.013	0.0009
Loader	22.0	0.004	0.0003
Paving Machine	13.7	0.002	0.0002
Grader	9.3	0.002	0.0001
Water Truck - 5000 Gallons	7.2	0.001	0.0001
Backhoe	22.0	0.004	0.0003
Roller	3.4	0.001	0.0000
Air Compressor	24.7	0.005	0.0003
Welding Machine	24.7	0.005	0.0003
Generator	12.4	0.002	0.0002
Material Truck (1)	185.4	0.010	0.0051
Fugitive Dust	---	---	---
Subtotal	405.4	0.048	0.0078
Backland Improvements			
Paving Machine	3.7	0.001	0.0000
Water Truck - 5000 Gallons	9.5	0.002	0.0001
Compactive Roller	9.2	0.002	0.0001
Scraper	10.9	0.002	0.0001
Grader	5.6	0.001	0.0001
Loader	6.6	0.001	0.0001
Backhoe	3.5	0.001	0.0000
Bulldozer - D6	3.6	0.001	0.0000
Haul Truck - Paving (1)	12.7	0.001	0.0003
Haul Truck - Base (1)	6.2	0.000	0.0002
Semi Truck (1)	8.2	0.000	0.0002
Fugitive Dust	---	---	---
Subtotal	79.5	0.010	0.0014

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-54. Total GHG Emissions for Existing Cranes Removal at Berth 136 - Berths 136-147 Terminal Project Alternative 3 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Existing Crane Removal			
Crane - 50 ton	4.0	0.001	0.0000
Winch	1.5	0.000	0.0000
Tugboat	2.5	0.000	0.0000
Tugboat	0.4	0.000	0.0000
Subtotal	8.4	0.001	0.0001

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-55. Total GHG Emissions for Construction of Harry Bridges Boulevard Buffer - Berths 136-147 Terminal Project Alternative 3 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Landscape Installation			
Backhoe - 416D	277.8	0.048	0.0034
Dump Truck - 12 CY (1)	79.4	0.004	0.0022
Dump Truck - 12 CY	22.6	0.003	0.0002
Loader - 938G	96.2	0.016	0.0011
Trencher	95.6	0.016	0.0012
Material Truck (1)	64.8	0.004	0.0018
Water Truck - 5,000 Gallons	162.4	0.023	0.0017
Fugitive Dust	---	---	---
Subtotal	798.9	0.114	0.0115
Grading/Earthmoving			
Bulldozer - D9	81.2	0.012	0.0008
Compactor - CS431C	47.4	0.008	0.0006
Dump Truck - 20 CY (1)	82.7	0.005	0.0023
Dump Truck - 12 CY	23.5	0.003	0.0002
Fugitive Dust	---	---	---
Grader - 140H	33.1	0.005	0.0004
Loader - 938G	96.2	0.016	0.0011
Scraper - 637E	85.2	0.013	0.0009
Water Truck - 5,000 Gallons	72.2	0.010	0.0007
Subtotal	521.5	0.072	0.0071

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-56. Total GHG Emissions for Crane Installation at Berth 136 & Berth 144 - Berths 136-147 Project (2012).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Install Cranes at Berth 136 & Berth 144			
Crane - 50 ton	4.0	0.001	0.0000
Winch	0.8	0.000	0.0000
Cargo Ship - Transit - Crane Delivery (1)	95.0	0.013	0.0008
Tugboat - Vessel Assist	1.4	0.000	0.0000
Cargo Ship - Hotelling (1)	31.2	0.004	0.0003
Subtotal	132.3	0.018	0.0012

Note: (1) See Table C1-XX for a summary of the associated activity data. Arrival/departure would not occur on the same day.

Table XX-C-57. Total GHG Emissions from Berths 136-147 Terminal Project Alternative 3 Construction Activities (2007-2010) .

Construction Project/Activity	Tons		
	CO2	CH4	N2O
Wharf Improvments at Berths 144-147			
Remove 2 Existing Cranes at Berth 144	8.4	0.001	0.0001
Upgrade Existing Wharf	88.2	0.011	0.0013
Install 3 Cranes at Berth 144	164.1	0.022	0.0015
89 Acres of Backland Improvement at Berths 142-147			
Building Demolition	59.2	0.008	0.0008
Backland Improvements	372.5	0.047	0.0063
Construct a New Administration Building, Main Gate, a			
Construct Administration Building	62.2	0.010	0.0009
Construct New Main Gate	32.2	0.005	0.0005
Improve/Pave Demolished Areas and Parking	121.4	0.015	0.0021
Demolish Existing Administration Building and Gate	23.4	0.003	0.0003
Construct a New Maintenance and Repair Facility-Bert			
Construct Maintenance and Repair Facility	232.2	0.038	0.0031
Improve/Pave Demolished Areas and M&R	58.6	0.007	0.0010
Demolish Existing M&R Facility	40.3	0.006	0.0006
Harry Bridges Blvd. Realignment			
Street Removals	126.7	0.019	0.0014
Street Improvements	226.3	0.018	0.0054
Sewer Installation	17.3	0.003	0.0002
Water Systems Installation	34.5	0.006	0.0004
Storm Drain Installation	88.3	0.013	0.0010
Construction of a 46-Acre Rail Yard at Berth 200	1,553.9	0.184	0.0297
5 Acres of Backland Improvements at Berts 134-135	20.9	0.003	0.0004
Construction of the Berths 142-147 12-Acre ICTF and			
Rail Track Removal	119.5	0.016	0.0019
Rail Yard Construction	405.4	0.048	0.0078
Backland Improvements	79.5	0.010	0.0014
Existing Cranes Removal at Berth 136	8.4	0.001	0.0001
Construction of Harry Bridges Blvd. Buffer			
Landscape Installation	798.9	0.114	0.0115
Grading/Earthmoving	521.5	0.072	0.0071
Install Cranes at Berth 136 & Berth 144	132.3	0.018	0.0012
Commuting of Workers (1)	1,778.3	0.291	0.2817
Total GHG Emissions	7,175	0.990	0.3695

Table XX-C-58. Total GHG Emissions for 89 Acres of Backland Improvements at Berths 142-147 - Berths 136-147 Terminal Project Alternative 4 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Building Demolition			
Bulldozer	17.5	0.003	0.0002
Backhoe	9.0	0.001	0.0001
Loader	18.2	0.003	0.0002
Crane w/Wrecking Ball	5.1	0.001	0.0001
Haul Truck (1)	9.3	0.001	0.0003
Building Demolition	---	---	---
Subtotal	59.2	0.008	0.0008
Backland Improvements			
Paving Machine	17.4	0.003	0.0002
Water Truck - 5000 Gallons	44.6	0.007	0.0005
Compactive Roller	43.0	0.007	0.0005
Scraper	50.8	0.008	0.0006
Grader	26.1	0.004	0.0003
Loader	31.1	0.005	0.0004
Backhoe	16.2	0.003	0.0002
Bulldozer - D6	16.7	0.003	0.0002
Haul Truck - Paving (1)	59.5	0.003	0.0016
Haul Truck - Base (1)	28.8	0.002	0.0008
Semi Truck (1)	38.3	0.002	0.0010
Fugitive Dust	---	---	---
Subtotal	372.5	0.047	0.0063

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-59. Total GHG Emissions to Construct a New Administration Building, Main Gate, and Worker Parking Lot - Berths 136-147 Terminal Project Alternative 4 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Construct Administration Building			
Air Compressor - 100 CFM	7.4	0.001	0.0001
Concrete/Industrial Saw	15.2	0.003	0.0002
Crane	14.1	0.002	0.0002
Forklift	11.1	0.002	0.0001
Generator	8.9	0.002	0.0001
Concrete Trucks (1)	1.3	0.000	0.0000
Supply Trucks (1)	4.1	0.000	0.0001
Fugitive Dust	---	---	---
Subtotal	62.2	0.010	0.0009
Construct New Main Gate			
Air Compressor - 185 CFM	6.9	0.001	0.0001
Backhoe	6.0	0.001	0.0001
Compactive Roller	6.2	0.001	0.0001
Generator	6.7	0.001	0.0001
Concrete Trucks (1)	0.9	0.000	0.0000
Haul Trucks (1)	5.4	0.000	0.0001
Fugitive Dust	---	---	---
Subtotal	32.2	0.005	0.0005
Improve/Pave Demolished Areas and Parking Lot			
Paving Machine	5.7	0.001	0.0001
Water Truck - 5000 Gallons	14.5	0.002	0.0002
Compactive Roller	14.0	0.002	0.0002
Scraper	16.6	0.003	0.0002
Grader	8.5	0.001	0.0001
Loader	10.1	0.002	0.0001
Backhoe	5.3	0.001	0.0001
Bulldozer - D6	5.4	0.001	0.0001
Haul Truck - Paving (1)	19.4	0.001	0.0005
Haul Truck - Base (1)	9.4	0.001	0.0003
Semi Truck (1)	12.5	0.001	0.0003
Fugitive Dust	---	---	---
Subtotal	121.4	0.015	0.0021
Demolish Existing Admin. Bldg. and Gate			
Backhoe	3.6	0.001	0.0000
Bulldozer	6.9	0.001	0.0001
Crane w/Wrecking Ball	2.0	0.000	0.0000
Loader	7.2	0.001	0.0001
Haul Truck (1)	3.7	0.000	0.0001
Building Demolition	---	---	---
Subtotal	23.4	0.003	0.0003

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-60. Total GHG Emissions for Construction of a New Maintenance and Repair Facility Alternative 4 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Construct Maintenance and Repair Facility			
Air Compressor - 100 CFM	22.8	0.004	0.0003
Concrete/Industrial Saw	62.2	0.011	0.0008
Crane	57.8	0.010	0.0007
Generator	27.4	0.005	0.0004
Rough Terrain Forklift	45.3	0.008	0.0006
Concrete Trucks (1)	4.0	0.000	0.0001
Supply Trucks (1)	12.6	0.001	0.0003
Fugitive Dust	---	---	---
Subtotal	232.2	0.038	0.0031
Improve/Pave Demolished Areas and M&R Area			
Paving Machine	2.7	0.000	0.0000
Water Truck - 5000 Gallons	7.0	0.001	0.0001
Compactive Roller	6.8	0.001	0.0001
Scraper	8.0	0.001	0.0001
Grader	4.1	0.001	0.0000
Loader	4.9	0.001	0.0001
Backhoe	2.6	0.000	0.0000
Bulldozer - D6	2.6	0.000	0.0000
Haul Truck - Paving (1)	9.4	0.001	0.0003
Haul Truck - Base (1)	4.5	0.000	0.0001
Semi Truck (1)	6.0	0.000	0.0002
Fugitive Dust	---	---	---
Subtotal	58.6	0.007	0.0010
Demolish Existing M&R Facility			
Backhoe	6.1	0.001	0.0001
Bulldozer	11.9	0.002	0.0001
Crane w/Wrecking Ball	3.5	0.001	0.0000
Loader	12.4	0.002	0.0001
Haul Truck (1)	6.3	0.000	0.0002
Building Demolition	---	---	---
Subtotal	40.3	0.006	0.0006

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-61. Total GHG Emissions for Harry Bridges Blvd. Realignment Alternative 4 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Street Removals			
Backhoe - 416D	2.8	0.000	0.0000
Bulldozer - D9	14.7	0.002	0.0002
Dump Truck - 16 CY	65.5	0.009	0.0007
Fugitive Dust	---	---	---
Loader - 938G	23.3	0.004	0.0003
Water Truck - 5000 Gallons	20.4	0.003	0.0002
Subtotal	126.7	0.019	0.0014
Street Improvements			
Asphalt Spreader - BG 240C	8.3	0.001	0.0001
Concrete Truck - 9 CY (1)	8.7	0.000	0.0002
Concrete Truck - 9 CY	3.3	0.000	0.0000
Fugitive Dust (1)	---	---	---
Grader - 14H	9.7	0.002	0.0001
Haul Truck - Base (1)	107.0	0.006	0.0029
Haul Truck - Paving (1)	62.6	0.003	0.0017
Loader - 938G	7.2	0.001	0.0001
Oil Truck	5.4	0.001	0.0001
Vibratory Compactor - CB 355D	14.2	0.002	0.0002
Subtotal	226.3	0.018	0.0054
Sewer Installation			
Backhoe - 416D	2.3	0.000	0.0000
Dump Truck - 16 CY	4.5	0.001	0.0000
Excavator Compactor - 320C	6.2	0.001	0.0001
Water Truck - 5000 Gallons	4.2	0.001	0.0000
Subtotal	17.3	0.003	0.0002
Water Systems Installation			
Backhoe - 416D	4.6	0.001	0.0001
Dump Truck - 16 CY	9.0	0.001	0.0001
Excavator Compactor - 320C	12.4	0.002	0.0001
Water Truck - 5000 Gallons	8.4	0.001	0.0001
Subtotal	34.5	0.006	0.0004
Storm Drain Installation			
Backhoe - 416D	5.8	0.001	0.0001
Concrete Truck - 9 CY (1)	2.2	0.000	0.0001
Concrete Truck - 9 CY	0.8	0.000	0.0000
Dump Truck - 16 CY	45.1	0.006	0.0005
Excavator Compactor - 320C	15.6	0.003	0.0002
Pipelayer - 561M	8.3	0.001	0.0001
Water Truck - 5000 Gallons	10.5	0.002	0.0001
Subtotal	88.3	0.013	0.0010

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-62. Total GHG Emissions for 5 Acres of Backland Improvements at Berths 134-135 - Berths 136-147 Terminal Project Alternative 4 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Backland Improvements			
Paving Machine	1.0	0.000	0.0000
Water Truck - 5000 Gallons	2.5	0.000	0.0000
Compactive Roller	2.4	0.000	0.0000
Scraper	2.9	0.000	0.0000
Grader	1.5	0.000	0.0000
Loader	1.7	0.000	0.0000
Backhoe	0.9	0.000	0.0000
Bulldozer - D6	0.9	0.000	0.0000
Haul Truck - Paving (1)	3.3	0.000	0.0001
Haul Truck - Base (1)	1.6	0.000	0.0000
Semi Truck (1)	2.1	0.000	0.0001
Fugitive Dust	---	---	---
Subtotal	20.9	0.003	0.0004

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-63. Total GHG Emissions for Construction of Harry Bridges Boulevard Buffer - Berths 136-147 Terminal Project Alternative 4 (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Landscape Installation			
Backhoe - 416D	277.8	0.048	0.0034
Dump Truck - 12 CY (1)	79.4	0.004	0.0022
Dump Truck - 12 CY	22.6	0.003	0.0002
Loader - 938G	96.2	0.016	0.0011
Trencher	95.6	0.016	0.0012
Material Truck (1)	64.8	0.004	0.0018
Water Truck - 5,000 Gallons	162.4	0.023	0.0017
Fugitive Dust	---	---	---
Subtotal	798.9	0.114	0.0115
Grading/Earthmoving			
Bulldozer - D9	81.2	0.012	0.0008
Compactor - CS431C	47.4	0.008	0.0006
Dump Truck - 20 CY (1)	82.7	0.005	0.0023
Dump Truck - 12 CY	23.5	0.003	0.0002
Fugitive Dust	---	---	---
Grader - 140H	33.1	0.005	0.0004
Loader - 938G	96.2	0.016	0.0011
Scraper - 637E	85.2	0.013	0.0009
Water Truck - 5,000 Gallons	72.2	0.010	0.0007
Subtotal	521.5	0.072	0.0071

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-64. Total GHG Emissions from Berths 136-147 Terminal Project Alternative 4 Construction Activities (2007-2010) .

Construction Project/Activity	Tons		
	CO2	CH4	N2O
89 Acres of Backland Improvement at Berths 142-147			
Building Demolition	59.2	0.008	0.0008
Backland Improvements	372.5	0.047	0.0063
Construct a New Administration Building, Main Gate,			
Construct Administration Building	62.2	0.010	0.0009
Construct New Main Gate	32.2	0.005	0.0005
Improve/Pave Demolished Areas and Parking	121.4	0.015	0.0021
Demolish Existing Administration Building and Gate	23.4	0.003	0.0003
Construct a New Maintenance and Repair Facility-Ber			
Construct Maintenance and Repair Facility	232.2	0.038	0.0031
Improve/Pave Demolished Areas and M&R	58.6	0.007	0.0010
Demolish Existing M&R Facility	40.3	0.006	0.0006
Harry Bridges Blvd. Realignment			
Street Removals	126.7	0.019	0.0014
Street Improvements	226.3	0.018	0.0054
Sewer Installation	17.3	0.003	0.0002
Water Systems Installation	34.5	0.006	0.0004
Storm Drain Installation	88.3	0.013	0.0010
5 Acres of Backland Improvements at Berts 134-135	20.9	0.003	0.0004
Construction of Harry Bridges Blvd. Buffer			
Landscape Installation	798.9	0.114	0.0115
Grading/Earthmoving	521.5	0.072	0.0071
Commuting of Workers (1)	787.3	0.129	0.1247
Total GHG Emissions	3,624	0.517	0.1676

Table XX-C-65. Total GHG Emissions for 89 Acres of Backland Improvements at Berths 142-147 - Berths 136-147 Terminal Project NFAB (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Building Demolition			
Bulldozer	17.5	0.003	0.0002
Backhoe	9.0	0.001	0.0001
Loader	18.2	0.003	0.0002
Crane w/Wrecking Ball	5.1	0.001	0.0001
Haul Truck (1)	9.3	0.001	0.0003
Building Demolition	---	---	---
Subtotal	59.2	0.008	0.0008
Backland Improvements			
Paving Machine	17.4	0.003	0.0002
Water Truck - 5000 Gallons	44.6	0.007	0.0005
Compactive Roller	43.0	0.007	0.0005
Scraper	50.8	0.008	0.0006
Grader	26.1	0.004	0.0003
Loader	31.1	0.005	0.0004
Backhoe	16.2	0.003	0.0002
Bulldozer - D6	16.7	0.003	0.0002
Haul Truck - Paving (1)	59.5	0.003	0.0016
Haul Truck - Base (1)	28.8	0.002	0.0008
Semi Truck (1)	38.3	0.002	0.0010
Fugitive Dust	---	---	---
Subtotal	372.5	0.047	0.0063

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-66. Total GHG Emissions to Construct a New Administration Building, Main Gate, and Worker Parking Lot - Berths 136-147 Terminal Project NFAB (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Construct Administration Building			
Air Compressor - 100 CFM	7.4	0.001	0.0001
Concrete/Industrial Saw	15.2	0.003	0.0002
Crane	14.1	0.002	0.0002
Forklift	11.1	0.002	0.0001
Generator	8.9	0.002	0.0001
Concrete Trucks (1)	1.3	0.000	0.0000
Supply Trucks (1)	4.1	0.000	0.0001
Fugitive Dust	---	---	---
Subtotal	62.2	0.010	0.0009
Construct New Main Gate			
Air Compressor - 185 CFM	6.9	0.001	0.0001
Backhoe	6.0	0.001	0.0001
Compactive Roller	6.2	0.001	0.0001
Generator	6.7	0.001	0.0001
Concrete Trucks (1)	0.9	0.000	0.0000
Haul Trucks (1)	5.4	0.000	0.0001
Fugitive Dust	---	---	---
Subtotal	32.2	0.005	0.0005
Improve/Pave Demolished Areas and Parking Lot			
Paving Machine	5.7	0.001	0.0001
Water Truck - 5000 Gallons	14.5	0.002	0.0002
Compactive Roller	14.0	0.002	0.0002
Scraper	16.6	0.003	0.0002
Grader	8.5	0.001	0.0001
Loader	10.1	0.002	0.0001
Backhoe	5.3	0.001	0.0001
Bulldozer - D6	5.4	0.001	0.0001
Haul Truck - Paving (1)	19.4	0.001	0.0005
Haul Truck - Base (1)	9.4	0.001	0.0003
Semi Truck (1)	12.5	0.001	0.0003
Fugitive Dust	---	---	---
Subtotal	121.4	0.015	0.0021
Demolish Existing Admin. Bldg. and Gate			
Backhoe	3.6	0.001	0.0000
Bulldozer	6.9	0.001	0.0001
Crane w/Wrecking Ball	2.0	0.000	0.0000
Loader	7.2	0.001	0.0001
Haul Truck (1)	3.7	0.000	0.0001
Building Demolition	---	---	---
Subtotal	23.4	0.003	0.0003

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-67. Total GHG Emissions for Construction of a New Maintenance and Repair Facility NFAB (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Construct Maintenance and Repair Facility			
Air Compressor - 100 CFM	22.8	0.004	0.0003
Concrete/Industrial Saw	62.2	0.011	0.0008
Crane	57.8	0.010	0.0007
Generator	27.4	0.005	0.0004
Rough Terrain Forklift	45.3	0.008	0.0006
Concrete Trucks (1)	4.0	0.000	0.0001
Supply Trucks (1)	12.6	0.001	0.0003
Fugitive Dust	---	---	---
Subtotal	232.2	0.038	0.0031
Improve/Pave Demolished Areas and M&R Area			
Paving Machine	2.7	0.000	0.0000
Water Truck - 5000 Gallons	7.0	0.001	0.0001
Compactive Roller	6.8	0.001	0.0001
Scraper	8.0	0.001	0.0001
Grader	4.1	0.001	0.0000
Loader	4.9	0.001	0.0001
Backhoe	2.6	0.000	0.0000
Bulldozer - D6	2.6	0.000	0.0000
Haul Truck - Paving (1)	9.4	0.001	0.0003
Haul Truck - Base (1)	4.5	0.000	0.0001
Semi Truck (1)	6.0	0.000	0.0002
Fugitive Dust	---	---	---
Subtotal	58.6	0.007	0.0010
Demolish Existing M&R Facility			
Backhoe	6.1	0.001	0.0001
Bulldozer	11.9	0.002	0.0001
Crane w/Wrecking Ball	3.5	0.001	0.0000
Loader	12.4	0.002	0.0001
Haul Truck (1)	6.3	0.000	0.0002
Building Demolition	---	---	---
Subtotal	40.3	0.006	0.0006

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-68. Total GHG Emissions for Harry Bridges Blvd. Realignment NFAB (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Street Removals			
Backhoe - 416D	2.8	0.000	0.0000
Bulldozer - D9	14.7	0.002	0.0002
Dump Truck - 16 CY	65.5	0.009	0.0007
Fugitive Dust	---	---	---
Loader - 938G	23.3	0.004	0.0003
Water Truck - 5000 Gallons	20.4	0.003	0.0002
Subtotal	126.7	0.019	0.0014
Street Improvements			
Asphalt Spreader - BG 240C	8.3	0.001	0.0001
Concrete Truck - 9 CY (1)	8.7	0.000	0.0002
Concrete Truck - 9 CY	3.3	0.000	0.0000
Fugitive Dust (1)	---	---	---
Grader - 14H	9.7	0.002	0.0001
Haul Truck - Base (1)	107.0	0.006	0.0029
Haul Truck - Paving (1)	62.6	0.003	0.0017
Loader - 938G	7.2	0.001	0.0001
Oil Truck	5.4	0.001	0.0001
Vibratory Compactor - CB 355D	14.2	0.002	0.0002
Subtotal	226.3	0.018	0.0054
Sewer Installation			
Backhoe - 416D	2.3	0.000	0.0000
Dump Truck - 16 CY	4.5	0.001	0.0000
Excavator Compactor - 320C	6.2	0.001	0.0001
Water Truck - 5000 Gallons	4.2	0.001	0.0000
Subtotal	17.3	0.003	0.0002
Water Systems Installation			
Backhoe - 416D	4.6	0.001	0.0001
Dump Truck - 16 CY	9.0	0.001	0.0001
Excavator Compactor - 320C	12.4	0.002	0.0001
Water Truck - 5000 Gallons	8.4	0.001	0.0001
Subtotal	34.5	0.006	0.0004
Storm Drain Installation			
Backhoe - 416D	5.8	0.001	0.0001
Concrete Truck - 9 CY (1)	2.2	0.000	0.0001
Concrete Truck - 9 CY	0.8	0.000	0.0000
Dump Truck - 16 CY	45.1	0.006	0.0005
Excavator Compactor - 320C	15.6	0.003	0.0002
Pipelayer - 561M	8.3	0.001	0.0001
Water Truck - 5000 Gallons	10.5	0.002	0.0001
Subtotal	88.3	0.013	0.0010

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-69. Total GHG Emissions for Construction of a 46-Acre Rail Yard at Berth 200 - Berths 136-147 Terminal Project NFAB (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Crane	308.2	0.051	0.0036
Loader	84.3	0.014	0.0010
Paving Machine	52.7	0.009	0.0006
Grader	35.6	0.006	0.0004
Water Truck - 5000 Gallons	27.7	0.005	0.0003
Backhoe	84.3	0.014	0.0010
Roller	13.2	0.002	0.0002
Air Compressor	94.8	0.018	0.0013
Welding Machine	94.8	0.018	0.0013
Generator	47.4	0.009	0.0006
Material Truck (1)	710.8	0.039	0.0194
Fugitive Dust	---	---	---
Subtotal	1553.9	0.184	0.0297

Notes: (1) Within construction site area, assuming 1 mile of tra

Table XX-C-70. Total GHG Emissions for 5 Acres of Backland Improvements at Berths 134-135 - Berths 136-147 Terminal Project NFAB (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Backland Improvements			
Paving Machine	1.0	0.000	0.0000
Water Truck - 5000 Gallons	2.5	0.000	0.0000
Compactive Roller	2.4	0.000	0.0000
Scraper	2.9	0.000	0.0000
Grader	1.5	0.000	0.0000
Loader	1.7	0.000	0.0000
Backhoe	0.9	0.000	0.0000
Bulldozer - D6	0.9	0.000	0.0000
Haul Truck - Paving (1)	3.3	0.000	0.0001
Haul Truck - Base (1)	1.6	0.000	0.0000
Semi Truck (1)	2.1	0.000	0.0001
Fugitive Dust	---	---	---
Subtotal	20.9	0.003	0.0004

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-71. Total GHG Emissions for Construction of the Berths 142-147 12-Acre ICTF and Associated 19-Acre Backland Berths 136-147 Terminal Project NFAB (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Rail Track Removal			
Forklift	41.3	0.007	0.0005
Mobile Crane	45.1	0.007	0.0005
Haul Truck (1)	33.1	0.002	0.0009
Subtotal	119.5	0.016	0.0019
Rail Yard Construction			
Crane	80.4	0.013	0.0009
Loader	22.0	0.004	0.0003
Paving Machine	13.7	0.002	0.0002
Grader	9.3	0.002	0.0001
Water Truck - 5000 Gallons	7.2	0.001	0.0001
Backhoe	22.0	0.004	0.0003
Roller	3.4	0.001	0.0000
Air Compressor	24.7	0.005	0.0003
Welding Machine	24.7	0.005	0.0003
Generator	12.4	0.002	0.0002
Material Truck (1)	185.4	0.010	0.0051
Fugitive Dust	---	---	---
Subtotal	405.4	0.048	0.0078
Backland Improvements			
Paving Machine	3.7	0.001	0.0000
Water Truck - 5000 Gallons	9.5	0.002	0.0001
Compactive Roller	9.2	0.002	0.0001
Scraper	10.9	0.002	0.0001
Grader	5.6	0.001	0.0001
Loader	6.6	0.001	0.0001
Backhoe	3.5	0.001	0.0000
Bulldozer - D6	3.6	0.001	0.0000
Haul Truck - Paving (1)	12.7	0.001	0.0003
Haul Truck - Base (1)	6.2	0.000	0.0002
Semi Truck (1)	8.2	0.000	0.0002
Fugitive Dust	---	---	---
Subtotal	79.5	0.010	0.0014

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-72. Total GHG Emissions for Construction of Harry Bridges Boulevard Buffer - Berths 136-147 Terminal Project NFAB (2007-2010).

Construction Activity/Equipment Type	Tons		
	CO2	CH4	N2O
Landscape Installation			
Backhoe - 416D	277.8	0.048	0.0034
Dump Truck - 12 CY (1)	79.4	0.004	0.0022
Dump Truck - 12 CY	22.6	0.003	0.0002
Loader - 938G	96.2	0.016	0.0011
Trencher	95.6	0.016	0.0012
Material Truck (1)	64.8	0.004	0.0018
Water Truck - 5,000 Gallons	162.4	0.023	0.0017
Fugitive Dust	---	---	---
Subtotal	798.9	0.114	0.0115
Grading/Earthmoving			
Bulldozer - D9	81.2	0.012	0.0008
Compactor - CS431C	47.4	0.008	0.0006
Dump Truck - 20 CY (1)	82.7	0.005	0.0023
Dump Truck - 12 CY	23.5	0.003	0.0002
Fugitive Dust	---	---	---
Grader - 140H	33.1	0.005	0.0004
Loader - 938G	96.2	0.016	0.0011
Scraper - 637E	85.2	0.013	0.0009
Water Truck - 5,000 Gallons	72.2	0.010	0.0007
Subtotal	521.5	0.072	0.0071

Notes: (1) Within construction site area, assuming 1 mile of transport @ 5mph and 5 minutes of idling mode for each truck round trip.

Table XX-C-73. Total GHG Emissions from Berths 136-147 Terminal Project NFAB Construction Activities (2007-2010) .

Construction Project/Activity	Tons		
	CO2	CH4	N2O
89 Acres of Backland Improvement at Berths 142-147			
Building Demolition	59.2	0.008	0.0008
Backland Improvements	372.5	0.047	0.0063
Construct a New Administration Building, Main Gate,			
Construct Administration Building	62.2	0.010	0.0009
Construct New Main Gate	32.2	0.005	0.0005
Improve/Pave Demolished Areas and Parking	121.4	0.015	0.0021
Demolish Existing Administration Building and Gate	23.4	0.003	0.0003
Construct a New Maintenance and Repair Facility-Be			
Construct Maintenance and Repair Facility	232.2	0.038	0.0031
Improve/Pave Demolished Areas and M&R	58.6	0.007	0.0010
Demolish Existing M&R Facility	40.3	0.006	0.0006
Harry Bridges Blvd. Realignment			
Street Removals	126.7	0.019	0.0014
Street Improvements	226.3	0.018	0.0054
Sewer Installation	17.3	0.003	0.0002
Water Systems Installation	34.5	0.006	0.0004
Storm Drain Installation	88.3	0.013	0.0010
Construction of a 46-Acre Rail Yard at Berth 200	1,553.9	0.184	0.0297
5 Acres of Backland Improvements at Berts 134-135	20.9	0.003	0.0004
Construction of the Berths 142-147 12-Acre ICTF and			
Rail Track Removal	119.5	0.016	0.0019
Rail Yard Construction	405.4	0.048	0.0078
Backland Improvements	79.5	0.010	0.0014
Construction of Harry Bridges Blvd. Buffer			
Landscape Installation	798.9	0.114	0.0115
Grading/Earthmoving	521.5	0.072	0.0071
Commuting of Workers	944.7	0.155	0.1496
Total GHG Emissions	5,940	0.801	0.2333

Table XX-5. Derivation of GHG Emission Factors for Marine Vessels - Main & Auxiliary Engines

Source	Engine Type	Fuel	Fuel Density[a] (barrels/ metric ton)	Specific Fuel Consumption[b] (g/kWh)	Original Emission Factors			Converted Emission Factors[e]	
					CO2[c] (g/kWh)	CH4[d] (kg/gal)	N2O[d] (kg/gal)	CH4 (g/kWh)	N2O (g/kWh)
Ships – At Sea	Main	Residual	6.66	195	620	0.0015	0.0001	0.0818	0.00545
Ships – Maneuvering	Main	Residual	6.66	215	682	0.0015	0.0001	0.0902	0.00601
Ships – At Sea	Main	Distillate	7.46	185	588	0.0014	0.0001	0.0811	0.00580
Ships – Maneuvering	Main	Distillate	7.46	204	647	0.0014	0.0001	0.0895	0.00639
Ships	Aux	Residual	6.66	227	722	0.0015	0.0001	0.0952	0.00635
Ships	Aux	Distillate	7.46	217	690	0.0014	0.0001	0.0952	0.00680
Tugs	Main	Distillate	7.46	203	645	0.0014	0.0001	0.0890	0.00636
Tugs	Aux	Distillate	7.46	217	690	0.0014	0.0001	0.0952	0.00680

[a] Source: CCAR General Reporting Protocol v. 2.2. Appendix B.

[b] Source: Entec 2002, Tables 2.8, 2.9, and 2.10.

[c] Source: Entec 2002, Tables 2.8, 2.9, and 2.10.

[d] Source: CCAR GRP v. 2.2 Table C.6.

[e] Formula is: Converted EF (g/kWh) = Original EF (kg/gal) x 1000 g/kg x 42 gal/bbl x Fuel Density (bbl/metric ton) x metric ton/10^6 g x BSFC (g/kWh)

Table XX-6. Derivation of GHG Emission Factors for Marine Vessels - Boilers

Source	Engine Type	Fuel	Fuel Density[a] (barrels/ metric ton)	Original Emission Factors			Converted Emission Factors[e]		
				CO2[c] (kg/gal)	CH4[d] (kg/gal)	N2O[d] (kg/gal)	CO2 (lb/ton)	CH4 (lb/ton)	N2O (lb/ton)
Ships	Boiler	Distillate	7.46	10.15	0.0014	0.0001	6,360	0.877	0.0627
Ships	Boiler	Residual	6.66	11.79	0.0015	0.0001	6,596	0.839	0.0559

[a] Source: CCAR General Reporting Protocol v. 2.2. Appendix B.

[c] Source: CCAR GRP v. 2.2 Table C.5.

[d] Source: CCAR GRP v. 2.2 Table C.6.

[e] Formula is: Converted EF (lb/ton) = Original EF (kg/gal) x 42 gal/bbl x Fuel Density (bbl/metric ton) x 0.9072 metric ton/ton x lb/0.4536 kg

Table XX-7. Derivation of GHG Emission Factors for Cargo Handling Equipment and Construction Equipment (diesel)

Engine Size (hp)	BSFC (lb/bhp-hr) [a]	Fuel Density (barrels/ metric ton) [b]	Original Emission Factors			Converted Emission Factors [e]	
			CO2 (g/hp-hr) [c]	CH4 (kg/gal) [d]	N2O (kg/gal) [d]	CH4 (g/hp-hr)	N2O (g/hp-hr)
0-15	0.65	7.46	568.3	0.0014	0.0001	0.129	0.0092
16-25	0.53	7.46	568.3	0.0014	0.0001	0.105	0.0075
26-50	0.54	7.46	568.3	0.0014	0.0001	0.107	0.0077
51-120	0.49	7.46	568.3	0.0014	0.0001	0.097	0.0070
121-175	0.47	7.46	568.3	0.0014	0.0001	0.094	0.0067
176-250	0.47	7.46	568.3	0.0014	0.0001	0.094	0.0067
251-500	0.41	7.46	568.3	0.0014	0.0001	0.082	0.0058
501-750	0.42	7.46	568.3	0.0014	0.0001	0.084	0.0060
>750	0.42	7.46	568.3	0.0014	0.0001	0.084	0.0060

[a] Source: Offroad 2007 data file "Equip.csv".

[b] Source: CCAR General Reporting Protocol v. 2.2. Appendix B.

[c] Source: Offroad 2007. Data file "Emfac.csv".

[d] Source: CCAR GRP v. 2.2 Table C.6.

[e] Formula is: Converted EF (g/hp-hr) = Original EF (kg/gal) x 1000 g/kg x 42 gal/bbl x Fuel Density (bbl/metric ton) x metric ton/10^6 g x 453.6 g/lb * BSFC (lb/hp-hr)

Table XX-8. Derivation of GHG Emission Factors for Locomotives (diesel)

Locomotive Type	BSFC (lb/bhp-hr) [a]	Fuel Density (barrels/ metric ton) [b]	Original Emission Factors			Converted Emission Factors [e]		
			CO2 (kg/gal) [c]	CH4 (kg/gal) [d]	N2O (kg/gal) [d]	CO2 (g/hp-hr)	CH4 (g/hp-hr)	N2O (g/hp-hr)
Line Haul Locomotive	0.355	7.46	10.05	0.0014	0.0001	507.1	0.071	0.0050
Switch Locomotive	0.355	7.46	9.96	0.0014	0.0001	502.5	0.071	0.0050

[a] Source: Cat engine 3516B fuel usage factor.

[b] Source: CCAR General Reporting Protocol v. 2.2. Appendix B.

[c] Source: CCAR GRP v. 2.2 Table C.3. Assume CA Diesel for switch locomotives; Non-CA Diesel for line haul locomotives.

[d] Source: CCAR GRP v. 2.2 Table C.6.

[e] Formula is: Converted EF (g/hp-hr) = Original EF (kg/gal) x 1000 g/kg x 42 gal/bbl x Fuel Density (bbl/metric ton) x metric ton/10^6 g x 453.6 g/lb * BSFC (lb/hp-hr)

Table XX-9. Derivation of GHG Emission Factors for Trucks (diesel)

Speed (mph)	Original Emission Factors		
	CO2 (g/mi) [a,b]	CH4 (g/mi) [b,c]	N2O (g/mi) [b,c]
Idle	6,994	0.5	0.25
5	3,845	0.10	0.05
10	3,165	0.10	0.05
25	2,043	0.10	0.05
55	1,662	0.10	0.05

[a] Source: EMFAC2007. The CO2 emission factors from EMFAC2007 are identical for all project study years, for both unmitigated and mitigated fleet mixes.

[b] The idle emission factors are in units of g/hr. The idle emission factors for CH4 and N2O were derived from the 5 mph emission factor.

[c] Source: CCAR GRP v. 2.2 Table C.4. The highest emission factor from all model year categories was conservatively selected.

Table XX-10. Derivation of GHG Emission Factors for Commute Vehicles - 1 of 2

Vehicle Category	Fuel Economy (mi/gal) [a]	Fraction of Vehicle Miles Traveled [b]					Original Emission Factors			Converted Emission Factor [e]
		2003	2007	2015	2025	2038	CO2 (kg/gal) [c]	CH4 (g/mi) [d]	N2O (g/mi) [d]	CO2 (g/mi)
Passenger Cars - Gasoline										
Model Year 1966-1972	19.9	1.76%	1.07%	0.05%	0.00%	0.00%	8.55	0.22	0.02	429.6
Model Year 1973-1974	19.9	0.32%	0.36%	0.08%	0.00%	0.00%	8.55	0.19	0.02	429.6
Model Year 1975-1979	19.9	0.80%	0.71%	0.77%	0.00%	0.00%	8.55	0.11	0.05	429.6
Model Year 1980-1983	25.8	1.29%	0.73%	0.69%	0.08%	0.00%	8.55	0.07	0.08	331.4
Model Year 1984-1991	28.1	15.53%	6.59%	1.29%	1.18%	0.00%	8.55	0.06	0.08	304.3
Model Year 1992	27.9	2.55%	2.11%	0.21%	0.17%	0.00%	8.55	0.06	0.07	306.5
Model Year 1993	28.4	2.82%	2.61%	0.26%	0.15%	0.00%	8.55	0.05	0.05	301.1
Model Year 1994-1999	28.5	20.86%	17.44%	6.12%	0.82%	0.32%	8.55	0.05	0.04	299.6
Model Year 2000-present	29.3	19.98%	34.29%	56.44%	63.50%	65.59%	8.55	0.04	0.04	291.4
Light Duty Truck - Gasoline										
Model Year 1966-1972	19.9	0.85%	0.39%	0.04%	0.00%	0.00%	8.55	0.22	0.02	429.6
Model Year 1973-1974	19.9	0.22%	0.20%	0.03%	0.00%	0.00%	8.55	0.23	0.02	429.6
Model Year 1975-1979	19.9	0.33%	0.51%	0.25%	0.00%	0.00%	8.55	0.14	0.07	429.6
Model Year 1980-1983	20.0	0.46%	0.30%	0.38%	0.05%	0.00%	8.55	0.12	0.13	428.6
Model Year 1984-1991	21.1	5.87%	2.61%	0.70%	0.44%	0.00%	8.55	0.11	0.14	405.0
Model Year 1992	20.8	1.04%	0.76%	0.08%	0.11%	0.00%	8.55	0.09	0.11	411.1
Model Year 1993	21.0	1.40%	0.96%	0.10%	0.11%	0.00%	8.55	0.07	0.08	407.1
Model Year 1994-1999	20.8	11.39%	7.59%	2.42%	0.52%	0.15%	8.55	0.06	0.06	411.7
Model Year 2000-present	21.6	12.52%	20.77%	30.08%	32.87%	33.94%	8.55	0.05	0.06	395.8

[a] Source: U.S. DOT, Summary of Fuel Economy Performance, October 2006.

[b] Source: EMFAC2007. South Coast Air Basin default vehicle fleet mix for yr. 2003, normalized to gasoline passenger cars & light duty trucks. Relative fleet age was kept constant for each study year.

[c] Source: CCAR GRP v. 2.2 Table C.3. CA Reformulated gasoline.

[d] Source: CCAR GRP v. 2.2 Table C.4.

[e] Formula is: Converted EF (g/mi) = Original EF (kg/gal) x 1000 g/kg / Fuel Economy (mi/gal)

Table XX-11. Derivation of GHG Emission Factors for Commute Vehicles - 2 of 2

Year	Fleet Composite Emission Factor [a]		
	CO2 (g/mi)	CH4 (g/mi)	N2O (g/mi)
2003	339.2	0.062	0.060
2007	335.3	0.055	0.053
2015	329.9	0.047	0.049
2025	327.4	0.044	0.048
2038	327.0	0.043	0.047

[a] The composite emission factor is the sum of the individual products of emission factor (g/mi) and fraction of VMT for each vehicle category.

Table XX-12. Commuting GHG Emissions from Operations

Description				Trip Length (mi) [a]	Daily VMT	Emission Factor (g/mi)			Annual Emissions (tons/year)		
Year	Alt #	Description	ADT			CO2	CH4	N2O	CO2	CH4	N2O
2003		CEQA Baseline (2003)	795	10.3	8,193	339.2	0.062	0.060	1,118	0.20	0.20
2007		Proposed Project	973	10.3	10,023	335.3	0.055	0.053	1,352	0.22	0.21
	Alternative 2	Proposed Project w/o 10-Ac	973	10.3	10,023	335.3	0.055	0.053	1,352	0.22	0.21
	Alternative 3	Reduced Wharf	957	10.3	9,862	335.3	0.055	0.053	1,330	0.22	0.21
	Alternative 4	OMNI Terminal (Containers)	310	10.3	3,197	335.3	0.055	0.053	431	0.07	0.07
	Alternative 1	No Project	842	10.3	8,669	335.3	0.055	0.053	1,169	0.19	0.19
	Alternative 5	Landside Terminal Improvements	1,071	10.3	11,028	335.3	0.055	0.053	1,488	0.24	0.24
2015		Proposed Project	1,566	10.3	16,127	329.9	0.047	0.049	2,141	0.30	0.32
	Alternative 2	Proposed Project w/o 10-Ac	1,566	10.3	16,127	329.9	0.047	0.049	2,141	0.30	0.32
	Alternative 3	Reduced Wharf	1,330	10.3	13,697	329.9	0.047	0.049	1,818	0.26	0.27
	Alternative 4	OMNI Terminal (Containers)	442	10.3	4,556	329.9	0.047	0.049	605	0.09	0.09
	Alternative 1	No Project	1,209	10.3	12,448	329.9	0.047	0.049	1,652	0.23	0.24
	Alternative 5	Landside Terminal Improvements	1,330	10.3	13,697	329.9	0.047	0.049	1,818	0.26	0.27
2025		Proposed Project	1,730	10.3	17,817	327.4	0.044	0.048	2,347	0.32	0.34
	Alternative 2	Proposed Project w/o 10-Ac	1,730	10.3	17,817	327.4	0.044	0.048	2,347	0.32	0.34
	Alternative 3	Reduced Wharf	1,471	10.3	15,154	327.4	0.044	0.048	1,997	0.27	0.29
	Alternative 4	OMNI Terminal (Containers)	450	10.3	4,636	327.4	0.044	0.048	611	0.08	0.09
	Alternative 1	No Project	1,283	10.3	13,217	327.4	0.044	0.048	1,741	0.24	0.25
	Alternative 5	Landside Terminal Improvements	1,352	10.3	13,923	327.4	0.044	0.048	1,834	0.25	0.27
2038		Proposed Project	1,943	10.3	20,015	327.0	0.043	0.047	2,634	0.35	0.38
	Alternative 2	Proposed Project w/o 10-Ac	1,943	10.3	20,015	327.0	0.043	0.047	2,634	0.35	0.38
	Alternative 3	Reduced Wharf	1,655	10.3	17,049	327.0	0.043	0.047	2,243	0.30	0.32
	Alternative 4	OMNI Terminal (Containers)	460	10.3	4,739	327.0	0.043	0.047	624	0.08	0.09
	Alternative 1	No Project	1,380	10.3	14,217	327.0	0.043	0.047	1,871	0.25	0.27
	Alternative 5	Landside Terminal Improvements	1,380	10.3	14,217	327.0	0.043	0.047	1,871	0.25	0.27

[a] Source: URBEMIS2002.

Table XX-13. Commuting GHG Emissions from Constructio

Description				Trip Length (mi) [a]	Daily VMT	Construct Duration (months)	Emission Factor [b] (g/mi)			Annual Emissions (tons/year)		
Pk Year	New Alt #	Description	ADT				CO2	CH4	N2O	CO2	CH4	N2O
2008		Proposed Project	320	10.3	3,296	66	335.3	0.055	0.053	445	0.07	0.07
	Alternative 2	Proposed Project w/o 10-Ac	320	10.3	3,296	48	335.3	0.055	0.053	445	0.07	0.07
	Alternative 3	Reduced Wharf	320	10.3	3,296	48	335.3	0.055	0.053	445	0.07	0.07
	Alternative 4	OMNI Terminal (Containers)	200	10.3	2,060	34	335.3	0.055	0.053	278	0.05	0.04
	Alternative 5	Landside Terminal Improvements	240	10.3	2,472	34	335.3	0.055	0.053	333	0.05	0.05

[a] Source: URBEMIS2002.

[b] The 2007 emission factors were conservatively usec

Table XX-14. GHG Emissions from Refrigerated Containers -
CEQA Baseline, Proposed Project, and Mitigated Project

Project Year	Reefer Throughput (containers/ year) [a]	Refrigerant Charge per Reefer (kg) [b]	Upper Bound Annual Refrigerant Loss Rate [c]	Average Reefer Dwell Time at Terminal (days) [d]	Total Refrigerant Loss During Dwell Time (kg/yr)	Emissions by Refrigerant Type [e]		
						HFC-125 (ton/yr)	HFC-134a (ton/yr)	HFC-143a (ton/yr)
Baseline 2003	11,572	6.35	35%	3	211.4	0.051	0.121	0.061
2007	14,156	6.35	35%	3	258.6	0.063	0.148	0.074
2015	22,672	6.35	35%	3	414.2	0.100	0.237	0.119
2025	30,994	6.35	35%	3	566.2	0.137	0.325	0.162
2038	30,994	6.35	35%	3	566.2	0.137	0.325	0.162

[a] Assumes POLA average of 1.85 TEU/container. Also assumes that reefers comprise 2.4% of POLA container throughput, based on 2002 data (Email from Marcel VanDijk/POLA, 1/31/07).

[b] An average reefer at POLA contains 6.35 kg of refrigerant (POLA, email from Marcel VanDijk/POLA, 1/31/07).

[c] Source: CCAR General Reporting Protocol v. 2.2, Table III.11.1.

[d] The average reefer dwell time at the terminal is 2 days. One additional day was added to account for transport to and from the terminal within the GHG operational and geographical boundaries.

[e] POLA reefers use R404a and HFC-134a refrigerants (50% each by weight was assumed). R404a is comprised of HFC-125 (44%), HFC-134a (4%), and HFC-143a.

Table XX-15. GHG Emissions from Refrigerated Containers -
No Federal Action Baseline

Project Year	Reefer Throughput (containers/ year) [a]	Refrigerant Charge per Reefer (kg) [b]	Upper Bound Annual Refrigerant Loss Rate [c]	Average Reefer Dwell Time at Terminal (days) [d]	Total Refrigerant Loss During Dwell Time (kg/yr)	Emissions by Refrigerant Type [e]		
						HFC-125 (ton/yr)	HFC-134a (ton/yr)	HFC-143a (ton/yr)
2007	13,700	6.35	35%	3	250.3	0.061	0.143	0.072
2015	19,344	6.35	35%	3	353.4	0.086	0.203	0.101
2025	22,020	6.35	35%	3	402.2	0.098	0.231	0.115
2038	22,020	6.35	35%	3	402.2	0.098	0.231	0.115

[a] Assumes POLA average of 1.85 TEU/container. Also assumes that reefers comprise 2.4% of POLA container throughput, based on 2002 data (Email from Marcel VanDijk/POLA, 1/31/07).

[b] An average reefer at POLA contains 6.35 kg of refrigerant (POLA, email from Marcel VanDijk/POLA, 1/31/07).

[c] Source: CCAR General Reporting Protocol v. 2.2, Table III.11.1.

[d] The average reefer dwell time at the terminal is 2 days. One additional day was added to account for transport to and from the terminal within the GHG operational and geographical boundaries.

[e] POLA reefers use R404a and HFC-134a refrigerants (50% each by weight was assumed). R404a is comprised of HFC-125 (44%), HFC-134a (4%), and HFC-143a.

Table XX-16. GHG Emissions from Refrigerated Containers -
Alternative 1

Project Year	Reefer Throughput (containers/ year) [a]	Refrigerant Charge per Reefer (kg) [b]	Upper Bound Annual Refrigerant Loss Rate [c]	Average Reefer Dwell Time at Terminal (days) [d]	Total Refrigerant Loss During Dwell Time (kg/yr)	Emissions by Refrigerant Type [e]		
						HFC-125 (ton/yr)	HFC-134a (ton/yr)	HFC-143a (ton/yr)
2007	14,156	6.35	35%	3	258.6	0.063	0.148	0.074
2015	17,580	6.35	35%	3	321.1	0.078	0.184	0.092
2025	22,020	6.35	35%	3	402.2	0.098	0.231	0.115
2038	22,020	6.35	35%	3	402.2	0.098	0.231	0.115

[a] Assumes POLA average of 1.85 TEU/container. Also assumes that reefers comprise 2.4% of POLA container throughput, based on 2002 data (Email from Marcel VanDijk/POLA, 1/31/07).

[b] An average reefer at POLA contains 6.35 kg of refrigerant (POLA, email from Marcel VanDijk/POLA, 1/31/07).

[c] Source: CCAR General Reporting Protocol v. 2.2, Table III.11.1.

[d] The average reefer dwell time at the terminal is 2 days. One additional day was added to account for transport to and from the terminal within the GHG operational and geographical boundaries.

[e] POLA reefers use R404a and HFC-134a refrigerants (50% each by weight was assumed). R404a is comprised of HFC-125 (44%), HFC-134a (4%), and HFC-143a.

Table XX-17. GHG Emissions from Refrigerated Containers -
Alternative 3 (mitigated and unmitigated)

Project Year	Reefer Throughput (containers/ year) [a]	Refrigerant Charge per Reefer (kg) [b]	Upper Bound Annual Refrigerant Loss Rate [c]	Average Reefer Dwell Time at Terminal (days) [d]	Total Refrigerant Loss During Dwell Time (kg/yr)	Emissions by Refrigerant Type [e]		
						HFC-125 (ton/yr)	HFC-134a (ton/yr)	HFC-143a (ton/yr)
2007	14,156	6.35	35%	3	258.6	0.063	0.148	0.074
2015	19,344	6.35	35%	3	353.4	0.086	0.203	0.101
2025	26,401	6.35	35%	3	482.3	0.117	0.276	0.138
2038	26,401	6.35	35%	3	482.3	0.117	0.276	0.138

[a] Assumes POLA average of 1.85 TEU/container. Also assumes that reefers comprise 2.4% of POLA container throughput, based on 2002 data (Email from Marcel VanDijk/POLA, 1/31/07).

[b] An average reefer at POLA contains 6.35 kg of refrigerant (POLA, email from Marcel VanDijk/POLA, 1/31/07).

[c] Source: CCAR General Reporting Protocol v. 2.2, Table III.11.1.

[d] The average reefer dwell time at the terminal is 2 days. One additional day was added to account for transport to and from the terminal within the GHG operational and geographical boundaries.

[e] POLA reefers use R404a and HFC-134a refrigerants (50% each by weight was assumed). R404a is comprised of HFC-125 (44%), HFC-134a (4%), and HFC-143a.

Table XX-18. GHG Emissions from Refrigerated Containers -
Alternative 4

Project Year	Reefer Throughput (containers/ year) [a]	Refrigerant Charge per Reefer (kg) [b]	Upper Bound Annual Refrigerant Loss Rate [c]	Average Reefer Dwell Time at Terminal (days) [d]	Total Refrigerant Loss During Dwell Time (kg/yr)	Emissions by Refrigerant Type [e]		
						HFC-125 (ton/yr)	HFC-134a (ton/yr)	HFC-143a (ton/yr)
2007	4,594	6.35	35%	3	83.9	0.020	0.048	0.024
2015	6,477	6.35	35%	3	118.3	0.029	0.068	0.034
2025	7,339	6.35	35%	3	134.1	0.033	0.077	0.038
2038	7,339	6.35	35%	3	134.1	0.033	0.077	0.038

[a] Assumes POLA average of 1.85 TEU/container. Also assumes that reefers comprise 2.4% of POLA container throughput, based on 2002 data (Email from Marcel VanDijk/POLA, 1/31/07).

[b] An average reefer at POLA contains 6.35 kg of refrigerant (POLA, email from Marcel VanDijk/POLA, 1/31/07).

[c] Source: CCAR General Reporting Protocol v. 2.2, Table III.11.1.

[d] The average reefer dwell time at the terminal is 2 days. One additional day was added to account for transport to and from the terminal within the GHG operational and geographical boundaries.

[e] POLA reefers use R404a and HFC-134a refrigerants (50% each by weight was assumed). R404a is comprised of HFC-125 (44%), HFC-134a (4%), and HFC-143a.

Table XX-19. GHG Emissions from Refrigerated Containers -
Alternative 5

Project Year	Reefer Throughput (containers/ year) [a]	Refrigerant Charge per Reefer (kg) [b]	Upper Bound Annual Refrigerant Loss Rate [c]	Average Reefer Dwell Time at Terminal (days) [d]	Total Refrigerant Loss During Dwell Time (kg/yr)	Emissions by Refrigerant Type [e]		
						HFC-125 (ton/yr)	HFC-134a (ton/yr)	HFC-143a (ton/yr)
2007	14,156	6.35	35%	3	258.6	0.063	0.148	0.074
2015	17,580	6.35	35%	3	321.1	0.078	0.184	0.092
2025	22,020	6.35	35%	3	402.2	0.098	0.231	0.115
2038	22,020	6.35	35%	3	402.2	0.098	0.231	0.115

[a] Assumes POLA average of 1.85 TEU/container. Also assumes that reefers comprise 2.4% of POLA container throughput, based on 2002 data (Email from Marcel VanDijk/POLA, 1/31/07).

[b] An average reefer at POLA contains 6.35 kg of refrigerant (POLA, email from Marcel VanDijk/POLA, 1/31/07).

[c] Source: CCAR General Reporting Protocol v. 2.2, Table III.11.1.

[d] The average reefer dwell time at the terminal is 2 days. One additional day was added to account for transport to and from the terminal within the GHG operational and geographical boundaries.

[e] POLA reefers use R404a and HFC-134a refrigerants (50% each by weight was assumed). R404a is comprised of HFC-125 (44%), HFC-134a (4%), and HFC-143a.

Table XX-20. GHG Emissions from AMP Electricity Consumption - Mitigated Project

Project Year	AMP Usage (MWh/yr)	CO2	CH4	N2O
		Emission Factors (lb/MWh) [a]		
		804.54	0.0067	0.0037
		Emissions (Tons Per Year)		
2015	20,980	8,439	0.07	0.04
2025	36,393	14,640	0.12	0.07
2038	36,393	14,640	0.12	0.07

[a] Source: CCAR General Reporting Protocol v. 2.2 (2007), Tables C.1 and C.2.

Table XX-21. GHG Emissions from AMP Electricity Consumption - No Federal Action Baseline

Project Year	AMP Usage (MWh/yr)	CO2	CH4	N2O
		Emission Factors (lb/MWh) [a]		
		804.54	0.0067	0.0037
		Emissions (Tons Per Year)		
2015	18,386	7,396	0.06	0.03
2025	28,418	11,432	0.10	0.05
2038	28,418	11,432	0.10	0.05

[a] Source: CCAR General Reporting Protocol v. 2.2 (2007), Tables C.1 and C.2.

Table XX-22. GHG Emissions from AMP Electricity Consumption - Alternative 3 with Mitigation

Project Year	AMP Usage (MWh/yr)	CO2	CH4	N2O
		Emission Factors (lb/MWh) [a]		
		804.54	0.0067	0.0037
		Emissions (Tons Per Year)		
2015	18,386	7,396	0.06	0.03
2025	33,886	13,631	0.11	0.06
2038	33,886	13,631	0.11	0.06

[a] Source: CCAR General Reporting Protocol v. 2.2 (2007), Tables C.1 and C.2.

Table XX-23. GHG Emissions from AMP Electricity Consumption - Alternative 5

Project Year	AMP Usage (MWh/yr)	CO2	CH4	N2O
		Emission Factors (lb/MWh) [a]		
		804.54	0.0067	0.0037
		Emissions (Tons Per Year)		
2015	17,299	6,959	0.06	0.03
2025	28,418	11,432	0.10	0.05
2038	28,418	11,432	0.10	0.05

[a] Source: CCAR General Reporting Protocol v. 2.2 (2007), Tables C.1 and C.2.

Table XX-24. GHG Emissions from Terminal Electricity Consumption -
CEQA Baseline, Proposed Project, and Mitigated Project

Project Year	Meter ID	Electricity Usage (MWh/yr) [b]	CO2	CH4	N2O
			Emission Factors (lb/MWh) [a]		
			804.54	0.0067	0.0037
			Emissions (Tons Per Year)		
2003	2026-000394	6,620	2,663	0.022	0.012
	2077-000119	2,035	819	0.007	0.004
	222-011820	977	393	0.003	0.002
	419-003270	708	285	0.002	0.001
	Total	10,340	4,160	0.035	0.019
2007	2026-000394	8,098	3,258	0.027	0.015
	2077-000119	2,490	1,001	0.008	0.005
	222-011820	1,195	481	0.004	0.002
	419-003270	867	349	0.003	0.002
	Total	12,649	5,088	0.042	0.023
2015	2026-000394	12,970	5,217	0.043	0.024
	2077-000119	3,987	1,604	0.013	0.007
	222-011820	1,913	770	0.006	0.004
	419-003270	1,388	558	0.005	0.003
	Total	20,258	8,149	0.068	0.037
2025	2026-000394	17,730	7,132	0.059	0.033
	2077-000119	5,451	2,193	0.018	0.010
	222-011820	2,616	1,052	0.009	0.005
	419-003270	1,898	763	0.006	0.004
	Total	27,694	11,140	0.093	0.051
2038	2026-000394	17,730	7,132	0.059	0.033
	2077-000119	5,451	2,193	0.018	0.010
	222-011820	2,616	1,052	0.009	0.005
	419-003270	1,898	763	0.006	0.004
	Total	27,694	11,140	0.093	0.051

[a] Source: CCAR General Reporting Protocol v. 2.2 (2007), Tables C.1 and C.2.

[b] Electricity usage for the CEQA baseline year (2003) is derived from actual data. Usage for subsequent years is scaled up by the relative number of annual TEU movements.

Table XX-25. GHG Emissions from Terminal Electricity Consumption -
No Federal Action Baseline

Project Year	Meter ID	Electricity Usage (MWh/yr) [b]	CO2	CH4	N2O
			Emission Factors (lb/MWh) [a]		
			804.54	0.0067	0.0037
			Emissions (Tons Per Year)		
2007	2026-000394	7,837	3,153	0.026	0.014
	2077-000119	2,409	969	0.008	0.004
	222-011820	1,156	465	0.004	0.002
	419-003270	839	337	0.003	0.002
	Total	12,242	4,925	0.041	0.023
2015	2026-000394	11,066	4,452	0.037	0.020
	2077-000119	3,402	1,369	0.011	0.006
	222-011820	1,632	657	0.005	0.003
	419-003270	1,184	476	0.004	0.002
	Total	17,285	6,953	0.058	0.032
2025	2026-000394	12,596	5,067	0.042	0.023
	2077-000119	3,873	1,558	0.013	0.007
	222-011820	1,858	748	0.006	0.003
	419-003270	1,348	542	0.005	0.002
	Total	19,675	7,915	0.066	0.036
2038	2026-000394	12,596	5,067	0.042	0.023
	2077-000119	3,873	1,558	0.013	0.007
	222-011820	1,858	748	0.006	0.003
	419-003270	1,348	542	0.005	0.002
	Total	19,675	7,915	0.066	0.036

[a] Source: CCAR General Reporting Protocol v. 2.2 (2007), Tables C.1 and C.2.

[b] Electricity usage for the CEQA baseline year (2003) is derived from actual data. Usage for subsequent years is scaled up by the relative number of annual TEU movements.

Table XX-26. GHG Emissions from Terminal Electricity Consumption - Alternative 1

Project Year	Meter ID	Electricity Usage (MWh/yr) [b]	CO2	CH4	N2O
			Emission Factors (lb/MWh) [a]		
			804.54	0.0067	0.0037
			Emissions (Tons Per Year)		
2007	2026-000394	8,098	3,258	0.027	0.015
	2077-000119	2,490	1,001	0.008	0.005
	222-011820	1,195	481	0.004	0.002
	419-003270	867	349	0.003	0.002
	Total	12,649	5,088	0.042	0.023
2015	2026-000394	10,057	4,046	0.034	0.019
	2077-000119	3,092	1,244	0.010	0.006
	222-011820	1,484	597	0.005	0.003
	419-003270	1,076	433	0.004	0.002
	Total	15,709	6,319	0.053	0.029
2025	2026-000394	12,596	5,067	0.042	0.023
	2077-000119	3,873	1,558	0.013	0.007
	222-011820	1,858	748	0.006	0.003
	419-003270	1,348	542	0.005	0.002
	Total	19,675	7,915	0.066	0.036
2038	2026-000394	12,596	5,067	0.042	0.023
	2077-000119	3,873	1,558	0.013	0.007
	222-011820	1,858	748	0.006	0.003
	419-003270	1,348	542	0.005	0.002
	Total	19,675	7,915	0.066	0.036

[a] Source: CCAR General Reporting Protocol v. 2.2 (2007), Tables C.1 and C.2.

[b] Electricity usage for the CEQA baseline year (2003) is derived from actual data. Usage for subsequent years is scaled up by the relative number of annual TEU movements.

Table XX-27. GHG Emissions from Terminal Electricity Consumption - Alternative 3 (mitigated and unmitigated)

Project Year	Meter ID	Electricity Usage (MWh/yr) [b]	CO2	CH4	N2O
			Emission Factors (lb/MWh) [a]		
			804.54	0.0067	0.0037
			Emissions (Tons Per Year)		
2007	2026-000394	8,098	3,258	0.027	0.015
	2077-000119	2,490	1,001	0.008	0.005
	222-011820	1,195	481	0.004	0.002
	419-003270	867	349	0.003	0.002
	Total	12,649	5,088	0.042	0.023
2015	2026-000394	11,066	4,452	0.037	0.020
	2077-000119	3,402	1,369	0.011	0.006
	222-011820	1,632	657	0.005	0.003
	419-003270	1,184	476	0.004	0.002
	Total	17,285	6,953	0.058	0.032
2025	2026-000394	15,103	6,075	0.051	0.028
	2077-000119	4,643	1,868	0.016	0.009
	222-011820	2,228	896	0.007	0.004
	419-003270	1,616	650	0.005	0.003
	Total	23,590	9,490	0.079	0.044
2038	2026-000394	15,103	6,075	0.051	0.028
	2077-000119	4,643	1,868	0.016	0.009
	222-011820	2,228	896	0.007	0.004
	419-003270	1,616	650	0.005	0.003
	Total	23,590	9,490	0.079	0.044

[a] Source: CCAR General Reporting Protocol v. 2.2 (2007), Tables C.1 and C.2.

[b] Electricity usage for the CEQA baseline year (2003) is derived from actual data. Usage for subsequent years is scaled up by the relative number of annual TEU movements.

Table XX-28. GHG Emissions from Terminal Electricity Consumption - Alternative 4

Project Year	Meter ID	Electricity Usage (MWh/yr) [b]	CO2	CH4	N2O
			Emission Factors (lb/MWh) [a]		
			804.54	0.0067	0.0037
			Emissions (Tons Per Year)		
2007	2026-000394	2,628	1,057	0.009	0.005
	2077-000119	808	325	0.003	0.001
	222-011820	388	156	0.001	0.001
	419-003270	281	113	0.001	0.001
	Total	4,105	1,651	0.014	0.008
2015	2026-000394	5,935	2,387	0.020	0.011
	2077-000119	1,824	734	0.006	0.003
	222-011820	875	352	0.003	0.002
	419-003270	635	256	0.002	0.001
	Total	9,270	3,729	0.031	0.017
2025	2026-000394	6,428	2,586	0.022	0.012
	2077-000119	1,976	795	0.007	0.004
	222-011820	948	381	0.003	0.002
	419-003270	688	277	0.002	0.001
	Total	10,040	4,039	0.034	0.019
2038	2026-000394	6,428	2,586	0.022	0.012
	2077-000119	1,976	795	0.007	0.004
	222-011820	948	381	0.003	0.002
	419-003270	688	277	0.002	0.001
	Total	10,040	4,039	0.034	0.019

[a] Source: CCAR General Reporting Protocol v. 2.2 (2007), Tables C.1 and C.2.

[b] Electricity usage for the CEQA baseline year (2003) is derived from actual data. Usage for subsequent years is scaled up by the relative number of annual TEU movements.

Table XX-29. GHG Emissions from Terminal Electricity Consumption - Alternative 5

Project Year	Meter ID	Electricity Usage (MWh/yr) [b]	CO2	CH4	N2O
			Emission Factors (lb/MWh) [a]		
			804.54	0.0067	0.0037
			Emissions (Tons Per Year)		
2007	2026-000394	8,098	3,258	0.027	0.015
	2077-000119	2,490	1,001	0.008	0.005
	222-011820	1,195	481	0.004	0.002
	419-003270	867	349	0.003	0.002
	Total	12,649	5,088	0.042	0.023
2015	2026-000394	10,057	4,046	0.034	0.019
	2077-000119	3,092	1,244	0.010	0.006
	222-011820	1,484	597	0.005	0.003
	419-003270	1,076	433	0.004	0.002
	Total	15,709	6,319	0.053	0.029
2025	2026-000394	12,596	5,067	0.042	0.023
	2077-000119	3,873	1,558	0.013	0.007
	222-011820	1,858	748	0.006	0.003
	419-003270	1,348	542	0.005	0.002
	Total	19,675	7,915	0.066	0.036
2038	2026-000394	12,596	5,067	0.042	0.023
	2077-000119	3,873	1,558	0.013	0.007
	222-011820	1,858	748	0.006	0.003
	419-003270	1,348	542	0.005	0.002
	Total	19,675	7,915	0.066	0.036

[a] Source: CCAR General Reporting Protocol v. 2.2 (2007), Tables C.1 and C.2.

[b] Electricity usage for the CEQA baseline year (2003) is derived from actual data. Usage for subsequent years is scaled up by the relative number of annual TEU movements.

Table XX-30. GHG Emission Factors for Rail/ICTF Equipment

Project Scenario/	Emission Factors (Gm/Hp-Hr)		
Equipment - Horsepower	CO2	CH4	N2O
Baseline - Year 2003			
Terminal Equipment - 121-175 Hp	568.3	0.094	0.0067
Terminal Equipment - 176-250 Hp	568.3	0.094	0.0067
Line Haul Locomotive - Year 2003	507.1	0.071	0.0050
Switch Yard Locomotive - Year 2003	502.5	0.071	0.0050
Year 2007			
Terminal Equipment - 121-175 Hp	568.3	0.094	0.0067
Terminal Equipment - 176-250 Hp	568.3	0.094	0.0067
Line Haul Locomotive - Year 2007	507.1	0.071	0.0050
Switch Yard Locomotive - Tier 2 Stds.	502.5	0.071	0.0050
Switch Yard Locomotive - Year 2007	502.5	0.071	0.0050
Year 2015			
Terminal Equipment - 121-175 Hp	568.3	0.094	0.0067
Terminal Equipment - 176-250 Hp	568.3	0.094	0.0067
Line Haul Locomotive - Year 2015	507.1	0.071	0.0050
Switch Yard Locomotive - Year 2015	502.5	0.071	0.0050
Year 2025			
Terminal Equipment - 121-175 Hp	568.3	0.094	0.0067
Terminal Equipment - 176-250 Hp	568.3	0.094	0.0067
Line Haul Locomotive - Year 2015	507.1	0.071	0.0050
Switch Yard Locomotive - Year 2015	502.5	0.071	0.0050
Year 2038			
Terminal Equipment - 121-175 Hp	568.3	0.094	0.0067
Terminal Equipment - 176-250 Hp	568.3	0.094	0.0067
Line Haul Locomotive - Year 2038	507.1	0.071	0.0050
Switch Yard Locomotive - Year 2038	502.5	0.071	0.0050

Table XX-31. Annual Train GHG Emissions within the Existing Pier A Rail Yard - Berths 136-147 Terminal CEQA Baseline.

Project Year/Emission Source	Tons per Year		
	CO2	CH4	N2O
Year 2003 Baseline			
Line Haul Locomotive	40	0.006	0.0004
Yard Locomotive - Low UsageTrip	102	0.014	0.0010
Yard Locomotive - Medium UsageTrip	164	0.023	0.0016
Subtotal	306	0.043	0.0031
Project Year 2007 (1)			
Line Haul Locomotive	47	0.006	0.0005
Yard Locomotive - Low UsageTrip	118	0.017	0.0012
Yard Locomotive - Medium UsageTrip	188	0.026	0.0019
Subtotal	352	0.049	0.0035
Project Year 2015 (1)			
Line Haul Locomotive	47	0.006	0.0005
Yard Locomotive - Low UsageTrip	118	0.017	0.0012
Yard Locomotive - Medium UsageTrip	188	0.026	0.0019
Subtotal	352	0.049	0.0035
Project Year 2025 (1)			
Line Haul Locomotive	47	0.006	0.0005
Yard Locomotive - Low UsageTrip	118	0.017	0.0012
Yard Locomotive - Medium UsageTrip	188	0.026	0.0019
Subtotal	352	0.049	0.0035
Project Year 2038 (1)			
Line Haul Locomotive	47	0.006	0.0005
Yard Locomotive - Low UsageTrip	118	0.017	0.0012
Yard Locomotive - Medium UsageTrip	188	0.026	0.0019
Subtotal	352	0.049	0.0035

Note: (1) Assumes a 15% increase in activity between 2003 and 2006 and then steady.

Table XX-C-1. GHG Emission Factors for the Berths 136-147 Terminal Project Alternatives Construction Activities.

Project Year/Source Type	Fuel Type	Emission Factors (g/hp-hr) [a]			References
		CO2	CH4	N2O	
Year 2007					
Off-Road Equipment - 25-50 Hp	D	568	0.107	0.0077	
Off-Road Equipment - 51-120 Hp	D	568	0.097	0.0070	
Off-Road Equipment - 121-175 Hp	D	568	0.094	0.0067	
Off-Road Equipment - 176-250 Hp	D	568	0.094	0.0067	
Off-Road Equipment - 251-500 Hp	D	568	0.082	0.0058	
Off-Road Equipment - 501-750 Hp	D	568	0.084	0.0060	
Off-Road Equipment - >750 Hp	D	568	0.084	0.0060	
On-road Truck - Idle (Gms/Hr)	D	6,994	0.50	0.25	
On-road Truck - 5 mph (Gms/Mi)	D	3,845	0.10	0.05	
On-road Truck - 25 mph (Gms/Mi)	D	2,043	0.10	0.05	
On-road Truck - 55 mph (Gms/Mi)	D	1,662	0.10	0.05	
Dredge Materials Haul Truck - Composite (Gms/Mi)	D	2,223	0.10	0.05	(3)
Other On-Road Trucks - Composite (Gms/Mi)	D	1,848	0.10	0.05	(4)
Year 2015					
Off-Road Equipment - 25-50 Hp	D	568	0.107	0.0077	
Off-Road Equipment - 51-120 Hp	D	568	0.097	0.0070	
Off-Road Equipment - 121-175 Hp	D	568	0.094	0.0067	
Off-Road Equipment - 176-250 Hp	D	568	0.094	0.0067	
Off-Road Equipment - 251-500 Hp	D	568	0.082	0.0058	
Off-Road Equipment - 501-750 Hp	D	568	0.084	0.0060	
Off-Road Equipment - >750 Hp	D	568	0.084	0.0060	
On-road Truck - Idle (Gms/Hr)	D	6,994	0.50	0.25	
On-road Truck - 5 mph (Gms/Mi)	D	3,845	0.10	0.05	
On-road Truck - 25 mph (Gms/Mi)	D	2,043	0.10	0.05	
On-road Truck - 55 mph (Gms/Mi)	D	1,662	0.10	0.05	
Dredge Materials Haul Truck - Composite (Gms/Mi)	D	2,223	0.10	0.05	(3)
Other On-Road Trucks - Composite (Gms/Mi)	D	1,848	0.10	0.05	(4)
All Years					
Tugboat (Gm/Hp-Hr)	D	481	0.066	0.005	
Fugitive Dust (Lbs/acre-day)	---	-	-	-	
Building Demolition (Lbs/1000 cf)	---	-	-	-	

[a] Units are g/hp-hr unless otherwise indicated.

Notes:

(3) Composite factors based on a round trip of 90% at 25 mph and 10% at 5 mph. Units in grams/mile. Although not shown in these calculations, emissions from 5 minutes of idling mode included for each truck round trip.

(4) For on-road trucks other then dredge material haul trucks, composite factor based on a round trip of 75% at 55 mph, 20% at 25 mph, and 5% at 5 mph. Units in grams/mile. Although not shown in these calculations, emissions from 5 minutes of idling mode included for each truck round trip.

Table XX-PP-1. Cargo Vessel Propulsion Engine Usage per One-Way Ship Trip in the POLA Fairway Zone in CA Waters - Berths 136-147 Terminal Project Alternatives.

		Fairway (1)						
Mode/Vessel Type	Propulsion Max Hp (2)	Load Factor (3)	Modal Hp	Distance (NM)	Speed (Kts) (4)	Hours Per Trip	Hp-Hrs/ Trip	kW-Hrs/ Trip (5)
Non-Compliance with VSRP (6)								
Containership 8,000 - 9,000 TEU	93,000	0.83	77,283	157.4	24.9	6.33	489,284	365,006
Containership 5,000 - 6,000 TEU	74,043	0.83	61,530	157.4	22.6	6.95	427,550	318,952
Containership 3,000 - 5,000 TEU	50,651	0.83	42,091	157.4	20.8	7.55	317,953	237,193
Containership < 3,000 TEU	26,525	0.83	22,043	157.4	18.2	8.63	190,196	141,886
General Cargo	10,993	0.83	9,135	127.4	14.7	8.67	79,185	59,072
Auto Carrier	15,418	0.83	12,813	147.4	17.6	8.36	107,059	79,866
Compliance with VSRP (7)								
Containership 8,000 - 9,000 TEU - Outside VSRPZ	93,000	0.83	77,283	135.4	24.9	5.45	420,875	313,973
Containership 8,000 - 9,000 TEU - In VSRPZ	93,000	0.09	8,694	22.0	12.0	1.83	15,940	11,891
Containership 8,000 - 9,000 TEU - Total kW-Hrs								325,864
Containership 5,000 - 6,000 TEU - Outside VSRPZ	74,043	0.83	61,530	135.4	22.6	5.98	367,771	274,358
Containership 5,000 - 6,000 TEU - In VSRPZ	74,043	0.12	9,152	22.0	12.0	1.83	16,779	12,517
Containership 5,000 - 6,000 TEU - Total kW-Hrs								286,874
Containership 3,000 - 5,000 TEU - Outside VSRPZ	50,651	0.83	42,091	135.4	20.8	6.50	273,498	204,029
Containership 3,000 - 5,000 TEU - In VSRPZ	50,651	0.16	8,043	22.0	12.0	1.83	14,746	11,000
Containership 3,000 - 5,000 TEU - Total kW-Hrs								215,030
Containership < 3,000 TEU - Outside VSRPZ	26,525	0.83	22,043	135.4	18.2	7.42	163,604	122,048
Containership < 3,000 TEU - In VSRPZ	26,525	0.24	6,278	22.0	12.0	1.83	11,509	8,586
Containership < 3,000 TEU - Total kW-Hrs								130,634
General Cargo - Outside VSRPZ	10,993	0.83	9,135	105.4	14.7	7.17	65,505	48,867
General Cargo - In VSRPZ	10,993	0.45	4,975	22.0	12.0	1.83	9,121	6,804
General Cargo - Total kW-Hrs								55,671
Auto Carrier - Outside VSRPZ	15,418	0.83	12,813	125.4	17.6	7.11	91,075	67,942
Auto Carrier - In VSRPZ	15,418	0.26	4,035	22.0	12.0	1.83	7,398	5,519
Auto Carrier - Total kW-Hrs								73,461

Notes: (1) Vessel route between the boundary of the California waters and the Precautionary Area. Based upon data from the Port of Los Angeles Baseline Air Emissions Inventory (PEI) (Starcrest 2005) Table 2.8 and expected usage of fairway routes for each vessel type (see Table XX-PP-5).

(2) Average maximum horsepower rating from Lloyds data, ship builders (Samsung Heavy Industries 2003), and PEI Table 2.26.

(3) PEI page 68.

(4) Represents service speed, which is 94% of maximum speed (PEI page 68).

(5) 1 kW-Hr = 0.746 Hp-Hrs.

(6) Length of fairway within the Vessel Speed Reduction Program (VSRP) Zone (VSRPZ) = 22 nautical miles (NM).

(7) Load factor derived from Propeller Law, where load factor = (actual speed/max. speed)^3 (PEI page 99).

Table XX-PP-2. Cargo Vessel Propulsion Engine Usage per One-Way Ship Trip in the POLA Precautionary Area - Berths 136-147 Terminal Project Alternatives.

	Precautionary Area (1)							
Vessel Type	Propulsion Max Hp	Load Factor (2)	Modal Hp	Distance (NM)	Speed (Kts) (3)	Hours	Hp-Hrs/ Trip	kW-Hrs/ Trip
Containership 8,000 - 9,000 TEU	93,000	0.07	6,697	10.4	11.0	0.95	6,332	4,723
Containership 5,000 - 6,000 TEU	74,043	0.10	7,049	10.4	11.0	0.95	6,665	4,972
Containership 3,000 - 5,000 TEU	50,651	0.12	6,195	10.4	11.0	0.95	5,857	4,370
Containership < 3,000 TEU	26,525	0.18	4,835	10.4	11.0	0.95	4,572	3,410
General Cargo	10,993	0.19	2,099	9.5	9.0	1.06	2,222	1,658
Auto Carrier	15,418	0.20	3,108	10.1	11.0	0.92	2,857	2,131

Notes: (1) Portion of the trip between the fairway and POLA breakwater.

(2) Load factor derived from Propeller Law, where load factor = (actual speed/max. speed)^3 (PEI page 99).

(3) Average transit speeds obtained from PEI Table 2.8.

Table XX-PP-3. Cargo Vessel Propulsion Engine Usage per One-Way Ship Trip within the POLA Breakwater - Berths 136-147 Terminal Project Alternatives.

Operational Mode/Vessel Type	Propulsion Max Hp	Load Factor (2)	Modal Hp	Hours/ Mode (3)	Hp-Hrs/ Trip	kW-Hrs/ Trip
Transit (1)						
Containership 8,000 - 9,000 TEU	93,000	0.037	3,441	0.75	2,581	1,925
Containership 5,000 - 6,000 TEU	74,043	0.037	2,740	0.75	2,055	1,533
Containership 3,000 - 5,000 TEU	50,651	0.037	1,874	0.75	1,406	1,049
Containership < 3,000 TEU	26,525	0.037	981	0.75	736	549
General Cargo	10,993	0.060	660	0.75	495	369
Auto Carrier	15,418	0.065	1,002	0.75	752	561
Docking						
Containership 8,000 - 9,000 TEU	93,000	0.020	1,860	0.21	381	284
Containership 5,000 - 6,000 TEU	74,043	0.020	1,481	0.21	304	226
Containership 3,000 - 5,000 TEU	50,651	0.020	1,013	0.21	208	155
Containership < 3,000 TEU	26,525	0.020	531	0.21	109	81
General Cargo	10,993	0.020	220	0.13	27	21
Auto Carrier	15,418	0.020	308	0.13	39	29

Notes: (1) Average one-way transit operations between the POLA breakwater and the Berth 136-149 Terminal.

(2) Transit load factors based upon the average of inbound and outbound load factors in PEI Table 2.46. Docking load factors obtained from PEI Table 2.46.

(3) One-way transit durations = 3.7 nm @ 5 kts. Docking durations obtained from PEI Table 2.51.

Table XX-PP-4. Cargo Vessel Propulsion Engine Usage for Shifts within the POLA Breakwater - Berths 136-147 Terminal Project Alternatives.

Operational Mode/Vessel Type	Propulsion Max Hp	Load Factor	Modal Hp	Hours/ Mode (3)	Hp-Hrs/ Trip	kW-Hrs/ Trip
Transit						
Containership < 3,000 TEU	26,525	0.037	981	0.75	736	549
Docking						
Containership < 3,000 TEU	26,525	0.020	531	0.21	109	81

Table XX-PP-5. Cargo Vessel Transit Distances within the Fairway (in CA Waters) and Precautionary Areas - Berths 136-147 Terminal Project Alternatives.

	Fairway 1-way Route Length (1)/ Percent in Route (2)			
	North	West	South	Ave.
Vessel Type	170.0	43.5	70.0	Length
Container	90.0	10.0	-	157.4
General Cargo	60.0	10.0	30.0	127.4
Auto	80.0	10.0	10.0	147.4
	VSRP Zone 1-way Distance within Fairway/Percent in Route (2)			
	North	West	South	Ave.
Vessel Type	22.4	19.2	13.6	Length
Container	90.0	10.0	-	22.1
General Cargo	60.0	10.0	30.0	19.4
Auto	80.0	10.0	10.0	21.2
	Precautionary Area 1-way Route Length (1)/Percent in Route (2)			
	North (3)	West (3)	South (3)	Ave.
	10.4	10.4	7.5	Length
Container	90.0	10.0	-	10.4
General Cargo	60.0	10.0	30.0	9.5
Auto	80.0	10.0	10.0	10.1

Notes: (1) Route lengths in units of nautical miles (nm) to CA overwater border.

(2) Based upon expected transit distribution patterns (TraPac 2004).

Table XX-PP-6. Cargo Vessel Auxiliary Generator Usage per One-Way Fairway Transit (CA Waters) - Berths 136-147 Terminal Project Alternatives.

Mode/Vessel Type	Auxiliary kW per Vessel (1)	Load Factor (2)	Hours/ Transit	kW-Hrs/ Transit
Non-Compliance with VSRP (3)				
Containership 8,000 - 9,000 TEU	13,501	0.13	6.33	11,112
Containership 5,000 - 6,000 TEU	12,431	0.13	6.95	11,229
Containership 3,000 - 5,000 TEU	8,137	0.13	7.55	7,991
Containership < 3,000 TEU	4,315	0.13	8.63	4,840
General Cargo	1,777	0.17	8.67	2,618
Auto Carrier	2,850	0.15	8.36	3,572
Compliance with VSRP (3)				
Containership 8,000 - 9,000 TEU	13,501	0.13	7.28	12,776
Containership 5,000 - 6,000 TEU	12,431	0.13	7.81	12,622
Containership 3,000 - 5,000 TEU	8,137	0.13	8.33	8,813
Containership < 3,000 TEU	4,315	0.13	9.26	5,192
General Cargo	1,777	0.17	9.00	2,720
Auto Carrier	2,850	0.15	8.94	3,823

Notes: (1) PEI Table 2.18, except kW rating for 8,000-9,000 vessel estimated by extrapolation from 5,000-6,000 TEU vessel rating.

(2) PEI Table 2.19.

(3) See Table XX-PP-1 for estimated vessel transit durations within the fairway for each mode of operation.

Table XX-PP-7. Cargo Vessel Auxiliary Generator Usage per One-Way Precautionary Area Transit - Berths 136-147 Terminal Project Alternatives.

Vessel Type	Auxiliary kW per Vessel	Load Factor (1)	Hours/ Transit	kW-Hrs/ Transit
Containership 8,000 - 9,000 TEU	13,501	0.25	0.95	3,191
Containership 5,000 - 6,000 TEU	12,431	0.25	0.95	2,938
Containership 3,000 - 5,000 TEU	8,137	0.25	0.95	1,923
Containership < 3,000 TEU	4,315	0.25	0.95	1,020
General Cargo	1,777	0.27	1.06	508
Auto Carrier	2,850	0.30	0.92	786

Notes: (1) PEI Table 2.19.

Table XX-PP-8. Cargo Vessel Auxiliary Generator Usage per One-Way Transit and Docking within the POLA Breakwater - Berths 136-147 Terminal Project Alternatives.

Vessel Type/Operational Mode	Auxiliary kW per Vessel	Load Factor (1)	Hours/ Mode (2)	kW-Hrs/ Transit
Transit (1)				
Containership 8,000 - 9,000 TEU	13,501	0.50	0.75	5,063
Containership 5,000 - 6,000 TEU	12,431	0.50	0.75	4,662
Containership 3,000 - 5,000 TEU	8,137	0.47	0.75	2,887
Containership < 3,000 TEU	4,315	0.45	0.75	1,466
General Cargo	1,777	0.45	0.75	600
Auto Carrier	2,850	0.45	0.75	962
Docking				
Containership 8,000 - 9,000 TEU	13,501	0.50	0.21	1,384
Containership 5,000 - 6,000 TEU	12,431	0.50	0.21	1,274
Containership 3,000 - 5,000 TEU	8,137	0.47	0.21	789
Containership < 3,000 TEU	4,315	0.45	0.21	401
General Cargo	1,777	0.45	0.13	100
Auto Carrier	2,850	0.45	0.13	160

Notes: (1) PEI Table 2.19.

(2) See Table XX-PP-3 for estimated vessel transit/docking durations within the Harbor.

Table XX-PP-9. Cargo Vessel Hoteling Auxiliary Generator Usage per Ship Visit - Berths 136-147 Terminal Project Alternatives.

Vessel Type	Auxiliary kW per Vessel	Load Factor (1)	Hours/ Visit	kW-Hrs/ Visit
Containership 8,000 - 9,000 TEU	13,501	0.15	84.0	170,113
Containership 5,000 - 6,000 TEU	12,431	0.15	72.0	136,940
Containership 3,000 - 5,000 TEU	8,137	0.19	60.0	90,809
Containership < 3,000 TEU	4,315	0.21	36.0	32,000
General Cargo	1,777	0.22	39.8	15,559
Auto Carrier	2,850	0.26	17.4	12,893

Notes: (1) PEI Table 2.19.

Table XX-PP-10. Cargo Vessel Auxiliary Generator Usage per Shift within the POLA Breakwater - Berths 136-147 Terminal Project Alternatives.

Vessel Type	Auxiliary kW per Vessel	Load Factor (1)	Hours/ Visit (1)	kW-Hrs/ Year
Transit (1)				
Containership < 3,000 TEU	4,315	0.45	0.75	1,466
Docking				
Containership < 3,000 TEU	4,315	0.45	0.21	401

Table XX-PP-11. Cargo Vessel Auxiliary Generator Usage during Hoteling per Shift - Berths 136-147 Terminal Project Alternatives.

Vessel Type	Auxiliary kW per Vessel (1)	Load Factor (2)	Hours/ Visit (1)	kW-Hrs/ Transit
Containership < 3,000 TEU	4,315	0.21	36.0	32,000

Table XX-PP-12. Cargo Vessel Auxiliary Boiler Usage per Ship Visit - Berths 136-147 Terminal Project Alternatives.

Vessel Type	Hourly Fuel Usage (1)
All Cargo Vessels	0.154

Notes: (1) Units in tons/hour of fuel consumption (PEI Section 2.5.6).
This usage assumed for all vessel locations.

Table XX-PP-13. Baseline Year 2003 Cargo Vessel Tugboat Assist Usage - Berths 136-147 Terminal Project Alternatives.

Vessel Type	Tugboat Max Hp (1)	Load Factor (2)	Hours/ Assist (3)	Hp-Hr/ Assist	Annual # of Assists (4)	Annual Hp-Hrs	Annual kW-Hrs
Containership 3,000 - 5,000 TEU	4,543	0.31	1.24	1,748	158	277,023	206,659
Containership < 3,000 TEU	4,543	0.31	1.24	1,748	237	414,031	308,867
Totals						691,054	515,526

Notes: (1) (Starcrest 2006)

(2) From PEI, Table 3.9.

(3) Duration 1-way vessel trip due to harbor transit and docking durations presented in Table XX-PP-3 times 1.3 to account for tug movement and assist time. General cargo and auto carrier vessels assumed to require the same tugboat assist usage as containerships <3,000 TEUs.

(4) Estimated by multiplying the ratio of 2003/2001 throughputs for the Berths 136-147 terminal by tug activitiy during the 2001 baseline year. All future project years would have 3 tug assists per ship visit.

Table XX-PP-14. Baseline Year 2003 Tugboat Aux. Generator Usage during Cargo Vessel Assists - Berths 136-147 Terminal Project Alternatives.

Vessel Type	Aux. Engine Hp (1)	Load Factor (2)	Hours/ Assist (3)	Hp-Hr/ Assist	Annual # of Assists	Annual Hp-Hrs	Annual kW-Hrs
Containership 3,000 - 5,000 TEU	258	0.43	1.61	179	158	28,369	21,163
Containership < 3,000 TEU	258	0.43	1.61	179	237	42,399	31,630
Totals						70,768	52,793

Notes: (1) (Starcrest 2006)

(2) From PEI Table 3.9.

(3) Duration = 1.3 times tug assist time in Table XX-PP-13 to account for usage when main engines are shut down in stand-by mode. General cargo/ auto carrier vessels would require the same usage as containerships <3,000 TEUs.

Table XX-PP-15. GHG Emissions Factors for Vessels - Berths 136-147 Terminal Project Alternatives.

Operational Mode/Ship-Engine Type	GHG Emission Factors (g/kWh)			Source
	CO2	CH4	N2O	
Cruise/Main Engine				
OGVs - Slow Speed Diesel Main Engines - 2.7% S RFO	620	0.082	0.0055	
OGVs - Slow Speed Diesel Main Engines - 0.5% S MGO	588	0.081	0.0058	
OGVs - Slow Speed Diesel Main Engines - 0.2% S MGO	588	0.081	0.0058	
<20% Main Engine Load GHG Emission Factors				
OGVs - Slow Speed Diesel 2% Load Adjustment Factor				
OGVs - Slow Speed Diesel 3% Load Adjustment Factor				
OGVs - Slow Speed Diesel 4% Load Adjustment Factor				
OGVs - Slow Speed Diesel 5% Load Adjustment Factor				
OGVs - Slow Speed Diesel 6% Load Adjustment Factor				
OGVs - Slow Speed Diesel 7% Load Adjustment Factor				
OGVs - Slow Speed Diesel 9% Load Adjustment Factor				
OGVs - Slow Speed Diesel 10% Load Adjustment Factor				
OGVs - Slow Speed Diesel 12% Load Adjustment Factor				
OGVs - Slow Speed Diesel 16% Load Adjustment Factor				
OGVs - Slow Speed Diesel 18% Load Adjustment Factor				
OGVs - Slow Speed Diesel 19% Load Adjustment Factor				
<20% Main Engine Load GHG Emission Factors - 2.7% S RFO				
OGVs - Slow Speed Diesel 2% Load GHG Emission Factor	682	0.090	0.0060	
OGVs - Slow Speed Diesel 3.7% Load GHG Emission Factor	682	0.090	0.0060	
OGVs - Slow Speed Diesel 6.5% Load GHG Emission Factor	620	0.082	0.0055	
OGVs - Slow Speed Diesel 7% Load GHG Emission Factor	620	0.082	0.0055	
OGVs - Slow Speed Diesel 9% Load GHG Emission Factor	620	0.082	0.0055	
OGVs - Slow Speed Diesel 10% Load GHG Emission Factor	620	0.082	0.0055	
OGVs - Slow Speed Diesel 12% Load GHG Emission Factor	620	0.082	0.0055	
OGVs - Slow Speed Diesel 16% Load GHG Emission Factor	620	0.082	0.0055	
OGVs - Slow Speed Diesel 18% Load GHG Emission Factor	620	0.082	0.0055	
OGVs - Slow Speed Diesel 19% Load GHG Emission Factor	620	0.082	0.0055	
<20% Main Engine Load GHG Emission Factors - 0.5% S MGO				
OGVs - Slow Speed Diesel 2% Load GHG Emission Factor	647	0.089	0.0064	
OGVs - Slow Speed Diesel 3.7% Load GHG Emission Factor	647	0.089	0.0064	
OGVs - Slow Speed Diesel 6.5% Load GHG Emission Factor	588	0.081	0.0058	
OGVs - Slow Speed Diesel 7% Load GHG Emission Factor	588	0.081	0.0058	
OGVs - Slow Speed Diesel 9% Load GHG Emission Factor	588	0.081	0.0058	
OGVs - Slow Speed Diesel 10% Load GHG Emission Factor	588	0.081	0.0058	
OGVs - Slow Speed Diesel 12% Load GHG Emission Factor	588	0.081	0.0058	
OGVs - Slow Speed Diesel 16% Load GHG Emission Factor	588	0.081	0.0058	
OGVs - Slow Speed Diesel 18% Load GHG Emission Factor	588	0.081	0.0058	
OGVs - Slow Speed Diesel 19% Load GHG Emission Factor	588	0.081	0.0058	
<20% Main Engine Load GHG Emission Factors - 0.2% S MGO				
OGVs - Slow Speed Diesel 2% Load GHG Emission Factor	647	0.089	0.0064	
OGVs - Slow Speed Diesel 3.7% Load GHG Emission Factor	647	0.089	0.0064	
OGVs - Slow Speed Diesel 6.5% Load GHG Emission Factor	588	0.081	0.0058	
OGVs - Slow Speed Diesel 7% Load GHG Emission Factor	588	0.081	0.0058	
OGVs - Slow Speed Diesel 9% Load GHG Emission Factor	588	0.081	0.0058	
OGVs - Slow Speed Diesel 10% Load GHG Emission Factor	588	0.081	0.0058	
OGVs - Slow Speed Diesel 12% Load GHG Emission Factor	588	0.081	0.0058	
OGVs - Slow Speed Diesel 16% Load GHG Emission Factor	588	0.081	0.0058	
OGVs - Slow Speed Diesel 18% Load GHG Emission Factor	588	0.081	0.0058	
OGVs - Slow Speed Diesel 19% Load GHG Emission Factor	588	0.081	0.0058	
Tugboats - Diesel Main Engines Year 2003	645	0.089	0.0064	
Tugboats - Diesel Main Engines Year 2007	645	0.089	0.0064	
Tugboats - Diesel Main Engines Year 2015	645	0.089	0.0064	
Tugboats - Diesel Main Engines Year 2025	645	0.089	0.0064	
Tugboats - Diesel Main Engines Year 2038	645	0.089	0.0064	
Auxiliary Generators				
OGVs - Medium Speed Diesel - Residual Oil @ 2.7%	722	0.095	0.0063	
OGVs - Medium Speed Diesel - Marine Gas Oil @ 0.5% S	690	0.095	0.0068	
OGVs - Medium Speed Diesel - Marine Gas Oil @ 0.2% S	690	0.095	0.0068	
OGVs - Medium Speed Diesel - Marine Gas Oil @ 0.1% S	690	0.095	0.0068	
Tugboats - High Speed Diesel - Year 2003	690	0.095	0.0068	
Tugboats - High Speed Diesel - Year 2007	690	0.095	0.0068	
Tugboats - High Speed Diesel - Year 2015	690	0.095	0.0068	
Tugboats - High Speed Diesel - Year 2025	690	0.095	0.0068	
Tugboats - High Speed Diesel - Year 2038	690	0.095	0.0068	
Auxiliary Boilers				
Commercial Vessels	6,596	0.839	0.0559	(7)

(7) Units in Lb/ton fuel.

Table XX-PP-16. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (in CA Waters) - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	21,531.0	2.84	0.189
Containership < 3,000 TEU	28,133.5	3.71	0.248
Subtotal	49,664.5	6.55	0.437
Project Year 2007			
Containerships 5,000 - 6,000 TEU	10,764.9	1.42	0.095
Containerships 3,000 - 5,000 TEU	24,724.7	3.26	0.218
Containerships < 3,000 TEU	28,868.2	3.81	0.254
Subtotal	64,357.7	8.49	0.566
Project Year 2015			
Containerships 8,000 - 9,000 TEU	19,156.4	2.53	0.169
Containerships 5,000 - 6,000 TEU	28,863.5	3.81	0.254
Containerships 3,000 - 5,000 TEU	20,098.0	2.65	0.177
Containerships < 3,000 TEU	17,800.0	2.35	0.157
Subtotal	85,917.8	11.34	0.756
Project Year 2025			
Containerships 8,000 - 9,000 TEU	36,032.3	4.75	0.317
Containerships 5,000 - 6,000 TEU	44,497.8	5.87	0.391
Containerships 3,000 - 5,000 TEU	19,798.1	2.61	0.174
Containerships < 3,000 TEU	9,989.8	1.32	0.088
Subtotal	110,317.9	14.56	0.971
Project Year 2038			
Containerships 8,000 - 9,000 TEU	36,032.3	4.75	0.317
Containerships 5,000 - 6,000 TEU	44,497.8	5.87	0.391
Containerships 3,000 - 5,000 TEU	19,798.1	2.61	0.174
Containerships < 3,000 TEU	9,989.8	1.32	0.088
Subtotal	110,317.9	14.56	0.971

Note: (1) Assumes 25/50/75/80% VSRP compliance rates for years 2003/2007/2010/post-2014.

Table XX-PP-17. Annual Cargo Vessel GHG Emissions within the POLA Precautionary Area - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	406.1	0.05	0.004
Containership < 3,000 TEU	689.9	0.09	0.006
Subtotal	1,096.0	0.14	0.010
Project Year 2007			
Containerships 5,000 - 6,000 TEU	176.7	0.02	0.002
Containerships 3,000 - 5,000 TEU	477.8	0.06	0.004
Containerships < 3,000 TEU	722.5	0.10	0.006
Subtotal	1,377.0	0.18	0.012
Project Year 2015			
Containerships 8,000 - 9,000 TEU	271.2	0.04	0.002
Containerships 5,000 - 6,000 TEU	489.3	0.06	0.004
Containerships 3,000 - 5,000 TEU	400.2	0.05	0.004
Containerships < 3,000 TEU	456.8	0.06	0.004
Subtotal	1,617.5	0.21	0.014
Project Year 2025			
Containerships 8,000 - 9,000 TEU	510.0	0.07	0.004
Containerships 5,000 - 6,000 TEU	754.3	0.10	0.007
Containerships 3,000 - 5,000 TEU	394.2	0.05	0.003
Containerships < 3,000 TEU	256.4	0.03	0.002
Subtotal	1,915.0	0.25	0.017
Project Year 2038			
Containerships 8,000 - 9,000 TEU	510.0	0.07	0.004
Containerships 5,000 - 6,000 TEU	754.3	0.10	0.007
Containerships 3,000 - 5,000 TEU	394.2	0.05	0.003
Containerships < 3,000 TEU	256.4	0.03	0.002
Subtotal	1,915.0	0.25	0.017

Table XX-PP-18. Annual Cargo Vessel GHG Emissions for Transit within the POLA Breakwater - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	107.2	0.01	0.001
Containership < 3,000 TEU	122.2	0.02	0.001
Subtotal	229.4	0.03	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	59.9	0.01	0.001
Containerships 3,000 - 5,000 TEU	126.1	0.02	0.001
Containerships < 3,000 TEU	128.0	0.02	0.001
Subtotal	314.0	0.04	0.003
Project Year 2015			
Containerships 8,000 - 9,000 TEU	121.6	0.02	0.001
Containerships 5,000 - 6,000 TEU	165.9	0.02	0.001
Containerships 3,000 - 5,000 TEU	105.6	0.01	0.001
Containerships < 3,000 TEU	80.9	0.01	0.001
Subtotal	474.0	0.06	0.004
Project Year 2025			
Containerships 8,000 - 9,000 TEU	228.7	0.03	0.002
Containerships 5,000 - 6,000 TEU	255.8	0.03	0.002
Containerships 3,000 - 5,000 TEU	104.1	0.01	0.001
Containerships < 3,000 TEU	45.4	0.01	0.000
Subtotal	633.9	0.08	0.006
Project Year 2038			
Containerships 8,000 - 9,000 TEU	228.7	0.03	0.002
Containerships 5,000 - 6,000 TEU	255.8	0.03	0.002
Containerships 3,000 - 5,000 TEU	104.1	0.01	0.001
Containerships < 3,000 TEU	45.4	0.01	0.000
Subtotal	633.9	0.08	0.006

Table XX-PP-19. Annual Cargo Vessel GHG Emissions for Docking Activities - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	15.8	0.00	0.000
Containership < 3,000 TEU	18.1	0.00	0.000
Subtotal	33.9	0.00	0.000
Project Year 2007			
Containerships 5,000 - 6,000 TEU	8.9	0.00	0.000
Containerships 3,000 - 5,000 TEU	18.6	0.00	0.000
Containerships < 3,000 TEU	18.9	0.00	0.000
Subtotal	46.4	0.01	0.000
Project Year 2015			
Containerships 8,000 - 9,000 TEU	18.0	0.00	0.000
Containerships 5,000 - 6,000 TEU	24.5	0.00	0.000
Containerships 3,000 - 5,000 TEU	15.6	0.00	0.000
Containerships < 3,000 TEU	12.0	0.00	0.000
Subtotal	70.0	0.01	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	33.8	0.00	0.000
Containerships 5,000 - 6,000 TEU	37.8	0.00	0.000
Containerships 3,000 - 5,000 TEU	15.4	0.00	0.000
Containerships < 3,000 TEU	6.7	0.00	0.000
Subtotal	93.7	0.01	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	33.8	0.00	0.000
Containerships 5,000 - 6,000 TEU	37.8	0.00	0.000
Containerships 3,000 - 5,000 TEU	15.4	0.00	0.000
Containerships < 3,000 TEU	6.7	0.00	0.000
Subtotal	93.7	0.01	0.001

Table XX-PP-20. Annual Shifting GHG Emissions for Cargo Vessels within the POLA Breakwater - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	24.8	0.00	0.000
Docking	3.7	0.00	0.000
Subtotal	28.4	0.00	0.000

Table XX-PP-21. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Fairway Zone (within CA Waters) - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	862.3	0.12	0.008
Containership < 3,000 TEU	1,128.5	0.15	0.011
Subtotal	1,990.9	0.27	0.019
Project Year 2007			
Containerships 5,000 - 6,000 TEU	479.8	0.07	0.005
Containerships 3,000 - 5,000 TEU	1,040.0	0.14	0.010
Containerships < 3,000 TEU	1,203.0	0.16	0.011
Subtotal	2,722.7	0.37	0.026
Project Year 2015			
Containerships 8,000 - 9,000 TEU	808.6	0.11	0.008
Containerships 5,000 - 6,000 TEU	1,375.1	0.19	0.013
Containerships 3,000 - 5,000 TEU	896.5	0.12	0.008
Containerships < 3,000 TEU	776.6	0.11	0.007
Subtotal	3,856.8	0.52	0.036
Project Year 2025			
Containerships 8,000 - 9,000 TEU	1,521.0	0.21	0.014
Containerships 5,000 - 6,000 TEU	2,119.9	0.29	0.020
Containerships 3,000 - 5,000 TEU	883.2	0.12	0.008
Containerships < 3,000 TEU	435.8	0.06	0.004
Subtotal	4,959.9	0.67	0.047
Project Year 2038			
Containerships 8,000 - 9,000 TEU	1,521.0	0.21	0.014
Containerships 5,000 - 6,000 TEU	2,119.9	0.29	0.020
Containerships 3,000 - 5,000 TEU	883.2	0.12	0.008
Containerships < 3,000 TEU	435.8	0.06	0.004
Subtotal	4,959.9	0.67	0.047

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

(2) Assumes 25/50/75/80% VSRP compliance rates for years 2003/2007/2010/post-2014.

Table XX-PP-22. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Precautionary Area - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	202.4	0.03	0.002
Containership < 3,000 TEU	233.6	0.03	0.002
Subtotal	435.9	0.06	0.004
Project Year 2007			
Containerships 5,000 - 6,000 TEU	118.2	0.02	0.001
Containerships 3,000 - 5,000 TEU	238.1	0.03	0.002
Containerships < 3,000 TEU	244.6	0.03	0.002
Subtotal	600.9	0.08	0.006
Project Year 2015			
Containerships 8,000 - 9,000 TEU	207.4	0.03	0.002
Containerships 5,000 - 6,000 TEU	327.3	0.04	0.003
Containerships 3,000 - 5,000 TEU	199.4	0.03	0.002
Containerships < 3,000 TEU	154.7	0.02	0.001
Subtotal	888.7	0.12	0.008
Project Year 2025			
Containerships 8,000 - 9,000 TEU	390.1	0.05	0.004
Containerships 5,000 - 6,000 TEU	504.6	0.07	0.005
Containerships 3,000 - 5,000 TEU	196.4	0.03	0.002
Containerships < 3,000 TEU	86.8	0.01	0.001
Subtotal	1,177.9	0.16	0.011
Project Year 2038			
Containerships 8,000 - 9,000 TEU	390.1	0.05	0.004
Containerships 5,000 - 6,000 TEU	504.6	0.07	0.005
Containerships 3,000 - 5,000 TEU	196.4	0.03	0.002
Containerships < 3,000 TEU	86.8	0.01	0.001
Subtotal	1,177.9	0.16	0.011

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-PP-23. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting within the POLA Breakwater - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	303.7	0.04	0.003
Containership < 3,000 TEU	335.7	0.05	0.003
Subtotal	639.4	0.09	0.006
Project Year 2007			
Containerships 5,000 - 6,000 TEU	187.5	0.03	0.002
Containerships 3,000 - 5,000 TEU	357.3	0.05	0.003
Containerships < 3,000 TEU	351.6	0.05	0.003
Subtotal	896.4	0.12	0.008
Project Year 2015			
Containerships 8,000 - 9,000 TEU	329.0	0.04	0.003
Containerships 5,000 - 6,000 TEU	519.3	0.07	0.005
Containerships 3,000 - 5,000 TEU	299.2	0.04	0.003
Containerships < 3,000 TEU	222.3	0.03	0.002
Subtotal	1,369.9	0.19	0.013
Project Year 2025			
Containerships 8,000 - 9,000 TEU	618.9	0.08	0.006
Containerships 5,000 - 6,000 TEU	800.6	0.11	0.008
Containerships 3,000 - 5,000 TEU	294.8	0.04	0.003
Containerships < 3,000 TEU	124.8	0.02	0.001
Subtotal	1,839.0	0.25	0.017
Project Year 2038			
Containerships 8,000 - 9,000 TEU	618.9	0.08	0.006
Containerships 5,000 - 6,000 TEU	800.6	0.11	0.008
Containerships 3,000 - 5,000 TEU	294.8	0.04	0.003
Containerships < 3,000 TEU	124.8	0.02	0.001
Subtotal	1,839.0	0.25	0.017

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-PP-24. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Docking within the POLA Breakwater - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	83.0	0.01	0.001
Containership < 3,000 TEU	91.8	0.01	0.001
Subtotal	174.8	0.02	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	51.3	0.01	0.000
Containerships 3,000 - 5,000 TEU	97.7	0.01	0.001
Containerships < 3,000 TEU	96.1	0.01	0.001
Subtotal	245.0	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	89.9	0.01	0.001
Containerships 5,000 - 6,000 TEU	141.9	0.02	0.001
Containerships 3,000 - 5,000 TEU	81.8	0.01	0.001
Containerships < 3,000 TEU	60.8	0.01	0.001
Subtotal	374.4	0.05	0.004
Project Year 2025			
Containerships 8,000 - 9,000 TEU	169.2	0.02	0.002
Containerships 5,000 - 6,000 TEU	218.8	0.03	0.002
Containerships 3,000 - 5,000 TEU	80.6	0.01	0.001
Containerships < 3,000 TEU	34.1	0.00	0.000
Subtotal	502.7	0.07	0.005
Project Year 2038			
Containerships 8,000 - 9,000 TEU	169.2	0.02	0.002
Containerships 5,000 - 6,000 TEU	218.8	0.03	0.002
Containerships 3,000 - 5,000 TEU	80.6	0.01	0.001
Containerships < 3,000 TEU	34.1	0.00	0.000
Subtotal	502.7	0.07	0.005

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-PP-25. Annual Auxiliary Generator GHG Emissions during Cargo Vessel Hoteling - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	4,777.2	0.65	0.045
Containership < 3,000 TEU	3,663.9	0.50	0.035
Subtotal	8,441.1	1.15	0.080
Project Year 2007			
Containerships 5,000 - 6,000 TEU	2,754.5	0.37	0.026
Containerships 3,000 - 5,000 TEU	5,620.2	0.76	0.053
Containerships < 3,000 TEU	3,837.2	0.52	0.036
Subtotal	12,211.9	1.66	0.115
Project Year 2015			
Containerships 8,000 - 9,000 TEU	5,527.4	0.75	0.052
Containerships 5,000 - 6,000 TEU	7,627.8	1.03	0.072
Containerships 3,000 - 5,000 TEU	4,706.9	0.64	0.044
Containerships < 3,000 TEU	2,426.1	0.33	0.023
Subtotal	20,288.2	2.75	0.192
Project Year 2025			
Containerships 8,000 - 9,000 TEU	10,396.8	1.41	0.098
Containerships 5,000 - 6,000 TEU	11,759.5	1.60	0.111
Containerships 3,000 - 5,000 TEU	4,636.7	0.63	0.044
Containerships < 3,000 TEU	1,361.6	0.18	0.013
Subtotal	28,154.5	3.82	0.266
Project Year 2038			
Containerships 8,000 - 9,000 TEU	10,396.8	1.41	0.098
Containerships 5,000 - 6,000 TEU	11,759.5	1.60	0.111
Containerships 3,000 - 5,000 TEU	4,636.7	0.63	0.044
Containerships < 3,000 TEU	1,361.6	0.18	0.013
Subtotal	28,154.5	3.82	0.266

Table XX-PP-26. Annual Auxiliary Generator GHG Emissions during Cargo Vessel Shifts - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	34.0	0.00	0.000
Docking	9.3	0.00	0.000
Subtotal	43.3	0.01	0.000

Table XX-PP-27. Annual Auxiliary Generator GHG Emissions for Shifted Cargo Vessels during Hoteling - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership < 3,000 TEU	742.7	0.10	0.007
Subtotal	742.7	0.10	0.007

Table XX-PP-29. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Transiting the Precautionary Area - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	65.3	0.01	0.001
Containership < 3,000 TEU	142.1	0.02	0.001
Subtotal	207.4	0.03	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	25.0	0.00	0.000
Containerships 3,000 - 5,000 TEU	76.8	0.01	0.001
Containerships < 3,000 TEU	148.9	0.02	0.001
Subtotal	250.7	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	40.3	0.01	0.000
Containerships 5,000 - 6,000 TEU	69.1	0.01	0.001
Containerships 3,000 - 5,000 TEU	64.3	0.01	0.001
Containerships < 3,000 TEU	94.1	0.01	0.001
Subtotal	267.9	0.03	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	75.9	0.01	0.001
Containerships 5,000 - 6,000 TEU	106.6	0.01	0.001
Containerships 3,000 - 5,000 TEU	63.4	0.01	0.001
Containerships < 3,000 TEU	52.8	0.01	0.000
Subtotal	298.7	0.04	0.003
Project Year 2038			
Containerships 8,000 - 9,000 TEU	75.9	0.01	0.001
Containerships 5,000 - 6,000 TEU	106.6	0.01	0.001
Containerships 3,000 - 5,000 TEU	63.4	0.01	0.001
Containerships < 3,000 TEU	52.8	0.01	0.000
Subtotal	298.7	0.04	0.003

Table XX-PP-30. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Transiting within the POLA Breakwater - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	51.8	0.01	0.000
Containership < 3,000 TEU	112.7	0.01	0.001
Subtotal	164.6	0.02	0.001
Project Year 2007			
Containerships 5,000 - 6,000 TEU	19.8	0.00	0.000
Containerships 3,000 - 5,000 TEU	60.9	0.01	0.001
Containerships < 3,000 TEU	118.1	0.02	0.001
Subtotal	198.8	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	32.0	0.00	0.000
Containerships 5,000 - 6,000 TEU	54.9	0.01	0.000
Containerships 3,000 - 5,000 TEU	51.0	0.01	0.000
Containerships < 3,000 TEU	74.7	0.01	0.001
Subtotal	212.5	0.03	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	60.2	0.01	0.001
Containerships 5,000 - 6,000 TEU	84.6	0.01	0.001
Containerships 3,000 - 5,000 TEU	50.3	0.01	0.000
Containerships < 3,000 TEU	41.9	0.01	0.000
Subtotal	236.9	0.03	0.002
Project Year 2038			
Containerships 8,000 - 9,000 TEU	60.2	0.01	0.001
Containerships 5,000 - 6,000 TEU	84.6	0.01	0.001
Containerships 3,000 - 5,000 TEU	50.3	0.01	0.000
Containerships < 3,000 TEU	41.9	0.01	0.000
Subtotal	236.9	0.03	0.002

Table XX-PP-31. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Docking within the POLA Breakwater - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	14.2	0.00	0.000
Containership < 3,000 TEU	30.8	0.00	0.000
Subtotal	45.0	0.01	0.000
Project Year 2007			
Containerships 5,000 - 6,000 TEU	5.4	0.00	0.000
Containerships 3,000 - 5,000 TEU	16.7	0.00	0.000
Containerships < 3,000 TEU	32.3	0.00	0.000
Subtotal	54.3	0.01	0.000
Project Year 2015			
Containerships 8,000 - 9,000 TEU	8.7	0.00	0.000
Containerships 5,000 - 6,000 TEU	15.0	0.00	0.000
Containerships 3,000 - 5,000 TEU	14.0	0.00	0.000
Containerships < 3,000 TEU	20.4	0.00	0.000
Subtotal	58.1	0.01	0.000
Project Year 2025			
Containerships 8,000 - 9,000 TEU	16.5	0.00	0.000
Containerships 5,000 - 6,000 TEU	23.1	0.00	0.000
Containerships 3,000 - 5,000 TEU	13.7	0.00	0.000
Containerships < 3,000 TEU	11.5	0.00	0.000
Subtotal	64.8	0.01	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	16.5	0.00	0.000
Containerships 5,000 - 6,000 TEU	23.1	0.00	0.000
Containerships 3,000 - 5,000 TEU	13.7	0.00	0.000
Containerships < 3,000 TEU	11.5	0.00	0.000
Subtotal	64.8	0.01	0.001

Table XX-PP-32. Annual Auxiliary Boiler GHG Emissions during Cargo Vessel Hoteling - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	2,072.1	0.26	0.018
Containership < 3,000 TEU	2,706.0	0.34	0.023
Subtotal	4,778.1	0.61	0.041
Project Year 2007			
Containerships 5,000 - 6,000 TEU	950.7	0.12	0.008
Containerships 3,000 - 5,000 TEU	2,437.8	0.31	0.021
Containerships < 3,000 TEU	2,834.0	0.36	0.024
Subtotal	6,222.5	0.79	0.053
Project Year 2015			
Containerships 8,000 - 9,000 TEU	1,791.8	0.23	0.015
Containerships 5,000 - 6,000 TEU	2,632.8	0.33	0.022
Containerships 3,000 - 5,000 TEU	2,041.7	0.26	0.017
Containerships < 3,000 TEU	1,791.8	0.23	0.015
Subtotal	8,258.1	1.05	0.070
Project Year 2025			
Containerships 8,000 - 9,000 TEU	3,370.3	0.43	0.029
Containerships 5,000 - 6,000 TEU	4,058.9	0.52	0.034
Containerships 3,000 - 5,000 TEU	2,011.2	0.26	0.017
Containerships < 3,000 TEU	1,005.6	0.13	0.009
Subtotal	10,446.0	1.33	0.089
Project Year 2038			
Containerships 8,000 - 9,000 TEU	3,370.3	0.43	0.029
Containerships 5,000 - 6,000 TEU	4,058.9	0.52	0.034
Containerships 3,000 - 5,000 TEU	2,011.2	0.26	0.017
Containerships < 3,000 TEU	1,005.6	0.13	0.009
Subtotal	10,446.0	1.33	0.089

Table XX-PP-33. Annual Auxiliary Boiler GHG Emissions during Cargo Vessel Shifts - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	22.9	0.00	0.000
Docking	6.2	0.00	0.000
Hoteling	548.5	0.07	0.005
Subtotal	577.6	0.07	0.005

Table XX-PP-34. Annual Tugboat GHG Emissions for Cargo Vessel Assists - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	146.9	0.02	0.001
Containership < 3,000 TEU	219.6	0.03	0.002
Subtotal	366.5	0.05	0.004
Project Year 2007			
Subtotal	726.1	0.10	0.007
Project Year 2015			
Subtotal	776.2	0.11	0.008
Project Year 2025			
Subtotal	865.2	0.12	0.009
Project Year 2038			
Subtotal	865.2	0.12	0.009

Note: (1) Assumes 3 tug assists per ship visit for all post-baseline years.

Table XX-PP-35. Annual Auxiliary Generator GHG Emissions for Tugboats during Cargo Vessel Assists - Berths 136-147 Terminal Project - Proposed Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	16.1	0.00	0.000
Containership < 3,000 TEU	24.1	0.00	0.000
Subtotal	40.2	0.01	0.000
Project Year 2007			
Subtotal (1)	79.5	0.01	0.001
Project Year 2015			
Subtotal (1)	85.0	0.01	0.001
Project Year 2025			
Subtotal (1)	94.8	0.01	0.001
Project Year 2038			
Subtotal (1)	94.8	0.01	0.001

Note: (1) Assumes 3 tug assists per ship visit for all post-baseline years.

Table XX-PP-36. Annual Vessel GHG Emissions - Berths 136-147 Terminal Project - Proposed Project.

Project Scenario/Emission Source	Tons Per Year		
	CO2	CH4	N2O
Year 2003 Baseline			
Ships - Fairway Transit (1)	51,655	6.82	0.46
Ships - Precautionary Area Transit (1)	1,739	0.23	0.02
Ships - Harbor Transit (1)	1,115	0.15	0.01
Ships - Docking (1)	273	0.04	0.00
Ships - Hoteling Aux. Sources	14,510	1.92	0.13
Tugboats - Cargo Vessel Assist (1)	407	0.06	0.00
Subtotal	69,700	9.22	0.62
Project Year 2007			
Ships - Fairway Transit (1)	67,080	8.86	0.59
Ships - Precautionary Area Transit (1)	2,229	0.30	0.02
Ships - Harbor Transit (1)	1,409	0.19	0.01
Ships - Docking (1)	346	0.05	0.00
Ships - Hoteling Aux. Sources	18,434	2.45	0.17
Tugboats - Cargo Vessel Assist (1)	806	0.11	0.01
Subtotal	90,304	11.95	0.80
Project Year 2015			
Ships - Fairway Transit (1)	89,775	11.86	0.79
Ships - Precautionary Area Transit (1)	2,774	0.37	0.02
Ships - Harbor Transit (1)	2,056	0.28	0.02
Ships - Docking (1)	503	0.07	0.00
Ships - Hoteling Aux. Sources	28,546	3.80	0.26
Tugboats - Cargo Vessel Assist (1)	861	0.12	0.01
Subtotal	124,515	16.49	1.11
Project Year 2025			
Ships - Fairway Transit (1)	115,278	15.23	1.02
Ships - Precautionary Area Transit (1)	3,392	0.45	0.03
Ships - Harbor Transit (1)	2,710	0.36	0.02
Ships - Docking (1)	661	0.09	0.01
Ships - Hoteling Aux. Sources	38,601	5.15	0.35
Tugboats - Cargo Vessel Assist (1)	960	0.13	0.01
Subtotal	161,601	21.41	1.44
Project Year 2038			
Ships - Fairway Transit (1)	115,278	15.23	1.02
Ships - Precautionary Area Transit (1)	3,392	0.45	0.03
Ships - Harbor Transit (1)	2,710	0.36	0.02
Ships - Docking (1)	661	0.09	0.01
Ships - Hoteling Aux. Sources	38,601	5.15	0.35
Tugboats - Cargo Vessel Assist (1)	960	0.13	0.01
Subtotal	161,601	21.41	1.44

Note: (1) Includes auxiliary power emissions.

Table XX-PP-37. On-Road Truck Trip Vehicle Miles Travelled in California - Berths 136-147 Terminal Project - Proposed Project.

Year	B136-149 Throughput (TEUs)	B136-149 ICTF Thruput (TEUs) (1)	TEUs to Offsite Railyard (2)	TEUs to Local Deilveries	Truck Trips to Offsite Railyard (2)	Local Truck Trips (3)	Truck Miles to Offsite Railyard (4)	Local Truck Trip Miles (5)	Composite VMT/ Truck Trip
Baseline - Year 2003	891,976	-	445,988	445,988	598,795	598,795	9.6	135.0	72.3
Year 2007	1,091,200	-	545,600	545,600	756,532	756,532	9.6	135.0	72.3
Year 2015	1,747,500	552,709	109,594	1,085,198	147,412	1,459,681	9.6	135.0	123.5
Year 2025	2,389,000	700,810	174,397	1,513,793	194,253	1,686,148	9.6	135.0	122.0
Year 2038	2,389,000	700,810	174,397	1,513,793	194,253	1,686,148	9.6	135.0	122.0

(1) Annual throughput estimates from Rail Master Plan.

(2) Based on 50/50/26.8/6.7/7.3% of Berths 136-147 annual cargo throughput for years 2003/2007/2010/2015/2030.

(3) Based on 50/50/61.4/62.1/63.4% of Berths 136-147 annual cargo throughput for years 2003/2007/2010/2015/2030.

(4) Assumes a weighted average split to Carson ICTF (4.5 miles) and LA railyards (18 miles) = 9.6 mi/trip.

(5) Average of local/external-CA trip lengths (20/250) that originate from/are destined to the POLA.

Table XX-PP-38. On-Road Truck Operational Data within California for the Berths 136-147 Terminal Project - Proposed Action.

Activity/Project Scenario	Idling Time/ Trip (Hrs) (1)	Miles/ Trip (2)	ADT	Idling Hrs/ Day	Miles/ Day
On-Terminal					
Year 2003 - Baseline	0.56	1.02	3,281	1,837	3,351
Year 2007	0.25	1.02	4,145	1,036	4,233
Year 2015	0.25	0.81	4,403	1,101	3,547
Year 2025	0.25	0.81	5,152	1,288	4,150
Year 2038	0.25	0.81	5,152	1,288	4,150
Off-Terminal					
Year 2003 - Baseline	0.30	72.3	3,281	984	237,270
Year 2007	0.30	72.3	4,145	1,244	299,773
Year 2015	0.30	123.5	4,403	1,321	543,771
Year 2025	0.30	122.0	5,152	1,546	628,769
Year 2038	0.30	122.0	5,152	1,546	628,769

Notes: (1) 2003 on-terminal durations from PEI. Post-2003 on-terminal durations from TraPac (TraPac 2006).

(2) On-terminal mileage/trip based upon current/proposed terminal gate systems. Off-terminal miles/trip from data presented in Table XX-PP-37.

Table XX-PP-39. On-Road Truck GHG Emission Factors - Berths 136-147 Terminal Project Alternatives Scenarios.

Project Year/Mode	Emission Factors (Grams/Mile)			References
	CO2	CH4	N2O	
Baseline - Year 2003				
On-road Truck - Idle	6,994	0.50	0.25	(1)
On-road Truck - 10 mph	3,165	0.10	0.05	(1)
On-road Truck - 25 mph	2,043	0.10	0.05	(1)
On-road Truck - 55 mph	1,662	0.10	0.05	(1)
On-road Trucks - Composite Off-Terminal	2,003	0.10	0.05	(2)
Project Year 2007				
On-road Truck - Idle	6,994	0.50	0.25	(1)
On-road Truck - 10 mph	3,165	0.10	0.05	(1)
On-road Truck - 25 mph	2,043	0.10	0.05	(1)
On-road Truck - 55 mph	1,662	0.10	0.05	(1)
On-road Trucks - Composite Off-Terminal	2,003	0.10	0.05	(2)
Project Year 2015				
On-road Truck - Idle	6,994	0.50	0.25	(1)
On-road Truck - 10 mph	3,165	0.10	0.05	(1)
On-road Truck - 25 mph	2,043	0.10	0.05	(1)
On-road Truck - 55 mph	1,662	0.10	0.05	(1)
On-road Trucks - Composite Off-Terminal	2,041	0.10	0.05	(3)
Project Year 2025				
On-road Truck - Idle	6,994	0.50	0.25	(1)
On-road Truck - 10 mph	3,165	0.10	0.05	(1)
On-road Truck - 25 mph	2,043	0.10	0.05	(1)
On-road Truck - 55 mph	1,662	0.10	0.05	(1)
On-road Trucks - Composite Off-Terminal	2,079	0.10	0.05	(4)
Project Year 2038				
On-road Truck - Idle	6,994	0.50	0.25	(1)
On-road Truck - 10 mph	3,165	0.10	0.05	(1)
On-road Truck - 25 mph	2,043	0.10	0.05	(1)
On-road Truck - 55 mph	1,662	0.10	0.05	(1)
On-road Trucks - Composite Off-Terminal	2,079	0.10	0.05	(4)

Notes: (1) From EMFAC2007 (ARB 2006). Units in grams/mile for each project year, at 60 degrees and 50% relative humidity, except idle factors in units of grams/hour.

Based on age distribution of year 2001 POLA truck fleet, as used in the PEI.

(2) Based on 10% at 10 miles per hour (mph), 50% at 25 mph, and 40% at 55 mph. Although not included in this composite emission factor, 30 minutes of idling mode included in emission estimates for each truck trip.

(3) Same as (2), except based on 10% at 10 miles per hour (mph), 60% at 25 mph, and 30% at 55 mph.

(4) Same as (3), except based on 10% at 10 miles per hour (mph), 70% at 25 mph, and 20% at 55 mph.

Table XX-PP-40. Daily Truck GHG Emissions for the Berths 136-147 Terminal Project - Proposed Action.

Location/Project Scenario - Mode	Pounds per Day		
	CO2	CH4	N2O
On-Terminal (1)			
Year 2003 - Idling	28,338	2.0	1.0
Year 2003 - Driving	23,387	0.7	0.4
Subtotal - Year 2003	51,725	2.8	1.4
Year 2007 - Idling	15,983	1.1	0.6
Year 2007 - Driving	29,548	0.9	0.5
Subtotal - Year 2007	45,532	2.1	1.0
Year 2015 - Idling	16,977	1.2	0.6
Year 2015 - Driving	24,759	0.8	0.4
Subtotal - Year 2015	41,735	2.0	1.0
Year 2025 - Idling	19,864	1.4	0.7
Year 2025 - Driving	28,969	0.9	0.5
Subtotal - Year 2025	48,833	2.3	1.2
Year 2038 - Idling	19,864	1.4	0.7
Year 2038 - Driving	28,969	0.9	0.5
Subtotal - Year 2038	48,833	2.3	1.2
Off-Terminal			
Year 2003 - Idling	15,181	1.1	0.5
Year 2003 - Driving	1,047,875	52.3	26.2
Subtotal - Year 2003	1,063,056	53.4	26.7
Year 2007 - Idling	19,180	1.4	0.7
Year 2007 - Driving	1,323,911	66.1	33.1
Subtotal - Year 2007	1,343,091	67.5	33.7
Year 2015 - Idling	20,372	1.5	0.7
Year 2015 - Driving	2,447,103	119.9	60.0
Subtotal - Year 2015	2,467,475	121.4	60.7
Year 2025 - Idling	23,836	1.7	0.9
Year 2025 - Driving	2,882,346	138.6	69.3
Subtotal - Year 2025	2,906,183	140.4	70.2
Year 2038 - Idling	23,836	1.7	0.9
Year 2038 - Driving	2,882,346	138.6	69.3
Subtotal - Year 2038	2,906,183	140.4	70.2
Total Daily Truck GHG Emissions by Project Year			
Year 2003	1,114,782	56.2	28.1
Year 2007	1,388,623	69.5	34.8
Year 2015	2,509,211	123.4	61.7
Year 2025	2,955,015	142.7	71.3
Year 2038	2,955,015	142.7	71.3

Notes: (1) On-terminal driving emissions calculated with 10 mph emission factors.

Table XX-PP-41. GHG Emission Factors for Terminal Equipment - Berths 136-147 Terminal Project Alternatives.

Project Scenario/Equipment Horsepower	Emission Factors (g/hp-hr) (1)		
	CO2	CH4	N2O
Baseline - Year 2003			
Terminal Equipment - 121-175 Hp	568.3	0.094	0.0067
Terminal Equipment - 176-250 Hp	568.3	0.094	0.0067
Terminal Equipment - 250-500 Hp	568.3	0.082	0.0058
Project Year 2007			
Terminal Equipment - 121-175 Hp	568.3	0.094	0.0067
Terminal Equipment - 176-250 Hp	568.3	0.094	0.0067
Terminal Equipment - 250-500 Hp	568.3	0.082	0.0058
Project Year 2015			
Terminal Equipment - 121-175 Hp	568.3	0.094	0.0067
Terminal Equipment - 176-250 Hp	568.3	0.094	0.0067
Terminal Equipment - 250-500 Hp	568.3	0.082	0.0058
Project Year 2025			
Terminal Equipment - 121-175 Hp	568.3	0.094	0.0067
Terminal Equipment - 176-250 Hp	568.3	0.094	0.0067
Terminal Equipment - 250-500 Hp	568.3	0.082	0.0058
Project Year 2038			
Terminal Equipment - 121-175 Hp	568.3	0.094	0.0067
Terminal Equipment - 176-250 Hp	568.3	0.094	0.0067
Terminal Equipment - 250-500 Hp	568.3	0.082	0.0058

Table XX-PP-42. Terminal Equipment Annual GHG Emissions - Berths 136-147 Terminal Project Proposed Project.

Project Scenario/Equipment Horsepower	Annual Hp-Hrs	Annual Emissions (Tons)		
		CO2	CH4	N2O
Baseline - Year 2003				
Terminal Equipment - 121-175 Hp	10,493,875	6,574	1.08	0.08
Terminal Equipment - 176-250 Hp	12,581,479	7,881	1.30	0.09
Terminal Equipment - 250-500 Hp	2,417,350	1,514	0.22	0.02
Subtotal	25,492,704	15,969	2.60	0.19
Project Year 2007				
Terminal Equipment - 121-175 Hp	12,837,231	8,042	1.32	0.09
Terminal Equipment - 176-250 Hp	15,391,012	9,641	1.59	0.11
Terminal Equipment - 250-500 Hp	2,957,161	1,852	0.27	0.02
Subtotal	31,185,404	19,536	3.18	0.23
Project Year 2015				
Terminal Equipment - 121-175 Hp	20,559,507	12,879	2.12	0.15
Terminal Equipment - 176-250 Hp	24,649,524	15,441	2.54	0.18
Terminal Equipment - 250-500 Hp	4,736,050	2,967	0.43	0.03
Subtotal	49,945,082	31,287	5.09	0.36
Project Year 2025				
Terminal Equipment - 121-175 Hp	34,539,516	21,637	3.56	0.25
Terminal Equipment - 176-250 Hp	41,410,653	25,941	4.27	0.30
Terminal Equipment - 250-500 Hp	7,956,460	4,984	0.72	0.05
Subtotal	83,906,628	52,562	8.54	0.61
Project Year 2038 (1)				
Terminal Equipment - 121-175 Hp	34,539,516	21,637	3.56	0.25
Terminal Equipment - 176-250 Hp	41,410,653	25,941	4.27	0.30
Terminal Equipment - 250-500 Hp	7,956,460	4,984	0.72	0.05
Subtotal	83,906,628	52,562	8.54	0.61

Note: (1) In years 2025 & 2038, Hp-Hrs increased an additional 23% to simulate the effects of additional equipment usage needed to handle future cargo levels within a constrained terminal space (>8,000 TEUs/acre).

Table XX-PP-43. Equipment Usage (within CA borders) Associated with One Outbound Train Trip at the Berths 136-147 ICTF - Berths 136-147 Terminal Project Alternatives.

Equipment Type (1)	Hp	Load Factor	Number Active	Hourly Hp-Hr	Hours/ Trip	Total Hp-Hrs
Hostler	175	0.25	7	306	8.0	2,450
Top Picks	250	0.40	2	200	8.0	1,600
Haul Line Locomotive (2)	4,244	0.28	3	3,535	12.5	44,190
Haul Line Locomotive - Notch 1	4,244	0.05	3	637	1.0	637
Yard Locomotive	2,045	0.11	1	229	1.9	435

Notes: (1) Each outbound train trip (to inland locations) would carry 240 containers (444 TEUs).

(2) Based on a one-way trip distance of 250 miles between Berths 136-147 terminal ICTF and exit of CA borders.

Table XX-PP-44. Equipment Usage (within CA borders) Associated with One Inbound Train Trip at the Berths 136-147 ICTF - Berths 136-147 Terminal Project Alternatives.

Equipment Type (1)	Hp	Load Factor	Number Active	Hourly Hp-Hr	Hours/ Trip	Total Hp-Hrs
Hostler	175	0.25	7	306	3.0	919
Top Picks	250	0.40	2	200	3.0	600
Haul Line Locomotive (2)	4,244	0.28	3	3,535	12.5	44,190
Haul Line Locomotive - Notch 1	4,244	0.05	3	637	1.0	637

Notes: (1) Each inbound train trip (into the POLA) would carry 90 containers (167 TEUs).

(2) Based on a one-way trip distance of 250 miles between Berths 136-147 terminal ICTF and exit of CA borders.

Table XX-PP-45. Equipment Usage (within CA borders) Associated with One Outbound Train Trip at the Carson/Los Angeles ICTFs - Berths 136-147 Terminal Project Alternatives.

Equipment Type (1)	Hp	Load Factor	Number Active	Hourly Hp-Hr	Hours/ Trip	Total Hp-Hrs
Hostler	175	0.25	7	306	8.0	2,450
Top Picks	250	0.40	2	200	8.0	1,600
Haul Line Locomotive (2)	4,244	0.28	3	3,535	12.1	42,776
Haul Line Locomotive - Notch 1	4,244	0.05	3	637	2.0	1,273
Yard Locomotive	2,045	0.11	1	229	2.0	458

Notes: (1) Each outbound train trip (to inland locations) would carry 240 containers (444 TEUs).

(2) Based on a one-way trip distance between the Carson/Los Angeles ICTFs and exit of CA borders (242 miles).

Table XX-PP-46. Equipment Usage (within CA borders) Associated with One Inbound Train Trip at the Carson/Los Angeles ICTFs - Berths 136-147 Terminal Project Alternatives.

Equipment Type (1)	Hp	Load Factor	Number Active	Hourly Hp-Hr	Hours/ Trip	Total Hp-Hrs
Hostler	175	0.25	7	306	3.0	919
Top Picks	250	0.40	2	200	3.0	600
Haul Line Locomotive (2)	4,244	0.28	3	3,535	12.1	42,776
Haul Line Locomotive - Notch 1	4,244	0.05	3	637	1.0	637

Notes: (1) Each inbound train trip (into the POLA) would carry 90 containers (167 TEUs).

(2) Based on a one-way trip distance between the Carson/Los Angeles ICTFs and exit of CA borders (242 miles).

Table XX-PP-47. Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Proposed Project Baseline Year 2003.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Carson or LA Railyards/Outbound			
Hostler	1,121	0.18	0.01
Top Picks	732	0.12	0.01
Line Haul Locomotive - Road Haul	17,466	2.43	0.17
Line Haul Locomotive - Notch 1	520	0.07	0.01
Yard Locomotive - Switching	185	0.03	0.00
Subtotal	20,024	2.84	0.20
Carson or LA Railyards/Inbound			
Hostler	420	0.07	0.00
Top Picks	275	0.05	0.00
Line Haul Locomotive - Road Haul	17,466	2.43	0.17
Line Haul Locomotive - Notch 1	260	0.04	0.00
Subtotal	18,421	2.58	0.18
Total Tons Per Year	38,445	5.42	0.39

Table XX-PP-48. Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Proposed Project Year 2007.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Yard Locomotive - Switching	-	-	-
Subtotal	-	-	-
Berths 136-147/Inbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Subtotal	-	-	-
Carson or LA Railyards/Outbound			
Hostler	1,372	0.23	0.02
Top Picks	896	0.15	0.01
Line Haul Locomotive - Road Haul	21,367	2.98	0.21
Line Haul Locomotive - Notch 1	636	0.09	0.01
Yard Locomotive - Switching	227	0.03	0.00
Subtotal	24,497	3.47	0.25
Carson or LA Railyards/Inbound			
Hostler	514	0.08	0.01
Top Picks	336	0.06	0.00
Line Haul Locomotive - Road Haul	21,367	2.98	0.21
Line Haul Locomotive - Notch 1	318	0.04	0.00
Subtotal	22,535	3.16	0.23
Total Tons Per Year	47,032	6.63	0.47

Table XX-PP-49. Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Proposed Project Year 2015.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,389	0.23	0.02
Top Picks	907	0.15	0.01
Line Haul Locomotive - Road Haul	22,361	3.11	0.22
Line Haul Locomotive - Notch 1	322	0.04	0.00
Yard Locomotive - Switching	218	0.03	0.00
Subtotal	25,198	3.57	0.25
Berths 136-147/Inbound			
Hostler	521	0.09	0.01
Top Picks	340	0.06	0.00
Line Haul Locomotive - Road Haul	22,361	3.11	0.22
Line Haul Locomotive - Notch 1	322	0.04	0.00
Subtotal	23,544	3.30	0.24
Carson or LA Railyards/Outbound			
Hostler	276	0.05	0.00
Top Picks	180	0.03	0.00
Line Haul Locomotive - Road Haul	4,292	0.60	0.04
Line Haul Locomotive - Notch 1	128	0.02	0.00
Yard Locomotive - Switching	46	0.01	0.00
Subtotal	4,921	0.70	0.05
Carson or LA Railyards/Inbound			
Hostler	103	0.02	0.00
Top Picks	67	0.01	0.00
Line Haul Locomotive - Road Haul	4,292	0.60	0.04
Line Haul Locomotive - Notch 1	64	0.01	0.00
Subtotal	4,527	0.63	0.05
Total Tons Per Year	58,190	8.20	0.59

Table XX-PP-50. Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Proposed Project Year 2025.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,762	0.29	0.02
Top Picks	1,151	0.19	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Yard Locomotive - Switching	277	0.04	0.00
Subtotal	31,950	4.52	0.32
Berths 136-147/Inbound			
Hostler	661	0.11	0.01
Top Picks	431	0.07	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Subtotal	29,853	4.19	0.30
Carson or LA Railyards/Outbound			
Hostler	438	0.07	0.01
Top Picks	286	0.05	0.00
Line Haul Locomotive - Road Haul	6,830	0.95	0.07
Line Haul Locomotive - Notch 1	203	0.03	0.00
Yard Locomotive - Switching	72	0.01	0.00
Subtotal	7,830	1.11	0.08
Carson or LA Railyards/Inbound			
Hostler	164	0.03	0.00
Top Picks	107	0.02	0.00
Line Haul Locomotive - Road Haul	6,830	0.95	0.07
Line Haul Locomotive - Notch 1	102	0.01	0.00
Subtotal	7,203	1.01	0.07
Total Tons Per Year	76,836	10.83	0.77

Table XX-PP-51. Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Proposed Project Year 2038.

ICTF/Train Direction/Source Activity	Tons per Year		
	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,762	0.29	0.02
Top Picks	1,151	0.19	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Yard Locomotive - Switching	277	0.04	0.00
Subtotal	31,950	4.52	0.32
Berths 136-147/Inbound			
Hostler	661	0.11	0.01
Top Picks	431	0.07	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Subtotal	29,853	4.19	0.30
Carson or LA Railyards/Outbound			
Hostler	438	0.07	0.01
Top Picks	286	0.05	0.00
Line Haul Locomotive - Road Haul	6,830	0.95	0.07
Line Haul Locomotive - Notch 1	203	0.03	0.00
Yard Locomotive - Switching	72	0.01	0.00
Subtotal	7,830	1.11	0.08
Carson or LA Railyards/Inbound			
Hostler	164	0.03	0.00
Top Picks	107	0.02	0.00
Line Haul Locomotive - Road Haul	6,830	0.95	0.07
Line Haul Locomotive - Notch 1	102	0.01	0.00
Subtotal	7,203	1.01	0.07
Total Tons Per Year	76,836	10.83	0.77

Table XX-PP-52. Summary of Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Proposed Project.

Project Scenario/Source Activity	Tons per Year		
	CO2	CH4	N2O
Baseline Year 2003			
ICTF Equipment	2,548	0.42	0.03
Trains	35,897	5.00	0.36
Subtotal	38,445	5.42	0.39
Project Year 2007			
ICTF Equipment	3,118	0.51	0.04
Trains	43,914	6.12	0.44
Subtotal	47,032	6.63	0.47
Project Year 2015			
ICTF Equipment	3,784	0.62	0.04
Trains	54,405	7.58	0.54
Subtotal	58,190	8.20	0.59
Project Year 2025			
ICTF Equipment	5,001	0.82	0.06
Trains	71,835	10.01	0.71
Subtotal	76,836	10.83	0.77
Project Year 2038			
ICTF Equipment	5,001	0.82	0.06
Trains	71,835	10.01	0.71
Subtotal	76,836	10.83	0.77

Table XX-PPMit-1. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147
Terminal Project Mitigated Project - Vessels that Comply with Proposed VSRP.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	4,996.5	0.66	0.044
Containership < 3,000 TEU	6,606.6	0.87	0.058
Subtotal	11,603.1	1.53	0.102
Project Year 2007			
Containerships 5,000 - 6,000 TEU	5,097.5	0.67	0.045
Containerships 3,000 - 5,000 TEU	11,756.5	1.55	0.103
Containerships < 3,000 TEU	13,838.1	1.83	0.122
Subtotal	30,692.0	4.05	0.270
Project Year 2015			
Containerships 8,000 - 9,000 TEU	4,398.9	0.61	0.043
Containerships 5,000 - 6,000 TEU	7,937.8	1.10	0.078
Containerships 3,000 - 5,000 TEU	6,491.6	0.90	0.064
Containerships < 3,000 TEU	7,411.1	1.02	0.073
Subtotal	26,239.4	3.62	0.259
Project Year 2025			
Containerships 8,000 - 9,000 TEU	8,274.1	1.14	0.082
Containerships 5,000 - 6,000 TEU	12,237.5	1.69	0.121
Containerships 3,000 - 5,000 TEU	6,394.7	0.88	0.063
Containerships < 3,000 TEU	4,159.3	0.57	0.041
Subtotal	31,065.6	4.29	0.306
Project Year 2038			
Containerships 8,000 - 9,000 TEU	8,274.1	1.14	0.082
Containerships 5,000 - 6,000 TEU	12,237.5	1.69	0.121
Containerships 3,000 - 5,000 TEU	6,394.7	0.88	0.063
Containerships < 3,000 TEU	4,159.3	0.57	0.041
Subtotal	31,065.6	4.29	0.306

Note: (1) Assumes 25/50/95% VSRP compliance rates for years 2003/2007/post-2007.
(2) Without slide valves

Table XX-PPMit-2. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147
Terminal Project Mitigated Project - Non-Compliant Vessels with the Proposed VSRP.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	16,534.5	2.18	0.145
Containership < 3,000 TEU	21,526.9	2.84	0.189
Subtotal	38,061.4	5.02	0.335
Project Year 2007			
Containerships 5,000 - 6,000 TEU	5,667.4	0.75	0.050
Containerships 3,000 - 5,000 TEU	12,968.2	1.71	0.114
Containerships < 3,000 TEU	15,030.1	1.98	0.132
Subtotal	33,665.7	4.44	0.296
Project Year 2015			
Containerships 8,000 - 9,000 TEU	993.6	0.14	0.010
Containerships 5,000 - 6,000 TEU	1,488.4	0.21	0.015
Containerships 3,000 - 5,000 TEU	1,030.0	0.14	0.010
Containerships < 3,000 TEU	901.2	0.12	0.009
Subtotal	4,413.3	0.61	0.044
Project Year 2025			
Containerships 8,000 - 9,000 TEU	1,869.0	0.26	0.018
Containerships 5,000 - 6,000 TEU	2,294.7	0.32	0.023
Containerships 3,000 - 5,000 TEU	1,014.7	0.14	0.010
Containerships < 3,000 TEU	505.8	0.07	0.005
Subtotal	5,684.1	0.78	0.056
Project Year 2038			
Containerships 8,000 - 9,000 TEU	1,869.0	0.26	0.018
Containerships 5,000 - 6,000 TEU	2,294.7	0.32	0.023
Containerships 3,000 - 5,000 TEU	1,014.7	0.14	0.010
Containerships < 3,000 TEU	505.8	0.07	0.005
Subtotal	5,684.1	0.78	0.056

Note: (1) Assumes 75/50/05% VSRP non-compliance rates for years 2003/2007/post-2007.

Table XX-PPMit-3. Annual Cargo Vessel GHG Emissions within the POLA Precautionary Area - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	406.1	0.05	0.004
Containership < 3,000 TEU	689.9	0.09	0.006
Subtotal	1,096.0	0.14	0.010
Project Year 2007			
Containerships 5,000 - 6,000 TEU	176.7	0.02	0.002
Containerships 3,000 - 5,000 TEU	477.8	0.06	0.004
Containerships < 3,000 TEU	722.5	0.10	0.006
Subtotal	1,377.0	0.18	0.012
Project Year 2015			
Containerships 8,000 - 9,000 TEU	257.2	0.04	0.003
Containerships 5,000 - 6,000 TEU	464.1	0.06	0.005
Containerships 3,000 - 5,000 TEU	379.5	0.05	0.004
Containerships < 3,000 TEU	433.3	0.06	0.004
Subtotal	1,534.0	0.21	0.015
Project Year 2025			
Containerships 8,000 - 9,000 TEU	483.7	0.07	0.005
Containerships 5,000 - 6,000 TEU	715.4	0.10	0.007
Containerships 3,000 - 5,000 TEU	373.8	0.05	0.004
Containerships < 3,000 TEU	243.2	0.03	0.002
Subtotal	1,816.1	0.25	0.018
Project Year 2038			
Containerships 8,000 - 9,000 TEU	483.7	0.07	0.005
Containerships 5,000 - 6,000 TEU	715.4	0.10	0.007
Containerships 3,000 - 5,000 TEU	373.8	0.05	0.004
Containerships < 3,000 TEU	243.2	0.03	0.002
Subtotal	1,816.1	0.25	0.018

Table XX-PPMit-4. Annual Cargo Vessel GHG Emissions for Transit within the POLA Breakwater - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	107.2	0.01	0.001
Containership < 3,000 TEU	122.2	0.02	0.001
Subtotal	229.4	0.03	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	59.9	0.01	0.001
Containerships 3,000 - 5,000 TEU	126.1	0.02	0.001
Containerships < 3,000 TEU	128.0	0.02	0.001
Subtotal	314.0	0.04	0.003
Project Year 2015			
Containerships 8,000 - 9,000 TEU	115.3	0.02	0.001
Containerships 5,000 - 6,000 TEU	157.4	0.02	0.002
Containerships 3,000 - 5,000 TEU	100.2	0.01	0.001
Containerships < 3,000 TEU	76.8	0.01	0.001
Subtotal	449.7	0.06	0.004
Project Year 2025			
Containerships 8,000 - 9,000 TEU	216.9	0.03	0.002
Containerships 5,000 - 6,000 TEU	242.7	0.03	0.002
Containerships 3,000 - 5,000 TEU	98.7	0.01	0.001
Containerships < 3,000 TEU	43.1	0.01	0.000
Subtotal	601.4	0.08	0.006
Project Year 2038			
Containerships 8,000 - 9,000 TEU	216.9	0.03	0.002
Containerships 5,000 - 6,000 TEU	242.7	0.03	0.002
Containerships 3,000 - 5,000 TEU	98.7	0.01	0.001
Containerships < 3,000 TEU	43.1	0.01	0.000
Subtotal	601.4	0.08	0.006

Table XX-PPMit-5. Annual Cargo Vessel GHG Emissions for Docking Activities - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	15.8	0.00	0.000
Containership < 3,000 TEU	18.1	0.00	0.000
Subtotal	33.9	0.00	0.000
Project Year 2007			
Containerships 5,000 - 6,000 TEU	8.9	0.00	0.000
Containerships 3,000 - 5,000 TEU	18.6	0.00	0.000
Containerships < 3,000 TEU	18.9	0.00	0.000
Subtotal	46.4	0.01	0.000
Project Year 2015			
Containerships 8,000 - 9,000 TEU	17.0	0.00	0.000
Containerships 5,000 - 6,000 TEU	23.3	0.00	0.000
Containerships 3,000 - 5,000 TEU	14.8	0.00	0.000
Containerships < 3,000 TEU	11.3	0.00	0.000
Subtotal	66.4	0.01	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	32.1	0.00	0.000
Containerships 5,000 - 6,000 TEU	35.9	0.00	0.000
Containerships 3,000 - 5,000 TEU	14.6	0.00	0.000
Containerships < 3,000 TEU	6.4	0.00	0.000
Subtotal	88.9	0.01	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	32.1	0.00	0.000
Containerships 5,000 - 6,000 TEU	35.9	0.00	0.000
Containerships 3,000 - 5,000 TEU	14.6	0.00	0.000
Containerships < 3,000 TEU	6.4	0.00	0.000
Subtotal	88.9	0.01	0.001

Table XX-PPMit-6. Annual Shifting GHG Emissions for Cargo Vessels within the POLA Breakwater - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	24.8	0.00	0.000
Docking	3.7	0.00	0.000
Subtotal	28.4	0.00	0.000

Table XX-PPMit-7. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Fairway Zone (CA Waters) - Berths 136-147 Terminal Project Mitigated Project - Vessels that Comply with VSRP.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	231.8	0.03	0.002
Containership < 3,000 TEU	297.2	0.04	0.003
Subtotal	529.0	0.07	0.005
Project Year 2007			
Containerships 5,000 - 6,000 TEU	253.9	0.03	0.002
Containerships 3,000 - 5,000 TEU	545.4	0.07	0.005
Containerships < 3,000 TEU	622.6	0.08	0.006
Subtotal	1,421.9	0.19	0.013
Project Year 2015			
Containerships 8,000 - 9,000 TEU	1,396.8	0.19	0.014
Containerships 5,000 - 6,000 TEU	2,204.8	0.30	0.022
Containerships 3,000 - 5,000 TEU	1,343.0	0.19	0.013
Containerships < 3,000 TEU	1,041.7	0.14	0.010
Subtotal	5,986.3	0.83	0.059
Project Year 2025			
Containerships 8,000 - 9,000 TEU	2,627.4	0.36	0.026
Containerships 5,000 - 6,000 TEU	3,399.0	0.47	0.033
Containerships 3,000 - 5,000 TEU	1,322.9	0.18	0.013
Containerships < 3,000 TEU	584.6	0.08	0.006
Subtotal	7,934.0	1.09	0.078
Project Year 2038			
Containerships 8,000 - 9,000 TEU	2,627.4	0.36	0.026
Containerships 5,000 - 6,000 TEU	3,399.0	0.47	0.033
Containerships 3,000 - 5,000 TEU	1,322.9	0.18	0.013
Containerships < 3,000 TEU	584.6	0.08	0.006
Subtotal	7,934.0	1.09	0.078

(2) Assumes 25/50/95% VSRP compliance rates for years 2003/2007/post-2007.

Table XX-PPMit-8. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Fairway Zone (CA Waters) - Berths 136-147 Terminal Project Mitigated Project - Non-Compliant Vessels within VSRP.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	630.5	0.09	0.006
Containership < 3,000 TEU	831.3	0.11	0.008
Subtotal	1,461.8	0.20	0.014
Project Year 2007			
Containerships 5,000 - 6,000 TEU	225.9	0.03	0.002
Containerships 3,000 - 5,000 TEU	494.5	0.07	0.005
Containerships < 3,000 TEU	580.4	0.08	0.005
Subtotal	1,300.8	0.18	0.012
Project Year 2015			
Containerships 8,000 - 9,000 TEU	35.5	0.00	0.000
Containerships 5,000 - 6,000 TEU	61.5	0.01	0.001
Containerships 3,000 - 5,000 TEU	40.7	0.01	0.000
Containerships < 3,000 TEU	36.1	0.00	0.000
Subtotal	173.8	0.02	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	66.8	0.01	0.001
Containerships 5,000 - 6,000 TEU	94.8	0.01	0.001
Containerships 3,000 - 5,000 TEU	40.1	0.01	0.000
Containerships < 3,000 TEU	20.2	0.00	0.000
Subtotal	221.9	0.03	0.002
Project Year 2038			
Containerships 8,000 - 9,000 TEU	66.8	0.01	0.001
Containerships 5,000 - 6,000 TEU	94.8	0.01	0.001
Containerships 3,000 - 5,000 TEU	40.1	0.01	0.000
Containerships < 3,000 TEU	20.2	0.00	0.000
Subtotal	221.9	0.03	0.002

Note: (1) Assumes 75/50/05% VSRP non-compliance rates for years 2003/2007/post-2007.

Table XX-PPMit-9. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Precautionary Area - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	202.4	0.03	0.002
Containership < 3,000 TEU	233.6	0.03	0.002
Subtotal	435.9	0.06	0.004
Project Year 2007			
Containerships 5,000 - 6,000 TEU	118.2	0.02	0.001
Containerships 3,000 - 5,000 TEU	238.1	0.03	0.002
Containerships < 3,000 TEU	244.6	0.03	0.002
Subtotal	600.9	0.08	0.006
Project Year 2015			
Containerships 8,000 - 9,000 TEU	203.9	0.03	0.002
Containerships 5,000 - 6,000 TEU	321.8	0.04	0.003
Containerships 3,000 - 5,000 TEU	196.0	0.03	0.002
Containerships < 3,000 TEU	152.0	0.02	0.001
Subtotal	873.7	0.12	0.009
Project Year 2025			
Containerships 8,000 - 9,000 TEU	1,335.3	0.18	0.013
Containerships 5,000 - 6,000 TEU	1,896.1	0.26	0.019
Containerships 3,000 - 5,000 TEU	802.2	0.11	0.008
Containerships < 3,000 TEU	404.9	0.06	0.004
Subtotal	4,438.6	0.61	0.044
Project Year 2038			
Containerships 8,000 - 9,000 TEU	1,335.3	0.18	0.013
Containerships 5,000 - 6,000 TEU	1,896.1	0.26	0.019
Containerships 3,000 - 5,000 TEU	802.2	0.11	0.008
Containerships < 3,000 TEU	404.9	0.06	0.004
Subtotal	4,438.6	0.61	0.044

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-PPMit-10. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting within the POLA Breakwater - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	303.7	0.04	0.003
Containership < 3,000 TEU	335.7	0.05	0.003
Subtotal	639.4	0.09	0.006
Project Year 2007			
Containerships 5,000 - 6,000 TEU	187.5	0.03	0.002
Containerships 3,000 - 5,000 TEU	357.3	0.05	0.003
Containerships < 3,000 TEU	351.6	0.05	0.003
Subtotal	896.4	0.12	0.008
Project Year 2015			
Containerships 8,000 - 9,000 TEU	323.5	0.04	0.003
Containerships 5,000 - 6,000 TEU	510.6	0.07	0.005
Containerships 3,000 - 5,000 TEU	294.2	0.04	0.003
Containerships < 3,000 TEU	218.5	0.03	0.002
Subtotal	1,346.8	0.19	0.013
Project Year 2025			
Containerships 8,000 - 9,000 TEU	608.4	0.08	0.006
Containerships 5,000 - 6,000 TEU	787.1	0.11	0.008
Containerships 3,000 - 5,000 TEU	289.8	0.04	0.003
Containerships < 3,000 TEU	122.7	0.02	0.001
Subtotal	1,808.0	0.25	0.018
Project Year 2038			
Containerships 8,000 - 9,000 TEU	608.4	0.08	0.006
Containerships 5,000 - 6,000 TEU	787.1	0.11	0.008
Containerships 3,000 - 5,000 TEU	289.8	0.04	0.003
Containerships < 3,000 TEU	122.7	0.02	0.001
Subtotal	1,808.0	0.25	0.018

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-PPMit-11. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Docking within the POLA Breakwater - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	83.0	0.01	0.001
Containership < 3,000 TEU	91.8	0.01	0.001
Subtotal	174.8	0.02	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	51.3	0.01	0.000
Containerships 3,000 - 5,000 TEU	97.7	0.01	0.001
Containerships < 3,000 TEU	96.1	0.01	0.001
Subtotal	245.0	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	88.4	0.01	0.001
Containerships 5,000 - 6,000 TEU	139.6	0.02	0.001
Containerships 3,000 - 5,000 TEU	80.4	0.01	0.001
Containerships < 3,000 TEU	59.7	0.01	0.001
Subtotal	368.1	0.05	0.004
Project Year 2025			
Containerships 8,000 - 9,000 TEU	166.3	0.02	0.002
Containerships 5,000 - 6,000 TEU	215.1	0.03	0.002
Containerships 3,000 - 5,000 TEU	79.2	0.01	0.001
Containerships < 3,000 TEU	33.5	0.00	0.000
Subtotal	494.2	0.07	0.005
Project Year 2038			
Containerships 8,000 - 9,000 TEU	166.3	0.02	0.002
Containerships 5,000 - 6,000 TEU	215.1	0.03	0.002
Containerships 3,000 - 5,000 TEU	79.2	0.01	0.001
Containerships < 3,000 TEU	33.5	0.00	0.000
Subtotal	494.2	0.07	0.005

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-PPMit-12. Annual Auxiliary Generator GHG Emissions during Cargo Vessel Hoteling - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	4,777.2	0.65	0.045
Containership < 3,000 TEU	3,663.9	0.50	0.035
Subtotal	8,441.1	1.15	0.080
Project Year 2007			
Containerships 5,000 - 6,000 TEU	2,754.5	0.37	0.026
Containerships 3,000 - 5,000 TEU	5,620.2	0.76	0.053
Containerships < 3,000 TEU	3,837.2	0.52	0.036
Subtotal	12,211.9	1.66	0.115
Project Year 2015			
Containerships 8,000 - 9,000 TEU	1,086.8	0.15	0.011
Containerships 5,000 - 6,000 TEU	1,499.8	0.21	0.015
Containerships 3,000 - 5,000 TEU	925.5	0.13	0.009
Containerships < 3,000 TEU	477.0	0.07	0.005
Subtotal	3,989.2	0.55	0.039
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-
Containerships < 3,000 TEU	-	-	-
Subtotal	-	-	-
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-
Containerships < 3,000 TEU	-	-	-
Subtotal	-	-	-

Table XX-PPMit-13. Annual Auxiliary Generator GHG Emissions during Cargo Vessel Shifts - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	34.0	0.00	0.000
Docking	9.3	0.00	0.000
Subtotal	43.3	0.01	0.000

Table XX-PPMit-14. Annual Auxiliary Generator GHG Emissions for Shifted Cargo Vessels during Hoteling - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership < 3,000 TEU	742.7	0.10	0.007
Subtotal	742.7	0.10	0.007

Table XX-PPMit-17. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Transiting the Precautionary Area - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	65.3	0.01	0.001
Containership < 3,000 TEU	142.1	0.02	0.001
Subtotal	207.4	0.03	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	25.0	0.00	0.000
Containerships 3,000 - 5,000 TEU	76.8	0.01	0.001
Containerships < 3,000 TEU	148.9	0.02	0.001
Subtotal	250.7	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	40.3	0.01	0.000
Containerships 5,000 - 6,000 TEU	69.1	0.01	0.001
Containerships 3,000 - 5,000 TEU	64.3	0.01	0.001
Containerships < 3,000 TEU	94.1	0.01	0.001
Subtotal	267.9	0.03	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	75.9	0.01	0.001
Containerships 5,000 - 6,000 TEU	106.6	0.01	0.001
Containerships 3,000 - 5,000 TEU	63.4	0.01	0.001
Containerships < 3,000 TEU	52.8	0.01	0.000
Subtotal	298.7	0.04	0.003
Project Year 2038			
Containerships 8,000 - 9,000 TEU	75.9	0.01	0.001
Containerships 5,000 - 6,000 TEU	106.6	0.01	0.001
Containerships 3,000 - 5,000 TEU	63.4	0.01	0.001
Containerships < 3,000 TEU	52.8	0.01	0.000
Subtotal	298.7	0.04	0.003

(2) Does not assume use of low-sulfur fuels.

Table XX-PPMit-18. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Transiting within the POLA Breakwater - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	51.8	0.01	0.000
Containership < 3,000 TEU	112.7	0.01	0.001
Subtotal	164.6	0.02	0.001
Project Year 2007			
Containerships 5,000 - 6,000 TEU	19.8	0.00	0.000
Containerships 3,000 - 5,000 TEU	60.9	0.01	0.001
Containerships < 3,000 TEU	118.1	0.02	0.001
Subtotal	198.8	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	32.0	0.00	0.000
Containerships 5,000 - 6,000 TEU	54.9	0.01	0.000
Containerships 3,000 - 5,000 TEU	51.0	0.01	0.000
Containerships < 3,000 TEU	74.7	0.01	0.001
Subtotal	212.5	0.03	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	60.2	0.01	0.001
Containerships 5,000 - 6,000 TEU	84.6	0.01	0.001
Containerships 3,000 - 5,000 TEU	50.3	0.01	0.000
Containerships < 3,000 TEU	41.9	0.01	0.000
Subtotal	236.9	0.03	0.002
Project Year 2038			
Containerships 8,000 - 9,000 TEU	60.2	0.01	0.001
Containerships 5,000 - 6,000 TEU	84.6	0.01	0.001
Containerships 3,000 - 5,000 TEU	50.3	0.01	0.000
Containerships < 3,000 TEU	41.9	0.01	0.000
Subtotal	236.9	0.03	0.002

Table XX-PPMit-19. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Docking within the POLA Breakwater - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	14.2	0.00	0.000
Containership < 3,000 TEU	30.8	0.00	0.000
Subtotal	45.0	0.01	0.000
Project Year 2007			
Containerships 5,000 - 6,000 TEU	5.4	0.00	0.000
Containerships 3,000 - 5,000 TEU	16.7	0.00	0.000
Containerships < 3,000 TEU	32.3	0.00	0.000
Subtotal	54.3	0.01	0.000
Project Year 2015			
Containerships 8,000 - 9,000 TEU	8.7	0.00	0.000
Containerships 5,000 - 6,000 TEU	15.0	0.00	0.000
Containerships 3,000 - 5,000 TEU	14.0	0.00	0.000
Containerships < 3,000 TEU	20.4	0.00	0.000
Subtotal	58.1	0.01	0.000
Project Year 2025			
Containerships 8,000 - 9,000 TEU	16.5	0.00	0.000
Containerships 5,000 - 6,000 TEU	23.1	0.00	0.000
Containerships 3,000 - 5,000 TEU	13.7	0.00	0.000
Containerships < 3,000 TEU	11.5	0.00	0.000
Subtotal	64.8	0.01	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	16.5	0.00	0.000
Containerships 5,000 - 6,000 TEU	23.1	0.00	0.000
Containerships 3,000 - 5,000 TEU	13.7	0.00	0.000
Containerships < 3,000 TEU	11.5	0.00	0.000
Subtotal	64.8	0.01	0.001

(2) Does not assume use of low-sulfur fuels.

Table XX-PPMit-20. Annual Auxiliary Boiler GHG Emissions during Cargo Vessel Hoteling - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	2,072.1	0.26	0.018
Containership < 3,000 TEU	2,706.0	0.34	0.023
Subtotal	4,778.1	0.61	0.041
Project Year 2007			
Containerships 5,000 - 6,000 TEU	950.7	0.12	0.008
Containerships 3,000 - 5,000 TEU	2,437.8	0.31	0.021
Containerships < 3,000 TEU	2,834.0	0.36	0.024
Subtotal	6,222.5	0.79	0.053
Project Year 2015			
Containerships 8,000 - 9,000 TEU	1,791.8	0.23	0.015
Containerships 5,000 - 6,000 TEU	2,632.8	0.33	0.022
Containerships 3,000 - 5,000 TEU	2,041.7	0.26	0.017
Containerships < 3,000 TEU	1,791.8	0.23	0.015
Subtotal	8,258.1	1.05	0.070
Project Year 2025			
Containerships 8,000 - 9,000 TEU	3,370.3	0.43	0.029
Containerships 5,000 - 6,000 TEU	4,058.9	0.52	0.034
Containerships 3,000 - 5,000 TEU	2,011.2	0.26	0.017
Containerships < 3,000 TEU	1,005.6	0.13	0.009
Subtotal	10,446.0	1.33	0.089
Project Year 2038			
Containerships 8,000 - 9,000 TEU	3,370.3	0.43	0.029
Containerships 5,000 - 6,000 TEU	4,058.9	0.52	0.034
Containerships 3,000 - 5,000 TEU	2,011.2	0.26	0.017
Containerships < 3,000 TEU	1,005.6	0.13	0.009
Subtotal	10,446.0	1.33	0.089

Table XX-PPMit-21. Annual Auxiliary Boiler GHG Emissions during Cargo Vessel Shifts - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	22.9	0.00	0.000
Docking	6.2	0.00	0.000
Hoteling	548.5	0.07	0.005
Subtotal	577.6	0.07	0.005

Table XX-PPMit-22. Annual Tugboat GHG Emissions for Cargo Vessel Assists - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	146.9	0.02	0.001
Containership < 3,000 TEU	219.6	0.03	0.002
Subtotal	366.5	0.05	0.004
Project Year 2007			
Subtotal	726.1	0.10	0.007
Project Year 2015			
Subtotal	776.2	0.11	0.008
Project Year 2025			
Subtotal	865.2	0.12	0.009
Project Year 2038			
Subtotal	865.2	0.12	0.009

Note: (1) Assumes 3 tug assists per ship visit for all post-baseline years.

Table XX-PPMit-23. Annual Auxiliary Generator GHG Emissions for Tugboats during Cargo Vessel Assists - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	16.1	0.00	0.000
Containership < 3,000 TEU	24.1	0.00	0.000
Subtotal	40.2	0.01	0.000
Project Year 2007			
Subtotal (1)	79.5	0.01	0.001
Project Year 2015			
Subtotal (1)	85.0	0.01	0.001
Project Year 2025			
Subtotal (1)	94.8	0.01	0.001
Project Year 2038			
Subtotal (1)	94.8	0.01	0.001

Note: (1) Assumes 3 tug assists per ship visit for all post-baseline years.

Table XX-PPMit-24. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147 Terminal Project Mitigated Project - Vessels that Comply with VSRP + Slide Valves

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	4,398.9	0.61	0.043
Containerships 5,000 - 6,000 TEU	7,937.8	1.10	0.078
Containerships 3,000 - 5,000 TEU	6,491.6	0.90	0.064
Containerships < 3,000 TEU	7,411.1	1.02	0.073
Subtotal	26,239.4	3.62	0.259
Project Year 2025			
Containerships 8,000 - 9,000 TEU	8,274.1	1.14	0.082
Containerships 5,000 - 6,000 TEU	12,237.5	1.69	0.121
Containerships 3,000 - 5,000 TEU	6,394.7	0.88	0.063
Containerships < 3,000 TEU	4,159.3	0.57	0.041
Subtotal	31,065.6	4.29	0.306
Project Year 2038			
Containerships 8,000 - 9,000 TEU	8,274.1	1.14	0.082
Containerships 5,000 - 6,000 TEU	12,237.5	1.69	0.121
Containerships 3,000 - 5,000 TEU	6,394.7	0.88	0.063
Containerships < 3,000 TEU	4,159.3	0.57	0.041
Subtotal	31,065.6	4.29	0.306

Notes: (1) Assumes 25/50/95% VSRP compliance rates for years 2003/2007/post-2007.

Table XX-PPMit-25. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147 Terminal Project Mitigated Project - Non-Compliant Vessels within VSRP + Slide Valves.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	993.6	0.14	0.010
Containerships 5,000 - 6,000 TEU	1,488.4	0.21	0.015
Containerships 3,000 - 5,000 TEU	1,030.0	0.14	0.010
Containerships < 3,000 TEU	901.2	0.12	0.009
Subtotal	4,413.3	0.61	0.044
Project Year 2025			
Containerships 8,000 - 9,000 TEU	1,869.0	0.26	0.018
Containerships 5,000 - 6,000 TEU	2,294.7	0.32	0.023
Containerships 3,000 - 5,000 TEU	1,014.7	0.14	0.010
Containerships < 3,000 TEU	505.8	0.07	0.005
Subtotal	5,684.1	0.78	0.056
Project Year 2038			
Containerships 8,000 - 9,000 TEU	1,869.0	0.26	0.018
Containerships 5,000 - 6,000 TEU	2,294.7	0.32	0.023
Containerships 3,000 - 5,000 TEU	1,014.7	0.14	0.010
Containerships < 3,000 TEU	505.8	0.07	0.005
Subtotal	5,684.1	0.78	0.056

Note: (1) Assumes 75/50/05% VSRP non-compliance rates for years 2003/2007/post-2007.

Table XX-PPMit-26. Annual Cargo Vessel GHG Emissions within the POLA Precautionary Area - Berths 136-147 Terminal Project - Mitigated Project + Slide Valves.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	257.2	0.04	0.003
Containerships 5,000 - 6,000 TEU	464.1	0.06	0.005
Containerships 3,000 - 5,000 TEU	379.5	0.05	0.004
Containerships < 3,000 TEU	433.3	0.06	0.004
Subtotal	1,534.0	0.21	0.015
Project Year 2025			
Containerships 8,000 - 9,000 TEU	483.7	0.07	0.005
Containerships 5,000 - 6,000 TEU	715.4	0.10	0.007
Containerships 3,000 - 5,000 TEU	373.8	0.05	0.004
Containerships < 3,000 TEU	243.2	0.03	0.002
Subtotal	1,816.1	0.25	0.018
Project Year 2038			
Containerships 8,000 - 9,000 TEU	483.7	0.07	0.005
Containerships 5,000 - 6,000 TEU	715.4	0.10	0.007
Containerships 3,000 - 5,000 TEU	373.8	0.05	0.004
Containerships < 3,000 TEU	243.2	0.03	0.002
Subtotal	1,816.1	0.25	0.018

Table XX-PPMit-27. Annual Cargo Vessel GHG Emissions for Transit within the POLA Breakwater - Berths 136-147 Terminal Project - Mitigated Project + Slide Valves.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	115.3	0.02	0.001
Containerships 5,000 - 6,000 TEU	157.4	0.02	0.002
Containerships 3,000 - 5,000 TEU	100.2	0.01	0.001
Containerships < 3,000 TEU	76.8	0.01	0.001
Subtotal	449.7	0.06	0.004
Project Year 2025			
Containerships 8,000 - 9,000 TEU	216.9	0.03	0.002
Containerships 5,000 - 6,000 TEU	242.7	0.03	0.002
Containerships 3,000 - 5,000 TEU	98.7	0.01	0.001
Containerships < 3,000 TEU	43.1	0.01	0.000
Subtotal	601.4	0.08	0.006
Project Year 2038			
Containerships 8,000 - 9,000 TEU	216.9	0.03	0.002
Containerships 5,000 - 6,000 TEU	242.7	0.03	0.002
Containerships 3,000 - 5,000 TEU	98.7	0.01	0.001
Containerships < 3,000 TEU	43.1	0.01	0.000
Subtotal	601.4	0.08	0.006

Table XX-PPMit-28. Annual Cargo Vessel GHG Emissions for Docking Activities - Berths 136-147 Terminal Project - Mitigated Project + Slide Valves.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	17.0	0.00	0.000
Containerships 5,000 - 6,000 TEU	23.3	0.00	0.000
Containerships 3,000 - 5,000 TEU	14.8	0.00	0.000
Containerships < 3,000 TEU	11.3	0.00	0.000
Subtotal	66.4	0.01	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	32.1	0.00	0.000
Containerships 5,000 - 6,000 TEU	35.9	0.00	0.000
Containerships 3,000 - 5,000 TEU	14.6	0.00	0.000
Containerships < 3,000 TEU	6.4	0.00	0.000
Subtotal	88.9	0.01	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	32.1	0.00	0.000
Containerships 5,000 - 6,000 TEU	35.9	0.00	0.000
Containerships 3,000 - 5,000 TEU	14.6	0.00	0.000
Containerships < 3,000 TEU	6.4	0.00	0.000
Subtotal	88.9	0.01	0.001

Table XX-PPMit-29. Annual Vessel GHG Emissions - Berths 136-147 Terminal Project - Mitigated Project .

Project Scenario/Emission Source	Tons Per Year		
	CO2	CH4	N2O
Year 2003 Baseline			
Ships - Fairway Transit (1)	51,655	6.82	0.46
Ships - Precautionary Area Transit (1)	1,739	0.23	0.02
Ships - Harbor Transit (1)	1,115	0.15	0.01
Ships - Docking (1)	273	0.04	0.00
Ships - Hoteling Aux. Sources	14,510	1.92	0.13
Tugboats - Cargo Vessel Assist (1)	407	0.06	0.00
Subtotal	69,700	9.22	0.62
Project Year 2007			
Ships - Fairway Transit (1)	67,080	8.86	0.59
Ships - Precautionary Area Transit (1)	2,229	0.30	0.02
Ships - Harbor Transit (1)	1,409	0.19	0.01
Ships - Docking (1)	346	0.05	0.00
Ships - Hoteling Aux. Sources	18,434	2.45	0.17
Tugboats - Cargo Vessel Assist (1)	806	0.11	0.01
Subtotal	90,304	11.95	0.80
Project Year 2015			
Ships - Fairway Transit (1)	36,813	5.08	0.36
Ships - Precautionary Area Transit (1)	2,676	0.37	0.03
Ships - Harbor Transit (1)	2,009	0.28	0.02
Ships - Docking (1)	493	0.07	0.00
Ships - Hoteling Aux. Sources	12,247	1.60	0.11
Tugboats - Cargo Vessel Assist (1)	861	0.12	0.01
Subtotal	55,099	7.51	0.53
Project Year 2025			
Ships - Fairway Transit (1)	44,906	6.20	0.44
Ships - Precautionary Area Transit (1)	6,553	0.90	0.06
Ships - Harbor Transit (1)	2,646	0.36	0.03
Ships - Docking (1)	648	0.09	0.01
Ships - Hoteling Aux. Sources	10,446	1.33	0.09
Tugboats - Cargo Vessel Assist (1)	960	0.13	0.01
Subtotal	66,159	9.01	0.64
Project Year 2038			
Ships - Fairway Transit (1)	44,906	6.20	0.44
Ships - Precautionary Area Transit (1)	6,553	0.90	0.06
Ships - Harbor Transit (1)	2,646	0.36	0.03
Ships - Docking (1)	648	0.09	0.01
Ships - Hoteling Aux. Sources	10,446	1.33	0.09
Tugboats - Cargo Vessel Assist (1)	960	0.13	0.01
Subtotal	66,159	9.01	0.64

Note: (1) Includes auxiliary power emissions.

Table XX-PPMit-30. On-Road Truck Trip Vehicle Miles Travelled in California - Berths 136-147 Terminal Project - Mitigated Project

Year	B136-149 Throughput (TEUs)	B136-149 ICTF Thruput (TEUs) (1)	TEUs to Offsite Railyard (2)	TEUs to Local Deilveries	Truck Trips to Offsite Railyard (2)	Local Truck Trips (3)	Truck Miles to Offsite Railyard (4)	Local Truck Trip Miles (5)	Composite VMT/ Truck Trip
Baseline - Year 2003	891,976	-	445,988	445,988	598,795	598,795	9.6	135.0	72.3
Year 2007	1,091,200	-	545,600	545,600	756,532	756,532	9.6	135.0	72.3
Year 2015	1,747,500	552,709	109,594	1,085,198	147,412	1,459,681	9.6	135.0	123.5
Year 2025	2,389,000	700,810	174,397	1,513,793	194,253	1,686,148	9.6	135.0	122.0
Year 2038	2,389,000	700,810	174,397	1,513,793	194,253	1,686,148	9.6	135.0	122.0

(1) Annual throughput estimates from Rail Master Plan.

(2) Based on 50/50/26.8/6.7/7.3% of Berths 136-147 annual cargo throughput for years 2003/2007/2010/2015/2030.

(3) Based on 50/50/61.4/62.1/63.4% of Berths 136-147 annual cargo throughput for years 2003/2007/2010/2015/2030.

(4) Assumes a weighted split to Carson ICTF (4.5 miles) and LA railyards (18 miles) = 9.6 miles/trip

(5) Average of local/external-CA trip lengths (20/250) that originate from/are destined to the POLA.

Table XX-PPMit-31. On-Road Truck Operational Data within California for the Berths 136-147 Terminal Project - Alternative 1.

Activity/Project Scenario	Idling Time/ Trip (Hrs) (1)	Miles/ Trip (2)	ADT	Idling Hrs/ Day	Miles/ Day
On-Terminal					
Year 2003 - Baseline	0.56	1.02	3,281	1,837	3,351
Year 2007	0.25	1.02	4,145	1,036	4,233
Year 2015	0.25	0.81	4,403	1,101	3,547
Year 2025	0.25	0.81	5,152	1,288	4,150
Year 2038	0.25	0.81	5,152	1,288	4,150
Off-Terminal					
Year 2003 - Baseline	0.30	72.3	3,281	984	237,270
Year 2007	0.30	72.3	4,145	1,244	299,773
Year 2015	0.30	123.5	4,403	1,321	543,771
Year 2025	0.30	122.0	5,152	1,546	628,769
Year 2038	0.30	122.0	5,152	1,546	628,769

Notes: (1) 2003 on-terminal durations from PEI. Post-2003 on-terminal durations from TraPac (TraPac 2006).

(2) On-terminal mileage/trip based upon current/proposed terminal gate systems. Off-terminal miles/trip from data presented in Table XX-PPMit-30.

Table XX-PPMit-32. Daily Mitigated Truck GHG Emissions for the Berths 136-147 Terminal Project - Mitigated Project.

Location/Project Scenario - Mode	Pounds per Day		
	CO2	CH4	N2O
On-Terminal (1)			
Year 2003 - Idling	28,338	2.0	1.0
Year 2003 - Driving	23,387	0.7	0.4
Subtotal - Year 2003	51,725	2.8	1.4
Year 2007 - Idling	15,983	1.1	0.6
Year 2007 - Driving	29,548	0.9	0.5
Subtotal - Year 2007	45,532	2.1	1.0
Year 2015 - Idling	16,977	1.2	0.6
Year 2015 - Driving	24,759	0.8	0.4
Subtotal - Year 2015	41,735	2.0	1.0
Year 2025 - Idling	19,864	1.4	0.7
Year 2025 - Driving	28,969	0.9	0.5
Subtotal - Year 2025	48,833	2.3	1.2
Year 2038 - Idling	19,864	1.4	0.7
Year 2038 - Driving	28,969	0.9	0.5
Subtotal - Year 2038	48,833	2.3	1.2
Off-Terminal			
Year 2003 - Idling	15,181	1.1	0.5
Year 2003 - Driving	1,047,875	52.3	26.2
Subtotal - Year 2003	1,063,056	53.4	26.7
Year 2007 - Idling	19,180	1.4	0.7
Year 2007 - Driving	1,323,911	66.1	33.1
Subtotal - Year 2007	1,343,091	67.5	33.7
Year 2015 - Idling	20,372	1.5	0.7
Year 2015 - Driving	2,447,103	119.9	60.0
Subtotal - Year 2015	2,467,475	121.4	60.7
Year 2025 - Idling	23,836	1.7	0.9
Year 2025 - Driving	2,882,346	138.6	69.3
Subtotal - Year 2025	2,906,183	140.4	70.2
Year 2038 - Idling	23,836	1.7	0.9
Year 2038 - Driving	2,882,346	138.6	69.3
Subtotal - Year 2038	2,906,183	140.4	70.2
Year 2003	1,114,782	56.2	28.1
Year 2007	1,388,623	69.5	34.8
Year 2015	2,509,211	123.4	61.7
Year 2025	2,955,015	142.7	71.3
Year 2038	2,955,015	142.7	71.3

Notes: (1) On-terminal driving emissions calculated with 10 mph emission factors.

Table XX-PPMit-33. Terminal Equipment Annual GHG Emissions - Berths 136-147 Terminal Project - Mitigated Project

Project Scenario/Equipment Horsepower	Annual Hp-Hrs	Annual GHG Emissions (Tons)		
		CO2	CH4	N2O
Baseline - Year 2003				
Terminal Equipment - 121-175 Hp	10,493,875	6,574	1.08	0.08
Terminal Equipment - 176-250 Hp	12,581,479	7,881	1.30	0.09
Terminal Equipment - 250-500 Hp	2,417,350	1,514	0.22	0.02
Subtotal	25,492,704	15,969	2.60	0.19
Project Year 2007				
Terminal Equipment - 121-175 Hp	12,837,231	8,042	1.32	0.09
Terminal Equipment - 176-250 Hp	15,391,012	9,641	1.59	0.11
Terminal Equipment - 250-500 Hp	2,957,161	1,852	0.27	0.02
Subtotal	31,185,404	19,536	3.18	0.23
Project Year 2015				
Terminal Equipment - 121-175 Hp	20,559,507	12,879	2.12	0.15
Terminal Equipment - 176-250 Hp	24,649,524	15,441	2.54	0.18
Terminal Equipment - 250-500 Hp	4,736,050	2,967	0.43	0.03
Subtotal	49,945,082	31,287	5.09	0.36
Project Year 2025				
Terminal Equipment - 121-175 Hp	34,539,516	21,637	3.56	0.25
Terminal Equipment - 176-250 Hp	41,410,653	25,941	4.27	0.30
Terminal Equipment - 250-500 Hp	7,956,460	4,984	0.72	0.05
Subtotal	83,906,628	52,562	8.54	0.61
Project Year 2038 (1)				
Terminal Equipment - 121-175 Hp	34,539,516	21,637	3.56	0.25
Terminal Equipment - 176-250 Hp	41,410,653	25,941	4.27	0.30
Terminal Equipment - 250-500 Hp	7,956,460	4,984	0.72	0.05
Subtotal	83,906,628	52,562	8.54	0.61

Note: (1) In years 2025 & 2038, Hp-Hrs increased an additional 23% to simulate the effects of additional equipment usage needed to handle future cargo levels within a constrained terminal space (>8,000 TEUs/acre).

Table XX-PPMit-34. Mitigated Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project - Proposed Project - Year 2007.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Yard Locomotive - Switching	-	-	-
Subtotal	-	-	-
Berths 136-147/Inbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Subtotal	-	-	-
Carson or LA Railyards/Outbound			
Hostler	1,372	0.23	0.02
Top Picks	896	0.15	0.01
Line Haul Locomotive - Road Haul	21,367	2.98	0.21
Line Haul Locomotive - Notch 1	636	0.09	0.01
Yard Locomotive - Switching	227	0.03	0.00
Subtotal	24,497	3.47	0.25
Carson or LA Railyards/Inbound			
Hostler	514	0.08	0.01
Top Picks	336	0.06	0.00
Line Haul Locomotive - Road Haul	21,367	2.98	0.21
Line Haul Locomotive - Notch 1	318	0.04	0.00
Subtotal	22,535	3.16	0.23
Total Tons Per Year	47,032	6.63	0.47

Table XX-PPMit-35. Mitigated Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project - Proposed Project - Year 2015.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,389	0.23	0.02
Top Picks	907	0.15	0.01
Line Haul Locomotive - Road Haul	22,361	3.11	0.22
Line Haul Locomotive - Notch 1	322	0.04	0.00
Yard Locomotive - Switching	218	0.03	0.00
Subtotal	25,198	3.57	0.25
Berths 136-147/Inbound			
Hostler	521	0.09	0.01
Top Picks	340	0.06	0.00
Line Haul Locomotive - Road Haul	22,361	3.11	0.22
Line Haul Locomotive - Notch 1	322	0.04	0.00
Subtotal	23,544	3.30	0.24
Carson or LA Railyards/Outbound			
Hostler	276	0.05	0.00
Top Picks	180	0.03	0.00
Line Haul Locomotive - Road Haul	4,292	0.60	0.04
Line Haul Locomotive - Notch 1	128	0.02	0.00
Yard Locomotive - Switching	46	0.01	0.00
Subtotal	4,921	0.70	0.05
Carson or LA Railyards/Inbound			
Hostler	103	0.02	0.00
Top Picks	67	0.01	0.00
Line Haul Locomotive - Road Haul	4,292	0.60	0.04
Line Haul Locomotive - Notch 1	64	0.01	0.00
Subtotal	4,527	0.63	0.05
Total Tons Per Year	58,190	8.20	0.59

Table XX-PPMit-36. Mitigated Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project - Proposed Project - Year 2025.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,762	0.29	0.02
Top Picks	1,151	0.19	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Yard Locomotive - Switching	277	0.04	0.00
Subtotal	31,950	4.52	0.32
Berths 136-147/Inbound			
Hostler	661	0.11	0.01
Top Picks	431	0.07	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Subtotal	29,853	4.19	0.30
Carson or LA Railyards/Outbound			
Hostler	438	0.07	0.01
Top Picks	286	0.05	0.00
Line Haul Locomotive - Road Haul	6,830	0.95	0.07
Line Haul Locomotive - Notch 1	203	0.03	0.00
Yard Locomotive - Switching	72	0.01	0.00
Subtotal	7,830	1.11	0.08
Carson or LA Railyards/Inbound			
Hostler	164	0.03	0.00
Top Picks	107	0.02	0.00
Line Haul Locomotive - Road Haul	6,830	0.95	0.07
Line Haul Locomotive - Notch 1	102	0.01	0.00
Subtotal	7,203	1.01	0.07
Total Tons Per Year	76,836	10.83	0.77

Table XX-PPMit-37. Mitigated Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project - Proposed Project - Year 2038.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,762	0.29	0.02
Top Picks	1,151	0.19	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Yard Locomotive - Switching	277	0.04	0.00
Subtotal	31,950	4.52	0.32
Berths 136-147/Inbound			
Hostler	661	0.11	0.01
Top Picks	431	0.07	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Subtotal	29,853	4.19	0.30
Carson or LA Railyards/Outbound			
Hostler	438	0.07	0.01
Top Picks	286	0.05	0.00
Line Haul Locomotive - Road Haul	6,830	0.95	0.07
Line Haul Locomotive - Notch 1	203	0.03	0.00
Yard Locomotive - Switching	72	0.01	0.00
Subtotal	7,830	1.11	0.08
Carson or LA Railyards/Inbound			
Hostler	164	0.03	0.00
Top Picks	107	0.02	0.00
Line Haul Locomotive - Road Haul	6,830	0.95	0.07
Line Haul Locomotive - Notch 1	102	0.01	0.00
Subtotal	7,203	1.01	0.07
Total Tons Per Year	76,836	10.83	0.77

Table XX-PPMit-38. Summary of Mitigated Annual Train and Rail Yard Cargo Handling Equipment Mitigated GHG Emissions - Berths 136-147 Terminal Project - Proposed Project with Mitigation

	Tons per Year		
Project Scenario/Source Activity	CO2	CH4	N2O
Baseline Year 2003			
ICTF Equipment	2,548	0.42	0.03
Trains	35,897	5.00	0.36
Subtotal	38,445	5.42	0.39
Project Year 2007			
ICTF Equipment	3,118	0.51	0.04
Trains	43,914	6.12	0.44
Subtotal	47,032	6.63	0.47
Project Year 2015			
ICTF Equipment	3,784	0.62	0.04
Trains	54,405	7.58	0.54
Subtotal	58,190	8.20	0.59
Project Year 2025			
ICTF Equipment	5,001	0.82	0.06
Trains	71,835	10.01	0.71
Subtotal	76,836	10.83	0.77
Project Year 2038			
ICTF Equipment	5,001	0.82	0.06
Trains	71,835	10.01	0.71
Subtotal	76,836	10.83	0.77

Table XX-NP-1. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	21,531.0	2.84	0.189
Containership < 3,000 TEU	28,133.5	3.71	0.248
Subtotal	49,664.5	6.55	0.437
Project Year 2007			
Containerships 5,000 - 6,000 TEU	10,764.9	1.42	0.095
Containerships 3,000 - 5,000 TEU	24,724.7	3.26	0.218
Containerships < 3,000 TEU	28,868.2	3.81	0.254
Subtotal	64,357.7	8.49	0.566
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	22,048.5	2.91	0.194
Containerships 3,000 - 5,000 TEU	36,296.4	4.79	0.319
Containerships < 3,000 TEU	17,618.3	2.32	0.155
Subtotal	75,963.2	10.02	0.668
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	54,519.9	7.19	0.480
Containerships 3,000 - 5,000 TEU	27,597.3	3.64	0.243
Containerships < 3,000 TEU	8,173.5	1.08	0.072
Subtotal	90,290.6	11.92	0.794
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	54,519.9	7.19	0.480
Containerships 3,000 - 5,000 TEU	27,597.3	3.64	0.243
Containerships < 3,000 TEU	8,173.5	1.08	0.072
Subtotal	90,290.6	11.92	0.794

Table XX-NP-2. Annual Cargo Vessel GHG Emissions within the POLA Precautionary Area - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	406.1	0.05	0.004
Containership < 3,000 TEU	689.9	0.09	0.006
Subtotal	1,096.0	0.14	0.010
Project Year 2007			
Containerships 5,000 - 6,000 TEU	176.7	0.02	0.002
Containerships 3,000 - 5,000 TEU	477.8	0.06	0.004
Containerships < 3,000 TEU	722.5	0.10	0.006
Subtotal	1,377.0	0.18	0.012
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	373.8	0.05	0.003
Containerships 3,000 - 5,000 TEU	722.7	0.10	0.006
Containerships < 3,000 TEU	452.2	0.06	0.004
Subtotal	1,548.6	0.20	0.014
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	924.2	0.12	0.008
Containerships 3,000 - 5,000 TEU	549.5	0.07	0.005
Containerships < 3,000 TEU	209.8	0.03	0.002
Subtotal	1,683.5	0.22	0.015
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	924.2	0.12	0.008
Containerships 3,000 - 5,000 TEU	549.5	0.07	0.005
Containerships < 3,000 TEU	209.8	0.03	0.002
Subtotal	1,683.5	0.22	0.015

Table XX-NP-3. Annual Cargo Vessel GHG Emissions for Transit within the POLA Breakwater - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	107.2	0.01	0.001
Containership < 3,000 TEU	122.2	0.02	0.001
Subtotal	229.4	0.03	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	59.9	0.01	0.001
Containerships 3,000 - 5,000 TEU	126.1	0.02	0.001
Containerships < 3,000 TEU	128.0	0.02	0.001
Subtotal	314.0	0.04	0.003
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	126.8	0.02	0.001
Containerships 3,000 - 5,000 TEU	190.8	0.03	0.002
Containerships < 3,000 TEU	80.1	0.01	0.001
Subtotal	397.6	0.05	0.004
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	313.4	0.04	0.003
Containerships 3,000 - 5,000 TEU	145.0	0.02	0.001
Containerships < 3,000 TEU	37.2	0.00	0.000
Subtotal	495.6	0.07	0.004
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	313.4	0.04	0.003
Containerships 3,000 - 5,000 TEU	145.0	0.02	0.001
Containerships < 3,000 TEU	37.2	0.00	0.000
Subtotal	495.6	0.07	0.004

Table XX-NP-4. Annual Cargo Vessel GHG Emissions for Docking Activities - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	15.8	0.00	0.000
Containership < 3,000 TEU	18.1	0.00	0.000
Subtotal	33.9	0.00	0.000
Project Year 2007			
Containerships 5,000 - 6,000 TEU	8.9	0.00	0.000
Containerships 3,000 - 5,000 TEU	18.6	0.00	0.000
Containerships < 3,000 TEU	18.9	0.00	0.000
Subtotal	46.4	0.01	0.000
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	18.7	0.00	0.000
Containerships 3,000 - 5,000 TEU	28.2	0.00	0.000
Containerships < 3,000 TEU	11.8	0.00	0.000
Subtotal	58.7	0.01	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	46.3	0.01	0.000
Containerships 3,000 - 5,000 TEU	21.4	0.00	0.000
Containerships < 3,000 TEU	5.5	0.00	0.000
Subtotal	73.2	0.01	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	46.3	0.01	0.000
Containerships 3,000 - 5,000 TEU	21.4	0.00	0.000
Containerships < 3,000 TEU	5.5	0.00	0.000
Subtotal	73.2	0.01	0.001

Table XX-NP-5. Annual Shifting GHG Emissions for Cargo Vessels within the POLA Breakwater - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	24.8	0.00	0.000
Docking	3.7	0.00	0.000
Subtotal	28.4	0.00	0.000

Table XX-NP-6. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Fairway Zone (CA Waters) - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	862.3	0.12	0.008
Containership < 3,000 TEU	1,128.5	0.15	0.011
Subtotal	1,990.9	0.27	0.019
Project Year 2007			
Containerships 5,000 - 6,000 TEU	479.8	0.07	0.005
Containerships 3,000 - 5,000 TEU	1,040.0	0.14	0.010
Containerships < 3,000 TEU	1,203.0	0.16	0.011
Subtotal	2,722.7	0.37	0.026
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,050.4	0.14	0.010
Containerships 3,000 - 5,000 TEU	1,619.1	0.22	0.015
Containerships < 3,000 TEU	768.7	0.10	0.007
Subtotal	3,438.2	0.47	0.032
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,597.4	0.35	0.025
Containerships 3,000 - 5,000 TEU	1,231.1	0.17	0.012
Containerships < 3,000 TEU	356.6	0.05	0.003
Subtotal	4,185.1	0.57	0.040
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,597.4	0.35	0.025
Containerships 3,000 - 5,000 TEU	1,231.1	0.17	0.012
Containerships < 3,000 TEU	356.6	0.05	0.003
Subtotal	4,185.1	0.57	0.040

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

(2) Assumes 25/50/75/80% VSRP compliance rates for years 2003/2007/2010/post-2014.

Table XX-NP-7. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Precautionary Area - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	202.4	0.03	0.002
Containership < 3,000 TEU	233.6	0.03	0.002
Subtotal	435.9	0.06	0.004
Project Year 2007			
Containerships 5,000 - 6,000 TEU	118.2	0.02	0.001
Containerships 3,000 - 5,000 TEU	238.1	0.03	0.002
Containerships < 3,000 TEU	244.6	0.03	0.002
Subtotal	600.9	0.08	0.006
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	250.0	0.03	0.002
Containerships 3,000 - 5,000 TEU	360.1	0.05	0.003
Containerships < 3,000 TEU	153.1	0.02	0.001
Subtotal	763.2	0.10	0.007
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	618.3	0.08	0.006
Containerships 3,000 - 5,000 TEU	273.8	0.04	0.003
Containerships < 3,000 TEU	71.0	0.01	0.001
Subtotal	963.1	0.13	0.009
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	618.3	0.08	0.006
Containerships 3,000 - 5,000 TEU	273.8	0.04	0.003
Containerships < 3,000 TEU	71.0	0.01	0.001
Subtotal	963.1	0.13	0.009

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-NP-8. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting within the POLA Breakwater - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	303.7	0.04	0.003
Containership < 3,000 TEU	335.7	0.05	0.003
Subtotal	639.4	0.09	0.006
Project Year 2007			
Containerships 5,000 - 6,000 TEU	187.5	0.03	0.002
Containerships 3,000 - 5,000 TEU	357.3	0.05	0.003
Containerships < 3,000 TEU	351.6	0.05	0.003
Subtotal	896.4	0.12	0.008
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	396.7	0.05	0.004
Containerships 3,000 - 5,000 TEU	540.4	0.07	0.005
Containerships < 3,000 TEU	220.0	0.03	0.002
Subtotal	1,157.2	0.16	0.011
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	980.9	0.13	0.009
Containerships 3,000 - 5,000 TEU	410.9	0.06	0.004
Containerships < 3,000 TEU	102.1	0.01	0.001
Subtotal	1,493.9	0.20	0.014
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	980.9	0.13	0.009
Containerships 3,000 - 5,000 TEU	410.9	0.06	0.004
Containerships < 3,000 TEU	102.1	0.01	0.001
Subtotal	1,493.9	0.20	0.014

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-NP-9. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Docking within the POLA Breakwater - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	83.0	0.01	0.001
Containership < 3,000 TEU	91.8	0.01	0.001
Subtotal	174.8	0.02	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	51.3	0.01	0.000
Containerships 3,000 - 5,000 TEU	97.7	0.01	0.001
Containerships < 3,000 TEU	96.1	0.01	0.001
Subtotal	245.0	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	108.4	0.01	0.001
Containerships 3,000 - 5,000 TEU	147.7	0.02	0.001
Containerships < 3,000 TEU	60.1	0.01	0.001
Subtotal	316.3	0.04	0.003
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	268.1	0.04	0.003
Containerships 3,000 - 5,000 TEU	112.3	0.02	0.001
Containerships < 3,000 TEU	27.9	0.00	0.000
Subtotal	408.3	0.06	0.004
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	268.1	0.04	0.003
Containerships 3,000 - 5,000 TEU	112.3	0.02	0.001
Containerships < 3,000 TEU	27.9	0.00	0.000
Subtotal	408.3	0.06	0.004

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-NP-10. Annual Auxiliary Generator GHG Emissions during Cargo Vessel Hoteling - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	4,777.2	0.65	0.045
Containership < 3,000 TEU	3,663.9	0.50	0.035
Subtotal	8,441.1	1.15	0.080
Project Year 2007			
Containerships 5,000 - 6,000 TEU	2,754.5	0.37	0.026
Containerships 3,000 - 5,000 TEU	5,620.2	0.76	0.053
Containerships < 3,000 TEU	3,837.2	0.52	0.036
Subtotal	12,211.9	1.66	0.115
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	5,826.8	0.79	0.055
Containerships 3,000 - 5,000 TEU	8,500.6	1.15	0.080
Containerships < 3,000 TEU	2,401.4	0.33	0.023
Subtotal	16,728.7	2.27	0.158
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	14,408.0	1.95	0.136
Containerships 3,000 - 5,000 TEU	6,463.3	0.88	0.061
Containerships < 3,000 TEU	1,114.0	0.15	0.011
Subtotal	21,985.3	2.98	0.208
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	14,408.0	1.95	0.136
Containerships 3,000 - 5,000 TEU	6,463.3	0.88	0.061
Containerships < 3,000 TEU	1,114.0	0.15	0.011
Subtotal	21,985.3	2.98	0.208

Table XX-NP-11. Annual Auxiliary Generator GHG Emissions during Cargo Vessel Shifts - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	34.0	0.00	0.000
Docking	9.3	0.00	0.000
Subtotal	43.3	0.01	0.000

Table XX-NP-12. Annual Auxiliary Generator GHG Emissions for Shifted Cargo Vessels during Hoteling - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership < 3,000 TEU	742.7	0.10	0.007
Subtotal	742.7	0.10	0.007

Table XX-NP-14. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Transiting the Precautionary Area - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	65.3	0.01	0.001
Containership < 3,000 TEU	142.1	0.02	0.001
Subtotal	207.4	0.03	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	25.0	0.00	0.000
Containerships 3,000 - 5,000 TEU	76.8	0.01	0.001
Containerships < 3,000 TEU	148.9	0.02	0.001
Subtotal	250.7	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	52.8	0.01	0.000
Containerships 3,000 - 5,000 TEU	116.2	0.01	0.001
Containerships < 3,000 TEU	93.2	0.01	0.001
Subtotal	262.2	0.03	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	130.6	0.02	0.001
Containerships 3,000 - 5,000 TEU	88.4	0.01	0.001
Containerships < 3,000 TEU	43.2	0.01	0.000
Subtotal	262.2	0.03	0.002
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	130.6	0.02	0.001
Containerships 3,000 - 5,000 TEU	88.4	0.01	0.001
Containerships < 3,000 TEU	43.2	0.01	0.000
Subtotal	262.2	0.03	0.002

Table XX-NP-15. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Transiting within the POLA Breakwater - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	51.8	0.01	0.000
Containership < 3,000 TEU	112.7	0.01	0.001
Subtotal	164.6	0.02	0.001
Project Year 2007			
Containerships 5,000 - 6,000 TEU	19.8	0.00	0.000
Containerships 3,000 - 5,000 TEU	60.9	0.01	0.001
Containerships < 3,000 TEU	118.1	0.02	0.001
Subtotal	198.8	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	41.9	0.01	0.000
Containerships 3,000 - 5,000 TEU	92.2	0.01	0.001
Containerships < 3,000 TEU	73.9	0.01	0.001
Subtotal	208.0	0.03	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	103.6	0.01	0.001
Containerships 3,000 - 5,000 TEU	70.1	0.01	0.001
Containerships < 3,000 TEU	34.3	0.00	0.000
Subtotal	208.0	0.03	0.002
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	103.6	0.01	0.001
Containerships 3,000 - 5,000 TEU	70.1	0.01	0.001
Containerships < 3,000 TEU	34.3	0.00	0.000
Subtotal	208.0	0.03	0.002

Table XX-NP-16. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Docking within the POLA Breakwater - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	14.2	0.00	0.000
Containership < 3,000 TEU	30.8	0.00	0.000
Subtotal	45.0	0.01	0.000
Project Year 2007			
Containerships 5,000 - 6,000 TEU	5.4	0.00	0.000
Containerships 3,000 - 5,000 TEU	16.7	0.00	0.000
Containerships < 3,000 TEU	32.3	0.00	0.000
Subtotal	54.3	0.01	0.000
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	11.5	0.00	0.000
Containerships 3,000 - 5,000 TEU	25.2	0.00	0.000
Containerships < 3,000 TEU	20.2	0.00	0.000
Subtotal	56.8	0.01	0.000
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	28.3	0.00	0.000
Containerships 3,000 - 5,000 TEU	19.2	0.00	0.000
Containerships < 3,000 TEU	9.4	0.00	0.000
Subtotal	56.8	0.01	0.000
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	28.3	0.00	0.000
Containerships 3,000 - 5,000 TEU	19.2	0.00	0.000
Containerships < 3,000 TEU	9.4	0.00	0.000
Subtotal	56.8	0.01	0.000

Table XX-NP-17. Annual Auxiliary Boiler GHG Emissions during Cargo Vessel Hoteling - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	2,072.1	0.26	0.018
Containership < 3,000 TEU	2,706.0	0.34	0.023
Subtotal	4,778.1	0.61	0.041
Project Year 2007			
Containerships 5,000 - 6,000 TEU	950.7	0.12	0.008
Containerships 3,000 - 5,000 TEU	2,437.8	0.31	0.021
Containerships < 3,000 TEU	2,834.0	0.36	0.024
Subtotal	6,222.5	0.79	0.053
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,011.2	0.26	0.017
Containerships 3,000 - 5,000 TEU	3,687.2	0.47	0.031
Containerships < 3,000 TEU	1,773.5	0.23	0.015
Subtotal	7,471.9	0.95	0.063
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	4,973.1	0.63	0.042
Containerships 3,000 - 5,000 TEU	2,803.5	0.36	0.024
Containerships < 3,000 TEU	822.8	0.10	0.007
Subtotal	8,599.4	1.09	0.073
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	4,973.1	0.63	0.042
Containerships 3,000 - 5,000 TEU	2,803.5	0.36	0.024
Containerships < 3,000 TEU	822.8	0.10	0.007
Subtotal	8,599.4	1.09	0.073

Table XX-NP-18. Annual Auxiliary Boiler GHG Emissions during Cargo Vessel Shifts - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	22.9	0.00	0.000
Docking	6.2	0.00	0.000
Hoteling	548.5	0.07	0.005
Subtotal	577.6	0.07	0.005

Table XX-NP-19. Annual Tugboat GHG Emissions for Cargo Vessel Assists - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	146.9	0.02	0.001
Containership < 3,000 TEU	219.6	0.03	0.002
Subtotal	366.5	0.05	0.004
Project Year 2007			
Subtotal	726.1	0.10	0.007
Project Year 2015			
Subtotal	759.5	0.10	0.007
Project Year 2025			
Subtotal	759.5	0.10	0.007
Project Year 2038			
Subtotal	759.5	0.10	0.007

Note: (1) Assumes 3 tug assists per ship visit for all post-baseline years.

Table XX-NP-20. Annual Auxiliary Generator GHG Emissions for Tugboats during Cargo Vessel Assists - Berths 136-147 Terminal Project - Alt 1 - No Project.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	16.1	0.00	0.000
Containership < 3,000 TEU	24.1	0.00	0.000
Subtotal	40.2	0.01	0.000
Project Year 2007			
Subtotal (1)	79.5	0.01	0.001
Project Year 2015			
Subtotal (1)	83.2	0.01	0.001
Project Year 2025			
Subtotal (1)	83.2	0.01	0.001
Project Year 2038			
Subtotal (1)	83.2	0.01	0.001

Note: (1) Assumes 3 tug assists per ship visit for all post-baseline years.

Table XX-NP-21. Annual Vessel GHG Emissions - Berths 136-147 Terminal Project - Alt 1 - No Project.

Project Scenario/GHG Emission Source	Tons Per Year		
	CO2	CH4	N2O
Year 2003 Baseline			
Ships - Fairway Transit (1)	51,655	6.82	0.46
Ships - Precautionary Area Transit (1)	1,739	0.23	0.02
Ships - Harbor Transit (1)	1,115	0.15	0.01
Ships - Docking (1)	273	0.04	0.00
Ships - Hoteling Aux. Sources	14,510	1.92	0.13
Tugboats - Cargo Vessel Assist (1)	407	0.06	0.00
Subtotal	69,700	9.22	0.62
Project Year 2007			
Ships - Fairway Transit (1)	67,080	8.86	0.59
Ships - Precautionary Area Transit (1)	2,229	0.30	0.02
Ships - Harbor Transit (1)	1,409	0.19	0.01
Ships - Docking (1)	346	0.05	0.00
Ships - Hoteling Aux. Sources	18,434	2.45	0.17
Tugboats - Cargo Vessel Assist (1)	806	0.11	0.01
Subtotal	90,304	11.95	0.80
Project Year 2015			
Ships - Fairway Transit (1)	79,401	10.49	0.70
Ships - Precautionary Area Transit (1)	2,574	0.34	0.02
Ships - Harbor Transit (1)	1,763	0.24	0.02
Ships - Docking (1)	432	0.06	0.00
Ships - Hoteling Aux. Sources	24,201	3.22	0.22
Tugboats - Cargo Vessel Assist (1)	843	0.12	0.01
Subtotal	109,213	14.46	0.97
Project Year 2025			
Ships - Fairway Transit (1)	94,476	12.48	0.83
Ships - Precautionary Area Transit (1)	2,909	0.39	0.03
Ships - Harbor Transit (1)	2,198	0.29	0.02
Ships - Docking (1)	538	0.07	0.00
Ships - Hoteling Aux. Sources	30,585	4.08	0.28
Tugboats - Cargo Vessel Assist (1)	843	0.12	0.01
Subtotal	131,548	17.43	1.17
Project Year 2038			
Ships - Fairway Transit (1)	94,476	12.48	0.83
Ships - Precautionary Area Transit (1)	2,909	0.39	0.03
Ships - Harbor Transit (1)	2,198	0.29	0.02
Ships - Docking (1)	538	0.07	0.00
Ships - Hoteling Aux. Sources	30,585	4.08	0.28
Tugboats - Cargo Vessel Assist (1)	843	0.12	0.01
Subtotal	131,548	17.43	1.17

Note: (1) Includes auxiliary power emissions.

Table XX-NP-22. On-Road Truck Trip Vehicle Miles Travelled in California - Berths 136-147 Terminal Project - Alt 1 - No Project.

Year	B136-149 Throughput (TEUs)	B136-149 ICTF Thruput (TEUs) (1)	TEUs to Offsite Railyard (2)	TEUs to Local Deilveries	Truck Trips to Offsite Railyard (2)	Local Truck Trips	Truck Miles to Offsite Railyard (3)	Local Truck Trip Miles (4)	Composite VMT/ Truck Trip
Baseline - Year 2003	891,976	-	445,988	445,988	598,795	598,795	11.3	135.0	73.2
Year 2007	1,091,200	-	545,600	545,600	756,532	756,532	11.3	135.0	73.2
Year 2015	1,355,200	-	677,600	677,600	939,564	939,564	11.3	135.0	73.2
Year 2025	1,697,000	-	848,500	848,500	980,698	980,698	11.3	135.0	73.2
Year 2038	1,697,000	-	848,500	848,500	980,698	980,698	11.3	135.0	73.2

(1) Annual throughput estimates from Rail Master Plan.

(2) = 50% of Berths 136-147 annual cargo throughput for all years.

(3) Assumes an even split to Carson ICTF (4.5 miles) and LA railyards (18 miles) = 11.3 miles/trip

(4) Average of local/external-CA trip lengths (20/250) that originate from/are destined to the POLA.

Table XX-NP-23. On-Road Truck Operational Data within California for the Berths 136-147 Terminal Project - Alt 1 - No Project.

Activity/Project Scenario	Idling Time/ Trip (Hrs) (1)	Miles/ Trip (2)	ADT	Idling Hrs/ Day	Miles/ Day
On-Terminal					
Year 2003 - Baseline	0.56	1.02	3,281	1,837	3,351
Year 2007	0.25	1.02	4,145	1,036	4,233
Year 2015	0.25	0.81	5,148	1,287	4,147
Year 2025	0.25	0.81	5,374	1,343	4,329
Year 2038	0.25	0.81	5,374	1,343	4,329
Off-Terminal					
Year 2003 - Baseline	0.30	73.2	3,281	984	240,010
Year 2007	0.30	73.2	4,145	1,244	303,234
Year 2015	0.30	73.2	5,148	1,544	376,598
Year 2025	0.30	73.2	5,374	1,612	393,085
Year 2038	0.30	73.2	5,374	1,612	393,085

Notes: (1) 2003 on-terminal durations from PEI. Post-2003 on-terminal durations from TraPac (TraPac 2006).

(2) On-terminal mileage/trip based upon current/proposed terminal gate systems. Off-terminal miles/trip from data presented in Table XX-NP-22.

Table XX-NP-24. Daily Truck GHG Emissions for the Berths 136-147 Terminal Project - Alt 1 - No Project.

Location/Project Scenario - Mode	Pounds per Day		
	CO2	CH4	N2O
On-Terminal (1)			
Year 2003 - Idling	28,338	2.0	1.0
Year 2003 - Driving	23,387	0.7	0.4
Subtotal - Year 2003	51,725	2.8	1.4
Year 2007 - Idling	15,983	1.1	0.6
Year 2007 - Driving	29,548	0.9	0.5
Subtotal - Year 2007	45,532	2.1	1.0
Year 2015 - Idling	19,850	1.4	0.7
Year 2015 - Driving	28,949	0.9	0.5
Subtotal - Year 2015	48,800	2.3	1.2
Year 2025 - Idling	20,719	1.5	0.7
Year 2025 - Driving	30,217	1.0	0.5
Subtotal - Year 2025	50,936	2.4	1.2
Year 2038 - Idling	20,719	1.5	0.7
Year 2038 - Driving	30,217	1.0	0.5
Subtotal - Year 2038	50,936	2.4	1.2
Off-Terminal			
Year 2003 - Idling	15,181	1.1	0.5
Year 2003 - Driving	1,059,975	52.9	26.5
Subtotal - Year 2003	1,075,156	54.0	27.0
Year 2007 - Idling	19,180	1.4	0.7
Year 2007 - Driving	1,339,198	66.9	33.4
Subtotal - Year 2007	1,358,378	68.2	34.1
Year 2015 - Idling	23,820	1.7	0.9
Year 2015 - Driving	1,694,782	83.0	41.5
Subtotal - Year 2015	1,718,602	84.7	42.4
Year 2025 - Idling	24,863	1.8	0.9
Year 2025 - Driving	1,801,946	86.7	43.3
Subtotal - Year 2025	1,826,809	88.5	44.2
Year 2038 - Idling	24,863	1.8	0.9
Year 2038 - Driving	1,801,946	86.7	43.3
Subtotal - Year 2038	1,826,809	88.5	44.2
Total Daily Truck GHG Emissions by Project Year			
Year 2003	1,126,881	56.8	28.4
Year 2007	1,403,910	70.3	35.2
Year 2015	1,767,402	87.1	43.5
Year 2025	1,877,745	90.9	45.4
Year 2038	1,877,745	90.9	45.4

Notes: (1) On-terminal driving emissions calculated with 10 mph emission factors.

Table XX-NP-25. Terminal Equipment Annual GHG Emissions - Berths 136-147 Terminal Project Alt 1 - No Project.

Project Scenario/Equipment Horsepower	Annual Hp-Hrs	Annual GHG Emissions (Tons)		
		CO2	CH4	N2O
Baseline - Year 2003				
Terminal Equipment - 121-175 Hp	10,493,875	6,574	1.08	0.08
Terminal Equipment - 176-250 Hp	12,581,479	7,881	1.30	0.09
Terminal Equipment - 250-500 Hp	2,417,350	1,514	0.22	0.02
Subtotal	25,492,704	15,969	2.60	0.19
Project Year 2007				
Terminal Equipment - 121-175 Hp	12,837,231	8,042	1.32	0.09
Terminal Equipment - 176-250 Hp	15,391,012	9,641	1.59	0.11
Terminal Equipment - 250-500 Hp	2,957,161	1,852	0.27	0.02
Subtotal	31,185,404	19,536	3.18	0.23
Project Year 2015				
Terminal Equipment - 121-175 Hp	15,942,275	9,987	1.64	0.12
Terminal Equipment - 176-250 Hp	19,113,760	11,973	1.97	0.14
Terminal Equipment - 250-500 Hp	3,672,433	2,301	0.33	0.02
Subtotal	38,728,468	24,261	3.94	0.28
Project Year 2025				
Terminal Equipment - 121-175 Hp	24,066,561	15,076	2.48	0.18
Terminal Equipment - 176-250 Hp	28,854,255	18,075	2.97	0.21
Terminal Equipment - 250-500 Hp	5,543,929	3,473	0.50	0.04
Subtotal	58,464,745	36,624	5.95	0.43
Project Year 2038 (1)				
Terminal Equipment - 121-175 Hp	24,066,561	15,076	2.48	0.18
Terminal Equipment - 176-250 Hp	28,854,255	18,075	2.97	0.21
Terminal Equipment - 250-500 Hp	5,543,929	3,473	0.50	0.04
Subtotal	58,464,745	36,624	5.95	0.43

Note: (1) Hp-Hr usage increased by 21% in year 2030 and beyond to simulate the effects of additional equipment usage needed to handle future cargo levels within a constrained terminal space (>8,000 TEUs/acre).

Table XX-NP-26. Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alt 1 - No Project Year 2007.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Yard Locomotive - Switching	-	-	-
Subtotal	-	-	-
Berths 136-147/Inbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Subtotal	-	-	-
Carson or LA Railyards/Outbound			
Hostler	1,372	0.23	0.02
Top Picks	896	0.15	0.01
Line Haul Locomotive - Road Haul	21,367	2.98	0.21
Line Haul Locomotive - Notch 1	636	0.09	0.01
Yard Locomotive - Switching	227	0.03	0.00
Subtotal	24,497	3.47	0.25
Carson or LA Railyards/Inbound			
Hostler	514	0.08	0.01
Top Picks	336	0.06	0.00
Line Haul Locomotive - Road Haul	21,367	2.98	0.21
Line Haul Locomotive - Notch 1	318	0.04	0.00
Subtotal	22,535	3.16	0.23
Total Tons Per Year	47,032	6.63	0.47

Table XX-NP-27. Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alt 1 - No Project Year 2015.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Yard Locomotive - Switching	-	-	-
Subtotal	-	-	-
Berths 136-147/Inbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Subtotal	-	-	-
Carson or LA Railyards/Outbound			
Hostler	1,703	0.28	0.02
Top Picks	1,112	0.18	0.01
Line Haul Locomotive - Road Haul	26,536	3.70	0.26
Line Haul Locomotive - Notch 1	790	0.11	0.01
Yard Locomotive - Switching	282	0.04	0.00
Subtotal	30,424	4.31	0.31
Carson or LA Railyards/Inbound			
Hostler	639	0.11	0.01
Top Picks	417	0.07	0.00
Line Haul Locomotive - Road Haul	26,536	3.70	0.26
Line Haul Locomotive - Notch 1	395	0.06	0.00
Subtotal	27,987	3.93	0.28
Total Tons Per Year	58,411	8.23	0.59

Table XX-NP-28. Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alt 1 - No Project Year 2025.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Yard Locomotive - Switching	-	-	-
Subtotal	-	-	-
Berths 136-147/Inbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Subtotal	-	-	-
Carson or LA Railyards/Outbound			
Hostler	2,133	0.35	0.03
Top Picks	1,393	0.23	0.02
Line Haul Locomotive - Road Haul	33,229	4.63	0.33
Line Haul Locomotive - Notch 1	989	0.14	0.01
Yard Locomotive - Switching	353	0.05	0.00
Subtotal	38,097	5.40	0.39
Carson or LA Railyards/Inbound			
Hostler	800	0.13	0.01
Top Picks	522	0.09	0.01
Line Haul Locomotive - Road Haul	33,229	4.63	0.33
Line Haul Locomotive - Notch 1	495	0.07	0.00
Subtotal	35,046	4.92	0.35
Total Tons Per Year	73,143	10.31	0.74

Table XX-NP-29. Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alt 1 - No Project Year 2038.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Yard Locomotive - Switching	-	-	-
Subtotal	-	-	-
Berths 136-147/Inbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Subtotal	-	-	-
Carson or LA Railyards/Outbound			
Hostler	2,133	0.35	0.03
Top Picks	1,393	0.23	0.02
Line Haul Locomotive - Road Haul	33,229	4.63	0.33
Line Haul Locomotive - Notch 1	989	0.14	0.01
Yard Locomotive - Switching	353	0.05	0.00
Subtotal	38,097	5.40	0.39
Carson or LA Railyards/Inbound			
Hostler	800	0.13	0.01
Top Picks	522	0.09	0.01
Line Haul Locomotive - Road Haul	33,229	4.63	0.33
Line Haul Locomotive - Notch 1	495	0.07	0.00
Subtotal	35,046	4.92	0.35
Total Tons Per Year	73,143	10.31	0.74

Table XX-NP-30. Summary of Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alt 1 - No Project.

Project Scenario/Source Activity	Tons per Year		
	CO2	CH4	N2O
Baseline Year 2003			
ICTF Equipment	2,548	0.42	0.03
Trains	35,897	5.00	0.36
Subtotal	38,445	5.42	0.39
Project Year 2007			
ICTF Equipment	3,118	0.51	0.04
Trains	43,914	6.12	0.44
Subtotal	47,032	6.63	0.47
Project Year 2015			
ICTF Equipment	3,872	0.64	0.05
Trains	54,539	7.60	0.54
Subtotal	58,411	8.23	0.59
Project Year 2025			
ICTF Equipment	4,848	0.80	0.06
Trains	68,294	9.51	0.68
Subtotal	73,143	10.31	0.74
Project Year 2038			
ICTF Equipment	4,848	0.80	0.06
Trains	68,294	9.51	0.68
Subtotal	73,143	10.31	0.74

Table XX-Alt3-1. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	21,531.0	2.84	0.189
Containership < 3,000 TEU	28,133.5	3.71	0.248
Subtotal	49,664.5	6.55	0.437
Project Year 2007			
Containerships 5,000 - 6,000 TEU	10,764.9	1.42	0.095
Containerships 3,000 - 5,000 TEU	24,724.7	3.26	0.218
Containerships < 3,000 TEU	28,868.2	3.81	0.254
Subtotal	64,357.7	8.49	0.566
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	30,066.1	3.97	0.265
Containerships 3,000 - 5,000 TEU	27,297.3	3.60	0.240
Containerships < 3,000 TEU	25,246.9	3.33	0.222
Subtotal	82,610.3	10.90	0.727
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	65,744.5	8.68	0.578
Containerships 3,000 - 5,000 TEU	31,196.9	4.12	0.274
Containerships < 3,000 TEU	11,261.2	1.49	0.099
Subtotal	108,202.7	14.28	0.952
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	65,744.5	8.68	0.578
Containerships 3,000 - 5,000 TEU	31,196.9	4.12	0.274
Containerships < 3,000 TEU	11,261.2	1.49	0.099
Subtotal	108,202.7	14.28	0.952

Note: (1) Assumes 25/50/75/80% VSRP compliance rates for years 2003/2007/2010/post-2014.

Table XX-Alt3-2. Annual Cargo Vessel GHG Emissions within the POLA Precautionary Area - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	406.1	0.05	0.004
Containership < 3,000 TEU	689.9	0.09	0.006
Subtotal	1,096.0	0.14	0.010
Project Year 2007			
Containerships 5,000 - 6,000 TEU	176.7	0.02	0.002
Containerships 3,000 - 5,000 TEU	477.8	0.06	0.004
Containerships < 3,000 TEU	722.5	0.10	0.006
Subtotal	1,377.0	0.18	0.012
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	509.7	0.07	0.004
Containerships 3,000 - 5,000 TEU	543.5	0.07	0.005
Containerships < 3,000 TEU	648.0	0.09	0.006
Subtotal	1,701.2	0.22	0.015
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,114.5	0.15	0.010
Containerships 3,000 - 5,000 TEU	621.1	0.08	0.005
Containerships < 3,000 TEU	289.0	0.04	0.003
Subtotal	2,024.7	0.27	0.018
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,114.5	0.15	0.010
Containerships 3,000 - 5,000 TEU	621.1	0.08	0.005
Containerships < 3,000 TEU	289.0	0.04	0.003
Subtotal	2,024.7	0.27	0.018

Table XX-Alt3-3. Annual Cargo Vessel GHG Emissions for Transit within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	107.2	0.01	0.001
Containership < 3,000 TEU	122.2	0.02	0.001
Subtotal	229.4	0.03	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	59.9	0.01	0.001
Containerships 3,000 - 5,000 TEU	126.1	0.02	0.001
Containerships < 3,000 TEU	128.0	0.02	0.001
Subtotal	314.0	0.04	0.003
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	172.8	0.02	0.002
Containerships 3,000 - 5,000 TEU	143.5	0.02	0.001
Containerships < 3,000 TEU	114.8	0.02	0.001
Subtotal	431.1	0.06	0.004
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	378.0	0.05	0.003
Containerships 3,000 - 5,000 TEU	164.0	0.02	0.001
Containerships < 3,000 TEU	51.2	0.01	0.000
Subtotal	593.1	0.08	0.005
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	378.0	0.05	0.003
Containerships 3,000 - 5,000 TEU	164.0	0.02	0.001
Containerships < 3,000 TEU	51.2	0.01	0.000
Subtotal	593.1	0.08	0.005

Table XX-Alt3-4. Annual Cargo Vessel GHG Emissions for Docking Activities - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	15.8	0.00	0.000
Containership < 3,000 TEU	18.1	0.00	0.000
Subtotal	33.9	0.00	0.000
Project Year 2007			
Containerships 5,000 - 6,000 TEU	8.9	0.00	0.000
Containerships 3,000 - 5,000 TEU	18.6	0.00	0.000
Containerships < 3,000 TEU	18.9	0.00	0.000
Subtotal	46.4	0.01	0.000
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	25.5	0.00	0.000
Containerships 3,000 - 5,000 TEU	21.2	0.00	0.000
Containerships < 3,000 TEU	17.0	0.00	0.000
Subtotal	63.7	0.01	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	55.8	0.01	0.000
Containerships 3,000 - 5,000 TEU	24.2	0.00	0.000
Containerships < 3,000 TEU	7.6	0.00	0.000
Subtotal	87.6	0.01	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	55.8	0.01	0.000
Containerships 3,000 - 5,000 TEU	24.2	0.00	0.000
Containerships < 3,000 TEU	7.6	0.00	0.000
Subtotal	87.6	0.01	0.001

Table XX-Alt3-5. Annual Shifting GHG Emissions for Cargo Vessels within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	24.8	0.00	0.000
Docking	3.7	0.00	0.000
Subtotal	28.4	0.00	0.000

Table XX-Alt3-6. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Fairway Zone (CA Waters) - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	862.3	0.12	0.008
Containership < 3,000 TEU	1,128.5	0.15	0.011
Subtotal	1,990.9	0.27	0.019
Project Year 2007			
Containerships 5,000 - 6,000 TEU	479.8	0.07	0.005
Containerships 3,000 - 5,000 TEU	1,040.0	0.14	0.010
Containerships < 3,000 TEU	1,203.0	0.16	0.011
Subtotal	2,722.7	0.37	0.026
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,432.4	0.19	0.014
Containerships 3,000 - 5,000 TEU	1,217.7	0.17	0.012
Containerships < 3,000 TEU	1,101.5	0.15	0.010
Subtotal	3,751.6	0.51	0.035
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	3,132.2	0.42	0.030
Containerships 3,000 - 5,000 TEU	1,391.6	0.19	0.013
Containerships < 3,000 TEU	491.3	0.07	0.005
Subtotal	5,015.1	0.68	0.047
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	3,132.2	0.42	0.030
Containerships 3,000 - 5,000 TEU	1,391.6	0.19	0.013
Containerships < 3,000 TEU	491.3	0.07	0.005
Subtotal	5,015.1	0.68	0.047

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

(2) Assumes 25/50/75/80% VSRP compliance rates for years 2003/2007/2010/post-2014.

Table XX-Alt3-7. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Precautionary Area - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	202.4	0.03	0.002
Containership < 3,000 TEU	233.6	0.03	0.002
Subtotal	435.9	0.06	0.004
Project Year 2007			
Containerships 5,000 - 6,000 TEU	118.2	0.02	0.001
Containerships 3,000 - 5,000 TEU	238.1	0.03	0.002
Containerships < 3,000 TEU	244.6	0.03	0.002
Subtotal	600.9	0.08	0.006
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	341.0	0.05	0.003
Containerships 3,000 - 5,000 TEU	270.8	0.04	0.003
Containerships < 3,000 TEU	219.4	0.03	0.002
Subtotal	831.1	0.11	0.008
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	745.6	0.10	0.007
Containerships 3,000 - 5,000 TEU	309.5	0.04	0.003
Containerships < 3,000 TEU	97.8	0.01	0.001
Subtotal	1,152.9	0.16	0.011
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	745.6	0.10	0.007
Containerships 3,000 - 5,000 TEU	309.5	0.04	0.003
Containerships < 3,000 TEU	97.8	0.01	0.001
Subtotal	1,152.9	0.16	0.011

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-Alt3-8. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	303.7	0.04	0.003
Containership < 3,000 TEU	335.7	0.05	0.003
Subtotal	639.4	0.09	0.006
Project Year 2007			
Containerships 5,000 - 6,000 TEU	187.5	0.03	0.002
Containerships 3,000 - 5,000 TEU	357.3	0.05	0.003
Containerships < 3,000 TEU	351.6	0.05	0.003
Subtotal	896.4	0.12	0.008
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	541.0	0.07	0.005
Containerships 3,000 - 5,000 TEU	406.4	0.06	0.004
Containerships < 3,000 TEU	315.3	0.04	0.003
Subtotal	1,262.7	0.17	0.012
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,182.9	0.16	0.011
Containerships 3,000 - 5,000 TEU	464.5	0.06	0.004
Containerships < 3,000 TEU	140.6	0.02	0.001
Subtotal	1,788.0	0.24	0.017
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,182.9	0.16	0.011
Containerships 3,000 - 5,000 TEU	464.5	0.06	0.004
Containerships < 3,000 TEU	140.6	0.02	0.001
Subtotal	1,788.0	0.24	0.017

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-Alt3-9. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Docking within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	83.0	0.01	0.001
Containership < 3,000 TEU	91.8	0.01	0.001
Subtotal	174.8	0.02	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	51.3	0.01	0.000
Containerships 3,000 - 5,000 TEU	97.7	0.01	0.001
Containerships < 3,000 TEU	96.1	0.01	0.001
Subtotal	245.0	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	147.9	0.02	0.001
Containerships 3,000 - 5,000 TEU	111.1	0.02	0.001
Containerships < 3,000 TEU	86.2	0.01	0.001
Subtotal	345.1	0.05	0.003
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	323.3	0.04	0.003
Containerships 3,000 - 5,000 TEU	127.0	0.02	0.001
Containerships < 3,000 TEU	38.4	0.01	0.000
Subtotal	488.7	0.07	0.005
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	323.3	0.04	0.003
Containerships 3,000 - 5,000 TEU	127.0	0.02	0.001
Containerships < 3,000 TEU	38.4	0.01	0.000
Subtotal	488.7	0.07	0.005

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-Alt3-10. Annual Auxiliary Generator GHG Emissions during Cargo Vessel Hoteling - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	4,777.2	0.65	0.045
Containership < 3,000 TEU	3,663.9	0.50	0.035
Subtotal	8,441.1	1.15	0.080
Project Year 2007			
Containerships 5,000 - 6,000 TEU	2,754.5	0.37	0.026
Containerships 3,000 - 5,000 TEU	5,620.2	0.76	0.053
Containerships < 3,000 TEU	3,837.2	0.52	0.036
Subtotal	12,211.9	1.66	0.115
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	7,945.6	1.08	0.075
Containerships 3,000 - 5,000 TEU	6,393.0	0.87	0.060
Containerships < 3,000 TEU	3,441.1	0.47	0.033
Subtotal	17,779.7	2.41	0.168
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	17,374.4	2.36	0.164
Containerships 3,000 - 5,000 TEU	7,306.3	0.99	0.069
Containerships < 3,000 TEU	1,534.9	0.21	0.015
Subtotal	26,215.5	3.56	0.248
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	17,374.4	2.36	0.164
Containerships 3,000 - 5,000 TEU	7,306.3	0.99	0.069
Containerships < 3,000 TEU	1,534.9	0.21	0.015
Subtotal	26,215.5	3.56	0.248

Table XX-Alt3-11. Annual Auxiliary Generator GHG Emissions during Cargo Vessel Shifts - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	34.0	0.00	0.000
Docking	9.3	0.00	0.000
Subtotal	43.3	0.01	0.000

Table XX-Alt3-12. Annual Auxiliary Generator GHG Emissions for Shifted Cargo Vessels during Hoteling - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership < 3,000 TEU	742.7	0.10	0.007
Subtotal	742.7	0.10	0.007

Table XX-Alt3-14. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Transiting the Precautionary Area - Berths 136-147 Terminal Project - Alternative 3.

Project Scenario/Vessel Type	Tons Per Year		
	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	65.3	0.01	0.001
Containership < 3,000 TEU	142.1	0.02	0.001
Subtotal	207.4	0.03	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	25.0	0.00	0.000
Containerships 3,000 - 5,000 TEU	76.8	0.01	0.001
Containerships < 3,000 TEU	148.9	0.02	0.001
Subtotal	250.7	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	72.0	0.01	0.001
Containerships 3,000 - 5,000 TEU	87.4	0.01	0.001
Containerships < 3,000 TEU	133.5	0.02	0.001
Subtotal	292.9	0.04	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	157.5	0.02	0.001
Containerships 3,000 - 5,000 TEU	99.9	0.01	0.001
Containerships < 3,000 TEU	59.5	0.01	0.001
Subtotal	316.9	0.04	0.003
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	157.5	0.02	0.001
Containerships 3,000 - 5,000 TEU	99.9	0.01	0.001
Containerships < 3,000 TEU	59.5	0.01	0.001
Subtotal	316.9	0.04	0.003

Table XX-Alt3-15. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Transiting within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	51.8	0.01	0.000
Containership < 3,000 TEU	112.7	0.01	0.001
Subtotal	164.6	0.02	0.001
Project Year 2007			
Containerships 5,000 - 6,000 TEU	19.8	0.00	0.000
Containerships 3,000 - 5,000 TEU	60.9	0.01	0.001
Containerships < 3,000 TEU	118.1	0.02	0.001
Subtotal	198.8	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	57.1	0.01	0.000
Containerships 3,000 - 5,000 TEU	69.3	0.01	0.001
Containerships < 3,000 TEU	105.9	0.01	0.001
Subtotal	232.4	0.03	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	124.9	0.02	0.001
Containerships 3,000 - 5,000 TEU	79.2	0.01	0.001
Containerships < 3,000 TEU	47.2	0.01	0.000
Subtotal	251.4	0.03	0.002
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	124.9	0.02	0.001
Containerships 3,000 - 5,000 TEU	79.2	0.01	0.001
Containerships < 3,000 TEU	47.2	0.01	0.000
Subtotal	251.4	0.03	0.002

Table XX-Alt3-16. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Docking within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	14.2	0.00	0.000
Containership < 3,000 TEU	30.8	0.00	0.000
Subtotal	45.0	0.01	0.000
Project Year 2007			
Containerships 5,000 - 6,000 TEU	5.4	0.00	0.000
Containerships 3,000 - 5,000 TEU	16.7	0.00	0.000
Containerships < 3,000 TEU	32.3	0.00	0.000
Subtotal	54.3	0.01	0.000
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	15.6	0.00	0.000
Containerships 3,000 - 5,000 TEU	18.9	0.00	0.000
Containerships < 3,000 TEU	28.9	0.00	0.000
Subtotal	63.5	0.01	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	34.1	0.00	0.000
Containerships 3,000 - 5,000 TEU	21.7	0.00	0.000
Containerships < 3,000 TEU	12.9	0.00	0.000
Subtotal	68.7	0.01	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	34.1	0.00	0.000
Containerships 3,000 - 5,000 TEU	21.7	0.00	0.000
Containerships < 3,000 TEU	12.9	0.00	0.000
Subtotal	68.7	0.01	0.001

Table XX-Alt3-17. Annual Auxiliary Boiler GHG Emissions during Cargo Vessel Hoteling - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	2,072.1	0.26	0.018
Containership < 3,000 TEU	2,706.0	0.34	0.023
Subtotal	4,778.1	0.61	0.041
Project Year 2007			
Containerships 5,000 - 6,000 TEU	950.7	0.12	0.008
Containerships 3,000 - 5,000 TEU	2,437.8	0.31	0.021
Containerships < 3,000 TEU	2,834.0	0.36	0.024
Subtotal	6,222.5	0.79	0.053
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,742.5	0.35	0.023
Containerships 3,000 - 5,000 TEU	2,773.0	0.35	0.024
Containerships < 3,000 TEU	2,541.4	0.32	0.022
Subtotal	8,057.0	1.03	0.068
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	5,997.0	0.76	0.051
Containerships 3,000 - 5,000 TEU	3,169.1	0.40	0.027
Containerships < 3,000 TEU	1,133.6	0.14	0.010
Subtotal	10,299.7	1.31	0.087
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	5,997.0	0.76	0.051
Containerships 3,000 - 5,000 TEU	3,169.1	0.40	0.027
Containerships < 3,000 TEU	1,133.6	0.14	0.010
Subtotal	10,299.7	1.31	0.087

Table XX-Alt3-18. Annual Auxiliary Boiler GHG Emissions during Cargo Vessel Shifts - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	22.9	0.00	0.000
Docking	6.2	0.00	0.000
Hoteling	548.5	0.07	0.005
Subtotal	577.6	0.07	0.005

Table XX-Alt3-19. Annual Tugboat GHG Emissions for Cargo Vessel Assists - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	146.9	0.02	0.001
Containership < 3,000 TEU	219.6	0.03	0.002
Subtotal	366.5	0.05	0.004
Project Year 2007			
Subtotal	726.1	0.10	0.007
Project Year 2015			
Subtotal	848.5	0.12	0.008
Project Year 2025			
Subtotal	918.1	0.13	0.009
Project Year 2038			
Subtotal	918.1	0.13	0.009

Note: (1) Assumes 3 tug assists per ship visit for all post-baseline years.

Table XX-Alt3-20. Annual Auxiliary Generator GHG Emissions for Tugboats during Cargo Vessel Assists - Berths 136-147 Terminal Project - Alternative 3.

Project Scenario/Vessel Type	Tons Per Year		
	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	16.1	0.00	0.000
Containership < 3,000 TEU	24.1	0.00	0.000
Subtotal	40.2	0.01	0.000
Project Year 2007			
Subtotal (1)	79.5	0.01	0.001
Project Year 2015			
Subtotal (1)	93.0	0.01	0.001
Project Year 2025			
Subtotal (1)	100.6	0.01	0.001
Project Year 2038			
Subtotal (1)	100.6	0.01	0.001

Note: (1) Assumes 3 tug assists per ship visit for all post-baseline years.

Table XX-Alt3-21. Annual Vessel GHG Emissions - Berths 136-147 Terminal Project - Alternative 3.

	Tons Per Year		
Project Scenario/GHG Emission Source	CO2	CH4	N2O
Year 2003 Baseline			
Ships - Fairway Transit (1)	51,655	6.82	0.46
Ships - Precautionary Area Transit (1)	1,739	0.23	0.02
Ships - Harbor Transit (1)	1,115	0.15	0.01
Ships - Docking (1)	273	0.04	0.00
Ships - Hoteling Aux. Sources	14,510	1.92	0.13
Tugboats - Cargo Vessel Assist (1)	407	0.06	0.00
Subtotal	69,700	9.22	0.62
Project Year 2007			
Ships - Fairway Transit (1)	67,080	8.86	0.59
Ships - Precautionary Area Transit (1)	2,229	0.30	0.02
Ships - Harbor Transit (1)	1,409	0.19	0.01
Ships - Docking (1)	346	0.05	0.00
Ships - Hoteling Aux. Sources	18,434	2.45	0.17
Tugboats - Cargo Vessel Assist (1)	806	0.11	0.01
Subtotal	90,304	11.95	0.80
Project Year 2015			
Ships - Fairway Transit (1)	86,362	11.41	0.76
Ships - Precautionary Area Transit (1)	2,825	0.37	0.03
Ships - Harbor Transit (1)	1,926	0.26	0.02
Ships - Docking (1)	472	0.06	0.00
Ships - Hoteling Aux. Sources	25,837	3.44	0.24
Tugboats - Cargo Vessel Assist (1)	941	0.13	0.01
Subtotal	118,364	15.67	1.06
Project Year 2025			
Ships - Fairway Transit (1)	113,218	14.96	1.00
Ships - Precautionary Area Transit (1)	3,495	0.46	0.03
Ships - Harbor Transit (1)	2,633	0.35	0.02
Ships - Docking (1)	645	0.09	0.01
Ships - Hoteling Aux. Sources	36,515	4.87	0.34
Tugboats - Cargo Vessel Assist (1)	1,019	0.14	0.01
Subtotal	157,524	20.87	1.41
Project Year 2038			
Ships - Fairway Transit (1)	113,218	14.96	1.00
Ships - Precautionary Area Transit (1)	3,495	0.46	0.03
Ships - Harbor Transit (1)	2,633	0.35	0.02
Ships - Docking (1)	645	0.09	0.01
Ships - Hoteling Aux. Sources	36,515	4.87	0.34
Tugboats - Cargo Vessel Assist (1)	1,019	0.14	0.01
Subtotal	157,524	20.87	1.41

Note: (1) Includes auxiliary power emissions.

Table XX-Alt3-22. On-Road Truck Trip Vehicle Miles Travelled in California - Berths 136-147 Terminal Project - Alternative 3.

Year	B136-149 Throughput (TEUs)	B136-149 ICTF Thruput (TEUs) (1)	TEUs to Offsite Railyard (2)	TEUs to Local Deilveries	Truck Trips to Offsite Railyard (2)	Local Truck Trips (3)	Truck Miles to Offsite Railyard (4)	Local Truck Trip Miles (5)	Composite VMT/ Truck Trip
Baseline - Year 2003	891,976	-	445,988	445,988	598,795	598,795	11.3	135.0	73.2
Year 2007	1,091,200	-	545,600	545,600	744,330	744,330	11.3	135.0	73.2
Year 2015	1,491,000	552,709	12,380	925,911	17,037	1,274,210	11.3	135.0	133.4
Year 2025	2,035,000	700,810	148,555	1,185,635	162,151	1,294,142	11.3	135.0	121.2
Year 2038	2,035,000	700,810	148,555	1,185,635	162,151	1,294,142	11.3	135.0	121.2

(1) Annual throughput estimates from Rail Master Plan.

(2) Based on 50/50/26.8/6.7/7.3% of Berths 136-147 annual cargo throughput for years 2003/2007/2010/2015/2030.

(3) Based on 50/50/61.4/62.1/63.4% of Berths 136-147 annual cargo throughput for years 2003/2007/2010/2015/2030.

(4) Assumes an even split to Carson ICTF (4.5 miles) and LA railyards (18 miles) = 11.3 miles/trip

(5) Average of local/external-CA trip lengths (20/250) that originate from/are destined to the POLA.

Table XX-Alt3-23. On-Road Truck Operational Data within California for the Berths 136-147 Terminal Project - Alternative 3.

Activity/Project Scenario	Idling Time/ Trip (Hrs) (1)	Miles/ Trip (2)	ADT	Idling Hrs/ Day	Miles/ Day
On-Terminal					
Year 2003 - Baseline	0.56	1.02	3,281	1,837	3,351
Year 2007	0.25	1.02	4,079	1,020	4,165
Year 2015	0.25	0.81	3,538	884	2,850
Year 2025	0.25	0.81	3,990	997	3,214
Year 2038	0.25	0.81	3,990	997	3,214
Off-Terminal					
Year 2003 - Baseline	0.30	73.2	3,281	984	240,010
Year 2007	0.30	73.2	4,079	1,224	298,344
Year 2015	0.30	133.4	3,538	1,061	471,811
Year 2025	0.30	121.2	3,990	1,197	483,675
Year 2038	0.30	121.2	3,990	1,197	483,675

Notes: (1) 2003 on-terminal durations from PEI. Post-2003 on-terminal durations from TraPac (TraPac 2006).

(2) On-terminal mileage/trip based upon current/proposed terminal gate systems. Off-terminal miles/trip from data presented in Table XX-Alt3-22.

Table XX-Alt3-24. Daily Truck GHG Emissions for the Berths 136-147 Terminal Project - Alternative 3.

Location/Project Scenario - Mode	Pounds per Day		
	CO2	CH4	N2O
On-Terminal (1)			
Year 2003 - Idling	28,338	2.0	1.0
Year 2003 - Driving	23,387	0.7	0.4
Subtotal - Year 2003	51,725	2.8	1.4
Year 2007 - Idling	15,726	1.1	0.6
Year 2007 - Driving	29,072	0.9	0.5
Subtotal - Year 2007	44,797	2.0	1.0
Year 2015 - Idling	13,640	1.0	0.5
Year 2015 - Driving	19,893	0.6	0.3
Subtotal - Year 2015	33,533	1.6	0.8
Year 2025 - Idling	15,384	1.1	0.5
Year 2025 - Driving	22,435	0.7	0.4
Subtotal - Year 2025	37,819	1.8	0.9
Year 2038 - Idling	15,384	1.1	0.5
Year 2038 - Driving	22,435	0.7	0.4
Subtotal - Year 2038	37,819	1.8	0.9
Off-Terminal			
Year 2003 - Idling	15,181	1.1	0.5
Year 2003 - Driving	1,059,975	52.9	26.5
Subtotal - Year 2003	1,075,156	54.0	27.0
Year 2007 - Idling	18,871	1.3	0.7
Year 2007 - Driving	1,317,598	65.8	32.9
Subtotal - Year 2007	1,336,469	67.1	33.6
Year 2015 - Idling	16,368	1.2	0.6
Year 2015 - Driving	2,123,263	104.0	52.0
Subtotal - Year 2015	2,139,632	105.2	52.6
Year 2025 - Idling	18,460	1.3	0.7
Year 2025 - Driving	2,217,222	106.7	53.3
Subtotal - Year 2025	2,235,682	108.0	54.0
Year 2038 - Idling	18,460	1.3	0.7
Year 2038 - Driving	2,217,222	106.7	53.3
Subtotal - Year 2038	2,235,682	108.0	54.0
Total Daily Truck GHG Emissions by Project Year			
Year 2003	1,126,881	56.8	28.4
Year 2007	1,381,266	69.2	34.6
Year 2015	2,173,164	106.8	53.4
Year 2025	2,273,501	109.8	54.9
Year 2038	2,273,501	109.8	54.9

Notes: (1) On-terminal driving emissions calculated with 10 mph emission factors.

Table XX-Alt3-25. Terminal Equipment Annual GHG Emissions - Berths 136-147 Terminal Project Alternative 3.

Project Scenario/Equipment Horsepower	Annual Hp-Hrs	Annual GHG Emissions (Tons) CO2	CH4	N2O
Baseline - Year 2003				
Terminal Equipment - 121-175 Hp	10,493,875	6,574	1.08	0.08
Terminal Equipment - 176-250 Hp	12,581,479	7,881	1.30	0.09
Terminal Equipment - 250-500 Hp	2,417,350	1,514	0.22	0.02
Subtotal	25,492,704	15,969	2.60	0.19
Project Year 2007				
Terminal Equipment - 121-175 Hp	12,837,231	8,042	1.32	0.09
Terminal Equipment - 176-250 Hp	15,391,012	9,641	1.59	0.11
Terminal Equipment - 250-500 Hp	2,957,161	1,852	0.27	0.02
Subtotal	31,185,404	19,536	3.18	0.23
Project Year 2015				
Terminal Equipment - 121-175 Hp	17,542,048	10,989	1.81	0.13
Terminal Equipment - 176-250 Hp	21,031,785	13,175	2.17	0.15
Terminal Equipment - 250-500 Hp	4,040,954	2,531	0.36	0.03
Subtotal	42,614,787	26,695	4.34	0.31
Project Year 2025				
Terminal Equipment - 121-175 Hp	26,137,689	16,374	2.69	0.19
Terminal Equipment - 176-250 Hp	31,337,404	19,631	3.23	0.23
Terminal Equipment - 250-500 Hp	6,021,030	3,772	0.54	0.04
Subtotal	63,496,123	39,776	6.47	0.46
Project Year 2038 (1)				
Terminal Equipment - 121-175 Hp	26,137,689	16,374	2.69	0.19
Terminal Equipment - 176-250 Hp	31,337,404	19,631	3.23	0.23
Terminal Equipment - 250-500 Hp	6,021,030	3,772	0.54	0.04
Subtotal	63,496,123	39,776	6.47	0.46

Note: (1) In year 2030 and beyond, Hp-Hrs increased an additional 6% to simulate the effects of additional equipment usage needed to handle future cargo levels within a constrained terminal space (>8,000 TEUs/acre).

Table XX-Alt3-26. Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 3 Year 2007.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Yard Locomotive - Switching	-	-	-
Subtotal	-	-	-
Berths 136-147/Inbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Subtotal	-	-	-
Carson or LA Railyards/Outbound			
Hostler	1,372	0.23	0.02
Top Picks	896	0.15	0.01
Line Haul Locomotive - Road Haul	21,367	2.98	0.21
Line Haul Locomotive - Notch 1	636	0.09	0.01
Yard Locomotive - Switching	227	0.03	0.00
Subtotal	24,497	3.47	0.25
Carson or LA Railyards/Inbound			
Hostler	514	0.08	0.01
Top Picks	336	0.06	0.00
Line Haul Locomotive - Road Haul	21,367	2.98	0.21
Line Haul Locomotive - Notch 1	318	0.04	0.00
Subtotal	22,535	3.16	0.23
Total Tons Per Year	47,032	6.63	0.47

Table XX-Alt3-27. Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 3 Year 2015.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,389	0.23	0.02
Top Picks	907	0.15	0.01
Line Haul Locomotive - Road Haul	22,361	3.11	0.22
Line Haul Locomotive - Notch 1	322	0.04	0.00
Yard Locomotive - Switching	218	0.03	0.00
Subtotal	25,198	3.57	0.25
Berths 136-147/Inbound			
Hostler	521	0.09	0.01
Top Picks	340	0.06	0.00
Line Haul Locomotive - Road Haul	22,361	3.11	0.22
Line Haul Locomotive - Notch 1	322	0.04	0.00
Subtotal	23,544	3.30	0.24
Carson or LA Railyards/Outbound			
Hostler	31	0.01	0.00
Top Picks	20	0.00	0.00
Line Haul Locomotive - Road Haul	485	0.07	0.00
Line Haul Locomotive - Notch 1	14	0.00	0.00
Yard Locomotive - Switching	5	0.00	0.00
Subtotal	556	0.08	0.01
Carson or LA Railyards/Inbound			
Hostler	12	0.00	0.00
Top Picks	8	0.00	0.00
Line Haul Locomotive - Road Haul	485	0.07	0.00
Line Haul Locomotive - Notch 1	7	0.00	0.00
Subtotal	511	0.07	0.01
Total Tons Per Year	49,809	7.02	0.50

Table XX-Alt3-28. Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 3 Year 2025.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,762	0.29	0.02
Top Picks	1,151	0.19	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Yard Locomotive - Switching	277	0.04	0.00
Subtotal	31,950	4.52	0.32
Berths 136-147/Inbound			
Hostler	661	0.11	0.01
Top Picks	431	0.07	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Subtotal	29,853	4.19	0.30
Carson or LA Railyards/Outbound			
Hostler	373	0.06	0.00
Top Picks	244	0.04	0.00
Line Haul Locomotive - Road Haul	5,818	0.81	0.06
Line Haul Locomotive - Notch 1	173	0.02	0.00
Yard Locomotive - Switching	62	0.01	0.00
Subtotal	6,670	0.94	0.07
Carson or LA Railyards/Inbound			
Hostler	140	0.02	0.00
Top Picks	91	0.02	0.00
Line Haul Locomotive - Road Haul	5,818	0.81	0.06
Line Haul Locomotive - Notch 1	87	0.01	0.00
Subtotal	6,136	0.86	0.06
Total Tons Per Year	74,609	10.52	0.75

Table XX-Alt3-29. Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 3 Year 2038.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,762	0.29	0.02
Top Picks	1,151	0.19	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Yard Locomotive - Switching	277	0.04	0.00
Subtotal	31,950	4.52	0.32
Berths 136-147/Inbound			
Hostler	661	0.11	0.01
Top Picks	431	0.07	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Subtotal	29,853	4.19	0.30
Carson or LA Railyards/Outbound			
Hostler	373	0.06	0.00
Top Picks	244	0.04	0.00
Line Haul Locomotive - Road Haul	5,818	0.81	0.06
Line Haul Locomotive - Notch 1	173	0.02	0.00
Yard Locomotive - Switching	62	0.01	0.00
Subtotal	6,670	0.94	0.07
Carson or LA Railyards/Inbound			
Hostler	140	0.02	0.00
Top Picks	91	0.02	0.00
Line Haul Locomotive - Road Haul	5,818	0.81	0.06
Line Haul Locomotive - Notch 1	87	0.01	0.00
Subtotal	6,136	0.86	0.06
Total Tons Per Year	74,609	10.52	0.75

Table XX-Alt3-30. Summary of Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 3.

Project Scenario/Source Activity	Tons per Year		
	CO2	CH4	N2O
Baseline Year 2003			
ICTF Equipment	2,548	0.42	0.03
Trains	35,897	5.00	0.36
Subtotal	38,445	5.42	0.39
Project Year 2007			
ICTF Equipment	3,118	0.51	0.04
Trains	43,914	6.12	0.44
Subtotal	47,032	6.63	0.47
Project Year 2015			
ICTF Equipment	3,229	0.53	0.04
Trains	46,581	6.49	0.46
Subtotal	49,809	7.02	0.50
Project Year 2025			
ICTF Equipment	4,853	0.80	0.06
Trains	69,755	9.72	0.69
Subtotal	74,609	10.52	0.75
Project Year 2038			
ICTF Equipment	4,853	0.80	0.06
Trains	69,755	9.72	0.69
Subtotal	74,609	10.52	0.75

Table XX-Alt3-Mit-1. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147
Terminal Project Mitigated Project - Vessels that Comply with Proposed VSRP.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	4,996.5	0.66	0.044
Containership < 3,000 TEU	6,606.6	0.87	0.058
Subtotal	11,603.1	1.53	0.102
Project Year 2007			
Containerships 5,000 - 6,000 TEU	5,097.5	0.67	0.045
Containerships 3,000 - 5,000 TEU	11,756.5	1.55	0.103
Containerships < 3,000 TEU	13,838.1	1.83	0.122
Subtotal	30,692.0	4.05	0.270
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	8,268.6	1.14	0.082
Containerships 3,000 - 5,000 TEU	8,817.0	1.22	0.087
Containerships < 3,000 TEU	10,511.6	1.45	0.104
Subtotal	27,597.1	3.81	0.272
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	18,080.6	2.50	0.178
Containerships 3,000 - 5,000 TEU	10,076.6	1.39	0.099
Containerships < 3,000 TEU	4,688.6	0.65	0.046
Subtotal	32,845.8	4.53	0.324
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	18,080.6	2.50	0.178
Containerships 3,000 - 5,000 TEU	10,076.6	1.39	0.099
Containerships < 3,000 TEU	4,688.6	0.65	0.046
Subtotal	32,845.8	4.53	0.324

Note: (1) Assumes 25/50/95% VSRP compliance rates for years 2003/2007/post-2007.
(2) Without slide valves

Table XX-Alt3-Mit-2. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147
Terminal Project Mitigated Project - Non-Compliant Vessels with the Proposed VSRP.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	16,534.5	2.18	0.145
Containership < 3,000 TEU	21,526.9	2.84	0.189
Subtotal	38,061.4	5.02	0.335
Project Year 2007			
Containerships 5,000 - 6,000 TEU	5,667.4	0.75	0.050
Containerships 3,000 - 5,000 TEU	12,968.2	1.71	0.114
Containerships < 3,000 TEU	15,030.1	1.98	0.132
Subtotal	33,665.7	4.44	0.296
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,550.5	0.21	0.015
Containerships 3,000 - 5,000 TEU	1,399.0	0.19	0.014
Containerships < 3,000 TEU	1,278.3	0.18	0.013
Subtotal	4,227.7	0.58	0.042
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	3,390.3	0.47	0.033
Containerships 3,000 - 5,000 TEU	1,598.9	0.22	0.016
Containerships < 3,000 TEU	570.2	0.08	0.006
Subtotal	5,559.4	0.77	0.055
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	3,390.3	0.47	0.033
Containerships 3,000 - 5,000 TEU	1,598.9	0.22	0.016
Containerships < 3,000 TEU	570.2	0.08	0.006
Subtotal	5,559.4	0.77	0.055

Note: (1) Assumes 75/50/05% VSRP non-compliance rates for years 2003/2007/post-2007.
(2) Fuel types assumed for each project year identified in Table D3-A1.1
(2) Without slide valves

Table XX-Alt3-Mit-3. Annual Cargo Vessel GHG Emissions within the POLA Precautionary Area - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	406.1	0.05	0.004
Containership < 3,000 TEU	689.9	0.09	0.006
Subtotal	1,096.0	0.14	0.010
Project Year 2007			
Containerships 5,000 - 6,000 TEU	176.7	0.02	0.002
Containerships 3,000 - 5,000 TEU	477.8	0.06	0.004
Containerships < 3,000 TEU	722.5	0.10	0.006
Subtotal	1,377.0	0.18	0.012
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	483.4	0.07	0.005
Containerships 3,000 - 5,000 TEU	515.4	0.07	0.005
Containerships < 3,000 TEU	614.5	0.08	0.006
Subtotal	1,613.4	0.22	0.016
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,057.0	0.15	0.010
Containerships 3,000 - 5,000 TEU	589.1	0.08	0.006
Containerships < 3,000 TEU	274.1	0.04	0.003
Subtotal	1,920.2	0.27	0.019
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,057.0	0.15	0.010
Containerships 3,000 - 5,000 TEU	589.1	0.08	0.006
Containerships < 3,000 TEU	274.1	0.04	0.003
Subtotal	1,920.2	0.27	0.019

(2) Without slide valves

Table XX-Alt3-Mit-4. Annual Cargo Vessel GHG Emissions for Transit within the POLA Breakwater - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	107.2	0.01	0.001
Containership < 3,000 TEU	122.2	0.02	0.001
Subtotal	229.4	0.03	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	59.9	0.01	0.001
Containerships 3,000 - 5,000 TEU	126.1	0.02	0.001
Containerships < 3,000 TEU	128.0	0.02	0.001
Subtotal	314.0	0.04	0.003
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	164.0	0.02	0.002
Containerships 3,000 - 5,000 TEU	136.1	0.02	0.001
Containerships < 3,000 TEU	108.9	0.02	0.001
Subtotal	408.9	0.06	0.004
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	358.6	0.05	0.004
Containerships 3,000 - 5,000 TEU	155.5	0.02	0.002
Containerships < 3,000 TEU	48.6	0.01	0.000
Subtotal	562.7	0.08	0.006
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	358.6	0.05	0.004
Containerships 3,000 - 5,000 TEU	155.5	0.02	0.002
Containerships < 3,000 TEU	48.6	0.01	0.000
Subtotal	562.7	0.08	0.006

Table XX-Alt3-Mit-5. Annual Cargo Vessel GHG Emissions for Docking Activities - Berths 136-147 Terminal Project - Mitigated Project .

Project Scenario/Vessel Type	Tons Per Year		
	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	15.8	0.00	0.000
Containership < 3,000 TEU	18.1	0.00	0.000
Subtotal	33.9	0.00	0.000
Project Year 2007			
Containerships 5,000 - 6,000 TEU	8.9	0.00	0.000
Containerships 3,000 - 5,000 TEU	18.6	0.00	0.000
Containerships < 3,000 TEU	18.9	0.00	0.000
Subtotal	46.4	0.01	0.000
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	24.2	0.00	0.000
Containerships 3,000 - 5,000 TEU	20.1	0.00	0.000
Containerships < 3,000 TEU	16.1	0.00	0.000
Subtotal	60.4	0.01	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	53.0	0.01	0.001
Containerships 3,000 - 5,000 TEU	23.0	0.00	0.000
Containerships < 3,000 TEU	7.2	0.00	0.000
Subtotal	83.1	0.01	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	53.0	0.01	0.001
Containerships 3,000 - 5,000 TEU	23.0	0.00	0.000
Containerships < 3,000 TEU	7.2	0.00	0.000
Subtotal	83.1	0.01	0.001

(2) Without slide valves

Table XX-Alt3-Mit-6. Annual Shifting GHG Emissions for Cargo Vessels within the POLA Breakwater - Berths 136-147 Terminal Project - Mitigated Project .

Project Scenario/Vessel Mode	Tons Per Year		
	CO2	CH4	N2O
Year 2003 Baseline			
Transit	24.8	0.00	0.000
Docking	3.7	0.00	0.000
Subtotal	28.4	0.00	0.000

Table XX-Alt3-Mit-7. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Fairway Zone (CA Waters) - Berths 136-147 Terminal Project Mitigated Project - Vessels that Comply with VSRP.

Project Scenario/Vessel Type	Tons Per Year (1)		
	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	231.8	0.03	0.002
Containership < 3,000 TEU	297.2	0.04	0.003
Subtotal	529.0	0.07	0.005
Project Year 2007			
Containerships 5,000 - 6,000 TEU	253.9	0.03	0.002
Containerships 3,000 - 5,000 TEU	545.4	0.07	0.005
Containerships < 3,000 TEU	622.6	0.08	0.006
Subtotal	1,421.9	0.19	0.013
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,296.7	0.32	0.023
Containerships 3,000 - 5,000 TEU	1,824.0	0.25	0.018
Containerships < 3,000 TEU	1,477.5	0.20	0.015
Subtotal	5,598.2	0.77	0.055
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	5,022.0	0.69	0.049
Containerships 3,000 - 5,000 TEU	2,084.6	0.29	0.021
Containerships < 3,000 TEU	659.0	0.09	0.006
Subtotal	7,765.7	1.07	0.077
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	5,022.0	0.69	0.049
Containerships 3,000 - 5,000 TEU	2,084.6	0.29	0.021
Containerships < 3,000 TEU	659.0	0.09	0.006
Subtotal	7,765.7	1.07	0.077

Note: (1) Fuel types assumed for each project year identified in Table D3-A1.1

(2) Assumes 25/50/95% VSRP compliance rates for years 2003/2007/post-2007.

Table XX-Alt3-Mit-8. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Fairway Zone (CA Waters) - Berths 136-147 Terminal Project Mitigated Project - Non-Compliant Vessels within VSRP.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	630.5	0.09	0.006
Containership < 3,000 TEU	831.3	0.11	0.008
Subtotal	1,461.8	0.20	0.014
Project Year 2007			
Containerships 5,000 - 6,000 TEU	225.9	0.03	0.002
Containerships 3,000 - 5,000 TEU	494.5	0.07	0.005
Containerships < 3,000 TEU	580.4	0.08	0.005
Subtotal	1,300.8	0.18	0.012
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	64.1	0.01	0.001
Containerships 3,000 - 5,000 TEU	55.3	0.01	0.001
Containerships < 3,000 TEU	51.2	0.01	0.001
Subtotal	170.5	0.02	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	140.1	0.02	0.001
Containerships 3,000 - 5,000 TEU	63.2	0.01	0.001
Containerships < 3,000 TEU	22.8	0.00	0.000
Subtotal	226.1	0.03	0.002
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	140.1	0.02	0.001
Containerships 3,000 - 5,000 TEU	63.2	0.01	0.001
Containerships < 3,000 TEU	22.8	0.00	0.000
Subtotal	226.1	0.03	0.002

Note: (1) Assumes 75/50/05% VSRP non-compliance rates for years 2003/2007/post-2007.

(2) Fuel types assumed for each project year identified in Table D3-A1.1

Table XX-Alt3-Mit-9. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Precautionary Area - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	202.4	0.03	0.002
Containership < 3,000 TEU	233.6	0.03	0.002
Subtotal	435.9	0.06	0.004
Project Year 2007			
Containerships 5,000 - 6,000 TEU	118.2	0.02	0.001
Containerships 3,000 - 5,000 TEU	238.1	0.03	0.002
Containerships < 3,000 TEU	244.6	0.03	0.002
Subtotal	600.9	0.08	0.006
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	335.2	0.05	0.003
Containerships 3,000 - 5,000 TEU	266.2	0.04	0.003
Containerships < 3,000 TEU	215.7	0.03	0.002
Subtotal	817.1	0.11	0.008
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,801.4	0.39	0.028
Containerships 3,000 - 5,000 TEU	1,264.1	0.17	0.012
Containerships < 3,000 TEU	456.5	0.06	0.004
Subtotal	4,522.0	0.62	0.045
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,801.4	0.39	0.028
Containerships 3,000 - 5,000 TEU	1,264.1	0.17	0.012
Containerships < 3,000 TEU	456.5	0.06	0.004
Subtotal	4,522.0	0.62	0.045

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-Alt3-Mit-10. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting within the POLA Breakwater - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	303.7	0.04	0.003
Containership < 3,000 TEU	335.7	0.05	0.003
Subtotal	639.4	0.09	0.006
Project Year 2007			
Containerships 5,000 - 6,000 TEU	187.5	0.03	0.002
Containerships 3,000 - 5,000 TEU	357.3	0.05	0.003
Containerships < 3,000 TEU	351.6	0.05	0.003
Subtotal	896.4	0.12	0.008
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	531.8	0.07	0.005
Containerships 3,000 - 5,000 TEU	399.6	0.06	0.004
Containerships < 3,000 TEU	310.0	0.04	0.003
Subtotal	1,241.4	0.17	0.012
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,162.9	0.16	0.011
Containerships 3,000 - 5,000 TEU	456.7	0.06	0.004
Containerships < 3,000 TEU	138.3	0.02	0.001
Subtotal	1,757.9	0.24	0.017
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,162.9	0.16	0.011
Containerships 3,000 - 5,000 TEU	456.7	0.06	0.004
Containerships < 3,000 TEU	138.3	0.02	0.001
Subtotal	1,757.9	0.24	0.017

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-Alt3-Mit-11. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Docking within the POLA Breakwater - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	83.0	0.01	0.001
Containership < 3,000 TEU	91.8	0.01	0.001
Subtotal	174.8	0.02	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	51.3	0.01	0.000
Containerships 3,000 - 5,000 TEU	97.7	0.01	0.001
Containerships < 3,000 TEU	96.1	0.01	0.001
Subtotal	245.0	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	145.4	0.02	0.001
Containerships 3,000 - 5,000 TEU	109.2	0.02	0.001
Containerships < 3,000 TEU	84.7	0.01	0.001
Subtotal	339.3	0.05	0.003
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	317.9	0.04	0.003
Containerships 3,000 - 5,000 TEU	124.8	0.02	0.001
Containerships < 3,000 TEU	37.8	0.01	0.000
Subtotal	480.5	0.07	0.005
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	317.9	0.04	0.003
Containerships 3,000 - 5,000 TEU	124.8	0.02	0.001
Containerships < 3,000 TEU	37.8	0.01	0.000
Subtotal	480.5	0.07	0.005

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-Alt3-Mit-12. Annual Auxiliary Generator GHG Emissions during Cargo Vessel Hoteling - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	4,777.2	0.65	0.045
Containership < 3,000 TEU	3,663.9	0.50	0.035
Subtotal	8,441.1	1.15	0.080
Project Year 2007			
Containerships 5,000 - 6,000 TEU	2,754.5	0.37	0.026
Containerships 3,000 - 5,000 TEU	5,620.2	0.76	0.053
Containerships < 3,000 TEU	3,837.2	0.52	0.036
Subtotal	12,211.9	1.66	0.115
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,562.3	0.22	0.015
Containerships 3,000 - 5,000 TEU	1,257.0	0.17	0.012
Containerships < 3,000 TEU	676.6	0.09	0.007
Subtotal	3,496.0	0.48	0.034
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-
Containerships < 3,000 TEU	-	-	-
Subtotal	-	-	-
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-
Containerships < 3,000 TEU	-	-	-
Subtotal	-	-	-

Table XX-Alt3-Mit-13. Annual Auxiliary Generator GHG Emissions during Cargo Vessel Shifts - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	34.0	0.00	0.000
Docking	9.3	0.00	0.000
Subtotal	43.3	0.01	0.000

Table XX-Alt3-Mit-14. Annual Auxiliary Generator GHG Emissions for Shifted Cargo Vessels during Hoteling - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership < 3,000 TEU	742.7	0.10	0.007
Subtotal	742.7	0.10	0.007

Table XX-Alt3-Mit-17. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Transiting the Precautionary Area - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	65.3	0.01	0.001
Containership < 3,000 TEU	142.1	0.02	0.001
Subtotal	207.4	0.03	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	25.0	0.00	0.000
Containerships 3,000 - 5,000 TEU	76.8	0.01	0.001
Containerships < 3,000 TEU	148.9	0.02	0.001
Subtotal	250.7	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	72.0	0.01	0.001
Containerships 3,000 - 5,000 TEU	87.4	0.01	0.001
Containerships < 3,000 TEU	133.5	0.02	0.001
Subtotal	292.9	0.04	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	157.5	0.02	0.001
Containerships 3,000 - 5,000 TEU	99.9	0.01	0.001
Containerships < 3,000 TEU	59.5	0.01	0.001
Subtotal	316.9	0.04	0.003
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	157.5	0.02	0.001
Containerships 3,000 - 5,000 TEU	99.9	0.01	0.001
Containerships < 3,000 TEU	59.5	0.01	0.001
Subtotal	316.9	0.04	0.003

(2) Does not assume use of low-sulfur fuels.

Table XX-Alt3-Mit-18. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Transiting within the POLA Breakwater - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	51.8	0.01	0.000
Containership < 3,000 TEU	112.7	0.01	0.001
Subtotal	164.6	0.02	0.001
Project Year 2007			
Containerships 5,000 - 6,000 TEU	19.8	0.00	0.000
Containerships 3,000 - 5,000 TEU	60.9	0.01	0.001
Containerships < 3,000 TEU	118.1	0.02	0.001
Subtotal	198.8	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	57.1	0.01	0.000
Containerships 3,000 - 5,000 TEU	69.3	0.01	0.001
Containerships < 3,000 TEU	105.9	0.01	0.001
Subtotal	232.4	0.03	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	124.9	0.02	0.001
Containerships 3,000 - 5,000 TEU	79.2	0.01	0.001
Containerships < 3,000 TEU	47.2	0.01	0.000
Subtotal	251.4	0.03	0.002
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	124.9	0.02	0.001
Containerships 3,000 - 5,000 TEU	79.2	0.01	0.001
Containerships < 3,000 TEU	47.2	0.01	0.000
Subtotal	251.4	0.03	0.002

Table XX-Alt3-Mit-19. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Docking within the POLA Breakwater - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	14.2	0.00	0.000
Containership < 3,000 TEU	30.8	0.00	0.000
Subtotal	45.0	0.01	0.000
Project Year 2007			
Containerships 5,000 - 6,000 TEU	5.4	0.00	0.000
Containerships 3,000 - 5,000 TEU	16.7	0.00	0.000
Containerships < 3,000 TEU	32.3	0.00	0.000
Subtotal	54.3	0.01	0.000
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	15.6	0.00	0.000
Containerships 3,000 - 5,000 TEU	18.9	0.00	0.000
Containerships < 3,000 TEU	28.9	0.00	0.000
Subtotal	63.5	0.01	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	34.1	0.00	0.000
Containerships 3,000 - 5,000 TEU	21.7	0.00	0.000
Containerships < 3,000 TEU	12.9	0.00	0.000
Subtotal	68.7	0.01	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	34.1	0.00	0.000
Containerships 3,000 - 5,000 TEU	21.7	0.00	0.000
Containerships < 3,000 TEU	12.9	0.00	0.000
Subtotal	68.7	0.01	0.001

(2) Does not assume use of low-sulfur fuels.

Table XX-Alt3-Mit-20. Annual Auxiliary Boiler GHG Emissions during Cargo Vessel Hoteling - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	2,072.1	0.26	0.018
Containership < 3,000 TEU	2,706.0	0.34	0.023
Subtotal	4,778.1	0.61	0.041
Project Year 2007			
Containerships 5,000 - 6,000 TEU	950.7	0.12	0.008
Containerships 3,000 - 5,000 TEU	2,437.8	0.31	0.021
Containerships < 3,000 TEU	2,834.0	0.36	0.024
Subtotal	6,222.5	0.79	0.053
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,742.5	0.35	0.023
Containerships 3,000 - 5,000 TEU	2,773.0	0.35	0.024
Containerships < 3,000 TEU	2,541.4	0.32	0.022
Subtotal	8,057.0	1.03	0.068
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	5,997.0	0.76	0.051
Containerships 3,000 - 5,000 TEU	3,169.1	0.40	0.027
Containerships < 3,000 TEU	1,133.6	0.14	0.010
Subtotal	10,299.7	1.31	0.087
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	5,997.0	0.76	0.051
Containerships 3,000 - 5,000 TEU	3,169.1	0.40	0.027
Containerships < 3,000 TEU	1,133.6	0.14	0.010
Subtotal	10,299.7	1.31	0.087

Table XX-Alt3-Mit-21. Annual Auxiliary Boiler GHG Emissions during Cargo Vessel Shifts - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	22.9	0.00	0.000
Docking	6.2	0.00	0.000
Hoteling	548.5	0.07	0.005
Subtotal	577.6	0.07	0.005

Table XX-Alt3-Mit-22. Annual Tugboat GHG Emissions for Cargo Vessel Assists - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	146.9	0.02	0.001
Containership < 3,000 TEU	219.6	0.03	0.002
Subtotal	366.5	0.05	0.004
Project Year 2007			
Subtotal	726.1	0.10	0.007
Project Year 2015			
Subtotal	848.5	0.12	0.008
Project Year 2025			
Subtotal	918.1	0.13	0.009
Project Year 2038			
Subtotal	918.1	0.13	0.009

Note: (1) Assumes 3 tug assists per ship visit for all post-baseline years.

Table XX-Alt3-Mit-23. Annual Auxiliary Generator GHG Emissions for Tugboats during Cargo Vessel Assists - Berths 136-147 Terminal Project - Mitigated Project .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	16.1	0.00	0.000
Containership < 3,000 TEU	24.1	0.00	0.000
Subtotal	40.2	0.01	0.000
Project Year 2007			
Subtotal (1)	79.5	0.01	0.001
Project Year 2015			
Subtotal (1)	93.0	0.01	0.001
Project Year 2025			
Subtotal (1)	100.6	0.01	0.001
Project Year 2038			
Subtotal (1)	100.6	0.01	0.001

Note: (1) Assumes 3 tug assists per ship visit for all post-baseline years.

Table XX-Alt3-Mit-24. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147 Terminal Project Mitigated Project - Vessels that Comply with VSRP + Slide Valves

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	8,268.6	1.14	0.082
Containerships 3,000 - 5,000 TEU	8,817.0	1.22	0.087
Containerships < 3,000 TEU	10,511.6	1.45	0.104
Subtotal	27,597.1	3.81	0.272
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	18,080.6	2.50	0.178
Containerships 3,000 - 5,000 TEU	10,076.6	1.39	0.099
Containerships < 3,000 TEU	4,688.6	0.65	0.046
Subtotal	32,845.8	4.53	0.324
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	18,080.6	2.50	0.178
Containerships 3,000 - 5,000 TEU	10,076.6	1.39	0.099
Containerships < 3,000 TEU	4,688.6	0.65	0.046
Subtotal	32,845.8	4.53	0.324

Notes: (1) Assumes 25/50/95% VSRP compliance rates for years 2003/2007/post-2007.

(2) Fuel types assumed for each project year identified in Table D3-A1.1

Table XX-Alt3-Mit-25. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147 Terminal Project Mitigated Project - Non-Compliant Vessels within VSRP + Slide Valves.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,550.5	0.21	0.015
Containerships 3,000 - 5,000 TEU	1,399.0	0.19	0.014
Containerships < 3,000 TEU	1,278.3	0.18	0.013
Subtotal	4,227.7	0.58	0.042
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	3,390.3	0.47	0.033
Containerships 3,000 - 5,000 TEU	1,598.9	0.22	0.016
Containerships < 3,000 TEU	570.2	0.08	0.006
Subtotal	5,559.4	0.77	0.055
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	3,390.3	0.47	0.033
Containerships 3,000 - 5,000 TEU	1,598.9	0.22	0.016
Containerships < 3,000 TEU	570.2	0.08	0.006
Subtotal	5,559.4	0.77	0.055

Note: (1) Assumes 75/50/05% VSRP non-compliance rates for years 2003/2007/post-2007.

(2) Fuel types assumed for each project year identified in Table D3-A1.1

Table XX-Alt3-Mit-26. Annual Cargo Vessel GHG Emissions within the POLA Precautionary Area - Berths 136-147 Terminal Project - Mitigated Project + Slide Valves.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	483.4	0.07	0.005
Containerships 3,000 - 5,000 TEU	515.4	0.07	0.005
Containerships < 3,000 TEU	614.5	0.08	0.006
Subtotal	1,613.4	0.22	0.016
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,057.0	0.15	0.010
Containerships 3,000 - 5,000 TEU	589.1	0.08	0.006
Containerships < 3,000 TEU	274.1	0.04	0.003
Subtotal	1,920.2	0.27	0.019
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,057.0	0.15	0.010
Containerships 3,000 - 5,000 TEU	589.1	0.08	0.006
Containerships < 3,000 TEU	274.1	0.04	0.003
Subtotal	1,920.2	0.27	0.019

Table XX-Alt3-Mit-27. Annual Cargo Vessel GHG Emissions for Transit within the POLA Breakwater - Berths 136-147 Terminal Project - Mitigated Project + Slide Valves.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	164.0	0.02	0.002
Containerships 3,000 - 5,000 TEU	136.1	0.02	0.001
Containerships < 3,000 TEU	108.9	0.02	0.001
Subtotal	408.9	0.06	0.004
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	358.6	0.05	0.004
Containerships 3,000 - 5,000 TEU	155.5	0.02	0.002
Containerships < 3,000 TEU	48.6	0.01	0.000
Subtotal	562.7	0.08	0.006
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	358.6	0.05	0.004
Containerships 3,000 - 5,000 TEU	155.5	0.02	0.002
Containerships < 3,000 TEU	48.6	0.01	0.000
Subtotal	562.7	0.08	0.006

Table XX-Alt3-Mit-28. Annual Cargo Vessel GHG Emissions for Docking Activities - Berths 136-147 Terminal Project - Mitigated Project + Slide Valves.

Project Scenario/Vessel Type	Tons Per Year		
	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	24.2	0.00	0.000
Containerships 3,000 - 5,000 TEU	20.1	0.00	0.000
Containerships < 3,000 TEU	16.1	0.00	0.000
Subtotal	60.4	0.01	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	53.0	0.01	0.001
Containerships 3,000 - 5,000 TEU	23.0	0.00	0.000
Containerships < 3,000 TEU	7.2	0.00	0.000
Subtotal	83.1	0.01	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	53.0	0.01	0.001
Containerships 3,000 - 5,000 TEU	23.0	0.00	0.000
Containerships < 3,000 TEU	7.2	0.00	0.000
Subtotal	83.1	0.01	0.001

Table XX-Alt3-Mit-29. Annual Vessel GHG Emissions - Berths 136-147 Terminal Project - Mitigated Project .

Project Scenario/GHG Emission Source	Tons Per Year		
	CO2	CH4	N2O
Year 2003 Baseline			
Ships - Fairway Transit (1)	51,655.31	6.82	0.46
Ships - Precautionary Area Transit (1)	1,739.40	0.23	0.02
Ships - Harbor Transit (1)	1,115.02	0.15	0.01
Ships - Docking (1)	272.85	0.04	0.00
Ships - Hoteling Aux. Sources	14,510.42	1.92	0.13
Tugboats - Cargo Vessel Assist (1)	406.68	0.06	0.00
Subtotal	69,699.67	9.22	0.62
Project Year 2007			
Ships - Fairway Transit (1)	67,080.43	8.86	0.59
Ships - Precautionary Area Transit (1)	2,228.57	0.30	0.02
Ships - Harbor Transit (1)	1,409.28	0.19	0.01
Ships - Docking (1)	345.77	0.05	0.00
Ships - Hoteling Aux. Sources	18,434.42	2.45	0.17
Tugboats - Cargo Vessel Assist (1)	805.67	0.11	0.01
Subtotal	90,304.13	11.95	0.80
Project Year 2015			
Ships - Fairway Transit (1)	37,593.61	5.19	0.37
Ships - Precautionary Area Transit (1)	2,723.36	0.37	0.03
Ships - Harbor Transit (1)	1,882.69	0.26	0.02
Ships - Docking (1)	463.24	0.06	0.00
Ships - Hoteling Aux. Sources	11,552.91	1.51	0.10
Tugboats - Cargo Vessel Assist (1)	941.49	0.13	0.01
Subtotal	55,157.31	7.52	0.53
Project Year 2025			
Ships - Fairway Transit (1)	46,396.91	6.40	0.46
Ships - Precautionary Area Transit (1)	6,759.09	0.93	0.07
Ships - Harbor Transit (1)	2,571.93	0.35	0.03
Ships - Docking (1)	632.33	0.09	0.01
Ships - Hoteling Aux. Sources	10,299.73	1.31	0.09
Tugboats - Cargo Vessel Assist (1)	1,018.66	0.14	0.01
Subtotal	67,678.65	9.22	0.65
Project Year 2038			
Ships - Fairway Transit (1)	46,396.91	6.40	0.46
Ships - Precautionary Area Transit (1)	6,759.09	0.93	0.07
Ships - Harbor Transit (1)	2,571.93	0.35	0.03
Ships - Docking (1)	632.33	0.09	0.01
Ships - Hoteling Aux. Sources	10,299.73	1.31	0.09
Tugboats - Cargo Vessel Assist (1)	1,018.66	0.14	0.01
Subtotal	67,678.65	9.22	0.65

Note: (1) Includes auxiliary power emissions.

Table XX-Alt3-Mit-30. On-Road Truck Trip Vehicle Miles Travelled in California - Berths 136-147 Terminal Project - Alternative 1.

Year	B136-149 Throughput (TEUs)	B136-149 ICTF Thruput (TEUs) (1)	TEUs to Offsite Railyard (2)	TEUs to Local Deilveries	Truck Trips to Offsite Railyard (2)	Local Truck Trips (3)	Truck Miles to Offsite Railyard (4)	Local Truck Trip Miles (5)	Composite VMT/ Truck Trip
Baseline - Year 2003	891,976	-	445,988	445,988	598,795	598,795	11.3	135.0	73.2
Year 2007	1,091,200	-	545,600	545,600	744,330	744,330	11.3	135.0	73.2
Year 2015	1,491,000	552,709	12,380	925,911	17,037	1,274,210	11.3	135.0	133.4
Year 2025	2,035,000	700,810	148,555	1,185,635	162,151	1,294,142	11.3	135.0	121.2
Year 2038	2,035,000	700,810	148,555	1,185,635	162,151	1,294,142	11.3	135.0	121.2

(1) Annual throughput estimates from Rail Master Plan.

(2) Based on 50/50/26.8/6.7/7.3% of Berths 136-147 annual cargo throughput for years 2003/2007/2010/2015/2030.

(3) Based on 50/50/61.4/62.1/63.4% of Berths 136-147 annual cargo throughput for years 2003/2007/2010/2015/2030.

(4) Assumes an even split to Carson ICTF (4.5 miles) and LA railyards (18 miles) = 11.3 miles/trip

(5) Average of local/external-CA trip lengths (20/250) that originate from/are destined to the POLA.

Table XX-Alt3-Mit-31. On-Road Truck Operational Data within California for the Berths 136-147 Terminal Project - Alternative 3.

Activity/Project Scenario	Idling Time/ Trip (Hrs) (1)	Miles/ Trip (2)	ADT	Idling Hrs/ Day	Miles/ Day
On-Terminal					
Year 2003 - Baseline	0.56	1.02	3,281	1,837	3,351
Year 2007	0.25	1.02	4,079	1,020	4,165
Year 2015	0.25	0.81	3,538	884	2,850
Year 2025	0.25	0.81	3,990	997	3,214
Year 2038	0.25	0.81	3,990	997	3,214
Off-Terminal					
Year 2003 - Baseline	0.30	73.2	3,281	984	240,010
Year 2007	0.30	73.2	4,079	1,224	298,344
Year 2015	0.30	133.4	3,538	1,061	471,811
Year 2025	0.30	121.2	3,990	1,197	483,675
Year 2038	0.30	121.2	3,990	1,197	483,675

Notes: (1) 2003 on-terminal durations from PEI. Post-2003 on-terminal durations from TraPac (TraPac 2006).

(2) On-terminal mileage/trip based upon current/proposed terminal gate systems. Off-terminal miles/trip from data presented in Table XX-Alt3-Mit-30.

Table XX-Alt3Mit-32. Daily Mitigated Truck GHG Emissions for the Berths 136-147 Terminal Project - Alternative 3.

Location/Project Scenario - Mode	Pounds per Day		
	CO2	CH4	N2O
On-Terminal (1)			
Year 2003 - Idling	28,338	2.0	1.0
Year 2003 - Driving	23,387	0.7	0.4
Subtotal - Year 2003	51,725	2.8	1.4
Year 2007 - Idling	15,726	1.1	0.6
Year 2007 - Driving	29,072	0.9	0.5
Subtotal - Year 2007	44,797	2.0	1.0
Year 2015 - Idling	13,640	1.0	0.5
Year 2015 - Driving	19,893	0.6	0.3
Subtotal - Year 2015	33,533	1.6	0.8
Year 2025 - Idling	15,384	1.1	0.5
Year 2025 - Driving	22,435	0.7	0.4
Subtotal - Year 2025	37,819	1.8	0.9
Year 2038 - Idling	15,384	1.1	0.5
Year 2038 - Driving	22,435	0.7	0.4
Subtotal - Year 2038	37,819	1.8	0.9
Off-Terminal			
Year 2003 - Idling	15,181	1.1	0.5
Year 2003 - Driving	1,059,975	52.9	26.5
Subtotal - Year 2003	1,075,156	54.0	27.0
Year 2007 - Idling	18,871	1.3	0.7
Year 2007 - Driving	1,317,598	65.8	32.9
Subtotal - Year 2007	1,336,469	67.1	33.6
Year 2015 - Idling	16,368	1.2	0.6
Year 2015 - Driving	2,123,263	104.0	52.0
Subtotal - Year 2015	2,139,632	105.2	52.6
Year 2025 - Idling	18,460	1.3	0.7
Year 2025 - Driving	2,217,222	106.7	53.3
Subtotal - Year 2025	2,235,682	108.0	54.0
Year 2038 - Idling	18,460	1.3	0.7
Year 2038 - Driving	2,217,222	106.7	53.3
Subtotal - Year 2038	2,235,682	108.0	54.0
Year 2003	1,126,881	56.8	28.4
Year 2007	1,381,266	69.2	34.6
Year 2015	2,173,164	106.8	53.4
Year 2025	2,273,501	109.8	54.9
Year 2038	2,273,501	109.8	54.9

Notes: (1) On-terminal driving emissions calculated with 10 mph emission factors.

Table XX-Alt3Mit-33. Terminal Equipment Annual Mitigated GHG Emissions - Berths 136-147 Terminal Project Alternative 3.

Project Scenario/Equipment Horsepower	Annual Hp-Hrs	Annual GHG Emissions (Tons) (1) CO2	CH4	N2O
Baseline - Year 2003				
Terminal Equipment - 121-175 Hp	10,493,875	6,574	1.08	0.08
Terminal Equipment - 176-250 Hp	12,581,479	7,881	1.30	0.09
Terminal Equipment - 250-500 Hp	2,417,350	1,514	0.22	0.02
Subtotal	25,492,704	15,969	2.60	0.19
Project Year 2007				
Terminal Equipment - 121-175 Hp	12,837,231	8,042	1.32	0.09
Terminal Equipment - 176-250 Hp	15,391,012	9,641	1.59	0.11
Terminal Equipment - 250-500 Hp	2,957,161	1,852	0.27	0.02
Subtotal	31,185,404	19,536	3.18	0.23
Project Year 2010				
Terminal Equipment - 121-175 Hp	15,898,206	9,959	1.64	0.12
Terminal Equipment - 176-250 Hp	19,060,924	11,940	1.96	0.14
Terminal Equipment - 250-500 Hp	3,662,282	2,478	0.36	0.03
Subtotal	38,621,412	24,377	3.96	0.28
Project Year 2011				
Terminal Equipment - 121-175 Hp	16,226,975	10,165	1.67	0.12
Terminal Equipment - 176-250 Hp	19,455,096	12,187	2.01	0.14
Terminal Equipment - 250-500 Hp	3,738,016	2,342	0.34	0.02
Subtotal	39,420,087	24,694	4.01	0.29
Project Year 2012				
Terminal Equipment - 121-175 Hp	16,555,743	10,371	1.71	0.12
Terminal Equipment - 176-250 Hp	19,849,268	12,434	2.05	0.15
Terminal Equipment - 250-500 Hp	3,813,751	2,389	0.34	0.03
Subtotal	40,218,762	25,194	4.10	0.29
Project Year 2013				
Terminal Equipment - 121-175 Hp	16,884,511	10,577	1.74	0.12
Terminal Equipment - 176-250 Hp	20,243,441	12,681	2.09	0.15
Terminal Equipment - 250-500 Hp	3,889,485	2,437	0.35	0.03
Subtotal	41,017,437	25,695	4.18	0.30
Project Year 2015				
Terminal Equipment - 121-175 Hp	17,542,048	10,989	1.81	0.13
Terminal Equipment - 176-250 Hp	21,031,785	13,175	2.17	0.15
Terminal Equipment - 250-500 Hp	4,040,954	2,531	0.36	0.03
Subtotal	42,614,787	26,695	4.34	0.31
Project Year 2025/2038 (2)				
Terminal Equipment - 121-175 Hp	26,137,689	16,374	2.69	0.19
Terminal Equipment - 176-250 Hp	31,337,404	19,631	3.23	0.23
Terminal Equipment - 250-500 Hp	6,021,030	3,772	0.54	0.04
Subtotal	63,496,123	39,776	6.47	0.47

Note: (1) Mitigations begin in year 2010 and are complete by 2013.

(2) In years 2025/2038, Hp-Hrs increased an additional 9% to simulate the effects of additional equipment usage needed to handle future cargo levels within a constrained terminal space (>8,000 TEUs/acre).

Table XX-Alt3Mit-34. Mitigated Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 3 Year 2007.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Yard Locomotive - Switching	-	-	-
Subtotal	-	-	-
Berths 136-147/Inbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Subtotal	-	-	-
Carson or LA Railyards/Outbound			
Hostler	1,372	0.23	0.02
Top Picks	896	0.15	0.01
Line Haul Locomotive - Road Haul	21,367	2.98	0.21
Line Haul Locomotive - Notch 1	636	0.09	0.01
Yard Locomotive - Switching	227	0.03	0.00
Subtotal	24,497	3.47	0.25
Carson or LA Railyards/Inbound			
Hostler	514	0.08	0.01
Top Picks	336	0.06	0.00
Line Haul Locomotive - Road Haul	21,367	2.98	0.21
Line Haul Locomotive - Notch 1	318	0.04	0.00
Subtotal	22,535	3.16	0.23
Total Tons Per Year	47,032	6.63	0.47

Table XX-Alt3Mit-35. Mitigated Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 3 Year 2015.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,389	0.23	0.02
Top Picks	907	0.15	0.01
Line Haul Locomotive - Road Haul	22,361	3.11	0.22
Line Haul Locomotive - Notch 1	322	0.04	0.00
Yard Locomotive - Switching	218	0.03	0.00
Subtotal	25,198	3.57	0.25
Berths 136-147/Inbound			
Hostler	521	0.09	0.01
Top Picks	340	0.06	0.00
Line Haul Locomotive - Road Haul	22,361	3.11	0.22
Line Haul Locomotive - Notch 1	322	0.04	0.00
Subtotal	23,544	3.30	0.24
Carson or LA Railyards/Outbound			
Hostler	31	0.01	0.00
Top Picks	20	0.00	0.00
Line Haul Locomotive - Road Haul	485	0.07	0.00
Line Haul Locomotive - Notch 1	14	0.00	0.00
Yard Locomotive - Switching	5	0.00	0.00
Subtotal	556	0.08	0.01
Carson or LA Railyards/Inbound			
Hostler	12	0.00	0.00
Top Picks	8	0.00	0.00
Line Haul Locomotive - Road Haul	485	0.07	0.00
Line Haul Locomotive - Notch 1	7	0.00	0.00
Subtotal	511	0.07	0.01
Total Tons Per Year	49,809	7.02	0.50

Table XX--Alt3Mit-36. Mitigated Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 3 Year 2025.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,762	0.29	0.02
Top Picks	1,151	0.19	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Yard Locomotive - Switching	277	0.04	0.00
Subtotal	31,950	4.52	0.32
Berths 136-147/Inbound			
Hostler	661	0.11	0.01
Top Picks	431	0.07	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Subtotal	29,853	4.19	0.30
Carson or LA Railyards/Outbound			
Hostler	373	0.06	0.00
Top Picks	244	0.04	0.00
Line Haul Locomotive - Road Haul	5,818	0.81	0.06
Line Haul Locomotive - Notch 1	173	0.02	0.00
Yard Locomotive - Switching	62	0.01	0.00
Subtotal	6,670	0.94	0.07
Carson or LA Railyards/Inbound			
Hostler	140	0.02	0.00
Top Picks	91	0.02	0.00
Line Haul Locomotive - Road Haul	5,818	0.81	0.06
Line Haul Locomotive - Notch 1	87	0.01	0.00
Subtotal	6,136	0.86	0.06
Total Tons Per Year	74,609	10.52	0.75

Table XX--Alt3Mit-37. Mitigated Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 3 Year 2038.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,762	0.29	0.02
Top Picks	1,151	0.19	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Yard Locomotive - Switching	277	0.04	0.00
Subtotal	31,950	4.52	0.32
Berths 136-147/Inbound			
Hostler	661	0.11	0.01
Top Picks	431	0.07	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Subtotal	29,853	4.19	0.30
Carson or LA Railyards/Outbound			
Hostler	373	0.06	0.00
Top Picks	244	0.04	0.00
Line Haul Locomotive - Road Haul	5,818	0.81	0.06
Line Haul Locomotive - Notch 1	173	0.02	0.00
Yard Locomotive - Switching	62	0.01	0.00
Subtotal	6,670	0.94	0.07
Carson or LA Railyards/Inbound			
Hostler	140	0.02	0.00
Top Picks	91	0.02	0.00
Line Haul Locomotive - Road Haul	5,818	0.81	0.06
Line Haul Locomotive - Notch 1	87	0.01	0.00
Subtotal	6,136	0.86	0.06
Total Tons Per Year	74,609	10.52	0.75

Table XX--Alt3Mit-38. Summary of Mitigated Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 3.

Project Scenario/Source Activity	Tons per Year		
	CO2	CH4	N2O
Baseline Year 2003			
ICTF Equipment	2,548	0.42	0.03
Trains	35,897	5.00	0.36
Subtotal	38,445	5.42	0.39
Project Year 2007			
ICTF Equipment	3,118	0.51	0.04
Trains	43,914	6.12	0.44
Subtotal	47,032	6.63	0.47
Project Year 2015			
ICTF Equipment	3,229	0.53	0.04
Trains	46,581	6.49	0.46
Subtotal	49,809	7.02	0.50
Project Year 2025			
ICTF Equipment	4,853	0.80	0.06
Trains	69,755	9.72	0.69
Subtotal	74,609	10.52	0.75
Project Year 2038			
ICTF Equipment	4,853	0.80	0.06
Trains	69,755	9.72	0.69
Subtotal	74,609	10.52	0.75

Table XX-Alt4-1. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147 Terminal Project - Alternative 4.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	21,531.0	2.84	0.189
Containership < 3,000 TEU	28,133.5	3.71	0.248
Subtotal	49,664.5	6.55	0.437
Project Year 2007			
Containerships 5,000 - 6,000 TEU	5,796.5	0.76	0.051
Containerships 3,000 - 5,000 TEU	5,563.1	0.73	0.049
Containerships < 3,000 TEU	9,126.1	1.20	0.080
Subtotal	20,485.6	2.70	0.180
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	10,422.9	1.38	0.092
Containerships 3,000 - 5,000 TEU	8,099.2	1.07	0.071
Containerships < 3,000 TEU	9,081.6	1.20	0.080
General Cargo	1,463.4	0.19	0.013
Auto Carrier	1,532.4	0.20	0.013
Subtotal	30,599.6	4.04	0.269
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	21,246.7	2.80	0.187
Containerships 3,000 - 5,000 TEU	4,499.6	0.59	0.040
Containerships < 3,000 TEU	3,814.3	0.50	0.034
General Cargo	1,467.9	0.19	0.013
Auto Carrier	1,539.0	0.20	0.014
Subtotal	32,567.4	4.30	0.287
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	21,246.7	2.80	0.187
Containerships 3,000 - 5,000 TEU	4,499.6	0.59	0.040
Containerships < 3,000 TEU	3,814.3	0.50	0.034
General Cargo	1,467.9	0.19	0.013
Auto Carrier	1,539.0	0.20	0.014
Subtotal	32,567.4	4.30	0.287

Note: (1) Assumes 25/50/75/80% VSRP compliance rates for years 2003/2007/2010/post-2014.

Table XX-Alt4-2. Annual Cargo Vessel GHG Emissions within the POLA Precautionary Area - Berths 136-147 Terminal Project - Alternative 4.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	406.1	0.05	0.004
Containership < 3,000 TEU	689.9	0.09	0.006
Subtotal	1,096.0	0.14	0.010
Project Year 2007			
Containerships 5,000 - 6,000 TEU	95.1	0.01	0.001
Containerships 3,000 - 5,000 TEU	107.5	0.01	0.001
Containerships < 3,000 TEU	228.4	0.03	0.002
Subtotal	431.1	0.06	0.004
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	176.7	0.02	0.002
Containerships 3,000 - 5,000 TEU	161.3	0.02	0.001
Containerships < 3,000 TEU	233.1	0.03	0.002
General Cargo	43.1	0.01	0.000
Auto Carrier	43.7	0.01	0.000
Subtotal	657.8	0.09	0.006
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	360.2	0.05	0.003
Containerships 3,000 - 5,000 TEU	89.6	0.01	0.001
Containerships < 3,000 TEU	97.9	0.01	0.001
General Cargo	43.1	0.01	0.000
Auto Carrier	43.7	0.01	0.000
Subtotal	634.4	0.08	0.006
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	360.2	0.05	0.003
Containerships 3,000 - 5,000 TEU	89.6	0.01	0.001
Containerships < 3,000 TEU	97.9	0.01	0.001
General Cargo	43.1	0.01	0.000
Auto Carrier	43.7	0.01	0.000
Subtotal	634.4	0.08	0.006

Table XX-Alt4-3. Annual Cargo Vessel GHG Emissions for Transit within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 4.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	107.2	0.01	0.001
Containership < 3,000 TEU	122.2	0.02	0.001
Subtotal	229.4	0.03	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	32.3	0.00	0.000
Containerships 3,000 - 5,000 TEU	28.4	0.00	0.000
Containerships < 3,000 TEU	40.5	0.01	0.000
Subtotal	101.1	0.01	0.001
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	59.9	0.01	0.001
Containerships 3,000 - 5,000 TEU	42.6	0.01	0.000
Containerships < 3,000 TEU	41.3	0.01	0.000
General Cargo	-	-	-
Auto Carrier	11.5	0.00	0.000
Subtotal	155.3	0.02	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	122.1	0.02	0.001
Containerships 3,000 - 5,000 TEU	23.6	0.00	0.000
Containerships < 3,000 TEU	17.3	0.00	0.000
General Cargo	-	-	-
Auto Carrier	11.5	0.00	0.000
Subtotal	174.6	0.02	0.002
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	122.1	0.02	0.001
Containerships 3,000 - 5,000 TEU	23.6	0.00	0.000
Containerships < 3,000 TEU	17.3	0.00	0.000
General Cargo	-	-	-
Auto Carrier	11.5	0.00	0.000
Subtotal	174.6	0.02	0.002

Table XX-Alt4-4. Annual Cargo Vessel GHG Emissions for Docking Activities - Berths 136-147 Terminal Project - Alternative 4.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	15.8	0.00	0.000
Containership < 3,000 TEU	18.1	0.00	0.000
Subtotal	33.9	0.00	0.000
Project Year 2007			
Containerships 5,000 - 6,000 TEU	4.8	0.00	0.000
Containerships 3,000 - 5,000 TEU	4.2	0.00	0.000
Containerships < 3,000 TEU	6.0	0.00	0.000
Subtotal	14.9	0.00	0.000
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	8.9	0.00	0.000
Containerships 3,000 - 5,000 TEU	6.3	0.00	0.000
Containerships < 3,000 TEU	6.1	0.00	0.000
General Cargo	0.6	0.00	0.000
Auto Carrier	0.6	0.00	0.000
Subtotal	22.5	0.00	0.000
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	18.0	0.00	0.000
Containerships 3,000 - 5,000 TEU	3.5	0.00	0.000
Containerships < 3,000 TEU	2.6	0.00	0.000
General Cargo	0.6	0.00	0.000
Auto Carrier	0.6	0.00	0.000
Subtotal	25.3	0.00	0.000
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	18.0	0.00	0.000
Containerships 3,000 - 5,000 TEU	3.5	0.00	0.000
Containerships < 3,000 TEU	2.6	0.00	0.000
General Cargo	0.6	0.00	0.000
Auto Carrier	0.6	0.00	0.000
Subtotal	25.3	0.00	0.000

Table XX-Alt4-5. Annual Shifting GHG Emissions for Cargo Vessels within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 4.

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	24.8	0.00	0.000
Docking	3.7	0.00	0.000
Subtotal	28.4	0.00	0.000

Table XX-Alt4-6. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Fairway Zone (CA Waters) - Berths 136-147 Terminal Project - Alternative 4.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	862.3	0.12	0.008
Containership < 3,000 TEU	1,128.5	0.15	0.011
Subtotal	1,990.9	0.27	0.019
Project Year 2007			
Containerships 5,000 - 6,000 TEU	258.3	0.04	0.002
Containerships 3,000 - 5,000 TEU	234.0	0.03	0.002
Containerships < 3,000 TEU	380.3	0.05	0.004
Subtotal	872.6	0.12	0.008
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	496.6	0.07	0.005
Containerships 3,000 - 5,000 TEU	361.3	0.05	0.003
Containerships < 3,000 TEU	396.2	0.05	0.004
General Cargo	79.4	0.01	0.001
Auto Carrier	87.6	0.01	0.001
Subtotal	1,421.0	0.19	0.013
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,012.2	0.14	0.010
Containerships 3,000 - 5,000 TEU	200.7	0.03	0.002
Containerships < 3,000 TEU	166.4	0.02	0.002
General Cargo	79.2	0.01	0.001
Auto Carrier	87.3	0.01	0.001
Subtotal	1,545.8	0.21	0.015
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,012.2	0.14	0.010
Containerships 3,000 - 5,000 TEU	200.7	0.03	0.002
Containerships < 3,000 TEU	166.4	0.02	0.002
General Cargo	79.2	0.01	0.001
Auto Carrier	87.3	0.01	0.001
Subtotal	1,545.8	0.21	0.015

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

(2) Assumes 25/50/75/80% VSRP compliance rates for years 2003/2007/2010/post-2014.

Table XX-Alt4-7. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Precautionary Area - Berths 136-147 Terminal Project - Alternative 4.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	202.4	0.03	0.002
Containership < 3,000 TEU	233.6	0.03	0.002
Subtotal	435.9	0.06	0.004
Project Year 2007			
Containerships 5,000 - 6,000 TEU	63.6	0.01	0.001
Containerships 3,000 - 5,000 TEU	53.6	0.01	0.001
Containerships < 3,000 TEU	77.3	0.01	0.001
Subtotal	194.5	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	118.2	0.02	0.001
Containerships 3,000 - 5,000 TEU	80.3	0.01	0.001
Containerships < 3,000 TEU	78.9	0.01	0.001
General Cargo	14.9	0.00	0.000
Auto Carrier	18.2	0.00	0.000
Subtotal	310.6	0.04	0.003
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	241.0	0.03	0.002
Containerships 3,000 - 5,000 TEU	44.6	0.01	0.000
Containerships < 3,000 TEU	33.1	0.00	0.000
General Cargo	14.9	0.00	0.000
Auto Carrier	18.2	0.00	0.000
Subtotal	351.9	0.05	0.003
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	241.0	0.03	0.002
Containerships 3,000 - 5,000 TEU	44.6	0.01	0.000
Containerships < 3,000 TEU	33.1	0.00	0.000
General Cargo	14.9	0.00	0.000
Auto Carrier	18.2	0.00	0.000
Subtotal	351.9	0.05	0.003

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-Alt4-8. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 4.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	303.7	0.04	0.003
Containership < 3,000 TEU	335.7	0.05	0.003
Subtotal	639.4	0.09	0.006
Project Year 2007			
Containerships 5,000 - 6,000 TEU	101.0	0.01	0.001
Containerships 3,000 - 5,000 TEU	80.4	0.01	0.001
Containerships < 3,000 TEU	111.1	0.02	0.001
Subtotal	292.5	0.04	0.003
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	187.5	0.03	0.002
Containerships 3,000 - 5,000 TEU	120.6	0.02	0.001
Containerships < 3,000 TEU	113.4	0.02	0.001
General Cargo	17.6	0.00	0.000
Auto Carrier	22.3	0.00	0.000
Subtotal	461.5	0.06	0.004
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	382.3	0.05	0.004
Containerships 3,000 - 5,000 TEU	67.0	0.01	0.001
Containerships < 3,000 TEU	47.6	0.01	0.000
General Cargo	17.6	0.00	0.000
Auto Carrier	22.3	0.00	0.000
Subtotal	536.9	0.07	0.005
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	382.3	0.05	0.004
Containerships 3,000 - 5,000 TEU	67.0	0.01	0.001
Containerships < 3,000 TEU	47.6	0.01	0.000
General Cargo	17.6	0.00	0.000
Auto Carrier	22.3	0.00	0.000
Subtotal	536.9	0.07	0.005

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-Alt4-9. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Docking within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 4.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	83.0	0.01	0.001
Containership < 3,000 TEU	91.8	0.01	0.001
Subtotal	174.8	0.02	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	27.6	0.00	0.000
Containerships 3,000 - 5,000 TEU	22.0	0.00	0.000
Containerships < 3,000 TEU	30.4	0.00	0.000
Subtotal	80.0	0.01	0.001
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	51.3	0.01	0.000
Containerships 3,000 - 5,000 TEU	33.0	0.00	0.000
Containerships < 3,000 TEU	31.0	0.00	0.000
General Cargo	2.9	0.00	0.000
Auto Carrier	3.7	0.00	0.000
Subtotal	121.9	0.02	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	104.5	0.01	0.001
Containerships 3,000 - 5,000 TEU	18.3	0.00	0.000
Containerships < 3,000 TEU	13.0	0.00	0.000
General Cargo	2.9	0.00	0.000
Auto Carrier	3.7	0.00	0.000
Subtotal	142.5	0.02	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	104.5	0.01	0.001
Containerships 3,000 - 5,000 TEU	18.3	0.00	0.000
Containerships < 3,000 TEU	13.0	0.00	0.000
General Cargo	2.9	0.00	0.000
Auto Carrier	3.7	0.00	0.000
Subtotal	142.5	0.02	0.001

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-Alt4-10. Annual Auxiliary Generator GHG Emissions during Cargo Vessel Hoteling - Berths 136-147 Terminal Project - Alternative 4.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	4,777.2	0.65	0.045
Containership < 3,000 TEU	3,663.9	0.50	0.035
Subtotal	8,441.1	1.15	0.080
Project Year 2007			
Containerships 5,000 - 6,000 TEU	1,483.2	0.20	0.014
Containerships 3,000 - 5,000 TEU	1,264.6	0.17	0.012
Containerships < 3,000 TEU	1,213.1	0.16	0.011
Subtotal	3,960.8	0.54	0.037
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,754.5	0.37	0.026
Containerships 3,000 - 5,000 TEU	1,896.8	0.26	0.018
Containerships < 3,000 TEU	1,237.8	0.17	0.012
General Cargo	228.7	0.03	0.002
Auto Carrier	149.6	0.02	0.001
Subtotal	6,267.4	0.85	0.059
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	5,614.9	0.76	0.053
Containerships 3,000 - 5,000 TEU	1,053.8	0.14	0.010
Containerships < 3,000 TEU	519.9	0.07	0.005
General Cargo	228.7	0.03	0.002
Auto Carrier	149.6	0.02	0.001
Subtotal	7,566.9	1.03	0.072
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	5,614.9	0.76	0.053
Containerships 3,000 - 5,000 TEU	1,053.8	0.14	0.010
Containerships < 3,000 TEU	519.9	0.07	0.005
General Cargo	228.7	0.03	0.002
Auto Carrier	149.6	0.02	0.001
Subtotal	7,566.9	1.03	0.072

Table XX-Alt4-11. Annual Auxiliary Generator GHG Emissions during Cargo Vessel Shifts - Berths 136-147 Terminal Project - Alternative 4.

Project Scenario/Vessel Mode	Tons Per Year		
	CO2	CH4	N2O
Year 2003 Baseline			
Transit	34.0	0.00	0.000
Docking	9.3	0.00	0.000
Subtotal	43.3	0.01	0.000

Table XX-Alt4-12. Annual Auxiliary Generator GHG Emissions for Shifted Cargo Vessels during Hoteling - Berths 136-147 Terminal Project - Alternative 4.

Project Scenario/Vessel Type	Tons Per Year		
	CO2	CH4	N2O
Year 2003 Baseline			
Containership < 3,000 TEU	742.7	0.10	0.007
Subtotal	742.7	0.10	0.007

Table XX-Alt4-14. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Transiting the Precautionary Area - Berths 136-147 Terminal Project - Alternative 4.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	65.3	0.01	0.001
Containership < 3,000 TEU	142.1	0.02	0.001
Subtotal	207.4	0.03	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	13.4	0.00	0.000
Containerships 3,000 - 5,000 TEU	17.3	0.00	0.000
Containerships < 3,000 TEU	47.1	0.01	0.000
Subtotal	77.8	0.01	0.001
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	25.0	0.00	0.000
Containerships 3,000 - 5,000 TEU	25.9	0.00	0.000
Containerships < 3,000 TEU	48.0	0.01	0.000
General Cargo	20.4	0.00	0.000
Auto Carrier	14.0	0.00	0.000
Subtotal	133.4	0.02	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	50.9	0.01	0.000
Containerships 3,000 - 5,000 TEU	14.4	0.00	0.000
Containerships < 3,000 TEU	20.2	0.00	0.000
General Cargo	20.4	0.00	0.000
Auto Carrier	14.0	0.00	0.000
Subtotal	119.9	0.02	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	50.9	0.01	0.000
Containerships 3,000 - 5,000 TEU	14.4	0.00	0.000
Containerships < 3,000 TEU	20.2	0.00	0.000
General Cargo	20.4	0.00	0.000
Auto Carrier	14.0	0.00	0.000
Subtotal	119.9	0.02	0.001

Table XX-Alt4-15. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Transiting within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 4.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	51.8	0.01	0.000
Containership < 3,000 TEU	112.7	0.01	0.001
Subtotal	164.6	0.02	0.001
Project Year 2007			
Containerships 5,000 - 6,000 TEU	10.7	0.00	0.000
Containerships 3,000 - 5,000 TEU	13.7	0.00	0.000
Containerships < 3,000 TEU	37.3	0.00	0.000
Subtotal	61.7	0.01	0.001
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	19.8	0.00	0.000
Containerships 3,000 - 5,000 TEU	20.6	0.00	0.000
Containerships < 3,000 TEU	38.1	0.00	0.000
General Cargo	14.5	0.00	0.000
Auto Carrier	11.4	0.00	0.000
Subtotal	104.4	0.01	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	40.4	0.01	0.000
Containerships 3,000 - 5,000 TEU	11.4	0.00	0.000
Containerships < 3,000 TEU	16.0	0.00	0.000
General Cargo	14.5	0.00	0.000
Auto Carrier	11.4	0.00	0.000
Subtotal	93.7	0.01	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	40.4	0.01	0.000
Containerships 3,000 - 5,000 TEU	11.4	0.00	0.000
Containerships < 3,000 TEU	16.0	0.00	0.000
General Cargo	14.5	0.00	0.000
Auto Carrier	11.4	0.00	0.000
Subtotal	93.7	0.01	0.001

Table XX-Alt4-16. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Docking within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 4.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	14.2	0.00	0.000
Containership < 3,000 TEU	30.8	0.00	0.000
Subtotal	45.0	0.01	0.000
Project Year 2007			
Containerships 5,000 - 6,000 TEU	2.9	0.00	0.000
Containerships 3,000 - 5,000 TEU	3.7	0.00	0.000
Containerships < 3,000 TEU	10.2	0.00	0.000
Subtotal	16.9	0.00	0.000
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	5.4	0.00	0.000
Containerships 3,000 - 5,000 TEU	5.6	0.00	0.000
Containerships < 3,000 TEU	10.4	0.00	0.000
General Cargo	2.4	0.00	0.000
Auto Carrier	1.9	0.00	0.000
Subtotal	25.8	0.00	0.000
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	11.0	0.00	0.000
Containerships 3,000 - 5,000 TEU	3.1	0.00	0.000
Containerships < 3,000 TEU	4.4	0.00	0.000
General Cargo	2.4	0.00	0.000
Auto Carrier	1.9	0.00	0.000
Subtotal	22.8	0.00	0.000
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	11.0	0.00	0.000
Containerships 3,000 - 5,000 TEU	3.1	0.00	0.000
Containerships < 3,000 TEU	4.4	0.00	0.000
General Cargo	2.4	0.00	0.000
Auto Carrier	1.9	0.00	0.000
Subtotal	22.8	0.00	0.000

Table XX-Alt4-17. Annual Auxiliary Boiler GHG Emissions during Cargo Vessel Hoteling - Berths 136-147 Terminal Project - Alternative 4.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	2,072.1	0.26	0.018
Containership < 3,000 TEU	2,706.0	0.34	0.023
Subtotal	4,778.1	0.61	0.041
Project Year 2007			
Containerships 5,000 - 6,000 TEU	511.9	0.07	0.004
Containerships 3,000 - 5,000 TEU	548.5	0.07	0.005
Containerships < 3,000 TEU	895.9	0.11	0.008
Subtotal	1,956.3	0.25	0.017
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	950.7	0.12	0.008
Containerships 3,000 - 5,000 TEU	822.8	0.10	0.007
Containerships < 3,000 TEU	914.2	0.12	0.008
General Cargo	384.1	0.05	0.003
Auto Carrier	132.6	0.02	0.001
Subtotal	3,204.3	0.41	0.027
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,938.1	0.25	0.016
Containerships 3,000 - 5,000 TEU	457.1	0.06	0.004
Containerships < 3,000 TEU	384.0	0.05	0.003
General Cargo	384.1	0.05	0.003
Auto Carrier	132.6	0.02	0.001
Subtotal	3,295.7	0.42	0.028
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,938.1	0.25	0.016
Containerships 3,000 - 5,000 TEU	457.1	0.06	0.004
Containerships < 3,000 TEU	384.0	0.05	0.003
General Cargo	384.1	0.05	0.003
Auto Carrier	132.6	0.02	0.001
Subtotal	3,295.7	0.42	0.028

Table XX-Alt4-18. Annual Auxiliary Boiler GHG Emissions during Cargo Vessel Shifts - Berths 136-147 Terminal Project - Alternative 4.

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	22.9	0.00	0.000
Docking	6.2	0.00	0.000
Hoteling	548.5	0.07	0.005
Subtotal	577.6	0.07	0.005

Table XX-Alt4-19. Annual Tugboat GHG Emissions for Cargo Vessel Assists - Berths 136-147 Terminal Project - Alternative 4.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	146.9	0.02	0.001
Containership < 3,000 TEU	219.6	0.03	0.002
Subtotal	366.5	0.05	0.004
Project Year 2007			
Subtotal	302.1	0.04	0.003
Project Year 2015			
Subtotal	510.9	0.07	0.005
Project Year 2025			
Subtotal	458.7	0.06	0.005
Project Year 2038			
Subtotal	458.7	0.06	0.005

Note: (1) Assumes 3 tug assists per ship visit for all post-baseline years.

Table XX-Alt4-20. Annual Auxiliary Generator GHG Emissions for Tugboats during Cargo Vessel Assists - Berths 136-147 Terminal Project - Alternative 4.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	16.1	0.00	0.000
Containership < 3,000 TEU	24.1	0.00	0.000
Subtotal	40.2	0.01	0.000
Project Year 2007			
Subtotal (1)	33.1	0.00	0.000
Project Year 2015			
Subtotal (1)	56.0	0.01	0.001
Project Year 2025			
Subtotal (1)	50.3	0.01	0.000
Project Year 2038			
Subtotal (1)	50.3	0.01	0.000

Note: (1) Assumes 3 tug assists per ship visit for all post-baseline years.

Table XX-Alt4-21. Annual Vessel GHG Emissions - Berths 136-147 Terminal Project - Alternative 4.

Project Scenario/GHG Emission Source	Tons Per Year		
	CO2	CH4	N2O
Year 2003 Baseline			
Ships - Fairway Transit (1)	51,655.31	6.82	0.46
Ships - Precautionary Area Transit (1)	1,739.40	0.23	0.02
Ships - Harbor Transit (1)	1,115.02	0.15	0.01
Ships - Docking (1)	272.85	0.04	0.00
Ships - Hoteling Aux. Sources	14,510.42	1.92	0.13
Tugboats - Cargo Vessel Assist (1)	406.68	0.06	0.00
Subtotal	69,699.67	9.22	0.62
Project Year 2007			
Ships - Fairway Transit (1)	21,358.22	2.82	0.19
Ships - Precautionary Area Transit (1)	703.39	0.09	0.01
Ships - Harbor Transit (1)	455.33	0.06	0.00
Ships - Docking (1)	111.76	0.01	0.00
Ships - Hoteling Aux. Sources	5,917.13	0.79	0.05
Tugboats - Cargo Vessel Assist (1)	335.17	0.05	0.00
Subtotal	28,880.99	3.82	0.26
Project Year 2015			
Ships - Fairway Transit (1)	32,020.57	4.23	0.28
Ships - Precautionary Area Transit (1)	1,101.77	0.15	0.01
Ships - Harbor Transit (1)	721.13	0.10	0.01
Ships - Docking (1)	170.12	0.02	0.00
Ships - Hoteling Aux. Sources	9,471.74	1.26	0.09
Tugboats - Cargo Vessel Assist (1)	566.89	0.08	0.01
Subtotal	44,052.21	5.83	0.39
Project Year 2025			
Ships - Fairway Transit (1)	34,113.21	4.51	0.30
Ships - Precautionary Area Transit (1)	1,106.23	0.15	0.01
Ships - Harbor Transit (1)	805.19	0.11	0.01
Ships - Docking (1)	190.67	0.03	0.00
Ships - Hoteling Aux. Sources	10,862.60	1.45	0.10
Tugboats - Cargo Vessel Assist (1)	508.96	0.07	0.01
Subtotal	47,586.86	6.30	0.42
Project Year 2038			
Ships - Fairway Transit (1)	34,113.21	4.51	0.30
Ships - Precautionary Area Transit (1)	1,106.23	0.15	0.01
Ships - Harbor Transit (1)	805.19	0.11	0.01
Ships - Docking (1)	190.67	0.03	0.00
Ships - Hoteling Aux. Sources	10,862.60	1.45	0.10
Tugboats - Cargo Vessel Assist (1)	508.96	0.07	0.01
Subtotal	47,586.86	6.30	0.42

Note: (1) Includes auxiliary power emissions.

Table XX-Alt4-22. Container Truck Trip Vehicle Miles Travelled in California - Berths 136-147 Terminal Project - Alternative 4.

Year	TEUs to Offsite Railyard (1)	TEUs to Local Deilveries (1)	Truck Trips to Offsite Railyard (1)	Local Truck Trips (1)	Truck Miles to Offsite Railyard (2)	Local Truck Trip Miles (3)	Composite VMT/ Truck Trip
Baseline - Year 2003	445,988	445,988	598,795	598,795	11.3	135.0	73.2
Year 2007	177,000	177,000	245,429	245,429	11.3	135.0	73.2
Year 2015	249,600	249,600	346,097	346,097	11.3	135.0	73.2
Year 2025	282,850	282,850	326,919	326,919	11.3	135.0	73.2
Year 2038	282,850	282,850	326,919	326,919	11.3	135.0	73.2

Notes: (1) Assumed to be 50% of Berths 136-147 annual cargo throughput.

(2) Assumes an even split to Carson ICTF (4.5 miles) and LA railyards (18 miles) = 11.3 miles/trip

(3) Average of local/external-CA trip lengths (20/250) that originate from/are destined to the POLA.

Table XX-Alt4-23. On-Road Truck Operational Data within California for the Berths 136-147 Terminal Project - Alternative 4.

Activity/Project Scenario	Idling Time/ Trip (Hrs) (1)	Miles/ Trip (2)	ADT	Idling Hrs/ Day	Miles/ Day
On-Terminal All Truck Types					
Year 2003 - Baseline	0.56	1.02	3,281	1,837	3,351
Year 2007	0.25	1.02	1,345	336	1,373
Year 2015	0.25	0.81	1,947	487	1,569
Year 2025	0.25	0.81	1,842	461	1,484
Year 2038	0.25	0.81	1,842	461	1,484
Off-Terminal - Container Trucks					
Year 2003 - Baseline	0.30	73.2	3,281	984	240,010
Year 2007	0.30	73.2	1,345	403	98,373
Year 2015	0.30	73.2	1,896	569	138,723
Year 2025	0.30	73.2	1,791	537	131,036
Year 2038	0.30	73.2	1,791	537	131,036
Off-Terminal - General Cargo Trucks					
Year 2003 - Baseline	0.30	15.0	-	-	-
Year 2007	0.30	15.0	-	-	-
Year 2015	0.30	15.0	34	10	514
Year 2025	0.30	15.0	34	10	514
Year 2038	0.30	15.0	34	10	514
Off-Terminal - Auto Trucks					
Year 2003 - Baseline	0.30	10.0	-	-	-
Year 2007	0.30	10.0	-	-	-
Year 2015	0.30	10.0	17	5	167
Year 2025	0.30	10.0	17	5	167
Year 2038	0.30	10.0	17	5	167

Notes: (1) 2003 on-terminal durations from PEI. Post-2003 on-terminal durations from TraPac (TraPac 2006).

(2) On-terminal mileage/trip based upon current/proposed terminal gate systems. Off-terminal container truck miles/trip from data presented in Table XX-Alt4-22.

Table XX-Alt4-24. Daily Truck GHG Emissions for the Berths 136-147 Terminal Project - Alternative 4.

Location/Project Scenario - Mode	Pounds per Day		
	CO2	CH4	N2O
On-Terminal (1)			
Year 2003 - Idling	28,338	2.0	1.0
Year 2003 - Driving	23,387	0.7	0.4
Subtotal - Year 2003	51,725	2.8	1.4
Year 2007 - Idling	5,185	0.4	0.2
Year 2007 - Driving	9,586	0.3	0.2
Subtotal - Year 2007	14,771	0.7	0.3
Year 2015 - Idling	7,508	0.5	0.3
Year 2015 - Driving	10,950	0.3	0.2
Subtotal - Year 2015	18,459	0.9	0.4
Year 2025 - Idling	7,103	0.5	0.3
Year 2025 - Driving	10,359	0.3	0.2
Subtotal - Year 2025	17,463	0.8	0.4
Year 2038 - Idling	7,103	0.5	0.3
Year 2038 - Driving	10,359	0.3	0.2
Subtotal - Year 2038	17,463	0.8	0.4
Off-Terminal			
Year 2003 - Idling	15,181	1.1	0.5
Year 2003 - Driving	1,059,975	52.9	26.5
Subtotal - Year 2003	1,075,156	54.0	27.0
Year 2007 - Idling	6,222	0.4	0.2
Year 2007 - Driving	434,454	21.7	10.8
Subtotal - Year 2007	440,676	22.1	11.1
Year 2015 - Idling	9,010	0.6	0.3
Year 2015 - Driving	627,352	30.7	15.4
Subtotal - Year 2015	636,362	31.4	15.7
Year 2025 - Idling	8,524	0.6	0.3
Year 2025 - Driving	603,806	29.0	14.5
Subtotal - Year 2025	612,330	29.7	14.8
Year 2038 - Idling	8,524	0.6	0.3
Year 2038 - Driving	603,806	29.0	14.5
Subtotal - Year 2038	612,330	29.7	14.8
Total Daily Truck GHG Emissions by Project Year			
Year 2003	1,126,881	56.8	28.4
Year 2007	455,447	22.8	11.4
Year 2015	654,821	32.3	16.1
Year 2025	629,792	30.5	15.2
Year 2038	629,792	30.5	15.2

Notes: (1) On-terminal driving emissions calculated with 10 mph emission factors.

Table XX-Alt4-25. Container Terminal Equipment Annual GHG Emissions - Berths 136-147 Terminal Project
Alternative 4.

Project Scenario/Equipment Horsepower	Annual Hp-Hrs	Annual GHG Emissions (Tons) CO2	CH4	N2O
Baseline - Year 2003				
Terminal Equipment - 121-175 Hp	10,493,875	6,574	1.08	0.08
Terminal Equipment - 176-250 Hp	12,581,479	7,881	1.30	0.09
Terminal Equipment - 250-500 Hp	2,417,350	1,514	0.22	0.02
Subtotal	25,492,704	15,969	2.60	0.19
Project Year 2007				
Terminal Equipment - 121-175 Hp	4,166,015	2,610	0.43	0.03
Terminal Equipment - 176-250 Hp	4,994,783	3,129	0.51	0.04
Terminal Equipment - 250-500 Hp	959,676	601	0.09	0.01
Subtotal	10,120,473	6,340	1.03	0.07
Project Year 2015				
Terminal Equipment - 121-175 Hp	5,873,795	3,680	0.61	0.04
Terminal Equipment - 176-250 Hp	7,042,302	4,412	0.73	0.05
Terminal Equipment - 250-500 Hp	1,353,077	848	0.12	0.01
Subtotal	14,269,174	8,939	1.45	0.10
Project Year 2025				
Terminal Equipment - 121-175 Hp	6,655,318	4,169	0.69	0.05
Terminal Equipment - 176-250 Hp	7,979,297	4,998	0.82	0.06
Terminal Equipment - 250-500 Hp	1,533,107	960	0.14	0.01
Subtotal	16,167,722	10,128	1.65	0.12
Project Year 2038				
Terminal Equipment - 121-175 Hp	6,655,318	4,169	0.69	0.05
Terminal Equipment - 176-250 Hp	7,979,297	4,998	0.82	0.06
Terminal Equipment - 250-500 Hp	1,533,107	960	0.14	0.01
Subtotal	16,167,722	10,128	1.65	0.12

Table XX-Alt4-26. Break Bulk Terminal Equipment Annual GHG Emissions - Berths 136-147 Terminal Project
Alternative 4.

Project Scenario/Equipment Horsepower	Annual Hp-Hrs	Annual GHG Emissions (Tons) CO2	CH4	N2O
Project Year 2015				
Terminal Equipment - 121-175 Hp	293,690	184	0.03	0.00
Terminal Equipment - 176-250 Hp	352,115	221	0.04	0.00
Terminal Equipment - 250-500 Hp	67,654	42	0.01	0.00
Subtotal	713,459	447	0.07	0.01
Project Year 2025				
Terminal Equipment - 121-175 Hp	332,766	208	0.03	0.00
Terminal Equipment - 176-250 Hp	398,965	250	0.04	0.00
Terminal Equipment - 250-500 Hp	76,655	48	0.01	0.00
Subtotal	808,386	506	0.08	0.01
Project Year 2038 (1)				
Terminal Equipment - 121-175 Hp	332,766	208	0.03	0.00
Terminal Equipment - 176-250 Hp	398,965	250	0.04	0.00
Terminal Equipment - 250-500 Hp	76,655	48	0.01	0.00
Subtotal	808,386	506	0.08	0.01

Note: (1) Assumed to = 5% of the annual container terminal equipment usages.

Table XX-Alt4-27. Auto Terminal Source Annual GHG Emissions - Berths 136-147 Terminal Project Alternative 4.

Project Scenario/Equipment Horsepower	Annual Hp-Hrs	Annual GHG Emissions (Tons) CO2	CH4	N2O
All Project Years				
Terminal Equipment		143	0.02	0.00
Autos		45	0.01	0.00
Subtotal		188	0.03	0.00

Table XX-Alt4-28. Combined Terminal Source Annual GHG Emissions - Berths 136-147 Terminal Project Alternative 4.

Project Scenario/Equipment Horsepower		Annual GHG Emissions (Tons) CO2	CH4	N2O
Baseline - Year 2003				
Container Terminal Equipment		15,969	2.60	0.19
Subtotal		15,969	2.60	0.19
Project Year 2007				
Container Terminal Equipment		6,340	1.03	0.07
Subtotal		6,340	1.03	0.07
Project Year 2015				
Container Terminal Equipment		8,939	1.45	0.10
Break Bulk Terminal Equipment		447	0.07	0.01
Auto Terminal Equipment		188	0.03	0.00
Subtotal		9,573	1.56	0.11
Project Year 2025				
Container Terminal Equipment		10,128	1.65	0.12
Break Bulk Terminal Equipment		506	0.08	0.01
Auto Terminal Equipment		188	0.03	0.00
Subtotal		10,822	1.76	0.13
Project Year 2038				
Container Terminal Equipment		10,128	1.65	0.12
Break Bulk Terminal Equipment		506	0.08	0.01
Auto Terminal Equipment		188	0.03	0.00
Subtotal		10,822	1.76	0.13

Table XX-Alt4-29. Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 4 Year 2007.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler			
Top Picks			
Line Haul Locomotive - Road Haul			
Line Haul Locomotive - Notch 1			
Yard Locomotive - Switching			
Subtotal			
Berths 136-147/Inbound			
Hostler			
Top Picks			
Line Haul Locomotive - Road Haul			
Line Haul Locomotive - Notch 1			
Subtotal			
Carson or LA Railyards/Outbound			
Hostler	445	0.07	0.01
Top Picks	291	0.05	0.00
Line Haul Locomotive - Road Haul	6,932	0.97	0.07
Line Haul Locomotive - Notch 1	206	0.03	0.00
Yard Locomotive - Switching	74	0.01	0.00
Subtotal	7,947	1.13	0.08
Carson or LA Railyards/Inbound			
Hostler	167	0.03	0.00
Top Picks	109	0.02	0.00
Line Haul Locomotive - Road Haul	6,932	0.97	0.07
Line Haul Locomotive - Notch 1	103	0.01	0.00
Subtotal	7,311	1.03	0.07
Total Tons Per Year	15,258	2.15	0.15

Table XX-Alt4-30. Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 4 Year 2015.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler			
Top Picks			
Line Haul Locomotive - Road Haul			
Line Haul Locomotive - Notch 1			
Yard Locomotive - Switching			
Subtotal			
Berths 136-147/Inbound			
Hostler			
Top Picks			
Line Haul Locomotive - Road Haul			
Line Haul Locomotive - Notch 1			
Subtotal			
Carson or LA Railyards/Outbound			
Hostler	627	0.10	0.01
Top Picks	410	0.07	0.00
Line Haul Locomotive - Road Haul	9,775	1.36	0.10
Line Haul Locomotive - Notch 1	291	0.04	0.00
Yard Locomotive - Switching	104	0.01	0.00
Subtotal	11,207	1.59	0.11
Carson or LA Railyards/Inbound			
Hostler	235	0.04	0.00
Top Picks	154	0.03	0.00
Line Haul Locomotive - Road Haul	9,775	1.36	0.10
Line Haul Locomotive - Notch 1	145	0.02	0.00
Subtotal	10,309	1.45	0.10
Total Tons Per Year	21,516	3.03	0.22

Table XX-Alt4-31. Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 4 Year 2025.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler			
Top Picks			
Line Haul Locomotive - Road Haul			
Line Haul Locomotive - Notch 1			
Yard Locomotive - Switching			
Subtotal			
Berths 136-147/Inbound			
Hostler			
Top Picks			
Line Haul Locomotive - Road Haul			
Line Haul Locomotive - Notch 1			
Subtotal			
Carson or LA Railyards/Outbound			
Hostler	711	0.12	0.01
Top Picks	464	0.08	0.01
Line Haul Locomotive - Road Haul	11,077	1.54	0.11
Line Haul Locomotive - Notch 1	330	0.05	0.00
Yard Locomotive - Switching	118	0.02	0.00
Subtotal	12,700	1.80	0.13
Carson or LA Railyards/Inbound			
Hostler	267	0.04	0.00
Top Picks	174	0.03	0.00
Line Haul Locomotive - Road Haul	11,077	1.54	0.11
Line Haul Locomotive - Notch 1	165	0.02	0.00
Subtotal	11,683	1.64	0.12
Total Tons Per Year	24,382	3.44	0.25

Table XX-Alt4-32. Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 4 Year 2038.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler			
Top Picks			
Line Haul Locomotive - Road Haul			
Line Haul Locomotive - Notch 1			
Yard Locomotive - Switching			
Subtotal			
Berths 136-147/Inbound			
Hostler			
Top Picks			
Line Haul Locomotive - Road Haul			
Line Haul Locomotive - Notch 1			
Subtotal			
Carson or LA Railyards/Outbound			
Hostler	711	0.12	0.01
Top Picks	464	0.08	0.01
Line Haul Locomotive - Road Haul	11,077	1.54	0.11
Line Haul Locomotive - Notch 1	330	0.05	0.00
Yard Locomotive - Switching	118	0.02	0.00
Subtotal	12,700	1.80	0.13
Carson or LA Railyards/Inbound			
Hostler	267	0.04	0.00
Top Picks	174	0.03	0.00
Line Haul Locomotive - Road Haul	11,077	1.54	0.11
Line Haul Locomotive - Notch 1	165	0.02	0.00
Subtotal	11,683	1.64	0.12
Total Tons Per Year	24,382	3.44	0.25

Table XX-Alt4-33. Summary of Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 4.

	Tons per Year		
Project Scenario/Source Activity	CO2	CH4	N2O
Baseline Year 2003			
ICTF Equipment	2,548	0.42	0.03
Trains	35,897	5.00	0.36
Subtotal	38,445	5.42	0.39
Project Year 2007			
ICTF Equipment	1,011	0.17	0.01
Trains	14,246	1.98	0.14
Subtotal	15,258	2.15	0.15
Project Year 2015			
ICTF Equipment	1,426	0.23	0.02
Trains	20,090	2.80	0.20
Subtotal	21,516	3.03	0.22
Project Year 2025			
ICTF Equipment	1,616	0.27	0.02
Trains	22,766	3.17	0.23
Subtotal	24,382	3.44	0.25
Project Year 2038			
ICTF Equipment	1,616	0.27	0.02
Trains	22,766	3.17	0.23
Subtotal	24,382	3.44	0.25

Table XX-Alt5-1. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147
Terminal Project Alternative 5 - Vessels that Comply with Proposed VSRP.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	4,996.5	0.66	0.044
Containership < 3,000 TEU	6,606.6	0.87	0.058
Subtotal	11,603.1	1.53	0.102
Project Year 2007			
Containerships 5,000 - 6,000 TEU	5,097.5	0.67	0.045
Containerships 3,000 - 5,000 TEU	11,756.5	1.55	0.103
Containerships < 3,000 TEU	13,838.1	1.83	0.122
Subtotal	30,692.0	4.05	0.270
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	6,063.6	0.84	0.060
Containerships 3,000 - 5,000 TEU	11,723.7	1.62	0.116
Containerships < 3,000 TEU	7,335.4	1.01	0.072
Subtotal	25,122.7	3.47	0.248
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	14,993.7	2.07	0.148
Containerships 3,000 - 5,000 TEU	8,913.9	1.23	0.088
Containerships < 3,000 TEU	3,403.0	0.47	0.034
Subtotal	27,310.6	3.77	0.269
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	14,993.7	2.07	0.148
Containerships 3,000 - 5,000 TEU	8,913.9	1.23	0.088
Containerships < 3,000 TEU	3,403.0	0.47	0.034
Subtotal	27,310.6	3.77	0.269

Note: (1) Assumes 25/50/95% VSRP compliance rates for years 2003/2007/post-2007.
(2) Without slide valves

Table XX-Alt5-2. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147
Terminal Project Alternative 5 - Non-Compliant Vessels with the Proposed VSRP.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	16,534.5	2.18	0.145
Containership < 3,000 TEU	21,526.9	2.84	0.189
Subtotal	38,061.4	5.02	0.335
Project Year 2007			
Containerships 5,000 - 6,000 TEU	5,667.4	0.75	0.050
Containerships 3,000 - 5,000 TEU	12,968.2	1.71	0.114
Containerships < 3,000 TEU	15,030.1	1.98	0.132
Subtotal	33,665.7	4.44	0.296
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,137.0	0.16	0.011
Containerships 3,000 - 5,000 TEU	1,860.2	0.26	0.018
Containerships < 3,000 TEU	892.0	0.12	0.009
Subtotal	3,889.3	0.54	0.038
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,811.5	0.39	0.028
Containerships 3,000 - 5,000 TEU	1,414.4	0.20	0.014
Containerships < 3,000 TEU	413.8	0.06	0.004
Subtotal	4,639.7	0.64	0.046
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,811.5	0.39	0.028
Containerships 3,000 - 5,000 TEU	1,414.4	0.20	0.014
Containerships < 3,000 TEU	413.8	0.06	0.004
Subtotal	4,639.7	0.64	0.046

Note: (1) Assumes 75/50/05% VSRP non-compliance rates for years 2003/2007/post-2007.
(2) Fuel types assumed for each project year identified in Table D3-A1.1
(2) Without slide valves

Table XX-Alt5-3. Annual Cargo Vessel GHG Emissions within the POLA Precautionary Area - Berths 136-147 Terminal Project - Alternative 5 .

Table 2.20	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	406.1	0.05	0.004
Containership < 3,000 TEU	689.9	0.09	0.006
Subtotal	1,096.0	0.14	0.010
Project Year 2007			
Containerships 5,000 - 6,000 TEU	176.7	0.02	0.002
Containerships 3,000 - 5,000 TEU	477.8	0.06	0.004
Containerships < 3,000 TEU	722.5	0.10	0.006
Subtotal	1,377.0	0.18	0.012
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	354.5	0.05	0.003
Containerships 3,000 - 5,000 TEU	685.4	0.09	0.007
Containerships < 3,000 TEU	428.8	0.06	0.004
Subtotal	1,468.7	0.20	0.014
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	876.5	0.12	0.009
Containerships 3,000 - 5,000 TEU	521.1	0.07	0.005
Containerships < 3,000 TEU	198.9	0.03	0.002
Subtotal	1,596.6	0.22	0.016
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	876.5	0.12	0.009
Containerships 3,000 - 5,000 TEU	521.1	0.07	0.005
Containerships < 3,000 TEU	198.9	0.03	0.002
Subtotal	1,596.6	0.22	0.016

(2) Without slide valves

Table XX-Alt5-4. Annual Cargo Vessel GHG Emissions for Transit within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 5 .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	107.2	0.01	0.001
Containership < 3,000 TEU	122.2	0.02	0.001
Subtotal	229.4	0.03	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	59.9	0.01	0.001
Containerships 3,000 - 5,000 TEU	126.1	0.02	0.001
Containerships < 3,000 TEU	128.0	0.02	0.001
Subtotal	314.0	0.04	0.003
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	120.2	0.02	0.001
Containerships 3,000 - 5,000 TEU	181.0	0.03	0.002
Containerships < 3,000 TEU	76.0	0.01	0.001
Subtotal	377.2	0.05	0.004
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	297.3	0.04	0.003
Containerships 3,000 - 5,000 TEU	137.6	0.02	0.001
Containerships < 3,000 TEU	35.2	0.00	0.000
Subtotal	470.2	0.07	0.005
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	297.3	0.04	0.003
Containerships 3,000 - 5,000 TEU	137.6	0.02	0.001
Containerships < 3,000 TEU	35.2	0.00	0.000
Subtotal	470.2	0.07	0.005

Table XX-Alt5-5. Annual Cargo Vessel GHG Emissions for Docking Activities - Berths 136-147 Terminal Project - Alternative 5 .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	15.8	0.00	0.000
Containership < 3,000 TEU	18.1	0.00	0.000
Subtotal	33.9	0.00	0.000
Project Year 2007			
Containerships 5,000 - 6,000 TEU	8.9	0.00	0.000
Containerships 3,000 - 5,000 TEU	18.6	0.00	0.000
Containerships < 3,000 TEU	18.9	0.00	0.000
Subtotal	46.4	0.01	0.000
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	17.8	0.00	0.000
Containerships 3,000 - 5,000 TEU	26.7	0.00	0.000
Containerships < 3,000 TEU	11.2	0.00	0.000
Subtotal	55.7	0.01	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	43.9	0.01	0.000
Containerships 3,000 - 5,000 TEU	20.3	0.00	0.000
Containerships < 3,000 TEU	5.2	0.00	0.000
Subtotal	69.5	0.01	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	43.9	0.01	0.000
Containerships 3,000 - 5,000 TEU	20.3	0.00	0.000
Containerships < 3,000 TEU	5.2	0.00	0.000
Subtotal	69.5	0.01	0.001

(2) Without slide valves

Table XX-Alt5-6. Annual Shifting GHG Emissions for Cargo Vessels within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 5 .

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	24.8	0.00	0.000
Docking	3.7	0.00	0.000
Subtotal	28.4	0.00	0.000

Table XX-Alt5-7. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Fairway Zone (CA Waters) - Berths 136-147 Terminal Project Alternative 5 - Vessels that Comply with VSRP.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	231.8	0.03	0.002
Containership < 3,000 TEU	297.2	0.04	0.003
Subtotal	529.0	0.07	0.005
Project Year 2007			
Containerships 5,000 - 6,000 TEU	253.9	0.03	0.002
Containerships 3,000 - 5,000 TEU	545.4	0.07	0.005
Containerships < 3,000 TEU	622.6	0.08	0.006
Subtotal	1,421.9	0.19	0.013
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,684.2	0.23	0.017
Containerships 3,000 - 5,000 TEU	2,425.4	0.33	0.024
Containerships < 3,000 TEU	1,031.1	0.14	0.010
Subtotal	5,140.6	0.71	0.051
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	4,164.6	0.57	0.041
Containerships 3,000 - 5,000 TEU	1,844.1	0.25	0.018
Containerships < 3,000 TEU	478.3	0.07	0.005
Subtotal	6,487.0	0.89	0.064
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	4,164.6	0.57	0.041
Containerships 3,000 - 5,000 TEU	1,844.1	0.25	0.018
Containerships < 3,000 TEU	478.3	0.07	0.005
Subtotal	6,487.0	0.89	0.064

Note: (1) Fuel types assumed for each project year identified in Table D3-A1.1

(2) Assumes 25/50/95% VSRP compliance rates for years 2003/2007/post-2007.

Table XX-Alt5-8. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Fairway Zone (CA Waters) - Berths 136-147 Terminal Project Alternative 5 - Non-Compliant Vessels within VSRP.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	630.5	0.09	0.006
Containership < 3,000 TEU	831.3	0.11	0.008
Subtotal	1,461.8	0.20	0.014
Project Year 2007			
Containerships 5,000 - 6,000 TEU	225.9	0.03	0.002
Containerships 3,000 - 5,000 TEU	494.5	0.07	0.005
Containerships < 3,000 TEU	580.4	0.08	0.005
Subtotal	1,300.8	0.18	0.012
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	47.0	0.01	0.000
Containerships 3,000 - 5,000 TEU	73.5	0.01	0.001
Containerships < 3,000 TEU	35.7	0.00	0.000
Subtotal	156.2	0.02	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	116.2	0.02	0.001
Containerships 3,000 - 5,000 TEU	55.9	0.01	0.001
Containerships < 3,000 TEU	16.6	0.00	0.000
Subtotal	188.6	0.03	0.002
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	116.2	0.02	0.001
Containerships 3,000 - 5,000 TEU	55.9	0.01	0.001
Containerships < 3,000 TEU	16.6	0.00	0.000
Subtotal	188.6	0.03	0.002

Note: (1) Assumes 75/50/05% VSRP non-compliance rates for years 2003/2007/post-2007.

(2) Fuel types assumed for each project year identified in Table D3-A1.1

Table XX-Alt5-9. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Precautionary Area - Berths 136-147 Terminal Project - Alternative 5 .

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	202.4	0.03	0.002
Containership < 3,000 TEU	233.6	0.03	0.002
Subtotal	435.9	0.06	0.004
Project Year 2007			
Containerships 5,000 - 6,000 TEU	118.2	0.02	0.001
Containerships 3,000 - 5,000 TEU	238.1	0.03	0.002
Containerships < 3,000 TEU	244.6	0.03	0.002
Subtotal	600.9	0.08	0.006
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	245.8	0.03	0.002
Containerships 3,000 - 5,000 TEU	354.0	0.05	0.003
Containerships < 3,000 TEU	150.5	0.02	0.001
Subtotal	750.3	0.10	0.007
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,323.1	0.32	0.023
Containerships 3,000 - 5,000 TEU	1,118.3	0.15	0.011
Containerships < 3,000 TEU	331.3	0.05	0.003
Subtotal	3,772.7	0.52	0.037
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,323.1	0.32	0.023
Containerships 3,000 - 5,000 TEU	1,118.3	0.15	0.011
Containerships < 3,000 TEU	331.3	0.05	0.003
Subtotal	3,772.7	0.52	0.037

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-Alt5-10. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 5 .

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	303.7	0.04	0.003
Containership < 3,000 TEU	335.7	0.05	0.003
Subtotal	639.4	0.09	0.006
Project Year 2007			
Containerships 5,000 - 6,000 TEU	187.5	0.03	0.002
Containerships 3,000 - 5,000 TEU	357.3	0.05	0.003
Containerships < 3,000 TEU	351.6	0.05	0.003
Subtotal	896.4	0.12	0.008
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	390.0	0.05	0.004
Containerships 3,000 - 5,000 TEU	531.3	0.07	0.005
Containerships < 3,000 TEU	216.3	0.03	0.002
Subtotal	1,137.6	0.16	0.011
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	964.4	0.13	0.010
Containerships 3,000 - 5,000 TEU	404.0	0.06	0.004
Containerships < 3,000 TEU	100.4	0.01	0.001
Subtotal	1,468.7	0.20	0.014
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	964.4	0.13	0.010
Containerships 3,000 - 5,000 TEU	404.0	0.06	0.004
Containerships < 3,000 TEU	100.4	0.01	0.001
Subtotal	1,468.7	0.20	0.014

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-Alt5-11. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Docking within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 5 .

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	83.0	0.01	0.001
Containership < 3,000 TEU	91.8	0.01	0.001
Subtotal	174.8	0.02	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	51.3	0.01	0.000
Containerships 3,000 - 5,000 TEU	97.7	0.01	0.001
Containerships < 3,000 TEU	96.1	0.01	0.001
Subtotal	245.0	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	106.6	0.01	0.001
Containerships 3,000 - 5,000 TEU	145.2	0.02	0.001
Containerships < 3,000 TEU	59.1	0.01	0.001
Subtotal	311.0	0.04	0.003
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	263.6	0.04	0.003
Containerships 3,000 - 5,000 TEU	110.4	0.02	0.001
Containerships < 3,000 TEU	27.4	0.00	0.000
Subtotal	401.4	0.06	0.004
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	263.6	0.04	0.003
Containerships 3,000 - 5,000 TEU	110.4	0.02	0.001
Containerships < 3,000 TEU	27.4	0.00	0.000
Subtotal	401.4	0.06	0.004

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-Alt5-12. Annual Auxiliary Generator GHG Emissions during Cargo Vessel Hoteling - Berths 136-147 Terminal Project - Alternative 5 .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	4,777.2	0.65	0.045
Containership < 3,000 TEU	3,663.9	0.50	0.035
Subtotal	8,441.1	1.15	0.080
Project Year 2007			
Containerships 5,000 - 6,000 TEU	2,754.5	0.37	0.026
Containerships 3,000 - 5,000 TEU	5,620.2	0.76	0.053
Containerships < 3,000 TEU	3,837.2	0.52	0.036
Subtotal	12,211.9	1.66	0.115
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,145.7	0.16	0.011
Containerships 3,000 - 5,000 TEU	1,671.4	0.23	0.016
Containerships < 3,000 TEU	472.2	0.07	0.005
Subtotal	3,289.3	0.45	0.032
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-
Containerships < 3,000 TEU	-	-	-
Subtotal	-	-	-
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-
Containerships < 3,000 TEU	-	-	-
Subtotal	-	-	-

Table XX-Alt5-13. Annual Auxiliary Generator GHG Emissions during Cargo Vessel Shifts - Berths 136-147 Terminal Project - Alternative 5 .

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	34.0	0.00	0.000
Docking	9.3	0.00	0.000
Subtotal	43.3	0.01	0.000

Table XX-Alt5-14. Annual Auxiliary Generator GHG Emissions for Shifted Cargo Vessels during Hoteling - Berths 136-147 Terminal Project - Alternative 5 .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership < 3,000 TEU	742.7	0.10	0.007
Subtotal	742.7	0.10	0.007

Table XX-Alt5-17. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Transiting the Precautionary Area - Berths 136-147 Terminal Project - Alternative 5 .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	65.3	0.01	0.001
Containership < 3,000 TEU	142.1	0.02	0.001
Subtotal	207.4	0.03	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	25.0	0.00	0.000
Containerships 3,000 - 5,000 TEU	76.8	0.01	0.001
Containerships < 3,000 TEU	148.9	0.02	0.001
Subtotal	250.7	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	52.8	0.01	0.000
Containerships 3,000 - 5,000 TEU	116.2	0.01	0.001
Containerships < 3,000 TEU	93.2	0.01	0.001
Subtotal	262.2	0.03	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	130.6	0.02	0.001
Containerships 3,000 - 5,000 TEU	88.4	0.01	0.001
Containerships < 3,000 TEU	43.2	0.01	0.000
Subtotal	262.2	0.03	0.002
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	130.6	0.02	0.001
Containerships 3,000 - 5,000 TEU	88.4	0.01	0.001
Containerships < 3,000 TEU	43.2	0.01	0.000
Subtotal	262.2	0.03	0.002

(2) Does not assume use of low-sulfur fuels.

Table XX-Alt5-18. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Transiting within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 5 .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	51.8	0.01	0.000
Containership < 3,000 TEU	112.7	0.01	0.001
Subtotal	164.6	0.02	0.001
Project Year 2007			
Containerships 5,000 - 6,000 TEU	19.8	0.00	0.000
Containerships 3,000 - 5,000 TEU	60.9	0.01	0.001
Containerships < 3,000 TEU	118.1	0.02	0.001
Subtotal	198.8	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	41.9	0.01	0.000
Containerships 3,000 - 5,000 TEU	92.2	0.01	0.001
Containerships < 3,000 TEU	73.9	0.01	0.001
Subtotal	208.0	0.03	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	103.6	0.01	0.001
Containerships 3,000 - 5,000 TEU	70.1	0.01	0.001
Containerships < 3,000 TEU	34.3	0.00	0.000
Subtotal	208.0	0.03	0.002
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	103.6	0.01	0.001
Containerships 3,000 - 5,000 TEU	70.1	0.01	0.001
Containerships < 3,000 TEU	34.3	0.00	0.000
Subtotal	208.0	0.03	0.002

Table XX-Alt5-19. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Docking within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 5 .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	14.2	0.00	0.000
Containership < 3,000 TEU	30.8	0.00	0.000
Subtotal	45.0	0.01	0.000
Project Year 2007			
Containerships 5,000 - 6,000 TEU	5.4	0.00	0.000
Containerships 3,000 - 5,000 TEU	16.7	0.00	0.000
Containerships < 3,000 TEU	32.3	0.00	0.000
Subtotal	54.3	0.01	0.000
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	11.5	0.00	0.000
Containerships 3,000 - 5,000 TEU	25.2	0.00	0.000
Containerships < 3,000 TEU	20.2	0.00	0.000
Subtotal	56.8	0.01	0.000
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	28.3	0.00	0.000
Containerships 3,000 - 5,000 TEU	19.2	0.00	0.000
Containerships < 3,000 TEU	9.4	0.00	0.000
Subtotal	56.8	0.01	0.000
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	28.3	0.00	0.000
Containerships 3,000 - 5,000 TEU	19.2	0.00	0.000
Containerships < 3,000 TEU	9.4	0.00	0.000
Subtotal	56.8	0.01	0.000

(2) Does not assume use of low-sulfur fuels.

Table XX-Alt5-20. Annual Auxiliary Boiler GHG Emissions during Cargo Vessel Hoteling - Berths 136-147 Terminal Project - Alternative 5 .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	2,072.1	0.26	0.018
Containership < 3,000 TEU	2,706.0	0.34	0.023
Subtotal	4,778.1	0.61	0.041
Project Year 2007			
Containerships 5,000 - 6,000 TEU	950.7	0.12	0.008
Containerships 3,000 - 5,000 TEU	2,437.8	0.31	0.021
Containerships < 3,000 TEU	2,834.0	0.36	0.024
Subtotal	6,222.5	0.79	0.053
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,011.2	0.26	0.017
Containerships 3,000 - 5,000 TEU	3,687.2	0.47	0.031
Containerships < 3,000 TEU	1,773.5	0.23	0.015
Subtotal	7,471.9	0.95	0.063
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	4,973.1	0.63	0.042
Containerships 3,000 - 5,000 TEU	2,803.5	0.36	0.024
Containerships < 3,000 TEU	822.8	0.10	0.007
Subtotal	8,599.4	1.09	0.073
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	4,973.1	0.63	0.042
Containerships 3,000 - 5,000 TEU	2,803.5	0.36	0.024
Containerships < 3,000 TEU	822.8	0.10	0.007
Subtotal	8,599.4	1.09	0.073

(2) Does not assume use of low-sulfur fuels.

Table XX-Alt5-21. Annual Auxiliary Boiler GHG Emissions during Cargo Vessel Shifts - Berths 136-147 Terminal Project - Alternative 5 .

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	22.9	0.00	0.000
Docking	6.2	0.00	0.000
Hoteling	548.5	0.07	0.005
Subtotal	577.6	0.07	0.005

Table XX-Alt5-22. Annual Tugboat GHG Emissions for Cargo Vessel Assists - Berths 136-147 Terminal Project - Alternative 5 .

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	146.9	0.02	0.001
Containership < 3,000 TEU	219.6	0.03	0.002
Subtotal	366.5	0.05	0.004
Project Year 2007			
Subtotal	726.1	0.10	0.007
Project Year 2015			
Subtotal	759.5	0.10	0.007
Project Year 2025			
Subtotal	759.5	0.10	0.007
Project Year 2038			
Subtotal	759.5	0.10	0.007

Note: (1) Assumes 3 tug assists per ship visit for all post-baseline years.

Table XX-Alt5-23. Annual Auxiliary Generator GHG Emissions for Tugboats during Cargo Vessel Assists - Berths 136-147 Terminal Project - Alternative 5 .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	16.1	0.00	0.000
Containership < 3,000 TEU	24.1	0.00	0.000
Subtotal	40.2	0.01	0.000
Project Year 2007			
Subtotal (1)	79.5	0.01	0.001
Project Year 2015			
Subtotal (1)	83.2	0.01	0.001
Project Year 2025			
Subtotal (1)	83.2	0.01	0.001
Project Year 2038			
Subtotal (1)	83.2	0.01	0.001

Note: (1) Assumes 3 tug assists per ship visit for all post-baseline years.

Table XX-Alt5-24. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147 Terminal Project Alternative 5 - Vessels that Comply with VSRP + Slide Valves

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	6,063.6	0.84	0.060
Containerships 3,000 - 5,000 TEU	11,723.7	1.62	0.116
Containerships < 3,000 TEU	7,335.4	1.01	0.072
Subtotal	25,122.7	3.47	0.248
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	14,993.7	2.07	0.148
Containerships 3,000 - 5,000 TEU	8,913.9	1.23	0.088
Containerships < 3,000 TEU	3,403.0	0.47	0.034
Subtotal	27,310.6	3.77	0.269
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	14,993.7	2.07	0.148
Containerships 3,000 - 5,000 TEU	8,913.9	1.23	0.088
Containerships < 3,000 TEU	3,403.0	0.47	0.034
Subtotal	27,310.6	3.77	0.269

Notes: (1) Assumes 25/50/95% VSRP compliance rates for years 2003/2007/post-2007.

(2) Fuel types assumed for each project year identified in Table D3-A1.1

Table XX-Alt5-25. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147 Terminal Project Alternative 5 - Non-Compliant Vessels within VSRP + Slide Valves.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,137.0	0.16	0.011
Containerships 3,000 - 5,000 TEU	1,860.2	0.26	0.018
Containerships < 3,000 TEU	892.0	0.12	0.009
Subtotal	3,889.3	0.54	0.038
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,811.5	0.39	0.028
Containerships 3,000 - 5,000 TEU	1,414.4	0.20	0.014
Containerships < 3,000 TEU	413.8	0.06	0.004
Subtotal	4,639.7	0.64	0.046
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,811.5	0.39	0.028
Containerships 3,000 - 5,000 TEU	1,414.4	0.20	0.014
Containerships < 3,000 TEU	413.8	0.06	0.004
Subtotal	4,639.7	0.64	0.046

Note: (1) Assumes 75/50/05% VSRP non-compliance rates for years 2003/2007/post-2007.

(2) Fuel types assumed for each project year identified in Table D3-A1.1

Table XX-Alt5-26. Annual Cargo Vessel GHG Emissions within the POLA Precautionary Area - Berths 136-147 Terminal Project - Alternative 5 + Slide Valves.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	354.5	0.05	0.003
Containerships 3,000 - 5,000 TEU	685.4	0.09	0.007
Containerships < 3,000 TEU	428.8	0.06	0.004
Subtotal	1,468.7	0.20	0.014
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	876.5	0.12	0.009
Containerships 3,000 - 5,000 TEU	521.1	0.07	0.005
Containerships < 3,000 TEU	198.9	0.03	0.002
Subtotal	1,596.6	0.22	0.016
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	876.5	0.12	0.009
Containerships 3,000 - 5,000 TEU	521.1	0.07	0.005
Containerships < 3,000 TEU	198.9	0.03	0.002
Subtotal	1,596.6	0.22	0.016

Table XX-Alt5-27. Annual Cargo Vessel GHG Emissions for Transit within the POLA Breakwater - Berths 136-147 Terminal Project - Alternative 5 + Slide Valves.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	120.2	0.02	0.001
Containerships 3,000 - 5,000 TEU	181.0	0.03	0.002
Containerships < 3,000 TEU	76.0	0.01	0.001
Subtotal	377.2	0.05	0.004
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	297.3	0.04	0.003
Containerships 3,000 - 5,000 TEU	137.6	0.02	0.001
Containerships < 3,000 TEU	35.2	0.00	0.000
Subtotal	470.2	0.07	0.005
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	297.3	0.04	0.003
Containerships 3,000 - 5,000 TEU	137.6	0.02	0.001
Containerships < 3,000 TEU	35.2	0.00	0.000
Subtotal	470.2	0.07	0.005

Table XX-Alt5-28. Annual Cargo Vessel GHG Emissions for Docking Activities - Berths 136-147 Terminal Project - Alternative 5 + Slide Valves.

Project Scenario/Vessel Type	Tons Per Year		
	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	17.8	0.00	0.000
Containerships 3,000 - 5,000 TEU	26.7	0.00	0.000
Containerships < 3,000 TEU	11.2	0.00	0.000
Subtotal	55.7	0.01	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	43.9	0.01	0.000
Containerships 3,000 - 5,000 TEU	20.3	0.00	0.000
Containerships < 3,000 TEU	5.2	0.00	0.000
Subtotal	69.5	0.01	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	43.9	0.01	0.000
Containerships 3,000 - 5,000 TEU	20.3	0.00	0.000
Containerships < 3,000 TEU	5.2	0.00	0.000
Subtotal	69.5	0.01	0.001

Table XX-Alt5-29. Annual Vessel GHG Emissions - Berths 136-147 Terminal Project - Alternative 5 .

Project Scenario/GHG Emission Source	Tons Per Year		
	CO2	CH4	N2O
Year 2003 Baseline			
Ships - Fairway Transit (1)	51,655	6.82	0.46
Ships - Precautionary Area Transit (1)	1,739	0.23	0.02
Ships - Harbor Transit (1)	1,115	0.15	0.01
Ships - Docking (1)	273	0.04	0.00
Ships - Hoteling Aux. Sources	14,510	1.92	0.13
Tugboats - Cargo Vessel Assist (1)	407	0.06	0.00
Subtotal	69,700	9.22	0.62
Project Year 2007			
Ships - Fairway Transit (1)	67,080	8.86	0.59
Ships - Precautionary Area Transit (1)	2,229	0.30	0.02
Ships - Harbor Transit (1)	1,409	0.19	0.01
Ships - Docking (1)	346	0.05	0.00
Ships - Hoteling Aux. Sources	18,434	2.45	0.17
Tugboats - Cargo Vessel Assist (1)	806	0.11	0.01
Subtotal	90,304	11.95	0.80
Project Year 2015			
Ships - Fairway Transit (1)	34,309	4.73	0.34
Ships - Precautionary Area Transit (1)	2,481	0.34	0.02
Ships - Harbor Transit (1)	1,723	0.24	0.02
Ships - Docking (1)	424	0.06	0.00
Ships - Hoteling Aux. Sources	10,761	1.40	0.10
Tugboats - Cargo Vessel Assist (1)	843	0.12	0.01
Subtotal	50,540	6.89	0.49
Project Year 2025			
Ships - Fairway Transit (1)	38,626	5.33	0.38
Ships - Precautionary Area Transit (1)	5,631	0.77	0.06
Ships - Harbor Transit (1)	2,147	0.29	0.02
Ships - Docking (1)	528	0.07	0.01
Ships - Hoteling Aux. Sources	8,599	1.09	0.07
Tugboats - Cargo Vessel Assist (1)	843	0.12	0.01
Subtotal	56,374	7.68	0.54
Project Year 2038			
Ships - Fairway Transit (1)	38,626	5.33	0.38
Ships - Precautionary Area Transit (1)	5,631	0.77	0.06
Ships - Harbor Transit (1)	2,147	0.29	0.02
Ships - Docking (1)	528	0.07	0.01
Ships - Hoteling Aux. Sources	8,599	1.09	0.07
Tugboats - Cargo Vessel Assist (1)	843	0.12	0.01
Subtotal	56,374	7.68	0.54

Note: (1) Includes auxiliary power emissions.

Table XX-Alt5-30. On-Road Truck Trip Vehicle Miles Travelled in California - Berths 136-147 Terminal Project - Alternative 5.

Year	B136-149 Throughput (TEUs)	B136-149 ICTF Thruput (TEUs) (1)	TEUs to Offsite Railyard (2)	TEUs to Local Deilveries	Truck Trips to Offsite Railyard (2)	Local Truck Trips (3)	Truck Miles to Offsite Railyard (4)	Local Truck Trip Miles (5)	Composite VMT/ Truck Trip
Baseline - Year 2003	891,976	-	445,988	445,988	598,795	598,795	11.3	135.0	73.2
Year 2007	1,091,200	-	545,600	545,600	756,532	756,532	11.3	135.0	73.2
Year 2015	1,355,200	513,621	-	841,579	-	1,158,155	11.3	135.0	135.0
Year 2025	1,697,000	700,810	123,881	872,309	149,251	1,050,954	11.3	135.0	119.6
Year 2038	1,697,000	700,810	123,881	872,309	149,251	1,050,954	11.3	135.0	119.6

(1) Annual throughput estimates from Rail Master Plan.

(2) Based on 50/50/26.8/6.7/7.3% of Berths 136-147 annual cargo throughput for years 2003/2007/2010/2015/2030.

(3) Based on 50/50/61.4/62.1/63.4% of Berths 136-147 annual cargo throughput for years 2003/2007/2010/2015/2030.

(4) Assumes an even split to Carson ICTF (4.5 miles) and LA railyards (18 miles) = 11.3 miles/trip

(5) Average of local/external-CA trip lengths (20/250) that originate from/are destined to the POLA.

Table XX-Alt5-31. On-Road Truck Operational Data within California for the Berths 136-147 Terminal Project - Alternative 5.

Activity/Project Scenario	Idling Time/ Trip (Hrs) (1)	Miles/ Trip (2)	ADT	Idling Hrs/ Day	Miles/ Day
On-Terminal					
Year 2003 - Baseline	0.56	1.02	3,281	1,837	3,351
Year 2007	0.25	1.02	4,145	1,036	4,233
Year 2015	0.25	0.81	3,173	793	2,556
Year 2025	0.25	0.81	3,288	822	2,649
Year 2038	0.25	0.81	3,288	822	2,649
Off-Terminal					
Year 2003 - Baseline	0.30	73.2	3,281	984	240,010
Year 2007	0.30	73.2	4,145	1,244	303,234
Year 2015	0.30	135.0	3,173	952	428,359
Year 2025	0.30	119.6	3,288	986	393,330
Year 2038	0.30	119.6	3,288	986	393,330

Notes: (1) 2003 on-terminal durations from PEI. Post-2003 on-terminal durations from TraPac (TraPac 2006).

(2) On-terminal mileage/trip based upon current/proposed terminal gate systems. Off-terminal miles/trip from data presented in Table XX-Alt5-30.

Table XX-Alt5-32. Daily Mitigated Truck GHG Emissions for the Berths 136-147 Terminal Project - Alternative 5.

Location/Project Scenario - Mode	Pounds per Day		
	CO2	CH4	N2O
On-Terminal (1)			
Year 2003 - Idling	28,338	2.0	1.0
Year 2003 - Driving	23,387	0.7	0.4
Subtotal - Year 2003	51,725	2.8	1.4
Year 2007 - Idling	15,983	1.1	0.6
Year 2007 - Driving	29,548	0.9	0.5
Subtotal - Year 2007	45,532	2.1	1.0
Year 2015 - Idling	12,234	0.9	0.4
Year 2015 - Driving	17,842	0.6	0.3
Subtotal - Year 2015	30,077	1.4	0.7
Year 2025 - Idling	12,678	0.9	0.5
Year 2025 - Driving	18,490	0.6	0.3
Subtotal - Year 2025	31,169	1.5	0.7
Year 2038 - Idling	12,678	0.9	0.5
Year 2038 - Driving	18,490	0.6	0.3
Subtotal - Year 2038	31,169	1.5	0.7
Off-Terminal			
Year 2003 - Idling	15,181	1.1	0.5
Year 2003 - Driving	1,059,975	52.9	26.5
Subtotal - Year 2003	1,075,156	54.0	27.0
Year 2007 - Idling	19,180	1.4	0.7
Year 2007 - Driving	1,339,198	66.9	33.4
Subtotal - Year 2007	1,358,378	68.2	34.1
Year 2015 - Idling	14,681	1.0	0.5
Year 2015 - Driving	1,927,720	94.5	47.2
Subtotal - Year 2015	1,942,401	95.5	47.8
Year 2025 - Idling	15,214	1.1	0.5
Year 2025 - Driving	1,803,067	86.7	43.4
Subtotal - Year 2025	1,818,281	87.8	43.9
Year 2038 - Idling	15,214	1.1	0.5
Year 2038 - Driving	1,803,067	86.7	43.4
Subtotal - Year 2038	1,818,281	87.8	43.9
emissions			
Year 2003	1,126,881	56.8	28.4
Year 2007	1,403,910	70.3	35.2
Year 2015	1,972,477	96.9	48.5
Year 2025	1,849,449	89.3	44.7
Year 2038	1,849,449	89.3	44.7

Notes: (1) On-terminal driving emissions calculated with 10 mph emission factors.

Table XX-Alt5-33. Terminal Equipment Annual Mitigated GHG Emissions - Berths 136-147 Terminal Project Alternative 5.

Project Scenario/Equipment Horsepower	Annual Hp-Hrs	Annual GHG Emissions (Tons) (1)		
		CO2	CH4	N2O
Baseline - Year 2003				
Terminal Equipment - 121-175 Hp	10,493,875	6,574	1.08	0.08
Terminal Equipment - 176-250 Hp	12,581,479	7,881	1.30	0.09
Terminal Equipment - 250-500 Hp	2,417,350	1,514	0.22	0.02
Subtotal	25,492,704	15,969	2.60	0.19
Project Year 2007				
Terminal Equipment - 121-175 Hp	12,837,231	8,042	1.32	0.09
Terminal Equipment - 176-250 Hp	15,391,012	9,641	1.59	0.11
Terminal Equipment - 250-500 Hp	2,957,161	1,852	0.27	0.02
Subtotal	31,185,404	19,536	3.18	0.23
Project Year 2010				
Terminal Equipment - 121-175 Hp	14,079,453	8,820	1.45	0.10
Terminal Equipment - 176-250 Hp	16,880,357	10,574	1.74	0.12
Terminal Equipment - 250-500 Hp	3,243,317	2,194	0.31	0.02
Subtotal	34,203,127	21,589	3.51	0.25
Project Year 2011				
Terminal Equipment - 121-175 Hp	14,452,018	9,053	1.49	0.11
Terminal Equipment - 176-250 Hp	17,327,037	10,854	1.79	0.13
Terminal Equipment - 250-500 Hp	3,329,140	2,085	0.30	0.02
Subtotal	35,108,195	21,993	3.58	0.26
Project Year 2012				
Terminal Equipment - 121-175 Hp	14,824,582	9,287	1.53	0.11
Terminal Equipment - 176-250 Hp	17,773,718	11,134	1.83	0.13
Terminal Equipment - 250-500 Hp	3,414,964	2,139	0.31	0.02
Subtotal	36,013,263	22,560	3.67	0.26
Project Year 2013				
Terminal Equipment - 121-175 Hp	15,197,146	9,520	1.57	0.11
Terminal Equipment - 176-250 Hp	18,220,399	11,414	1.88	0.13
Terminal Equipment - 250-500 Hp	3,500,787	2,193	0.31	0.03
Subtotal	36,918,332	23,127	3.76	0.27
Project Year 2015				
Terminal Equipment - 121-175 Hp	15,942,275	9,987	1.64	0.12
Terminal Equipment - 176-250 Hp	19,113,760	11,973	1.97	0.14
Terminal Equipment - 250-500 Hp	3,672,433	2,301	0.33	0.03
Subtotal	38,728,468	24,261	3.94	0.29
Project Year 2025/2038 (2)				
Terminal Equipment - 121-175 Hp	19,968,013	12,509	2.06	0.15
Terminal Equipment - 176-250 Hp	23,940,360	14,997	2.47	0.18
Terminal Equipment - 250-500 Hp	4,599,795	2,881	0.41	0.03
Subtotal	48,508,168	30,387	4.94	0.36

Note: (1) Mitigations begin in year 2010 and are complete by 2013.

(2) In years 2025 & 2038, Hp-Hrs increased an additional 23% to simulate the effects of additional equipment usage needed to handle future cargo levels within a constrained terminal space (>8,000 TEUs/acre).

Table XX-Alt5-34. Mitigated Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 5 Year 2007.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Yard Locomotive - Switching	-	-	-
Subtotal	-	-	-
Berths 136-147/Inbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Subtotal	-	-	-
Carson or LA Railyards/Outbound			
Hostler	1,372	0.23	0.02
Top Picks	896	0.15	0.01
Line Haul Locomotive - Road Haul	21,367	2.98	0.21
Line Haul Locomotive - Notch 1	636	0.09	0.01
Yard Locomotive - Switching	227	0.03	0.00
Subtotal	24,497	3.47	0.25
Carson or LA Railyards/Inbound			
Hostler	514	0.08	0.01
Top Picks	336	0.06	0.00
Line Haul Locomotive - Road Haul	21,367	2.98	0.21
Line Haul Locomotive - Notch 1	318	0.04	0.00
Subtotal	22,535	3.16	0.23
Total Tons Per Year	47,032	6.63	0.47

Table XX-Alt5-35. Mitigated Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 5 Year 2015.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,291	0.21	0.02
Top Picks	843	0.14	0.01
Line Haul Locomotive - Road Haul	20,779	2.89	0.21
Line Haul Locomotive - Notch 1	299	0.04	0.00
Yard Locomotive - Switching	203	0.03	0.00
Subtotal	23,416	3.32	0.24
Berths 136-147/Inbound			
Hostler	484	0.08	0.01
Top Picks	316	0.05	0.00
Line Haul Locomotive - Road Haul	20,779	2.89	0.21
Line Haul Locomotive - Notch 1	299	0.04	0.00
Subtotal	21,879	3.07	0.22
Carson or LA Railyards/Outbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Yard Locomotive - Switching	-	-	-
Subtotal	-	-	-
Carson or LA Railyards/Inbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Subtotal	-	-	-
Total Tons Per Year	45,295	6.38	0.46

Table XX-Alt5-36. Mitigated Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 5 Year 2025.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,762	0.29	0.02
Top Picks	1,151	0.19	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Yard Locomotive - Switching	277	0.04	0.00
Subtotal	31,950	4.52	0.32
Berths 136-147/Inbound			
Hostler	661	0.11	0.01
Top Picks	431	0.07	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Subtotal	29,853	4.19	0.30
Carson or LA Railyards/Outbound			
Hostler	311	0.05	0.00
Top Picks	203	0.03	0.00
Line Haul Locomotive - Road Haul	4,851	0.68	0.05
Line Haul Locomotive - Notch 1	144	0.02	0.00
Yard Locomotive - Switching	51	0.01	0.00
Subtotal	5,562	0.79	0.06
Carson or LA Railyards/Inbound			
Hostler	117	0.02	0.00
Top Picks	76	0.01	0.00
Line Haul Locomotive - Road Haul	4,851	0.68	0.05
Line Haul Locomotive - Notch 1	72	0.01	0.00
Subtotal	5,117	0.72	0.05
Total Tons Per Year	72,482	10.22	0.73

Table XX-Alt5-37. Mitigated Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project Alternative 5 Year 2038.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,762	0.29	0.02
Top Picks	1,151	0.19	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Yard Locomotive - Switching	277	0.04	0.00
Subtotal	31,950	4.52	0.32
Berths 136-147/Inbound			
Hostler	661	0.11	0.01
Top Picks	431	0.07	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Subtotal	29,853	4.19	0.30
Carson or LA Railyards/Outbound			
Hostler	311	0.05	0.00
Top Picks	203	0.03	0.00
Line Haul Locomotive - Road Haul	4,851	0.68	0.05
Line Haul Locomotive - Notch 1	144	0.02	0.00
Yard Locomotive - Switching	51	0.01	0.00
Subtotal	5,562	0.79	0.06
Carson or LA Railyards/Inbound			
Hostler	117	0.02	0.00
Top Picks	76	0.01	0.00
Line Haul Locomotive - Road Haul	4,851	0.68	0.05
Line Haul Locomotive - Notch 1	72	0.01	0.00
Subtotal	5,117	0.72	0.05
Total Tons Per Year	72,482	10.22	0.73

Table XX-Alt5-38. Summary of Mitigated Annual Train and Rail Yard Cargo Handling Equipment Mitigated GHG Emissions - Berths 136-147 Terminal Project Alternative 5.

Project Scenario/Source Activity	Tons per Year		
	CO2	CH4	N2O
Baseline Year 2003			
ICTF Equipment	2,548	0.42	0.03
Trains	35,897	5.00	0.36
Subtotal	38,445	5.42	0.39
Project Year 2007			
ICTF Equipment	3,118	0.51	0.04
Trains	43,914	6.12	0.44
Subtotal	47,032	6.63	0.47
Project Year 2015			
ICTF Equipment	2,935	0.48	0.03
Trains	42,360	5.90	0.42
Subtotal	45,295	6.38	0.46
Project Year 2025			
ICTF Equipment	4,712	0.78	0.06
Trains	67,769	9.44	0.67
Subtotal	72,482	10.22	0.73
Project Year 2038			
ICTF Equipment	4,712	0.78	0.06
Trains	67,769	9.44	0.67
Subtotal	72,482	10.22	0.73

Table XX-NFAB-Mit-1. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147 Terminal Project NEPA Baseline - Vessels that Comply with Proposed VSRP.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	4,996.5	0.66	0.044
Containership < 3,000 TEU	6,606.6	0.87	0.058
Subtotal	11,603.1	1.53	0.102
Project Year 2007			
Containerships 5,000 - 6,000 TEU	4,313.2	0.57	0.038
Containerships 3,000 - 5,000 TEU	11,756.5	1.55	0.103
Containerships < 3,000 TEU	13,748.8	1.81	0.121
Subtotal	29,818.5	3.93	0.262
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	8,268.6	1.14	0.082
Containerships 3,000 - 5,000 TEU	8,817.0	1.22	0.087
Containerships < 3,000 TEU	10,511.6	1.45	0.104
Subtotal	27,597.1	3.81	0.272
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	14,993.7	2.07	0.148
Containerships 3,000 - 5,000 TEU	8,913.9	1.23	0.088
Containerships < 3,000 TEU	3,403.0	0.47	0.034
Subtotal	27,310.6	3.77	0.269
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	14,993.7	2.07	0.148
Containerships 3,000 - 5,000 TEU	8,913.9	1.23	0.088
Containerships < 3,000 TEU	3,403.0	0.47	0.034
Subtotal	27,310.6	3.77	0.269

Note: (1) Assumes 25/50/95% VSRP compliance rates for years 2003/2007/post-2007.

(2) Without slide valves

Table XX-NFAB-Mit-2. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147 Terminal Project NEPA Baseline - Non-Compliant Vessels with the Proposed VSRP.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	16,534.5	2.18	0.145
Containership < 3,000 TEU	21,526.9	2.84	0.189
Subtotal	38,061.4	5.02	0.335
Project Year 2007			
Containerships 5,000 - 6,000 TEU	4,795.5	0.63	0.042
Containerships 3,000 - 5,000 TEU	12,968.2	1.71	0.114
Containerships < 3,000 TEU	14,933.1	1.97	0.131
Subtotal	32,696.8	4.31	0.288
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,550.5	0.21	0.015
Containerships 3,000 - 5,000 TEU	1,399.0	0.19	0.014
Containerships < 3,000 TEU	1,278.3	0.18	0.013
Subtotal	4,227.7	0.58	0.042
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,811.5	0.39	0.028
Containerships 3,000 - 5,000 TEU	1,414.4	0.20	0.014
Containerships < 3,000 TEU	413.8	0.06	0.004
Subtotal	4,639.7	0.64	0.046
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,811.5	0.39	0.028
Containerships 3,000 - 5,000 TEU	1,414.4	0.20	0.014
Containerships < 3,000 TEU	413.8	0.06	0.004
Subtotal	4,639.7	0.64	0.046

Note: (1) Assumes 75/50/05% VSRP non-compliance rates for years 2003/2007/post-2007.

(2) Fuel types assumed for each project year identified in Table D3-A1.1

(2) Without slide valves

Table XX-NFAB-Mit-3. Annual Cargo Vessel GHG Emissions within the POLA Precautionary Area - Berths 136-147 Terminal Project - NEPA Baseline .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	406.1	0.05	0.004
Containership < 3,000 TEU	689.9	0.09	0.006
Subtotal	1,096.0	0.14	0.010
Project Year 2007			
Containerships 5,000 - 6,000 TEU	149.5	0.02	0.001
Containerships 3,000 - 5,000 TEU	477.8	0.06	0.004
Containerships < 3,000 TEU	717.9	0.09	0.006
Subtotal	1,345.2	0.18	0.012
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	483.4	0.07	0.005
Containerships 3,000 - 5,000 TEU	515.4	0.07	0.005
Containerships < 3,000 TEU	614.5	0.08	0.006
Subtotal	1,613.4	0.22	0.016
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	876.5	0.12	0.009
Containerships 3,000 - 5,000 TEU	521.1	0.07	0.005
Containerships < 3,000 TEU	198.9	0.03	0.002
Subtotal	1,596.6	0.22	0.016
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	876.5	0.12	0.009
Containerships 3,000 - 5,000 TEU	521.1	0.07	0.005
Containerships < 3,000 TEU	198.9	0.03	0.002
Subtotal	1,596.6	0.22	0.016

(2) Without slide valves

Table XX-NFAB-Mit-4. Annual Cargo Vessel GHG Emissions for Transit within the POLA Breakwater - Berths 136-147 Terminal Project - NEPA Baseline .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	107.2	0.01	0.001
Containership < 3,000 TEU	122.2	0.02	0.001
Subtotal	229.4	0.03	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	50.7	0.01	0.000
Containerships 3,000 - 5,000 TEU	126.1	0.02	0.001
Containerships < 3,000 TEU	127.1	0.02	0.001
Subtotal	304.0	0.04	0.003
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	164.0	0.02	0.002
Containerships 3,000 - 5,000 TEU	136.1	0.02	0.001
Containerships < 3,000 TEU	108.9	0.02	0.001
Subtotal	408.9	0.06	0.004
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	297.3	0.04	0.003
Containerships 3,000 - 5,000 TEU	137.6	0.02	0.001
Containerships < 3,000 TEU	35.2	0.00	0.000
Subtotal	470.2	0.07	0.005
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	297.3	0.04	0.003
Containerships 3,000 - 5,000 TEU	137.6	0.02	0.001
Containerships < 3,000 TEU	35.2	0.00	0.000
Subtotal	470.2	0.07	0.005

Table XX-NFAB-Mit-5. Annual Cargo Vessel GHG Emissions for Docking Activities - Berths 136-147 Terminal Project - NEPA Baseline .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	15.8	0.00	0.000
Containership < 3,000 TEU	18.1	0.00	0.000
Subtotal	33.9	0.00	0.000
Project Year 2007			
Containerships 5,000 - 6,000 TEU	7.5	0.00	0.000
Containerships 3,000 - 5,000 TEU	18.6	0.00	0.000
Containerships < 3,000 TEU	18.8	0.00	0.000
Subtotal	44.9	0.01	0.000
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	24.2	0.00	0.000
Containerships 3,000 - 5,000 TEU	20.1	0.00	0.000
Containerships < 3,000 TEU	16.1	0.00	0.000
Subtotal	60.4	0.01	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	43.9	0.01	0.000
Containerships 3,000 - 5,000 TEU	20.3	0.00	0.000
Containerships < 3,000 TEU	5.2	0.00	0.000
Subtotal	69.5	0.01	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	43.9	0.01	0.000
Containerships 3,000 - 5,000 TEU	20.3	0.00	0.000
Containerships < 3,000 TEU	5.2	0.00	0.000
Subtotal	69.5	0.01	0.001

(2) Without slide valves

Table XX-NFAB-Mit-6. Annual Shifting GHG Emissions for Cargo Vessels within the POLA Breakwater - Berths 136-147 Terminal Project - NEPA Baseline .

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	24.8	0.00	0.000
Docking	3.7	0.00	0.000
Subtotal	28.4	0.00	0.000

Table XX-NFAB-Mit-7. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Fairway Zone (CA Waters) - Berths 136-147 Terminal Project NEPA Baseline - Vessels that Comply with VSRP.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	231.8	0.03	0.002
Containership < 3,000 TEU	297.2	0.04	0.003
Subtotal	529.0	0.07	0.005
Project Year 2007			
Containerships 5,000 - 6,000 TEU	214.8	0.03	0.002
Containerships 3,000 - 5,000 TEU	545.4	0.07	0.005
Containerships < 3,000 TEU	618.6	0.08	0.006
Subtotal	1,378.8	0.19	0.013
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,296.7	0.32	0.023
Containerships 3,000 - 5,000 TEU	1,824.0	0.25	0.018
Containerships < 3,000 TEU	1,477.5	0.20	0.015
Subtotal	5,598.2	0.77	0.055
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	4,164.6	0.57	0.041
Containerships 3,000 - 5,000 TEU	1,844.1	0.25	0.018
Containerships < 3,000 TEU	478.3	0.07	0.005
Subtotal	6,487.0	0.89	0.064
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	4,164.6	0.57	0.041
Containerships 3,000 - 5,000 TEU	1,844.1	0.25	0.018
Containerships < 3,000 TEU	478.3	0.07	0.005
Subtotal	6,487.0	0.89	0.064

Note: (1) Fuel types assumed for each project year identified in Table D3-A1.1

(2) Assumes 25/50/95% VSRP compliance rates for years 2003/2007/post-2007.

Table XX-NFAB-Mit-8. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Fairway Zone (CA Waters) - Berths 136-147 Terminal Project NEPA Baseline - Non-Compliant Vessels within VSRP.

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	630.5	0.09	0.006
Containership < 3,000 TEU	831.3	0.11	0.008
Subtotal	1,461.8	0.20	0.014
Project Year 2007			
Containerships 5,000 - 6,000 TEU	191.1	0.03	0.002
Containerships 3,000 - 5,000 TEU	494.5	0.07	0.005
Containerships < 3,000 TEU	576.7	0.08	0.005
Subtotal	1,262.3	0.17	0.012
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	64.1	0.01	0.001
Containerships 3,000 - 5,000 TEU	55.3	0.01	0.001
Containerships < 3,000 TEU	51.2	0.01	0.001
Subtotal	170.5	0.02	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	116.2	0.02	0.001
Containerships 3,000 - 5,000 TEU	55.9	0.01	0.001
Containerships < 3,000 TEU	16.6	0.00	0.000
Subtotal	188.6	0.03	0.002
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	116.2	0.02	0.001
Containerships 3,000 - 5,000 TEU	55.9	0.01	0.001
Containerships < 3,000 TEU	16.6	0.00	0.000
Subtotal	188.6	0.03	0.002

Note: (1) Assumes 75/50/05% VSRP non-compliance rates for years 2003/2007/post-2007.

(2) Fuel types assumed for each project year identified in Table D3-A1.1

Table XX-NFAB-Mit-9. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting the Precautionary Area - Berths 136-147 Terminal Project - NEPA Baseline .

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	202.4	0.03	0.002
Containership < 3,000 TEU	233.6	0.03	0.002
Subtotal	435.9	0.06	0.004
Project Year 2007			
Containerships 5,000 - 6,000 TEU	100.0	0.01	0.001
Containerships 3,000 - 5,000 TEU	238.1	0.03	0.002
Containerships < 3,000 TEU	243.0	0.03	0.002
Subtotal	581.1	0.08	0.005
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	335.2	0.05	0.003
Containerships 3,000 - 5,000 TEU	266.2	0.04	0.003
Containerships < 3,000 TEU	215.7	0.03	0.002
Subtotal	817.1	0.11	0.008
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,323.1	0.32	0.023
Containerships 3,000 - 5,000 TEU	1,118.3	0.15	0.011
Containerships < 3,000 TEU	331.3	0.05	0.003
Subtotal	3,772.7	0.52	0.037
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,323.1	0.32	0.023
Containerships 3,000 - 5,000 TEU	1,118.3	0.15	0.011
Containerships < 3,000 TEU	331.3	0.05	0.003
Subtotal	3,772.7	0.52	0.037

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-NFAB-Mit-10. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Transiting within the POLA Breakwater - Berths 136-147 Terminal Project - NEPA Baseline .

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	303.7	0.04	0.003
Containership < 3,000 TEU	335.7	0.05	0.003
Subtotal	639.4	0.09	0.006
Project Year 2007			
Containerships 5,000 - 6,000 TEU	158.7	0.02	0.001
Containerships 3,000 - 5,000 TEU	357.3	0.05	0.003
Containerships < 3,000 TEU	349.3	0.05	0.003
Subtotal	865.3	0.12	0.008
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	531.8	0.07	0.005
Containerships 3,000 - 5,000 TEU	399.6	0.06	0.004
Containerships < 3,000 TEU	310.0	0.04	0.003
Subtotal	1,241.4	0.17	0.012
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	964.4	0.13	0.010
Containerships 3,000 - 5,000 TEU	404.0	0.06	0.004
Containerships < 3,000 TEU	100.4	0.01	0.001
Subtotal	1,468.7	0.20	0.014
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	964.4	0.13	0.010
Containerships 3,000 - 5,000 TEU	404.0	0.06	0.004
Containerships < 3,000 TEU	100.4	0.01	0.001
Subtotal	1,468.7	0.20	0.014

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-NFAB-Mit-11. Annual Auxiliary Generator GHG Emissions for Cargo Vessels Docking within the POLA Breakwater - Berths 136-147 Terminal Project - NEPA Baseline .

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	83.0	0.01	0.001
Containership < 3,000 TEU	91.8	0.01	0.001
Subtotal	174.8	0.02	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	43.4	0.01	0.000
Containerships 3,000 - 5,000 TEU	97.7	0.01	0.001
Containerships < 3,000 TEU	95.5	0.01	0.001
Subtotal	236.5	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	145.4	0.02	0.001
Containerships 3,000 - 5,000 TEU	109.2	0.02	0.001
Containerships < 3,000 TEU	84.7	0.01	0.001
Subtotal	339.3	0.05	0.003
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	263.6	0.04	0.003
Containerships 3,000 - 5,000 TEU	110.4	0.02	0.001
Containerships < 3,000 TEU	27.4	0.00	0.000
Subtotal	401.4	0.06	0.004
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	263.6	0.04	0.003
Containerships 3,000 - 5,000 TEU	110.4	0.02	0.001
Containerships < 3,000 TEU	27.4	0.00	0.000
Subtotal	401.4	0.06	0.004

Note: (1) Assumes 37/63% residual/diesel fuel usage (PEI Table 2.3).

Table XX-NFAB-Mit-12. Annual Auxiliary Generator GHG Emissions during Cargo Vessel Hoteling - Berths 136-147 Terminal Project - NEPA Baseline .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	4,777.2	0.65	0.045
Containership < 3,000 TEU	3,663.9	0.50	0.035
Subtotal	8,441.1	1.15	0.080
Project Year 2007			
Containerships 5,000 - 6,000 TEU	2,330.7	0.32	0.022
Containerships 3,000 - 5,000 TEU	5,620.2	0.76	0.053
Containerships < 3,000 TEU	3,812.5	0.52	0.036
Subtotal	11,763.4	1.60	0.111
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,562.3	0.22	0.015
Containerships 3,000 - 5,000 TEU	1,257.0	0.17	0.012
Containerships < 3,000 TEU	676.6	0.09	0.007
Subtotal	3,496.0	0.48	0.034
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-
Containerships < 3,000 TEU	-	-	-
Subtotal	-	-	-
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	-	-	-
Containerships 3,000 - 5,000 TEU	-	-	-
Containerships < 3,000 TEU	-	-	-
Subtotal	-	-	-

Table XX-NFAB-Mit-13. Annual Auxiliary Generator GHG Emissions during Cargo Vessel Shifts - Berths 136-147 Terminal Project - NEPA Baseline .

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	34.0	0.00	0.000
Docking	9.3	0.00	0.000
Subtotal	43.3	0.01	0.000

Table XX-NFAB-Mit-14. Annual Auxiliary Generator GHG Emissions for Shifted Cargo Vessels during Hoteling - Berths 136-147 Terminal Project - NEPA Baseline .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership < 3,000 TEU	742.7	0.10	0.007
Subtotal	742.7	0.10	0.007

Table XX-NFAB-Mit-17. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Transiting the Precautionary Area - Berths 136-147 Terminal Project - NEPA Baseline .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	65.3	0.01	0.001
Containership < 3,000 TEU	142.1	0.02	0.001
Subtotal	207.4	0.03	0.002
Project Year 2007			
Containerships 5,000 - 6,000 TEU	21.1	0.00	0.000
Containerships 3,000 - 5,000 TEU	76.8	0.01	0.001
Containerships < 3,000 TEU	147.9	0.02	0.001
Subtotal	245.8	0.03	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	72.0	0.01	0.001
Containerships 3,000 - 5,000 TEU	87.4	0.01	0.001
Containerships < 3,000 TEU	133.5	0.02	0.001
Subtotal	292.9	0.04	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	130.6	0.02	0.001
Containerships 3,000 - 5,000 TEU	88.4	0.01	0.001
Containerships < 3,000 TEU	43.2	0.01	0.000
Subtotal	262.2	0.03	0.002
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	130.6	0.02	0.001
Containerships 3,000 - 5,000 TEU	88.4	0.01	0.001
Containerships < 3,000 TEU	43.2	0.01	0.000
Subtotal	262.2	0.03	0.002

(2) Does not assume use of low-sulfur fuels.

Table XX-NFAB-Mit-18. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Transiting within the POLA Breakwater - Berths 136-147 Terminal Project - NEPA Baseline .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	51.8	0.01	0.000
Containership < 3,000 TEU	112.7	0.01	0.001
Subtotal	164.6	0.02	0.001
Project Year 2007			
Containerships 5,000 - 6,000 TEU	16.8	0.00	0.000
Containerships 3,000 - 5,000 TEU	60.9	0.01	0.001
Containerships < 3,000 TEU	117.3	0.01	0.001
Subtotal	195.0	0.02	0.002
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	57.1	0.01	0.000
Containerships 3,000 - 5,000 TEU	69.3	0.01	0.001
Containerships < 3,000 TEU	105.9	0.01	0.001
Subtotal	232.4	0.03	0.002
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	103.6	0.01	0.001
Containerships 3,000 - 5,000 TEU	70.1	0.01	0.001
Containerships < 3,000 TEU	34.3	0.00	0.000
Subtotal	208.0	0.03	0.002
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	103.6	0.01	0.001
Containerships 3,000 - 5,000 TEU	70.1	0.01	0.001
Containerships < 3,000 TEU	34.3	0.00	0.000
Subtotal	208.0	0.03	0.002

Table XX-NFAB-Mit-19. Annual Auxiliary Boiler GHG Emissions for Cargo Vessels Docking within the POLA Breakwater - Berths 136-147 Terminal Project - NEPA Baseline .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	14.2	0.00	0.000
Containership < 3,000 TEU	30.8	0.00	0.000
Subtotal	45.0	0.01	0.000
Project Year 2007			
Containerships 5,000 - 6,000 TEU	4.6	0.00	0.000
Containerships 3,000 - 5,000 TEU	16.7	0.00	0.000
Containerships < 3,000 TEU	32.1	0.00	0.000
Subtotal	53.3	0.01	0.000
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	15.6	0.00	0.000
Containerships 3,000 - 5,000 TEU	18.9	0.00	0.000
Containerships < 3,000 TEU	28.9	0.00	0.000
Subtotal	63.5	0.01	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	28.3	0.00	0.000
Containerships 3,000 - 5,000 TEU	19.2	0.00	0.000
Containerships < 3,000 TEU	9.4	0.00	0.000
Subtotal	56.8	0.01	0.000
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	28.3	0.00	0.000
Containerships 3,000 - 5,000 TEU	19.2	0.00	0.000
Containerships < 3,000 TEU	9.4	0.00	0.000
Subtotal	56.8	0.01	0.000

(2) Does not assume use of low-sulfur fuels.

Table XX-NFAB-Mit-20. Annual Auxiliary Boiler GHG Emissions during Cargo Vessel Hoteling - Berths 136-147 Terminal Project - NEPA Baseline .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	2,072.1	0.26	0.018
Containership < 3,000 TEU	2,706.0	0.34	0.023
Subtotal	4,778.1	0.61	0.041
Project Year 2007			
Containerships 5,000 - 6,000 TEU	804.5	0.10	0.007
Containerships 3,000 - 5,000 TEU	2,437.8	0.31	0.021
Containerships < 3,000 TEU	2,815.7	0.36	0.024
Subtotal	6,057.9	0.77	0.051
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,742.5	0.35	0.023
Containerships 3,000 - 5,000 TEU	2,773.0	0.35	0.024
Containerships < 3,000 TEU	2,541.4	0.32	0.022
Subtotal	8,057.0	1.03	0.068
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	4,973.1	0.63	0.042
Containerships 3,000 - 5,000 TEU	2,803.5	0.36	0.024
Containerships < 3,000 TEU	822.8	0.10	0.007
Subtotal	8,599.4	1.09	0.073
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	4,973.1	0.63	0.042
Containerships 3,000 - 5,000 TEU	2,803.5	0.36	0.024
Containerships < 3,000 TEU	822.8	0.10	0.007
Subtotal	8,599.4	1.09	0.073

Table XX-NFAB-Mit-21. Annual Auxiliary Boiler GHG Emissions during Cargo Vessel Shifts - Berths 136-147 Terminal Project - NEPA Baseline .

	Tons Per Year		
Project Scenario/Vessel Mode	CO2	CH4	N2O
Year 2003 Baseline			
Transit	22.9	0.00	0.000
Docking	6.2	0.00	0.000
Hoteling	548.5	0.07	0.005
Subtotal	577.6	0.07	0.005

Table XX-NFAB-Mit-22. Annual Tugboat GHG Emissions for Cargo Vessel Assists - Berths 136-147 Terminal Project - NEPA Baseline .

	Tons Per Year (1)		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	146.9	0.02	0.001
Containership < 3,000 TEU	219.6	0.03	0.002
Subtotal	366.5	0.05	0.004
Project Year 2007			
Subtotal	712.2	0.10	0.007
Project Year 2015			
Subtotal	848.5	0.12	0.008
Project Year 2025			
Subtotal	759.5	0.10	0.007
Project Year 2038			
Subtotal	759.5	0.10	0.007

Note: (1) Assumes 3 tug assists per ship visit for all post-baseline years.

Table XX-NFAB-Mit-23. Annual Auxiliary Generator GHG Emissions for Tugboats during Cargo Vessel Assists - Berths 136-147 Terminal Project - NEPA Baseline .

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Year 2003 Baseline			
Containership 3,000 - 5,000 TEU	16.1	0.00	0.000
Containership < 3,000 TEU	24.1	0.00	0.000
Subtotal	40.2	0.01	0.000
Project Year 2007			
Subtotal (1)	78.0	0.01	0.001
Project Year 2015			
Subtotal (1)	93.0	0.01	0.001
Project Year 2025			
Subtotal (1)	83.2	0.01	0.001
Project Year 2038			
Subtotal (1)	83.2	0.01	0.001

Note: (1) Assumes 3 tug assists per ship visit for all post-baseline years.

Table XX-NFAB-Mit-24. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147 Terminal Project NEPA Baseline - Vessels that Comply with VSRP + Slide Valves

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	8,268.6	1.14	0.082
Containerships 3,000 - 5,000 TEU	8,817.0	1.22	0.087
Containerships < 3,000 TEU	10,511.6	1.45	0.104
Subtotal	27,597.1	3.81	0.272
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	14,993.7	2.07	0.148
Containerships 3,000 - 5,000 TEU	8,913.9	1.23	0.088
Containerships < 3,000 TEU	3,403.0	0.47	0.034
Subtotal	27,310.6	3.77	0.269
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	14,993.7	2.07	0.148
Containerships 3,000 - 5,000 TEU	8,913.9	1.23	0.088
Containerships < 3,000 TEU	3,403.0	0.47	0.034
Subtotal	27,310.6	3.77	0.269

Notes: (1) Assumes 25/50/95% VSRP compliance rates for years 2003/2007/post-2007.

(2) Fuel types assumed for each project year identified in Table D3-A1.1

Table XX-NFAB-Mit-25. Annual Cargo Vessel GHG Emissions within the POLA Fairway Zone (CA Waters) - Berths 136-147 Terminal Project NEPA Baseline - Non-Compliant Vessels within VSRP + Slide Valves.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	1,550.5	0.21	0.015
Containerships 3,000 - 5,000 TEU	1,399.0	0.19	0.014
Containerships < 3,000 TEU	1,278.3	0.18	0.013
Subtotal	4,227.7	0.58	0.042
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,811.5	0.39	0.028
Containerships 3,000 - 5,000 TEU	1,414.4	0.20	0.014
Containerships < 3,000 TEU	413.8	0.06	0.004
Subtotal	4,639.7	0.64	0.046
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	2,811.5	0.39	0.028
Containerships 3,000 - 5,000 TEU	1,414.4	0.20	0.014
Containerships < 3,000 TEU	413.8	0.06	0.004
Subtotal	4,639.7	0.64	0.046

Note: (1) Assumes 75/50/05% VSRP non-compliance rates for years 2003/2007/post-2007.

(2) Fuel types assumed for each project year identified in Table D3-A1.1

Table XX-NFAB-Mit-26. Annual Cargo Vessel GHG Emissions within the POLA Precautionary Area - Berths 136-147 Terminal Project - NEPA Baseline + Slide Valves.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	483.4	0.07	0.005
Containerships 3,000 - 5,000 TEU	515.4	0.07	0.005
Containerships < 3,000 TEU	614.5	0.08	0.006
Subtotal	1,613.4	0.22	0.016
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	876.5	0.12	0.009
Containerships 3,000 - 5,000 TEU	521.1	0.07	0.005
Containerships < 3,000 TEU	198.9	0.03	0.002
Subtotal	1,596.6	0.22	0.016
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	876.5	0.12	0.009
Containerships 3,000 - 5,000 TEU	521.1	0.07	0.005
Containerships < 3,000 TEU	198.9	0.03	0.002
Subtotal	1,596.6	0.22	0.016

Table XX-NFAB-Mit-27. Annual Cargo Vessel GHG Emissions for Transit within the POLA Breakwater - Berths 136-147 Terminal Project - NEPA Baseline + Slide Valves.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	164.0	0.02	0.002
Containerships 3,000 - 5,000 TEU	136.1	0.02	0.001
Containerships < 3,000 TEU	108.9	0.02	0.001
Subtotal	408.9	0.06	0.004
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	297.3	0.04	0.003
Containerships 3,000 - 5,000 TEU	137.6	0.02	0.001
Containerships < 3,000 TEU	35.2	0.00	0.000
Subtotal	470.2	0.07	0.005
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	297.3	0.04	0.003
Containerships 3,000 - 5,000 TEU	137.6	0.02	0.001
Containerships < 3,000 TEU	35.2	0.00	0.000
Subtotal	470.2	0.07	0.005

Table XX-NFAB-Mit-28. Annual Cargo Vessel GHG Emissions for Docking Activities - Berths 136-147 Terminal Project - NEPA Baseline + Slide Valves.

	Tons Per Year		
Project Scenario/Vessel Type	CO2	CH4	N2O
Project Year 2015			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	24.2	0.00	0.000
Containerships 3,000 - 5,000 TEU	20.1	0.00	0.000
Containerships < 3,000 TEU	16.1	0.00	0.000
Subtotal	60.4	0.01	0.001
Project Year 2025			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	43.9	0.01	0.000
Containerships 3,000 - 5,000 TEU	20.3	0.00	0.000
Containerships < 3,000 TEU	5.2	0.00	0.000
Subtotal	69.5	0.01	0.001
Project Year 2038			
Containerships 8,000 - 9,000 TEU	-	-	-
Containerships 5,000 - 6,000 TEU	43.9	0.01	0.000
Containerships 3,000 - 5,000 TEU	20.3	0.00	0.000
Containerships < 3,000 TEU	5.2	0.00	0.000
Subtotal	69.5	0.01	0.001

Table XX-NFAB-Mit-29. Annual Vessel GHG Emissions - Berths 136-147 Terminal Project - NEPA Baseline .

Project Scenario/GHG Emission Source	Tons Per Year		
	CO2	CH4	N2O
Year 2003 Baseline			
Ships - Fairway Transit (1)	51,655.31	6.82	0.46
Ships - Precautionary Area Transit (1)	1,739.40	0.23	0.02
Ships - Harbor Transit (1)	1,115.02	0.15	0.01
Ships - Docking (1)	272.85	0.04	0.00
Ships - Hoteling Aux. Sources	14,510.42	1.92	0.13
Tugboats - Cargo Vessel Assist (1)	406.68	0.06	0.00
Subtotal	69,699.67	9.22	0.62
Project Year 2007			
Ships - Fairway Transit (1)	65,156.48	8.61	0.57
Ships - Precautionary Area Transit (1)	2,172.16	0.29	0.02
Ships - Harbor Transit (1)	1,364.30	0.18	0.01
Ships - Docking (1)	334.74	0.04	0.00
Ships - Hoteling Aux. Sources	17,821.35	2.37	0.16
Tugboats - Cargo Vessel Assist (1)	790.23	0.11	0.01
Subtotal	87,639.25	11.60	0.78
Project Year 2015			
Ships - Fairway Transit (1)	37,593.61	5.19	0.37
Ships - Precautionary Area Transit (1)	2,723.36	0.37	0.03
Ships - Harbor Transit (1)	1,882.69	0.26	0.02
Ships - Docking (1)	463.24	0.06	0.00
Ships - Hoteling Aux. Sources	11,552.91	1.51	0.10
Tugboats - Cargo Vessel Assist (1)	941.49	0.13	0.01
Subtotal	55,157.31	7.52	0.53
Project Year 2025			
Ships - Fairway Transit (1)	38,625.93	5.33	0.38
Ships - Precautionary Area Transit (1)	5,631.45	0.77	0.06
Ships - Harbor Transit (1)	2,146.87	0.29	0.02
Ships - Docking (1)	527.76	0.07	0.01
Ships - Hoteling Aux. Sources	8,599.36	1.09	0.07
Tugboats - Cargo Vessel Assist (1)	842.71	0.12	0.01
Subtotal	56,374.08	7.68	0.54
Project Year 2038			
Ships - Fairway Transit (1)	38,625.93	5.33	0.38
Ships - Precautionary Area Transit (1)	5,631.45	0.77	0.06
Ships - Harbor Transit (1)	2,146.87	0.29	0.02
Ships - Docking (1)	527.76	0.07	0.01
Ships - Hoteling Aux. Sources	8,599.36	1.09	0.07
Tugboats - Cargo Vessel Assist (1)	842.71	0.12	0.01
Subtotal	56,374.08	7.68	0.54

Note: (1) Includes auxiliary power emissions.

Table XX-NFAB-Mit-30. On-Road Truck Trip Vehicle Miles Travelled in California - Berths 136-147 Terminal Project - NEPA Baseline.

Year	B136-149 Throughput (TEUs)	B136-149 ICTF Thruput (TEUs) (1)	TEUs to Offsite Railyard (2)	TEUs to Local Deilveries	Truck Trips to Offsite Railyard (2)	Local Truck Trips (3)	Truck Miles to Offsite Railyard (4)	Local Truck Trip Miles (5)	Composite VMT/ Truck Trip
Baseline - Year 2003	891,976	-	445,988	445,988	598,795	598,795	11.3	135.0	73.2
Year 2007	1,056,000	-	528,000	528,000	732,128	732,128	11.3	135.0	73.2
Year 2015	1,491,000	552,709	12,380	925,911	17,037	1,274,210	11.3	135.0	133.4
Year 2025	1,697,000	700,810	123,881	872,309	149,251	1,050,954	11.3	135.0	119.6
Year 2038	1,697,000	700,810	123,881	872,309	149,251	1,050,954	11.3	135.0	119.6

(1) Annual throughput estimates from Rail Master Plan.

(2) Based on 50/50/26.8/6.7/7.3% of Berths 136-147 annual cargo throughput for years 2003/2007/2010/2015/2030.

(3) Based on 50/50/61.4/62.1/63.4% of Berths 136-147 annual cargo throughput for years 2003/2007/2010/2015/2030.

(4) Assumes an even split to Carson ICTF (4.5 miles) and LA railyards (18 miles) = 11.3 miles/trip

(5) Average of local/external-CA trip lengths (20/250) that originate from/are destined to the POLA.

Table XX-NFAB-Mit-31. On-Road Truck Operational Data within California for the Berths 136-147 Terminal Project - NEPA Baseline.

Activity/Project Scenario	Idling Time/ Trip (Hrs) (1)	Miles/ Trip (2)	ADT	Idling Hrs/ Day	Miles/ Day
On-Terminal					
Year 2003 - Baseline	0.56	1.02	3,281	1,837	3,351
Year 2007	0.25	1.02	4,012	1,003	4,097
Year 2015	0.25	0.81	3,538	884	2,850
Year 2025	0.25	0.81	3,288	822	2,649
Year 2038	0.25	0.81	3,288	822	2,649
Off-Terminal					
Year 2003 - Baseline	0.30	73.2	3,281	984	240,010
Year 2007	0.30	73.2	4,012	1,203	293,453
Year 2015	0.30	133.4	3,538	1,061	471,811
Year 2025	0.30	119.6	3,288	986	393,330
Year 2038	0.30	119.6	3,288	986	393,330

Notes: (1) 2003 on-terminal durations from PEI. Post-2003 on-terminal durations from TraPac (TraPac 2006).

(2) On-terminal mileage/trip based upon current/proposed terminal gate systems. Off-terminal miles/trip from data presented in Table XX-NFAB-Mit-30.

Table XX-NFAB-Mit-32. Daily Mitigated Truck GHG Emissions for the Berths 136-147 Terminal Project - NEPA Baseline.

Location/Project Scenario - Mode	Pounds per Day		
	CO2	CH4	N2O
On-Terminal (1)			
Year 2003 - Idling	28,338	2.0	1.0
Year 2003 - Driving	23,387	0.7	0.4
Subtotal - Year 2003	51,725	2.8	1.4
Year 2007 - Idling	15,468	1.1	0.6
Year 2007 - Driving	28,595	0.9	0.5
Subtotal - Year 2007	44,063	2.0	1.0
Year 2015 - Idling	13,640	1.0	0.5
Year 2015 - Driving	19,893	0.6	0.3
Subtotal - Year 2015	33,533	1.6	0.8
Year 2025 - Idling	12,678	0.9	0.5
Year 2025 - Driving	18,490	0.6	0.3
Subtotal - Year 2025	31,169	1.5	0.7
Year 2038 - Idling	12,678	0.9	0.5
Year 2038 - Driving	18,490	0.6	0.3
Subtotal - Year 2038	31,169	1.5	0.7
Off-Terminal			
Year 2003 - Idling	15,181	1.1	0.5
Year 2003 - Driving	1,059,975	52.9	26.5
Subtotal - Year 2003	1,075,156	54.0	27.0
Year 2007 - Idling	18,561	1.3	0.7
Year 2007 - Driving	1,295,999	64.7	32.4
Subtotal - Year 2007	1,314,560	66.0	33.0
Year 2015 - Idling	16,368	1.2	0.6
Year 2015 - Driving	2,123,263	104.0	52.0
Subtotal - Year 2015	2,139,632	105.2	52.6
Year 2025 - Idling	15,214	1.1	0.5
Year 2025 - Driving	1,803,067	86.7	43.4
Subtotal - Year 2025	1,818,281	87.8	43.9
Year 2038 - Idling	15,214	1.1	0.5
Year 2038 - Driving	1,803,067	86.7	43.4
Subtotal - Year 2038	1,818,281	87.8	43.9
Year 2003	1,126,881	56.8	28.4
Year 2007	1,358,623	68.0	34.0
Year 2015	2,173,164	106.8	53.4
Year 2025	1,849,449	89.3	44.7
Year 2038	1,849,449	89.3	44.7

Notes: (1) On-terminal driving emissions calculated with 10 mph emission factors.

Table XX-NFAB-Mit-33. Terminal Equipment Annual Mitigated GHG Emissions - Berths 136-147 Terminal Project NEPA Baseline.

Project Scenario/Equipment Horsepower	Annual Hp-Hrs	Annual GHG Emissions (Tons) (1)		
		CO2	CH4	N2O
Baseline - Year 2003				
Terminal Equipment - 121-175 Hp	10,493,875	6,574	1.08	0.08
Terminal Equipment - 176-250 Hp	12,581,479	7,881	1.30	0.09
Terminal Equipment - 250-500 Hp	2,417,350	1,514	0.22	0.02
Subtotal	25,492,704	15,969	2.60	0.19
Project Year 2007				
Terminal Equipment - 121-175 Hp	12,423,941	7,783	1.28	0.09
Terminal Equipment - 176-250 Hp	14,895,504	9,331	1.54	0.11
Terminal Equipment - 250-500 Hp	2,861,956	1,793	0.26	0.02
Subtotal	30,181,402	18,907	3.07	0.22
Project Year 2010				
Terminal Equipment - 121-175 Hp	15,898,206	9,959	1.64	0.12
Terminal Equipment - 176-250 Hp	19,060,924	11,940	1.96	0.14
Terminal Equipment - 250-500 Hp	3,662,282	2,478	0.36	0.03
Subtotal	38,621,412	24,377	3.96	0.28
Project Year 2011				
Terminal Equipment - 121-175 Hp	16,226,975	10,165	1.67	0.12
Terminal Equipment - 176-250 Hp	19,455,096	12,187	2.01	0.14
Terminal Equipment - 250-500 Hp	3,738,016	2,342	0.34	0.02
Subtotal	39,420,087	24,694	4.01	0.29
Project Year 2012				
Terminal Equipment - 121-175 Hp	16,555,743	10,371	1.71	0.12
Terminal Equipment - 176-250 Hp	19,849,268	12,434	2.05	0.15
Terminal Equipment - 250-500 Hp	3,813,751	2,389	0.34	0.03
Subtotal	40,218,762	25,194	4.10	0.29
Project Year 2013				
Terminal Equipment - 121-175 Hp	16,884,511	10,577	1.74	0.12
Terminal Equipment - 176-250 Hp	20,243,441	12,681	2.09	0.15
Terminal Equipment - 250-500 Hp	3,889,485	2,437	0.35	0.03
Subtotal	41,017,437	25,695	4.18	0.30
Project Year 2015				
Terminal Equipment - 121-175 Hp	17,542,048	10,989	1.81	0.13
Terminal Equipment - 176-250 Hp	21,031,785	13,175	2.17	0.15
Terminal Equipment - 250-500 Hp	4,040,954	2,531	0.36	0.03
Subtotal	42,614,787	26,695	4.34	0.31
Project Year 2025/2038				
Terminal Equipment - 121-175 Hp	19,968,013	12,509	2.06	0.15
Terminal Equipment - 176-250 Hp	23,940,360	14,997	2.47	0.18
Terminal Equipment - 250-500 Hp	4,599,795	2,881	0.41	0.03
Subtotal	48,508,168	30,387	4.94	0.36

Note: (1) Mitigations begin in year 2010 and are complete by 2013.

Table XX-NFAB-Mit-34. Mitigated Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project NEPA Baseline Year 2007.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Yard Locomotive - Switching	-	-	-
Subtotal	-	-	-
Berths 136-147/Inbound			
Hostler	-	-	-
Top Picks	-	-	-
Line Haul Locomotive - Road Haul	-	-	-
Line Haul Locomotive - Notch 1	-	-	-
Subtotal	-	-	-
Carson or LA Railyards/Outbound			
Hostler	1,327	0.22	0.02
Top Picks	867	0.14	0.01
Line Haul Locomotive - Road Haul	20,678	2.88	0.21
Line Haul Locomotive - Notch 1	615	0.09	0.01
Yard Locomotive - Switching	219	0.03	0.00
Subtotal	23,707	3.36	0.24
Carson or LA Railyards/Inbound			
Hostler	498	0.08	0.01
Top Picks	325	0.05	0.00
Line Haul Locomotive - Road Haul	20,678	2.88	0.21
Line Haul Locomotive - Notch 1	308	0.04	0.00
Subtotal	21,808	3.06	0.22
Total Tons Per Year	45,515	6.42	0.46

Table XX-NFAB-Mit-35. Mitigated Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project NEPA Baseline Year 2015.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,389	0.23	0.02
Top Picks	907	0.15	0.01
Line Haul Locomotive - Road Haul	22,361	3.11	0.22
Line Haul Locomotive - Notch 1	322	0.04	0.00
Yard Locomotive - Switching	218	0.03	0.00
Subtotal	25,198	3.57	0.25
Berths 136-147/Inbound			
Hostler	521	0.09	0.01
Top Picks	340	0.06	0.00
Line Haul Locomotive - Road Haul	22,361	3.11	0.22
Line Haul Locomotive - Notch 1	322	0.04	0.00
Subtotal	23,544	3.30	0.24
Carson or LA Railyards/Outbound			
Hostler	31	0.01	0.00
Top Picks	20	0.00	0.00
Line Haul Locomotive - Road Haul	485	0.07	0.00
Line Haul Locomotive - Notch 1	14	0.00	0.00
Yard Locomotive - Switching	5	0.00	0.00
Subtotal	556	0.08	0.01
Carson or LA Railyards/Inbound			
Hostler	12	0.00	0.00
Top Picks	8	0.00	0.00
Line Haul Locomotive - Road Haul	485	0.07	0.00
Line Haul Locomotive - Notch 1	7	0.00	0.00
Subtotal	511	0.07	0.01
Total Tons Per Year	49,809	7.02	0.50

Table XX-NFAB-Mit-36. Mitigated Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project NEPA Baseline Year 2025.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,762	0.29	0.02
Top Picks	1,151	0.19	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Yard Locomotive - Switching	277	0.04	0.00
Subtotal	31,950	4.52	0.32
Berths 136-147/Inbound			
Hostler	661	0.11	0.01
Top Picks	431	0.07	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Subtotal	29,853	4.19	0.30
Carson or LA Railyards/Outbound			
Hostler	311	0.05	0.00
Top Picks	203	0.03	0.00
Line Haul Locomotive - Road Haul	4,851	0.68	0.05
Line Haul Locomotive - Notch 1	144	0.02	0.00
Yard Locomotive - Switching	51	0.01	0.00
Subtotal	5,562	0.79	0.06
Carson or LA Railyards/Inbound			
Hostler	117	0.02	0.00
Top Picks	76	0.01	0.00
Line Haul Locomotive - Road Haul	4,851	0.68	0.05
Line Haul Locomotive - Notch 1	72	0.01	0.00
Subtotal	5,117	0.72	0.05
Total Tons Per Year	72,482	10.22	0.73

Table XX-NFAB-Mit-37. Mitigated Annual Train and Rail Yard Cargo Handling Equipment GHG Emissions - Berths 136-147 Terminal Project NEPA Baseline Year 2038.

	Tons per Year		
ICTF/Train Direction/Source Activity	CO2	CH4	N2O
Berths 136-147/Outbound			
Hostler	1,762	0.29	0.02
Top Picks	1,151	0.19	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Yard Locomotive - Switching	277	0.04	0.00
Subtotal	31,950	4.52	0.32
Berths 136-147/Inbound			
Hostler	661	0.11	0.01
Top Picks	431	0.07	0.01
Line Haul Locomotive - Road Haul	28,352	3.95	0.28
Line Haul Locomotive - Notch 1	408	0.06	0.00
Subtotal	29,853	4.19	0.30
Carson or LA Railyards/Outbound			
Hostler	311	0.05	0.00
Top Picks	203	0.03	0.00
Line Haul Locomotive - Road Haul	4,851	0.68	0.05
Line Haul Locomotive - Notch 1	144	0.02	0.00
Yard Locomotive - Switching	51	0.01	0.00
Subtotal	5,562	0.79	0.06
Carson or LA Railyards/Inbound			
Hostler	117	0.02	0.00
Top Picks	76	0.01	0.00
Line Haul Locomotive - Road Haul	4,851	0.68	0.05
Line Haul Locomotive - Notch 1	72	0.01	0.00
Subtotal	5,117	0.72	0.05
Total Tons Per Year	72,482	10.22	0.73

Table XX-NFAB-Mit-38. Summary of Mitigated Annual Train and Rail Yard Cargo Handling Equipment Mitigated GHG Emissions - Berths 136-147 Terminal Project NEPA Baseline.

	Tons per Year		
Project Scenario/Source Activity	CO2	CH4	N2O
Baseline Year 2003			
ICTF Equipment	2,548	0.42	0.03
Trains	35,897	5.00	0.36
Subtotal	38,445	5.42	0.39
Project Year 2007			
ICTF Equipment	3,017	0.50	0.04
Trains	42,498	5.92	0.42
Subtotal	45,515	6.42	0.46
Project Year 2015			
ICTF Equipment	3,229	0.53	0.04
Trains	46,581	6.49	0.46
Subtotal	49,809	7.02	0.50
Project Year 2025			
ICTF Equipment	4,712	0.78	0.06
Trains	67,769	9.44	0.67
Subtotal	72,482	10.22	0.73
Project Year 2038			
ICTF Equipment	4,712	0.78	0.06
Trains	67,769	9.44	0.67
Subtotal	72,482	10.22	0.73