

Test Case Worksheet for Emission Sources and Criteria
Test Case: Port of Tacoma: Master Plan for Marine Terminal Expansion

General description: the Port would be its own lead agency for a SEPA EIS for its Master Plan to expand the Port. The Port would fund construction of the infrastructure for the new terminal. Future tenants (e.g., Hanjin Shipping) would then lease the terminal space and would operate the terminal. With the exception of initial construction emissions, the tenants would generate all of the future GHG emissions.

Emissions Source	Examples	Addressed in another SEPA document?	Credibly measured or assessed?	Boundary Determined?	Importance to Climate Change Impacts?	Mitigation Available?
Direct Emissions (Emitted by the Proponent)						
Construction	Generators and equipment exhaust, this includes off-site haul trucks during construction?	Favorable. Usually the responsibility of the proponent.	Favorable. There are readily available tools to calculate construction and dredging emissions.	Favorable. Boundary is easy to define.	Favorable. Construction emissions can be very large from some types of SEPA proposals.	Favorable. Use of biofuels is feasible. The proponent can also pay GHG offset fees.
On-Site Mobile Sources and Company-Owned VMT	Mobile sources operating within the Proponent's facility. Company-owned vehicles traveling off-site.	Favorable. Usually the responsibility of the proponent.	Favorable. There are readily available tools to calculate	Favorable. Boundary is easy to define.	Favorable. Non-road emissions are an important part of state-wide emissions	Favorable. Use of biofuels is feasible. The proponent can also pay GHG offset fees.
Stationary Sources and Direct Facility Emissions	On-site combustion processes usually from company-owned equipment.	Favorable. Usually the responsibility of the proponent. In this case the future tenants would generate the emissions, but the Port should be able to quantify the emissions as part of the Master Plan.	Favorable. Emissions would be generated by tenants, not by the SEPA proponent. There are readily available tools for stationary sources typically found at a marine terminal (space heating, power generation)	Favorable. Boundary is easy to define for on-site facilities.	Favorable. Industrial process emissions are an important part of state-wide emissions	Favorable. Space heating emissions can be reduced by conventional methods. The proponent can also pay GHG offset fees.
Fugitive Emissions	GHG emitted from points other than tailpipes, vents, stacks, or other locations that can be collected. E.g., landfill gas emissions, gas pipeline fugitive losses, enteric emissions from livestock.	Not applicable. Few fugitive emissions at a typical marine terminal.				
Direct	Livestock methane, land clearing,	N/A for a marine terminal				

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Agricultural Emissions	fertilizer application, and on-site manure handling.					
Forestry Conversion and other land or aquatic vegetation disturbance	One-time soil-carbon emissions during land clearing, and permanent annual loss of CO ₂ sink following removal of trees or vegetation.	Favorable. Usually the responsibility of the proponent.	Favorable. If the Port graded existing native vegetation, then IPCC equations can forecast the loss-of-sink.	Favorable. Boundary easily defined.	Favorable. Probably a minor fraction of GHG emissions at a Port, but this is an important component of state-side emissions.	Favorable. If the Port can't avoid wetlands and upland plants, they would have to mitigate by off-site restoration. Then, they can purchase GHG offset credits.
Maintenance activities	Emissions from equipment, chemicals	Favorable. Usually the responsibility of the proponent.	Favorable. There are readily available tools	Favorable. Boundary easily defined	Favorable. Maintenance activity would be a small fraction of GHG emissions at a Port, but this category contributes to state-wide emissions.	Favorable. The Port could use biofuels for maintenance equipment. The proponent can also pay GHG offset fees.
Indirect Emissions (Emitted by Parties Other Than SEPA Proponent)						
Off-Site Extraction of Purchased Materials	Off-site mining, timber mining/extraction, petroleum products (e.g. fuel and plastic products) for products and materials that are used by the proposal.	Unfavorable. Marine terminal construction would require lumber, concrete, asphalt, concrete, and steel, which would be mined or logged from a wide variety of sources that are not subject to SEPA. Operation would require use of diesel fuel for marine vessels, locomotives and trucks, which originate from oil wells not subject to SEPA.	Unfavorable. The SEPA proponent would not be able to accurately calculate emissions from mining of limestone, iron ore, and aggregate needed to build the facility. The Port cannot forecast the source of the crude oil used to refine diesel oil used to power future tenants' ships, trains, and trucks.	Unfavorable. The Port would not be able to identify the mines and oil fields used to supply raw materials used to build the Port and to refine diesel oil.	Unfavorable. Mining (limestone and iron ore) and oil extraction are negligible contributors to Washington's GHG emissions.	Unfavorable. The SEPA proponent (the Port) would have little control over emissions from ore mining and oil production for materials purchased by future tenants. The only feasible mitigation measure would be GHG offset fees.
Off-site Processing of Purchased	Energy used and emissions from processing raw materials or end products purchased by a proponent (e.g. cement, metals, plastics, wood,	Unfavorable. Marine terminal construction would require lumber, concrete, asphalt, concrete, and steel,	Unfavorable. The SEPA proponent (Port of Tacoma) would not be able to accurately	Unfavorable. Diesel oil used to operate marine vessels, trains, and trucks would be	Questionable. Cement plants, oil refineries, and steel mills are important GHG	Unfavorable. The SEPA proponent (the Port) would have little control over oil

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Materials	fuel).	which would be purchased from a wide variety of industrial plants that are not subject to SEPA. The Port would use little fuel for future operation, but the tenants would use large amounts of fuel. Tneant operation would require use of diesel fuel for marine vessels, locomotives and trucks, which originate from oil refineries not subject to SEPA.	calculate emissions from mining of limestone, iron ore, and aggregate needed to build the facility. Diesel fuel used to operate the marine terminal would be purchased by future tenants, not by the SEPA proponent (the Port). The Port cannot forecast the source of the crude oil used to refine diesel oil used to power future tenants' ships, trains, and trucks, so the SEPA proponent could not accurately predict their emissions.	purchased by future tenants, not by the SEPA proponent (the Port). The SEPA proponent would not be able to define where the purchased materials would originate from.	emission sources in Washington State. However, it is uncertain whether the steel and diesel fuel used by the future tenants would originate in Washington state.	refining for diesel fuel used by future tenants. The only feasible mitigation measure would be GHG offset fees.
Transportation of materials by Non-Company Owned Transport	Delivery of purchased raw materials to the facility by non-company-owned trucks, and shipment of produced product from the facility by non-company-owned trucks.	Unfavorable. Marine vessels, trains and trucks used to haul material into and out of the Port would be owned by companies not subject to SEPA. The shipping companies would contract to the Port's future tenants, not directly to the SEPA proponent (the Port).	Favorable. Diesel fuel usage and GHG emissions by future tenants can be predicted with reasonable accuracy.	Unfavorable. Marine vessels visiting the Port's tenants originate from worldwide sources, and trains departing the Port's tenants are heading for destinations throughout the U.S. The SEPA proponent (the Port) cannot accurately predict the origins and destinations for its tenants' shipments.	Favorable. Ships, trains and trucks are major contributors to Washington state GHG emissions.	Unfavorable. The SEPA proponent (the Port) would have little control over fuel usage and GHG emissions generated by shipping companies contracted to future tenants.
Employee Commute VMT	Tailpipe emissions from employee commuting	Questionable. Future employees would work for future tenants, not for the SEPA proponent (the Port).	Favorable. If the Port can predict its future tenant's employment figures, then the Port can predict VMT emissions from its	Favorable. Tenant commuter travel would be in the near vicinity to the Port.	Favorable. VMT emissions are a major contributor to Washington state GHG emissions.	Questionable. Can the SEPA proponent (the Port) control commuter travel by future tenants?

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Other Indirect VMT	Traffic from associated development, indirect change in traffic pattern, customer VMT (vs. company owned), associated public services (parks, emergency response)	Favorable. Other future developments that would affect traffic patterns around the Port will likely be subject to SEPA.	tenants' commuters. Favorable. The Port should be able to forecast future changes in traffic patterns and VMT indirectly caused by its tenants' new contribution to regional traffic.	Favorable. The Port's SEPA traffic impact analysis would be able to define the geographical boundary of the traffic study area.	Favorable. VMT emissions are a major contributor to Washington state GHG emissions.	Unfavorable. The SEPA proponent would have no control over travel patterns by outsiders. The only available mitigation would be purchase of GHG offset fees.
Purchased electricity	Off-site emissions from energy power plants that provide electricity to the proponent.	Unfavorable. Electricity would be purchased from power plants not subject to SEPA.	Favorable. GHG emissions from purchased electricity are easily calculated.	Favorable. The electricity providers are well defined.	Favorable. GHG emissions by out-of-state fossil fuel power plants are a major contributor to Washington state GHG emissions.	Favorable. The SEPA proponent (the Port) could impose energy conservation measures on future tenant improvements.
Water Use and Off-Site Wastewater Disposal	Quantity used during construction, operation and closure, -energy used to provide water and dispose of polluted water. GHG emitted from off-site pump stations and water treatment plants for water used by proposal. GHG emitted from off-site sewage lift stations and POTWs used to convey and treat wastewater from the proposed SEPA facility. This includes fugitive methane from POTWs. It does not include biogenic CO2 emitted from POTWs.	Questionable. The local water utility and POTW will eventually be subject to SEPA for their long-range plans. However, it is unknown if those SEPA actions would be completed in time for consideration as part of the Port's SEPA EIS for the expansion project.	Unfavorable. The Port would have difficulty obtaining records from the water district and the POTW with enough detail to allow the Port calculate GHG emissions per million gallons of water purchase or POTW discharges.	Favorable. The local water utility and the local POTW are well defined.	Unfavorable. GHG emissions from electricity usage and POTW emissions contribute only a small fraction of state-wide GHG emissions.	Unfavorable. Few mitigation options would be available, other than to buy GHG offsets.
Off-Site Solid Waste	Off-site emissions from disposal of all types of waste (construction, agriculture, general trash, food). Could include tailpipe emissions from trucks and trains used to collect refuse and haul it to the disposal site and off-site emissions from pre-processing of solid waste	Unfavorable. The regional MSW landfill will eventually be subject to SEPA for their long-range plans. However, it is unlikely the landfill's SEPA actions would be completed in time for	Unfavorable. The Port would have difficulty obtaining records from the regional landfill with enough detail to allow the Port calculate GHG emissions per ton of	Favorable. The location of the regional landfill and associated transfer facilities is easily defined.	Favorable. Landfill emissions are a contributor to state-wide GHG emissions.	Unfavorable. Few mitigation options would be available, other than to buy GHG offsets.

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Off-Site End-use emissions from use of proponent's products sold to others	Use and disposal of products sold by the proponent to consumers, industry etc. This could include emissions generated from combustion of fuels manufactured or distributed by the proposed facility.	Unfavorable. The Port would not be able to determine which of its tenants' customers have been subject to recent SEPA actions.	Unfavorable. The Port would not be able to predict how its tenants' exported materials are used and disposed of. Such emission calculations would be impossible.	Unfavorable. The Port would not be able to determine who will use its exported products over the life of the project.	Unfavorable. Many of the Port's tenants' products would likely be used by end-use customers outside of Washington.	Unfavorable. The Port and its tenants would be unable to forecast these emissions, and there would be no feasible way to mitigate the emissions.