

Westway Terminal Company LLC (the applicant) is proposing to expand its existing bulk liquid storage and distribution facility at the Port of Grays Harbor (Port) in Hoquiam, Washington.

The applicant's objective of the proposed action is to expand the existing bulk liquid storage terminal to receive crude oil by train, store the crude oil, and load crude oil onto tank vessels at the Terminal 1 dock for shipping to refineries.

This summary provides an overview of key elements of the environmental review process and the Final Environmental Impact Statement (Final EIS).

Environmental Review Process

What is the purpose of the environmental review process?

The Washington State Environmental Policy Act (SEPA) requires state and local agencies in Washington to identify and consider the environmental impacts that could result from governmental decisions including issuing permits for private projects, such as the proposed action.

Under SEPA, an EIS process is necessary if a proposed project is likely to result in significant adverse environmental impacts. An EIS provides the public and agencies with information about the effects of a proposed project and informs local and state agency permitting decisions.

What are the roles of the City of Hoquiam and the Washington State Department of Ecology?

The City of Hoquiam and the Washington State Department of Ecology (Ecology) served as co-lead agencies in the development of the EIS. The City of Hoquiam and Ecology issued a SEPA Determination of Significance on April 4, 2014, for the proposed action. This determination provided notice of the intent to develop a Draft EIS and Final EIS.

How does the proposed action relate to the REG (formerly Imperium Terminal Services) Expansion Project?

The City of Hoquiam and Ecology are co-lead agencies for a SEPA review process for a similar proposal adjacent to the Westway project site, the REG (formerly Imperium Terminal Services) Expansion Project. Although these projects are unrelated, because the proposals are similar, the sites are located in the same community, and the applications were submitted at the same time, the co-lead agencies conducted some parts of the EIS process jointly. Public comment periods and hearings were conducted at the same time. Parallel and joint expanded public review allows for greater efficiency and aids in transparent community engagement.

How were the public, agencies, and tribes involved in the development of the Draft and Final EISs?

The first step in the SEPA EIS process is called *scoping*. The co-lead agencies asked members of the public, agencies, and tribes to comment on what should be analyzed in the Draft EIS during the scoping period between April 10 and May 27, 2014. The co-lead agencies established the scope of the Draft EIS based on state and local SEPA guidance and comments received during the scoping period.

The co-leads coordinated with applicable state and local agencies with technical expertise or jurisdiction during the development of the Draft EIS. The co-leads also requested information from the Quinault Indian Nation and the Confederated Tribes of the Chehalis Reservation to identify important tribal resources and assess potential impacts of the proposed action on tribal resources.

The co-lead agencies then released the Draft EIS for public review and comment on August 31, 2015. The initial expanded 60-day public comment period, which ran through October 29, 2015, was further extended for a total of 90 days, closing on November 30, 2015.

Comments were accepted by mail, online, and in person at two public hearings held on the following days.

- October 1, 2015, 1:00 to 9:00 p.m., at the Satsop Business Park, Flextech Building, 150 Technology Way, Elma, WA 98541
- October 8, 2015, 1:00 to 9:00 p.m., at the D&R Theatre, 205 South I Street, Aberdeen, WA 98520

Approximately 97,000 comment submissions were received during the public comment period, from federal, state, and local agencies; tribes; organizations; and the public. The co-lead agencies reviewed and considered all the comments in the development of the Final EIS. All comments on the Draft EIS and the responses to those comments are presented in the Final EIS.

Alternatives

What is the proposed action?

The applicant is proposing to expand its existing methanol distribution facility at Terminal 1 at the Port in Hoquiam, Washington, to handle (unload and load) and store crude oil. The applicant plans to continue to operate the existing methanol distribution facility as it does currently and dedicate new capacity to the handling and storage of crude oil. The methanol facility and operations are separate and are not part of the proposed action so it are included as part of the environmental review under the no-action alternative.

The maximum amount of crude oil that could be stored on site would be 42 million gallons (1 million barrels). The maximum annual throughput of crude oil would be 751.8 million gallons (17.9 million barrels).

The proposed action involves constructing a facility on the applicant's existing industrial property at Port Terminal 1. The facility would include five bulk liquid storage tanks (each with a capacity of 8.4 million gallons or 200,000 barrels), new and modified rail spurs, rail-unloading equipment, vessel

loading equipment, and pumps and pipelines connecting the storage tanks to loading and unloading areas.

Crude oil would be delivered to the project site by rail, and is expected to come in the form of Bakken crude oil from the Intermountain Region and Central United States or diluted bitumen from Alberta, Canada. From Centralia, all trains would use the Puget Sound & Pacific Railroad (PS&P) rail line ¹ to reach the project site. At maximum throughput, operation of the proposed action would result in an average of 1.25 unit train trips² per day along the PS&P rail line (458 per year).

Crude oil would be transported from the project site by tank vessel (tanker or tank barge), likely to refineries in the Puget Sound area and California. At maximum throughput, operation of the proposed action would result in 0.7 tank vessel trip³ every other day (238 trips per year).

Construction would occur in two phases. Phase 1, which would include all structures except for three of the five storage tanks, is would begin upon receipt of all permits and approvals and is anticipated to last 10 to 12 months. If the applicant decides to construct Phase 2, the construction of the three remaining storage tanks is anticipated to last 10 months. The proposed action would become operational upon completion of construction, which was assumed for the purposes of the analysis to be 2017.

What is the no-action alternative?

In addition to the proposed action, SEPA requires that the no-action alternative be evaluated to provide a baseline of comparison for the proposed action. Under the no-action alternative, none of the proposed facility would be constructed and the applicant would continue to operate its existing facility.

Significant Areas of Controversy and Uncertainty

Concerns have been raised throughout the preparation of the EIS, including during the public scoping and Draft EIS public comment periods.

Scoping comments centered mostly on public safety and environmental impacts related to transportation. Rail transport concerns include increases in air pollutants, vehicle delay at and near PS&P rail line grade crossings (including emergency vehicle access and delay), and the hazards and costs related to potential oil spills, fires, or explosions. Vessel transport concerns have also focused on hazards and costs related to potential oil spills, fires, or explosions. Because oil spill response requires specialized equipment, there is also concern that local emergency responders may not be adequately trained, staffed, or equipped should an incident occur. Concerns were also raised about the potential for the proposed action to affect human health, recreational resources, natural resources, tribal resources, cultural resources, and greenhouse gas emissions. Further concerns were described about the potential for increased safety risks related to a tsunami at the project site. Additionally, commenters emphasized that the environmental review consider the cumulative impacts of implementing all three of the proposals to operate bulk liquid terminals at the Port that

¹ A short line that runs between Centralia and Hoquiam, Washington.

² A trip represents one-way travel; in other words, an inbound trip and an outbound trip are counted as two trips.

³ A vessel trip also represents one-way travel.

are currently before the co-lead agencies: the proposed action, the REG (formerly Imperium Terminal Services) Expansion Project, and Grays Harbor Rail Terminal Expansion Project.

Approximately 97,000 comments were submitted during the comment period for the Draft EIS. The majority of comments focused on the following concerns.

- The potential for an incident involving crude oil, particularly related to offsite rail transport, and the related potential for impacts on public health and safety, the environment, and the local economy. Also, the potential limits of liability for response to and cleanup of an oil spill.
- The geographic scope of the study area analyzed in Chapter 3, *Affected Environment, Impacts and Mitigation*, and Chapter 4, *Environmental Health and Safety*, and the desire for a more detailed analysis in the extended study area and consideration of all proposed crude oil terminal projects in the state.
- The potential for impacts on treaty rights, namely the Quinault Indian Nation's Usual and Accustomed fishing areas.
- The risks associated with siting the facility in an earthquake and tsunami hazard area.
- Greenhouse gas emissions from extended rail and vessel transport and the potential for the proposed action to induce crude oil production at the source. The contribution of these emissions to global emissions and climate change.
- Health risks related to emissions of diesel particulate matter, especially from rail operations between the rail yard and the project site.

Environmental Impacts and Applicant Mitigation Measures

This section summarizes the environmental impacts that would likely result from construction and routine operation of the proposed action, measures that have been identified to mitigate those impacts, and unavoidable and significant adverse impacts that would remain after mitigation. This section also summarizes the environmental health and safety impacts related to oil spills, fires, and explosions; the impacts that could occur outside the detailed study area; and the contribution of the proposed action to cumulative impacts. Additionally, economic, social policy, and cost-benefit considerations are included as required by the Hoquiam Municipal Code.

What is the study area and what activities were analyzed?

The study area is specific to each element of the environment but in most cases includes the following components.

- Resources on and near the project site that could be affected by construction and onsite operations.
- Resources along the PS&P rail line—from Centralia, Washington, to the project site—that could be affected by rail transport.
- Resources in and around Grays Harbor that could be affected by vessel transport.

The project site is limited to the property leased by the applicant on which the existing and proposed facility are and would be located. Activities at the project site would include construction (e.g., clearing the site and erecting storage tanks) and operations (e.g., rail unloading and vessel loading) that would be directly under the control of the applicant. These activities would be subject to the permit conditions that would be required by the City of Hoquiam, Ecology, and other state and local agencies.

Transport of crude oil to and from the project site by rail and vessel would occur under the responsibility of the rail and vessel operators, respectively. Although the applicant does not have control over rail and vessel transport, implementation of the proposed action would generate rail and vessel trips that could result in environmental impacts along these transportation corridors. The rail and vessel transportation corridors affected would vary depending on the source of the crude oil and the final destination. However, all rail trips generated by the proposed action would occur along the PS&P rail line between Centralia and the project site because this is the only rail line connecting the national mainline railroad system to the Port. Similarly, all vessel trips generated by the proposed action would travel through Grays Harbor along the Grays Harbor Navigation Channel between Terminal 1 and the Pacific Ocean.

What are the environmental impacts and mitigation related to construction and routine operations?

The following sections summarize the potential impacts associated with construction and routine operations on site (at the terminal) and during rail and vessel transport in the study area for each element of the environment.

- Earth
- Air
- Water
- Plants
- Animals
- Energy and Natural Resources
- Noise and Vibration
- Land and Shoreline Use
- Aesthetics, Light, and Glare
- Recreation
- Historic and Cultural Preservation
- Tribal Resources
- Public Services and Utilities
- Hazardous Materials
- Rail Traffic
- Vehicle Traffic and Safety
- Vessel Traffic

Potential impacts from increased risk of incidents (e.g., spills, fires, or explosions) are discussed in the section on environmental health and safety risks.

Earth

Potential impacts of construction and routine operation of the proposed action related to Earth resources are summarized below. Chapter 3, Section 3.1, *Earth*, provides a full discussion.

Construction

Construction of the proposed action could increase erosion and soil instability from work to prepare the project site. Construction activities would expose bare soil and could result in the need to

stockpile soil temporarily. The potential for increased erosion on the project site is low because the site is relatively flat and because sandy, gravely soils have a low erosion potential. Implementation of erosion control and best management practices would further reduce the potential for erosion.

Onsite Operations

The project site is located in an area that has the potential for moderate to severe earthquakes. The extent of earthquake damage would depend on the magnitude of the event. Although the likelihood of earthquakes is unchanged with or without the proposed action, the new facility would expose additional structures and workers to potential harm. The risk of damage to the new facility from an earthquake could increase potential impacts. Depending on the magnitude of the event, the new storage tanks could also become ruptured and result in a leak of crude oil into the environment. The proposed action would be designed to meet local building codes and standards. For example, pilings would be used to stabilize the storage tanks in case of ground movement or liquefaction.

The project site is also located in an area that has the potential to be inundated by tsunami waves. The extent of damage would vary with the magnitude of the seismic event, the tidal level at the time of the earthquake, the current state of sea-level rise, and the amount of debris. Although the likelihood of tsunami would be the same with or without the proposed action, the new facility would expose additional structures and workers to potential harm. Implementation of a tsunami evacuation plan (Table S-1, provided at the end of this summary) would reduce these risks. Depending on the magnitude of the event, the new storage tanks could also become damaged and contribute to the tsunami debris or rupture and result in a release of crude oil into the environment.

Implementation of proposed mitigation measures (Table S-1) would reduce impacts of seismic-related events, including a large-scale earthquake and subsequent tsunami and liquefaction.

Rail and Vessel Transport

Although the proposed action would not result in any modifications to the PS&P rail line that would directly affect soils or geological resources, geological events could affect increased rail traffic and safety under the proposed action. Potential events that could affect the PS&P rail line include landslides, earthquakes, and other seismic events, such as liquefaction, coseismic subsidence, and tsunamis.

Although the proposed action would not result in modifications to the harbor that would directly affect soils or geological resources, vessel operations could result in the slight increased potential for shoreline erosion associated with vessel wake. Additionally, geological events, specifically earthquake-related hazards of coseismic subsidence and tsunamis, could affect increased vessel traffic and safety under the proposed action.

The potential impacts related to routine rail and vessel operations would not differ substantially from existing conditions, because there would be no ground disturbance related to rail and vessel transport and the likelihood of seismic events affecting these corridors would not change. The increased potential for incidents to result in spills, fires, or explosions during rail and vessel transport is addressed in the environmental health and safety risks section.

Air

Potential impacts of construction and routine operation of the proposed action on air are summarized below. Chapter 3, Section 3.2, *Air*, provides a full discussion.

Construction

Construction equipment and activities would emit criteria air pollutants but at amounts well below the standards established by the U.S. Environmental Protection Agency and Washington State. These activities would also emit toxic air pollutants, particularly diesel particulate matter, but not at levels that would be of concern.

Onsite Operations

The proposed action would emit criteria and toxic air pollutants from stationary sources (such as storage tanks and the marine vapor combustion unit) and mobile sources (such as trains and vessels idling at the project site). These emissions are projected to be below state and federal standards. Emissions of nitrogen oxides would be closest to reaching established thresholds. Implementation of proposed mitigation measures (Table S-1) would reduce these impacts to acceptable levels.

Rail and Vessel Transport

At maximum throughput, operation of the proposed action would increase rail traffic along the PS&P rail line by an average of 1.25 train trips per day. Increased rail traffic would approximately double the emissions of criteria pollutants currently associated with rail transport in Grays Harbor County. However, these emissions would be spread out along the 59-mile PS&P rail line, making it unlikely that state or federal standards would be exceeded at any single location.

Increased rail traffic would also increase toxic air pollutants, primarily diesel particulate matter. Exposure to high levels of diesel particulate matter has been shown to increase the risk of cancer. The most diesel particulate matter would be emitted between the Poynor Yard in Hoquiam and the project site. A cancer risk analysis was conducted to determine risk of exposure to diesel particulate matter from rail operations in this area. The analysis was updated for the Final EIS based on information from PS&P regarding the number and type of locomotives used in these operations. The resulting level of diesel particulate matter emissions and related exposure levels are not considered significant. Elsewhere along the PS&P rail line, emissions would be dispersed and would not be concentrated in any one area. Risk of exposure would be reduced further in the future when new rail locomotives that emit less diesel particulate matter are put into service. The contribution of the proposed action to cumulative impacts is discussed in the cumulative impacts section.

Vessels related to the proposed action would travel along the Grays Harbor Navigation Channel, which is located away from the shoreline. Emissions of criteria and toxic air pollutants (primarily diesel particulate matter) would be spread out over the length of the navigation channel. Emissions would not likely exceed state and federal standards.

Greenhouse Gases

Construction and operation of the proposed action and associated rail and vessel transport would result in the emission of greenhouse gases. These gases are described as carbon dioxide equivalents (greenhouse gas emissions are calculated in terms of the equivalent warming potential of carbon

dioxide, a primary greenhouse gas). Construction activities would emit approximately 887 metric tons of carbon dioxide equivalent per year.

Greenhouse gas emissions from onsite operations, rail transport from the likely source (Williston Basin in North Dakota), and vessel transport to the furthest likely destination (Port of Long Beach, California) at maximum throughput were estimated at 123,247 metric tons of carbon dioxide equivalent per year. Because crude oil for the proposed action is expected to replace crude oil from the Alaska North Slope and other more distant sources, emissions from roundtrip transport of crude oil between Valdez, Alaska, and the Port of Long Beach were estimated as a conservative representation of emissions offset by the proposed action. The resulting net greenhouse gas emissions were estimated at 76,199 metric tons of carbon dioxide equivalent per year.

The combustion of crude oil also emits greenhouse gases. To the extent that crude oil transloaded through the proposed facility would replace oil shipped to West Coast refineries by other means and from other sources (e.g., Alaska or international ports), combustion emissions would not be entirely additive. For purposes of disclosure, greenhouse gas emissions from combustion of annual maximum throughput of crude oil transloaded under the proposed action were estimated and are presented in Table 3.2-10 of the Final EIS.

Water

Potential impacts of construction and routine operation of the proposed action on water are summarized below. Chapter 3, Section 3.3, *Water*, provides a full discussion.

Construction

Construction would occur within 200 feet of the shoreline of Grays Harbor. No dredge or fill operations or other in-water construction work is needed for the proposed action in these waters or any other surface waters, wetlands, or floodplains. Construction is not expected to result in any permanent impacts on water resources. Temporary impacts could occur from construction activities that involve soil disturbance, equipment and material use, and storage tank hydrostatic testing. Implementation of best management practices consistent with the required permits would ensure that water quality standards are met. Construction would not affect wetlands because wetlands are not present on or within 300 feet of the project site.

Onsite Operations

Routine operation at the project site could result in leaks or spills of various petrochemicals used for facility operations and maintenance that could adversely affect water resources from contaminated stormwater runoff. Other potential stormwater contaminants include vehicle residues that accumulate in parking lots and material handling areas; airborne particulates from vehicle and vessel exhaust and facility emissions that are deposited on pavement and other impervious surfaces of the facility; and residues of herbicides from areas where vegetation management (e.g., weed control in tank containment area) occurs. These chemicals could enter adjacent surface waters by transport in stormwater runoff and could degrade water quality and adversely affect both aquatic vegetation and aquatic life near the facility or be transported to other portions of Grays Harbor. The proposed action could slightly increase the potential for water quality impairment related to routine operations. However, the proposed design features, including containment structures and the oil/water separator, and the implementation of prevention and control measures and stormwater

best management practices required by state and federal law and applicable permits, would ensure that impacts from contaminated stormwater would be low.

Potential impacts from increased risk of onsite incidents involving the release of crude oil with the potential to directly affect water resources are addressed in the section on environmental health and safety.

Rail and Vessel Transport

Increased rail traffic and associated maintenance could result in the increased potential for leaks and spills that could affect the quality of surface waters and groundwater along the PS&P rail line as the result of contaminated stormwater runoff. Sensitive areas that could be affected by such releases include the Chehalis River Surge Plain Natural Area Preserve and the designated Critical Aquifer Recharge Area in the Black River and Scatter Creek subwatersheds in Thurston County. These releases would likely be limited to minor drips and leaks captured in the underlying ballast rock resulting in relatively limited risk of exposing water resources to contaminated stormwater. The potential for such leaks would be reduced by regularly inspecting and maintaining locomotives and rail cars and by implementing best management practices. Although the proposed action would result in a slight increase in these types of leaks and spills compared to the no-action alternative, the overall impacts on water quality are anticipated to remain low. Potential impacts from increased risk of rail incidents involving the release of crude oil with the potential to directly affect water resources are addressed in the section on environmental health and safety.

Increased vessel traffic and associated routine operation could result in water quality impacts related to ballast water discharge, propeller wash and vessel wake, and minor leaks and spills.

Increased vessel activity would incrementally increase the potential for erosion in Grays Harbor and along the harbor shoreline associated with wake and propeller wash compared with the no-action alternative. Any associated water quality impacts would be short-term and are not anticipated to be significant.

Vessels calling at the Terminal 1 berth could degrade water quality via ballast water discharge. Although the vessels would be required to exchange ballast water at sea to reduce potential transport of invasive species during the loading process, risks would remain. Implementation of proposed mitigation (Table S-1) for ballast water monitoring would further reduce potential impacts on water quality.

Increased vessel activity would result in a slight increase in the potential for diesel fuel, oils, grease, and other fluids required for the operation and maintenance of vessels to contaminate water. Regular inspections and implementation of standard best management practices would reduce these types of leaks and spills. These releases would be limited to minor drips and leaks from equipment located within contained areas of the vessel such that there would be limited risk of exposing water resources to contaminated stormwater. Potential impacts from increased risk of vessel incidents involving the release of crude oil with the potential to directly affect water resources are addressed in the section on environmental health and safety.

Plants

Potential impacts of construction and routine operation of the proposed action on plants are summarized below. Chapter 3, Section 3.4, *Plants*, provides a full discussion.

Construction

Ground disturbance for construction would result in the loss of approximately 1 acre of vegetation. The areas where construction would occur do not support native plant communities and do not provide valuable habitat to animals. Construction activities could temporarily affect shoreline and aquatic vegetation near the project site. Disturbances could temporarily increase total suspended solids near the project site and result in the release of construction vehicle fluids or construction materials. Implementation of best management practices per the required water quality permits would ensure these impacts would not exceed acceptable levels.

Onsite Operations

Operation of the proposed action would not affect plants or animal habitat on the project site, because the project site would be completely developed and no plants would be expected to colonize the developed site. The proposed action could affect plants and habitat in and around the harbor as the result of impacts on air and water quality associated with routine operations.

Routine operation at the project site could result of leaks or spills of various petrochemicals used for facility operations and maintenance that could adversely affect plants near the project site and potentially further into Grays Harbor from contaminated stormwater runoff. As discussed under *Water*, although routine operations could slightly increase the potential for contaminated stormwater runoff, the proposed design features and the implementation of prevention and control measures and stormwater best management practices required by state and federal law and applicable permits would ensure that these potential impacts would be low. Potential impacts from increased risk of incidents during transport are addressed in the section on environmental health and safety.

Onsite operations could affect plants near the project site as a result of emissions, primarily nitrogen dioxide and nitrogen oxides; however, because these emissions would be short-term and areas near the project site include the industrial shoreline, roadways, and developed uses, potential impacts on plants would not be significant.

Rail and Vessel Transport

Increased rail traffic and associated routine operations could result in plant impacts related to contaminated stormwater and emissions.

Increased rail traffic and associated maintenance could result in the increased potential for leaks and spills of petrochemicals that could affect plants along the PS&P rail line as the result of contaminated stormwater runoff. As discussed under *Water*, although the proposed action would result in a slight increase in these types of leaks and spills compared to the no-action alternative, the overall impacts on water quality are anticipated to remain low. The potential for associated impacts on plants is also anticipated to be low. Potential impacts from increased risk of rail incidents are addressed in the section on environmental health and safety.

Rail transport along the PS&P rail line would also emit nitrogen dioxide and nitrogen oxides; however, typical concentrations would be considerably lower than for onsite operations and are not anticipated to result in impacts on plants.

Increased vessel traffic and associated routine operations could result in plant impacts related to ballast water discharge, propeller wash and vessel wake, shading, and contaminated stormwater.

Vessels calling at the Terminal 1 berth could bring invasive species to Grays Harbor via ballast water. Although the vessels would be required to exchange ballast water at sea to reduce potential transport of invasive species during the loading process, risks would remain. Implementation of mitigation (Table S-1) ballast water monitoring would further reduce the risk of spreading invasive species.

Increased vessel activity would result in the potential for a small, incremental increase in impacts on plants in Grays Harbor and along the harbor shoreline associated with wake and propeller wash compared with the no-action alternative.

Vessels calling at the Terminal 1 berth would result in increased shading in the shallow-water habitat beneath and adjacent to existing berthing structures (e.g., docks, trestles). Because of the tidal currents and flow in this location, the level of increased shading is not expected to reduce the primary productivity of plankton or aquatic plants.

As discussed under *Water*, increased vessel activity would result in a slight increase in the potential for contaminated stormwater for leaks and spills of diesel fuel, oils, grease, and other fluids required for the operation and maintenance of vessels. The potential for associated impacts on plants is also anticipated to be low. Potential impacts from increased risk of incidents during transport are addressed in the section on environmental health and safety.

Animals

Potential impacts of construction and routine operation of the proposed action on animals are summarized below. Chapter 3, Section 3.5, *Animals*, provides a full discussion.

Construction

Construction activities could temporarily increase total suspended solids in water near the project site and result in the release of construction vehicle fluids or construction materials. Implementation of best management practices per the required water quality permits would ensure these impacts would not exceed acceptable levels that could adversely affect animals.

Noise would increase above ambient levels during construction. However, no special-status species have been recently documented in the study area. There is suitable habitat for the bald eagle, blue heron, and peregrine falcon, but it is unlikely that these species would be found near the project site. Underwater noise from pile driving is not anticipated to be an issue due to the distance from the pile to the nearest waterbody (Chehalis River).

Onsite Operations

Operation of the proposed action would not affect animal habitat on the project site, because the project site would be completely developed and no suitable habitat for animals would be present. The proposed action could affect animals in and around the harbor as the result of impacts on water quality and noise associated with routine operations.

Routine operation at the project site could result of leaks or spills of various chemicals used for facility operations and maintenance that could adversely affect animals from contaminated stormwater runoff. As discussed under *Water*, although routine operations could slightly increase the potential for contaminated stormwater runoff, the proposed design features and the implementation of prevention and control measures and stormwater best management practices

required by state and federal law and applicable permits would ensure that these potential impacts would be low. Potential impacts from increased risk of incidents during transport are addressed in the section on environmental health and safety. Implementation of best management practices consistent with the required permits would ensure that water quality standards are met and the potential impact on animals would not be significant.

Noise from onsite operations would be similar to existing conditions and would not result in substantial increases in noise that would be noticeable to animals likely to be found around the project site.

Rail and Vessel Transport

Increased rail traffic and associated routine operations could result in impacts on animals related to noise, collisions, and contaminated stormwater.

Operational noise (primarily train horns at PS&P rail line grade crossings) could affect animals along the PS&P rail line during rail operations. However, because impacts would last only the duration of the train passing and only occur within a certain distance of the track, and because species along the rail line are habituated to rail noise and are generally mobile, noise impacts would likely be imperceptible and would not affect species populations or fitness.

Additional rail trips on the PS&P rail line are expected to proportionally increase mortality of animals because of collisions with trains and increased predation risk. This increased risk is not expected to measurably alter species populations or fitness.

Increased rail traffic and associated maintenance could result in the increased potential for leaks and spills of petrochemicals that could affect animals as the result of contaminated stormwater runoff. As discussed under *Water*, although the proposed action would result in a slight increase in these types of leaks and spills compared to the no-action alternative, the overall impacts on water quality are anticipated to remain low. The potential for associated impacts on animals is also anticipated to be low. Potential impacts from increased risk of rail incidents are addressed in the section on environmental health and safety.

Increased vessel traffic and associated routine operations could result in impacts on animals as a result of ballast water discharge, propeller wash and vessel wake, shading, noise, and contaminated stormwater.

Increased vessel activity related to the proposed action would have a small, incremental increase in the potential for impacts associated with wake and propeller wash compared with the no-action alternative, including stranding of nearshore aquatic species, especially juvenile fish, on the shoreline.

Vessels calling at the Terminal 1 dock would result in increased shading that could slightly increase the potential to affect fish migration, prey capture, or predation.

Increased vessel traffic related to the proposed action would generate increased underwater noise that could affect aquatic animals, especially marine mammals because they rely on sound as a means of communication for finding food and mates, and for detecting predators. The potential for these impacts would increase somewhat under the proposed action because of increased vessel trips but impacts would not be significant.

Increased vessel traffic would also increase the chance of vessels striking marine mammals in the navigation channel, particularly during transits outside the mouth of the harbor, compared to the no-action alternative. However, because the likelihood of vessel strikes and the potential for population-level impacts would be low, impacts would not be significant.

Vessels calling at the Terminal 1 could bring invasive species to the Grays Harbor in their ballast water that could affect aquatic life. Although the vessels would be required to exchange ballast water at sea to reduce potential transport of invasive species during the loading process, the risks would remain. Implementation of mitigation (Table S-1) would reduce the risk of spreading invasive species.

As discussed under *Water*, increased vessel activity would result in a slight increase in the potential for contaminated stormwater for leaks and spills of diesel fuel, oils, grease, and other fluids required for the operation and maintenance of vessels. The potential for associated impacts on animals is also anticipated to be low. Potential impacts from increased risk of vessel incidents are addressed in the section on environmental health and safety.

Energy and Natural Resources

Potential impacts of construction and routine operation of the proposed action on energy and natural resources are summarized below. Chapter 3, Section 3.6, *Energy and Natural Resources*, provides a full discussion.

Construction

The proposed action would be constructed of materials that require energy and natural resources to manufacture. Energy would also be consumed in the transport of these materials to the project site. The increase in energy consumption is anticipated to be met by existing local energy and fuel supply and natural resources. Implementation of mitigation (Table S-1) would reduce energy consumption.

Onsite Operations

Energy would be used to operate equipment at the terminal. The proposed action's energy consumption during operation would be primarily in the forms of electricity, natural gas, and fuel. The increase in energy consumption is anticipated to be met by existing local fuel supply. To reduce energy consumption, the applicant would implement energy-saving measures in project design and operation (Table S-1).

Rail and Vessel Transport

Rail traffic associated with the proposed action would consume diesel fuel. The demand for diesel under the proposed action is anticipated to be met by regional supply. Vessels would likely use marine distillate fuel. The demand for marine distillate fuel under the proposed action is anticipated to be met by regional supply.

Noise and Vibration

Potential impacts of construction and routine operation of the proposed action related to noise and vibration are summarized below. Chapter 3, Section 3.7, *Noise and Vibration*, provides a full discussion.

Construction

Construction of the proposed action would result in a temporary increase in noise and vibration near the project site. Construction noise would consist primarily of operating construction equipment, such as pile-driving equipment, backhoes, cement mixers, and excavators. The greatest noise increases would result from pile driving, which is anticipated to last approximately 2 to 3 months. However, noise and vibration levels would be low at the nearest residential areas (approximately 1,500 feet) and are not anticipated to disrupt residents or other sensitive groups surrounding the project site. Implementation of mitigation (Table S-1) to keep construction and maintenance equipment in good working order would reduce noise and vibration impacts. Additionally, because construction would only occur during daytime hours, any noise or vibration from these activities would be limited to daytime hours.

Onsite Operations

Onsite operations would generate noise and vibration from equipment use and rail and vessel loading and unloading activities. Noise and vibration levels associated with these activities would be similar to levels generated by existing operations at the project site and in the Port area. The increases in noise and vibration are not anticipated to be disruptive to residents or other sensitive groups near the project site.

Rail and Vessel Transport

At maximum throughput, operation of the proposed action would increase rail traffic along the PS&P rail line by an average of 1.25 unit train trips per day. Noise-sensitive receptors (such as residences) would be exposed more frequently to two types of train noise.

- Wayside noise: The combined effect of locomotive noise and car/wheel noise.
- Horn noise: The sound of locomotive warning horns, which are sounded in advance of grade crossings per federal safety requirements.

Trains associated with the proposed action would travel at the same speeds as existing trains, and locomotives would sound horns consistent with existing practices. Therefore, the wayside and horn noise levels associated with any individual train trip would not change substantially compared to existing conditions.

However, because the proposed action would result in more rail traffic, average noise levels⁴ along the PS&P rail line would increase. Noise monitoring identified the baseline conditions at various sites along the rail line. Noise impacts were determined based on the assessment methods developed by the Federal Transit Administration and adopted by the Federal Railroad Administration. Based on these methods, where existing noise levels are higher, the amount of noise increase needed to result in a moderate or severe impact decreases.

The noise increase would be most noticeable for residences located close to the PS&P rail line, particularly near grade crossings where trains are required to sound horns. The greatest noise impacts on residences would occur between Satsop and Elma, and at some residences close to the

⁴ Average noise level, measured as day-night sound level (L_{dn}), is essentially a 24-hour average noise exposure over the course of any given day. It is adjusted upward to account for the potential that noise will occur during the night when most people are more sensitive to noise.

rail line in Central Park, Malone-Porter, and Centralia. Implementation of mitigation (Table S-1) to assist with the development of quiet zones in coordination with PS&P and the Federal Railroad Administration could reduce noise from train horns; however, if these measures were not implemented, noise increases from the additional train traffic would remain. The contribution of the proposed action to cumulative impacts is discussed in the cumulative impacts section. The potential for noise impacts to remain if mitigation is not feasible is discussed in the unavoidable and significant adverse impacts section.

Increased vessel traffic in Grays Harbor would not significantly increase noise levels. The nearest noise-sensitive receptors are along the shoreline (approximately 1,800 feet from the navigation channel), and impacts from vessel noise would be negligible.

Because vibration levels are primarily a function of train speed, and train traffic associated with the proposed action would not increase train speeds along the PS&P rail line, vibration impacts from rail traffic would be negligible. Vibration-sensitive receptors would experience no vibration on land from increased vessel traffic, because vessels would be traveling approximately 1,800 feet from the shoreline.

Land and Shoreline Use

Potential impacts of construction and routine operation of the proposed action on land and shoreline use are summarized below. Chapter 3, Section 3.8, *Land and Shoreline Use*, provides a full discussion.

Construction

Construction would occur in both the City of Hoquiam's and City of Aberdeen's Industrial Districts, where construction activities are compatible with the land and shoreline use designations of both cities' comprehensive plans and shoreline master programs. The applicant would be required to obtain all appropriate permits and/or approvals prior to construction. Therefore, impacts on land and shoreline use from construction of the proposed action are not anticipated.

Onsite Operations

Implementation of the proposed action would require land use permits from the City of Hoquiam and the City of Aberdeen, which require demonstration of consistency with the applicable policies and zoning. Operation of the proposed action at the project site would be consistent with the applicable policies, including consistency with comprehensive plans, zoning ordinances, critical areas ordinances, and shoreline master programs. The applicant would be required to obtain appropriate permits and approvals to ensure compliance with these requirements and consistency with the applicable land use and shoreline management programs and ordinances. Impacts on land and shoreline use from operation of the proposed action are not anticipated to occur.

Rail and Vessel Transport

Increased rail and vessel traffic associated with the proposed action would occur in existing transportation corridors. Rail and vessel transport in these areas is currently ongoing and the proposed increases in traffic would be consistent with applicable land use plans, policies, zoning, and regulations.

Aesthetics, Light, and Glare

Potential impacts of construction and routine operation of the proposed action on aesthetics, light, and glare are summarized below. Chapter 3, Section 3.9, *Aesthetics, Light, and Glare*, provides a full discussion.

Construction

The presence of construction equipment and the related increase in activities would create short-term visual changes at the project site. However, the project site is an existing industrial area and cranes and industrial operations are a common part of the visual environment. Construction would not require the use of high-intensity nighttime lighting and would not negatively affect day or nighttime public views. Glare would not be increased on the project site during construction.

Onsite Operations

Operation of the proposed action is not anticipated to result in substantial changes in views of the Port or harbor that would negatively affect any viewer groups. The most prominent features to be built on the project site would be the storage tanks. Implementation of mitigation (Table S-1) would ensure that the proposed facility would be consistent with the existing industrial character of the Port and immediately surrounding area and would not materially change the visual character or quality of views or result in glare. The changes in lighting toward the interior of the Port and away from residential areas are not anticipated to affect views from scenic routes. Although some additional nighttime lighting would be installed, the additional lighting is not expected to affect any viewer groups negatively.

Rail and Vessel Transport

Although nighttime rail and vessel transport lighting would increase compared with the no-action alternative, the increase would not be expected to disturb surrounding land uses.

Recreation

Potential impacts of construction and routine operation of the proposed action on recreation are summarized below. Chapter 3, Section 3.10, *Recreation*, provides a full discussion.

Construction

Construction vehicles would not likely block or reduce vehicle access to the 28th Street boat launch, fishing pier, viewing tower, or nearby parks. No in-water construction or access to the project site by water is proposed; therefore, the activities would not conflict with in-water recreation near the project site. Construction activities, primarily pile driving, would result in increased noise levels that could disturb surrounding recreational uses.

Onsite Operations

Vessel loading would restrict recreational boating and fishing access to the area directly adjacent to the Terminal 1 dock. Impacts on recreational boaters would not be significant because boaters could access other boating and fishing areas throughout the harbor. Implementation of mitigation (Table S-1) would reduce impacts on recreational boaters. Operational noise levels would be similar to

existing noise levels at the project site and would be consistent with current uses surrounding the project site. Additionally, the applicant would voluntarily cease vessel-loading operations of crude oil for 2 weeks each year (Table S-1) during the Grays Harbor Shorebird Festival. Potential impacts on animals, including fish, are described above.

Rail and Vessel Transport

Increased noise along the PS&P rail line from increased rail traffic could affect recreational uses; however, the maximum level of noise associated with a single train passing by likely to be experienced in recreational areas would not change because all trains would continue to travel at the same speeds as existing trains and would sound horns similarly. Increased train noise could temporarily disturb surrounding recreational uses during the passage of a train. Because recreational uses already experience noise levels associated with rail operations and because noise is temporary, noise impacts from the additional rail traffic under the proposed action are not considered significant. Potential impacts on animals from rail and vessel transport are described above.

For the majority of the rail line, the increase in rail traffic would not result in a substantial increase in vehicle delays or blocked vehicular access that could restrict access to recreational areas. However, vehicle access to Morrison Riverfront Park, which can only be accessed through entrances to the Olympic Gateway Plaza, would be blocked more frequently and for longer durations because of train operations in Aberdeen. Implementation of mitigation (Table S-1) to address vehicle delays at this location would reduce this impact.

Because vessel traffic under the proposed action would be limited to the navigation channel, impacts on recreational uses in the harbor outside the channel are not expected. The 28th Street boat launch area is near the navigation channel and project site; however, it is expected that recreational boaters would have sufficient room to navigate safely away from the launch into the harbor. They would not be substantially affected by vessels passing through the navigation channel. All other major access points for recreational boaters would be distant and not affected by vessel traffic. Recreational fishing does occur in the navigation channel, primarily in the fall. While this area would not be accessible while a vessel was making the trip to and from the project site (approximately 2 hours one way), recreational fishing and boating is seasonal, and even at the height of the season, the boat density is considered low, meaning potential conflicts are not anticipated to be frequent or to last for a substantial amount of time. Additionally, alternative fishing areas that would not be affected by vessel traffic are available. Implementation of mitigation (Table S-1) to provide advance notice of vessel transit would reduce impacts on recreational fishing.

Historic and Cultural Preservation

Potential impacts of construction and routine operation of the proposed action on cultural resources are summarized below. Chapter 3, Section 3.11, *Cultural Resources*, provides a full discussion.

Construction

No significant or protected cultural resources have been found at the project site. Although unlikely, archaeological resources may be found below the ground surface during construction. Construction of the proposed facility mainly involves surface grading and driving piles, which would not require significant excavation or deep ground disturbance. Implementation of mitigation (Table S-1) to

develop and implement an unanticipated discovery plan and to conduct onsite archaeological monitoring would address this impact.

Onsite Operations

Operation of the proposed action would not affect cultural resources because no cultural resources have been identified at or immediately surrounding the project site.

Rail and Vessel Transport

Increased rail traffic would not affect cultural resources because it would not involve ground-disturbing activities, increase vibration along the PS&P rail line, or alter views of historically important features of any historical resources.

Although unlikely, increased vessel traffic could slightly increase shoreline erosion, potentially affecting onshore cultural resources.

Tribal Resources

Potential impacts of construction and routine operation of the proposed action on tribal resources are summarized below. Chapter 3, Section 3.12, *Tribal Resources*, provides a full discussion.

Construction

Construction of the proposed action would likely have no impact on tribal resources because no in-water work is required. No access to the project site by water is proposed; therefore, the activities would not conflict with tribal fishing resources near the project site. Construction activities, primarily pile driving, would result in increased noise levels that could disturb aquatic species, including fish, and tribal fishers near the project site.

Onsite Operations

At maximum throughput, operation of the proposed action would result in vessels loading at the Terminal 1 dock up to 119 days per year, which, when added to baseline vessel forecasts over the planning period, would result in vessels at the Terminal 1 berth 177 days per year. This increase in vessels docking at Terminal 1 would reduce access to the tribal fishing area directly in front of the Terminal 1 dock. Lighting impacts on fish behavior from nighttime transfer operations could also affect the efficiency of drift netting.

While a vessel is at berth, fishers cannot extend fishing nets as far and cannot access the areas nearest to the dock structure. Implementation of mitigation (Table S-1) to coordinate docking schedules with fishing schedules, provide advance notice of vessel calls and movements, and work with the Quinault Indian Nation to identify other measures as appropriate could reduce these potential impacts on treaty tribal fishing but would not eliminate the potential to affect the tribe's ability to access resources.

Onsite operations of the proposed action could affect tribal resources if they were to degrade the resources used by the tribes, including the plants, wildlife, and fisheries. Impacts on these resources are described in their respective sections above.

The potential for impacts on tribal resource to remain after mitigation is discussed in the unavoidable and significant adverse impacts section.

Rail and Vessel Transport

Rail traffic along the PS&P rail line would increase by an average of 1.25 train trips per day. This increase would not significantly reduce access to Quinault Indian Nation tribal resources because there are few grade crossings between the Quinault Indian Nation reservation and Quinault fishing and access sites and substantial delays are not expected at these grade crossings. The Chehalis Tribe's access to fishing sites would not be affected because access roads to fishing sites on their reservation do not cross the PS&P rail line.

As described above under *Animals*, increased rail traffic and associated routine operations could affect animals along the PS&P rail line as the result of increased noise, increased mortality (collisions with moving trains), and increased exposure to pollutants (spills). These impacts could, in turn, affect the number of animals available for take by hunters from the Quinault Indian Nation and Confederated Tribes of the Chehalis Reservation. Although these impacts could increase incrementally compared to the no-action alternative, they are not expected to affect species populations or fitness.

Vessel traffic would increase by one vessel trip every other day. Vessel traffic would not likely affect Quinault Indian Nation tribal resources outside of the navigation channel (including crab fishing in the harbor). However, vessel operations could exclude tribal fishers from a portion of their typical fishing area in the navigation channel (from approximately the Crossover Channel Reach of the navigation channel to the turning basin upstream of Terminal 2). Conflicts would be greatest during the fall salmon fishery when tribal fishers use gillnets. Vessel traffic could also reduce access to marine fisheries (including crab) in the ocean because tribal fishers may not be able to cross the bar when tank vessels are moving into or out of the navigation channel. Implementation of mitigation (Table S-1) to coordinate docking schedules with fishing schedules, provide advance notice of vessel calls and movements, and work with the Quinault Indian Nation tribal officials to identify other measures as appropriate could reduce the potential for these impacts. The potential for tribal impacts to remain after mitigation is discussed in the unavoidable and significant adverse impacts section. The contribution of the proposed action to cumulative impacts is discussed in the cumulative impacts section.

Rail and vessel operations also could affect tribal resources if they were to degrade the plants used by the tribes. Impacts on plants are described above.

Public Services and Utilities

Potential impacts of construction and routine operation of the proposed action on public services and utilities are summarized below. Chapter 3, Section 3.12, *Public Services and Utilities*, provides a full discussion.

Construction

Construction of the proposed action would temporarily increase the demand for water at the project site. Construction activities would also result in a temporary increase in solid waste and hazardous waste. These services would not exceed public service or utility service provider capability.

Onsite Operations

During operations, new buildings and additional employees would modestly increase the demand for potable water on site. Routine operation of the proposed action would increase the amount of solid waste generated at the project site and could generate hazardous waste as a result of minor releases. These hazardous materials would require safe disposal and would be hauled separately from regular solid waste.

Rail and Vessel Transport

No utility or public service impacts would result from rail and vessel transport.

Hazardous Materials

Potential impacts of construction and routine operation of the proposed action related to hazardous materials are summarized below. Chapter 3, Section 3.14, *Hazardous Materials*, provides a full discussion.

Construction

Construction activities would be required to comply with applicable regulations. Implementation of mitigation (Table S-1) would reduce these impacts.

Onsite Operations

Although the unloading, storage, and loading of crude oil would be similar to existing operations, there is increased risk of exposure of people (primarily workers) and the environment due to the increase in throughput and increased consequences to human health and the environment due to harmful substances. Similar to existing conditions, exposure to hazardous materials associated with routine operations would be most likely to occur during unloading and loading activities. These routine operations could result in minor releases that would be contained and cleaned up by trained terminal personnel. The proposed facility would be designed and operated to meet the appropriate safety standards as a designated oil facility under federal and state law. Specifically, the facility would be designed to meet primary and secondary containment standards in the event of a spill. Additionally, the applicant would be required to develop operation manuals and spill prevention, contingency, and response plans to reduce the potential for a spill of crude oil. These identify emergency notification and response protocols during site operations and vessel transfers. Similar to existing conditions, the applicant would continue to ensure that personnel training and handling and storage activities would also comply with the appropriate safety standards intended to reduce the risks of incidents and to address potential spills during operation. Potential impacts from increased risk of incidents and related consequences (e.g., oil spills) are described in the section on environmental health and safety risks.

Rail and Vessel Transport

Potential impacts related to rail and vessel transport of hazardous materials are addressed in the environmental health and safety risks section.

Rail Traffic

Potential impacts of routine operation of the proposed action on rail traffic are summarized below. Chapter 3, Section 3.15, *Rail Traffic*, provides a full discussion.

Construction of the proposed action would not affect existing rail traffic. Operation of the proposed action at maximum throughput would add 1.25 unit train trips per day (458 trips per year) along the PS&P rail line to existing/no-action traffic (approximately 3.1 trips per day on average or 1,100 trips per year). The total estimated rail traffic, including the existing and proposed action, would be 4.35 trips per day on average. The rail traffic modeling and analysis shows that the PS&P rail line has the theoretical capacity to accommodate up to 12 trips per day. Based on this analysis, the rail line would have sufficient capacity to accommodate rail traffic under the proposed action. However, rail traffic and operations, particularly switching operations,⁵ would result in increased blockages along the rail line, most substantially at intersections between Aberdeen and the project site. The potential impacts on vehicle delay and safety are addressed in the next section.

Vehicle Traffic and Safety

Potential impacts of construction and routine operation of the proposed action on vehicle traffic and safety are summarized below. Chapter 3, Section 3.16, *Vehicle Traffic and Safety*, provides a full discussion.

Construction

Construction of the proposed action would result in more vehicles traveling to and from the project site to transport construction workers, equipment, and materials. However, these trips would represent a small increase in daily traffic in the area and would not likely affect vehicle delays and safety.

Onsite Operations

Operation of the proposed action would add vehicle trips to and from the project site, mainly from additional employees. These trips would also represent a small increase in daily traffic and would not likely affect vehicle delays and safety.

Rail and Vessel Transport

At maximum throughput, operation of the proposed action would increase rail traffic along the PS&P rail line by an average of 1.25 train trips per day. The increase in rail traffic along the PS&P rail line would block at-grade crossings more frequently and for longer periods than under the no-action alternative. Vehicle delay at most of these crossings would not increase substantially. This is because the existing and projected vehicle traffic is relatively low along this corridor and the chance of encountering a project train at a crossing would continue to be low.

Several intersections in Centralia and Aberdeen currently have long vehicle delays. These delays would continue under the no-action alternative and would increase under the proposed action.

⁵ Switching operations are generally related to disassembling unit trains by setting rail cars on multiple tracks, rearranging rail cars on tracks to facilitate loading or unloading, sorting rail cars by destination, delivering rail cars to an industry, picking up rail cars from an industry, or assembling unit trains from rail cars on multiple tracks.

These delays would be greatest during rush hour traffic. Projected 2017 daily crossing time at at-grade crossings in Centralia would be 28 to 39 minutes compared to approximately 17 to 26 minutes under the no-action alternative.

At-grade crossings in Aberdeen (Olympic Gateway Plaza and Port of Grays Harbor areas) would experience the most substantial increase in average vehicle delay with the addition of proposed action trains. For example, trains currently occupy all grade crossings in the Olympic Gateway Plaza area for up to 35 minutes about four times per week. Under the proposed action, this time would increase to up to 45 minutes and up to four more times per week. Trains currently occupy the Industrial Road crossing adjacent to the project site for up to 13 minutes. Under the proposed action, this time would increase to up to 22 minutes.

Because vehicle delay would increase, emergency vehicle delay would also increase at grade crossings. Emergency access is most limited in the Olympic Gateway Plaza and Port of Grays Harbor areas where trains can block all access to certain properties during switching operations.⁶ Existing communication and response procedures for providing emergency access at blocked crossings would reduce impacts related to the proposed action.

Implementation of mitigation (Table S-1) could decrease vehicle delays and emergency access issues. Potential infrastructure changes in the future could also reduce impacts. The potential for impacts on vehicle delay to remain after mitigation is discussed in the unavoidable and significant adverse impacts section. The contribution of the proposed action to cumulative impacts is discussed in the cumulative impacts section.

Vessel Traffic

Potential impacts of construction and routine operation of the proposed action on vessel traffic are summarized below. Chapter 3, Section 3.17, *Vessel Traffic*, provides a full discussion.

Construction

Construction of the proposed action would involve no in-water work and no vessel transport, and therefore would not affect existing vessel traffic.

Onsite Operations

At maximum throughput, operation of the proposed action would result in vessels at berth at Terminal 1 up to 119 days per year, which added to baseline vessel forecasts over the planning period would result in vessels at the Terminal 1 berth 177 days per year. Factoring annual downtime, a berth is available up to 90% of the time or 328 days per year. The proposed action would not exceed berth availability. The contribution of the proposed action to cumulative impacts is discussed in the cumulative impacts section.

Increased occupancy of the Terminal 1 berth under the proposed action would reduce access to fishing areas next to the Terminal 1 dock, which is in a commercial fishing area. During periods of maximum catch for Chinook, coho, or chum salmon, the fall fishery may be open 2 to 4 days per week and for limited periods (e.g., 8:00 a.m. to 12:00 noon). Approximately 15 to 20 boats may participate each year and the fishery is open is approximately 7 days total. Commercial fisheries do

⁶ Assembling and disassembling unit trains and delivering and picking up rail cars to and from the project site.

not occur during other times of the year; therefore, vessel traffic at other times of the year would not affect commercial fisheries.

Depending on the specific circumstances of each interaction (e.g., chance of a vessel calling during an open fishing window, distribution of the fish within the channel, number of fishers on any given day), it is difficult to predict whether increased occupancy at Terminal 1 would significantly affect any single fisher's daily catch. However, if a vessel is at berth during the fall fishery, fishers would have the option to fish longer (complete more drifts) or may choose to fish other preferred locations in Grays Harbor (such as other portions of the navigation channel, farther away from the shoreline or farther upstream), although opportunities to relocate during intense fishing periods may be limited if the other areas are occupied by fishers. Implementation of mitigation (Table S-1) to announce vessel arrivals and departures could reduce impacts on commercial fishers.

Vessel Transport

Operation of the proposed action at maximum throughput would add 238 tank vessel trips per year (0.7 trip per day on average) along the navigation channel to projected large commercial vessel trips under the no-action alternative—between 338 and 436 large commercial vessel⁷ trips per year in 2017 and 2037, respectively, or approximately one trip per day on average.

Considering the opportunities available for these vessels to travel through the harbor at various channel depths, the proposed action would not result in exceeding the capacity of the navigation channel. The increase in vessel traffic would increase the demand for tugs and pilots in Grays Harbor, but this demand could be managed with existing resources. It is not anticipated that availability of tugs or pilots would limit vessel operations at the Port. The contribution of the proposed action to cumulative impacts is discussed in the cumulative impacts section.

Increased vessel traffic could affect commercial fishing activities by disrupting fishing in the navigation channel, particularly from the Crossover Channel Reach of the navigation channel to the turning basin. Vessel traffic would not affect fishing outside the navigation channel (including crab fishing in the harbor). Conflicts would only occur during the fall salmon fishery. Increased traffic could limit access to commercial fishing areas. Implementation of mitigation (Table S-1) to announce vessel arrivals and departures would reduce these impacts further.

What are the environmental health and safety risks of oil spills, fires, and explosions?

This section summarizes impacts from increased risk of incidents (e.g., storage tank failure, train derailments, vessel collisions) and related consequences (e.g., oil spill, fire, or explosion). Chapter 4, *Environmental Health and Safety*, provides a full discussion.

Risk of Oil Spills

Because it is not possible to predict the timing or magnitude of an oil spill, the EIS focuses on spill scenarios. The spill scenarios include those required by law for contingency planning plus others that were relevant to the proposed action. Each spill scenario is defined by the type of activities, spill location, and the amount spilled.

⁷ The term *large commercial vessels* refers collectively to tank and cargo vessels.

The main spill scenarios and their likelihood of occurrence are summarized by activity in Table S-2.

Table S-2. Likelihood of an Incident for Select Spill Scenarios Related to the Proposed Action

Source	Spill Scenario	Occurrence Interval ^a	Probability of Occurrence
Small			
Project site	Up to 2,100 gallons (50 barrels) spilled when transferring oil from rail cars or to vessels at the project site	25 years	0.11 per rail unloading 0.12 per vessel loading
Rail transport	Up to 1,000 gallons (24 barrels) spilled during a derailment along the PS&P rail line	100 years with current rail cars 105 years with rail car improvements	0.010 per year with current rail cars 0.0095 per year with rail car improvements
Medium			
Project site	Represented by 10,000 gallons (238 barrels) spilled when transferring oil to a vessel at the project site	588 years	0.0074 per loading
	Represented by 50,400 gallons (1,200 barrels) spilled from pipeline or storage tank at the project site	2,500 years	0.0005 per year per tank
Rail transport	Represented by 30,000 gallons (714 barrels or the contents of one full tank car) spilled during a derailment along the PS&P rail line	36 years with current rail cars 43 years with rail car improvements	0.0287 per year with current rail cars 0.023 per year with rail car improvements
Large			
Project site	8.4 million gallons (200,000 barrels, the entire contents of 1 full storage tank) spilled on project site	50,000 years	0.000025 per year per tank
Rail transport	Roughly 90,000 gallons (2,140 barrels or the contents of three full tank cars) spilled during a derailment along the PS&P rail line	250 years with current rail cars 370 years with rail car improvements	0.0041 per year with current rail cars 0.0027 with rail car improvements
	Roughly 150,000 gallons (3,570 barrels or the contents of five full tank cars) spilled during a derailment along the PS&P rail line	4,800 years with current rail cars 11,000 years with rail car improvements	0.00021 per year with current rail cars 0.00009 per year with rail car improvements
	900,000 gallons (21,400 barrels or the contents of 30 full tank cars) spilled during a derailment along the PS&P rail line	10,000 years with current rail cars 74,000 years with rail car improvements	0.0000014 per year with current rail cars 0.000007 per year with rail car improvements
Vessel transport	Up to 105,000 gallons (2,500 barrels) spilled into Grays Harbor from a vessel collision	120 years	0.008 per year
	Up to 1.2 million gallons (29,000 barrels) from a vessel grounding in Grays Harbor	740 years	0.0021 per year
	Up to 15.1 million gallons (360,000 barrels) or the entire contents of one full tanker, including fuel) spilled into Grays Harbor from a vessel collision at harbor entrance	360 years	0.0028 per year

^a Event could occur once in number of years listed.

Construction and operational standards, equipment design, training and regulatory requirements for prevention of, preparedness for, and response to incidents involving the release of crude oil, in addition to the mitigation measures presented in Table S-1 would reduce the potential for impacts related to an oil spill, fire, or explosion. However, no mitigation measures would completely eliminate the possibility of a spill, fire, or explosion, nor would they completely eliminate the adverse consequences. Depending on the location of the incident, amount spilled, type of crude oil, and environmental conditions, such as the time of year, water flows, and weather conditions, the potential adverse environmental impacts could be significant.

Risk of Fire or Explosion

An incident involving a spill could result in a fire or explosion if there is an ignition source and combustible gases are present in a quantity that could ignite. The incident could cause sparking, which could ignite the spill. The extent of the damage would depend on numerous factors, including the cause of the incident, any fire suppression capabilities, and the timing and nature of response actions. It would also depend on the material: Bakken crude oil is more flammable than heavier crude oils. The flammability of diluted bitumen varies based on the diluent (diluting agent) used.

Although fires or explosions can result from spills resulting from events like collisions and derailments, long-term historical data show that most spills do not result in fires or explosions. A fire or explosion would be less likely to occur than a spill. While multiple recent derailments of trains on main lines have resulted in fires or explosions, the chance of an extreme derailment is very limited in the study area because of the relatively slower speeds on the PS&P rail line compared to typical mainline speeds. In general, large derailments from high-speed trains lead to releases from multiple rail cars. The energy involved in high-speed derailments and the resulting effect on rail cars yield the greatest chance of a fire that affects other rail cars and possibly results in an explosion. However, a spill of any size poses the potential risk of a fire or explosion depending on the conditions.

Building codes, equipment safety requirements, training, spill prevention, preparedness, and response requirements are intended to reduce the likelihood of a fire or explosion and the resulting environmental damage. Implementation of mitigation measures (Table S-1) would further reduce the risks; however, no measures could completely eliminate the possibility of a spill, fire, or explosion. Depending on the location of the incident, amount spilled, type of crude oil, and environmental conditions, such as the time of year, water flows, and weather conditions, the potential adverse environmental impacts could be significant.

Environmental Damage

Depending on the circumstances of each incident, the extent of damage would vary. Factors that influence the spread of oil or hazardous materials include the amount spilled, type of material, location, weather, and actions taken to contain or respond to the incident.

Spills of crude oil are considered hazardous. These materials can lead to injury or even death in plants, animals, and humans if prolonged exposure occurs. Additionally, Grays Harbor and the Chehalis River provide habitat for numerous sensitive and unique plant and animal species. The area also provides important commercial and recreational opportunities, including fishing and shellfish growing, and cultural, historical, and tribal resources. Potential impacts from oil spills, fires, or explosions are summarized by resource in Table S-3.

Table S-3. Environmental Damage from Oil Spills, Fires, or Explosions

Environmental Resource	Potential Impacts from Crude Oil Spill	Potential Impacts from Fire or Explosion
Water	Contaminated surface water and groundwater	Altered water chemistry
Plants	Stunted growth, impaired reproduction, and death; possible changes to overall community structure	Injury, death, and impaired reproduction; possible changes to overall community structure
Animals	Stunted growth, impaired reproduction, behavior changes, and death; possible changes to overall community structure	Injury, immigration, emigration, or death; possible changes to overall community structure
Aesthetics	Degraded views from oil buildup	Degraded views from burns
Recreation	Degraded or closed recreational areas	Degraded or closed recreational areas
Commercial Fishing	Restricted access to or closure of commercial fisheries	Restricted access to or closure of commercial fisheries
Cultural Resources	Contaminated historical resources, archaeological sites, and culturally important areas; possible damage during cleanup activities	Damaged historical and culturally sensitive properties
Tribal Resources	Degraded water quality; damage to fisheries, important plants and animals, and ceremonial qualities; possible damage and disturbance during cleanup activities	Degraded water quality; damage to fisheries, important plants and animals, and ceremonial qualities
Public Services	Disruption of public services; increased demand for emergency response services beyond existing capabilities	Disruption of public services; increased demand for emergency response services beyond existing capabilities
Air	Degraded air quality; potentially toxic fumes	Degraded air quality; potentially toxic fumes
Human Health	Respiratory problems; dizziness and nausea; eye, throat, and skin irritation, emotional and psychological stress; injury or death	Respiratory problems; dizziness and nausea; eye, throat, and skin irritation; emotional and psychological stress; injury or death

What are the potential impacts of extended rail and vessel transport?

This section summarizes potential impacts from rail and vessel transport in the extended study area. Chapter 5, *Extended Rail and Vessel Transport*, provides a full discussion.

The extended study area consists of the BNSF Railway Company (BNSF) mainline rail corridor from the Williston Basin in North Dakota⁸ to Centralia, Washington, and the vessel routes along the U.S. West Coast to Puget Sound and California refineries, with a focus on Washington State.

Rail traffic related to the proposed action would account for a small percentage of BNSF rail traffic in Washington State: between 0.7 and 4.8% of 2035 rail traffic volume projections along the assumed

⁸ The Williston Basin rail terminals are primarily in North Dakota but extend into Montana, South Dakota, and Saskatchewan, Canada.

routes; along the assumed routes for loaded trains, proposed action trips represent between 0.7 and 1.9% of 2035 estimates.

The proposed action could result in an increase in rail traffic along the BNSF main lines in the extended study area, which could affect rail capacity if BNSF does not take actions to address this growth. It is expected that BNSF will make the necessary investments or operating changes to accommodate the growth in rail traffic, but the timing of these actions is unknown.

In addition to potential impacts on rail capacity, routine rail transport along the BNSF main lines related to the proposed action could result in an incremental increase in the following impacts on the natural and built environment similar to existing conditions and the no-action alternative.

- Emission of ambient air pollutants and air toxics from train engine exhaust.
- Incidental leaks and spills from engines and tank cars.
- Train noise, including wayside noise from passing trains and horn noise at grade crossings.
- Vehicle delay at at-grade crossings, including disruption to emergency vehicle response times.
- Impacts on tribal resources.

Maximum annual vessel traffic related to the proposed action represents the following percentage of 2015 large commercial vessel traffic in major West Coast destinations: 4.5% of Puget Sound traffic, 4.0% of San Francisco Bay area traffic, and 3.2% of Los Angeles area traffic.

Vessel traffic related to the proposed action would have a negligible impact on vessel traffic in the extended study area. However, it could result in an incremental increase in the following impacts on the natural and built environment similar to existing conditions and the no-action alternative.

- Emission of ambient air pollutants and air toxics from vessel engine exhaust.
- Water quality impacts from incidental leaks.
- Introduction of invasive species through ballast water exchanges.
- Impacts on aquatic species from increased underwater noise and vibration, vessel strikes, and increased wake and propeller wash.
- Impacts on tribal resources.

In addition, rail and vessel transport of crude oil in the extended study area under the proposed action could increase the likelihood of rail and vessel incidents and related consequences (i.e., oil spills, fires, and explosions). However, the potential consequences would remain similar in nature and magnitude to those that could occur under existing conditions and the no-action alternative. Depending on the specific location of an incident (e.g., proximity to population centers, sensitive resources), the type of material released, the volume of the release, and the potential for ignition (e.g., fire, explosion), impacts could be significant.

What are the potential cumulative impacts?

This section summarizes the contribution of the proposed action to cumulative impacts. Chapter 6, *Cumulative Impacts*, provides a full discussion.

The analysis considered other reasonably foreseeable projects, past and present actions, and future conditions for cumulative impacts in the study area. These cumulative projects are the proposed

action, the REG (formerly Imperium Terminal Services) Expansion Project, the Grays Harbor Rail Terminal Project, and dredging for the Grays Harbor Navigation Improvement Project. The REG project currently includes handling crude petroleum, refined petroleum, and biological oils but REG has stated that they do not intend to handle crude oil and will revise their proposal. The crude oil proposal for the Grays Harbor Rail Terminal Project is no longer active; however, industrial growth is anticipated at this site between 2017 and 2037. Therefore, the analysis of cumulative impacts retains the original proposals for REG and Grays Harbor Rail Terminal considered in the Draft EIS. Future development at these sites would not include crude oil due to the revised zoning codes for the Cities of Hoquiam and Aberdeen.

Air

Air emissions associated with the cumulative projects are not anticipated to exceed applicable state and federal air quality standards; however, under worst-case conditions, the 1-hour standard for nitrogen oxides could be exceeded if all cumulative projects are conducting loading or unloading activities at the same time.

Greenhouse gas emissions would increase with the cumulative projects. Cumulative greenhouse gas emissions for onsite operations and offsite rail and vessel transport within the state, estimated at 118,447 metric tons of carbon dioxide equivalent per year, represent 0.13% of related 2011 statewide GHG emissions and approximately 0.26% of Washington State's 2050 statutory reductions. Greenhouse gas emissions from onsite operations, rail transport from and to the likely source and destination were estimated at 433,130 metric tons of carbon dioxide equivalent per year. Because crude oil handled under the cumulative projects is expected to replace crude oil from the Alaska North Slope and other more distant sources, emissions from roundtrip transport of crude oil between Valdez, Alaska, and the Port of Long Beach were estimated as a conservative representation of emissions offset by the proposed action. The resulting net greenhouse gas emissions from the cumulative projects were estimated at 263,620 metric tons of carbon dioxide equivalent per year. This represents approximately 0.004% of national emission reduction targets for 2025, and 0.0006% of global emission reduction targets.

Greenhouse gas emissions from the cumulative projects would contribute to global greenhouse gas emissions, which contribute to climate change. Climate change affects Washington State and the region by increasing the risk of wildfires, floods, drought, increased temperatures, ocean acidification, and changes in precipitation. Climate change also contributes to sea level rise; however, no flooding from sea level rise is predicted at the project site.

Noise and Vibration

The cumulative projects would add 4.25 train trips per day to the 3 train trips per day under existing conditions. The increase in noise along the PS&P rail line could disturb residents and other sensitive groups. Using methods established by the Federal Rail Administration and Federal Transit Authority, assuming that the cumulative projects are operating at maximum throughput, the average daily noise increase related to horn soundings would have moderate impacts on 756 residents and severe impacts on 253 residents. Severe impacts would be most likely near grade crossing in Elma, Satsop, Montesano, East Aberdeen, Malone, Porter, and Rochester.

The cumulative projects would also result in an average daily noise increase related to wayside noise from passing trains. Between Elma and Satsop, 10 residences could be exposed to severe

impacts. Implementation of mitigation (Table S-1) to establish quiet zones for severe impacts identified for the proposed action would also reduce cumulative noise impacts. However, as long as train horns continue to sound for safety at these grade crossings, the potential for exposure to severe impacts at these crossings would remain.

Tribal Resources

At maximum throughput, operation of the cumulative projects would add 758 vessel trips to projected large commercial vessel trips along the navigation channel, for 1,082 trips in 2017 to 1,180 vessel trips in 2037 per year. This increased traffic and the increased occupancy of the Terminal 1 dock could disrupt tribal fishing in the navigation channel (from approximately the Crossover Channel Reach of the navigation channel to the turning basin upstream of Terminal 2) and adjacent to Terminal 1, respectively.

Vessel traffic would not likely affect Quinault Indian Nation tribal resources outside of the navigation channel (including crab fishing in the harbor). However, vessel operations could exclude tribal fishers from a portion of their typical fishing area within the navigation channel (from approximately the Crossover Channel Reach of the navigation channel to the turning basin upstream of Terminal 2). Conflicts would be greatest during the fall salmon fishery. Vessel traffic could also reduce access to marine fisheries (including crab) in the ocean because tribal fishers may not be able to cross the bar when tank vessels are moving into or out of the navigation channel. Implementation of mitigation (Table S-1) to coordinate docking schedules with fishing schedules, provide advance notice of vessel calls and movements, and work with Quinault Indian Nation tribal officials to identify other measures as appropriate could reduce the potential for these impacts.

Rail Traffic

The cumulative projects would add approximately 4.25 trips per day on average to the PS&P rail line to the approximately three trips per day under existing conditions. Based on modeling, the PS&P rail line has the capacity to handle up to 12 trips per day. Although the total number of minutes each day that grade crossings would be blocked along the PS&P rail line would increase, trains associated with the cumulative projects could be accommodated on the PS&P rail line with existing infrastructure and there would be no cumulative impacts on rail traffic.

Vehicle Traffic and Safety

Increased rail traffic associated with the cumulative projects, described above, would increase vehicle delays at grade crossings along the PS&P rail line. These delays would not be substantial for most of the rail line between Centralia and Aberdeen, because the chance of encountering a blocked grade crossing would remain relatively low.

Vehicle delay would be most substantial in Centralia and Aberdeen. Vehicle delay would be greatest if a train traveled to or from the project site during rush hour. In Aberdeen, rail operations on the PS&P rail line are heavily influenced by train movements related to Poynor Yard. Substantial vehicle delays would occur with the cumulative projects in Aberdeen from the eastern end of the Olympic Gateway Plaza (Fleet Street) to the Port area and in Centralia at Tower Street, Pearl Street, and H Street grade crossings.

Vehicles at grade crossings in Aberdeen would experience longer delays from switching operations between Poynor Yard and the project sites and between Poynor Yard and Olympic Gateway Plaza.⁹ Currently, vehicles have to wait when trains block grade crossings in Olympic Gateway Plaza for up to 44 minutes per train. For the cumulative projects, this delay would increase to up to 52 minutes per train and would occur more frequently.

Vehicle delay would also substantially increase in the Port area near the project sites. Trains currently occupy grade crossings in this area for up to 13 minutes four times per week. This time would increase up to 22 minutes for the proposed action and up to 77 minutes for the REG (formerly Imperium Terminal Services) project. Vehicle delays at grade crossings could also cause congestion and delays at upstream intersections (east of the project sites).

Because vehicle delay would increase, emergency vehicle delay would also increase at grade crossings. Emergency access is most limited in the Olympic Gateway Plaza and Port of Grays Harbor areas where trains can block all access to certain properties because of switching operations.¹⁰ Existing communication and response procedures for providing emergency access at blocked crossings would reduce impacts related to the cumulative project. Increased rail traffic related to the cumulative projects could increase the frequency of accidents along the PS&P rail line. The grade crossings that would have the shortest predicted intervals between accidents would be in Aberdeen near the Olympic Gateway Plaza and in the Port area because of switching operations involving Poynor Yard. Both vehicle delays and accident frequencies would generally improve by 2037 for some grade crossings because improvements such as grade-crossing protections are assumed to be implemented by then. Additionally, improvements considered for the East Aberdeen Mobility Project would likely improve both delay and safety at grade crossings in the Olympic Gateway Plaza area.

Implementation of mitigation (Table S-1) for impacts of the proposed action, including the applicant working with local jurisdictions to implement accepted measures to address these delays, could also reduce impacts from cumulative projects. Potential infrastructure changes in the future may also reduce impacts.

Vessel Traffic

At maximum throughput, the cumulative projects would add 758 tank vessel trips per year to projected large commercial vessel trips, for 1,082 trips in 2017 to 1,180 trips in 2037, annually. Considering the opportunities available for these vessels to travel through the harbor at various channel depths, the cumulative projects would not exceed the capacity of the navigation channel. The increase in vessel traffic would increase the demand for escort tugs and pilots in Grays Harbor but this demand could be managed with existing services.

Adding the maximum number of days that tank vessels related to the cumulative projects¹¹ (up to 319 days) would be docked at Terminal 1 to the number of days forecast for baseline vessels, the Terminal 1 berth would be occupied 363 days per year. Although this exceeds the number of days that the Terminal 1 berth would be available per year (90% of 365 days is equal to 328 days), it is

⁹ Relates only to the proposed action and REG (formerly Imperium Terminal Services) Expansion Project.

¹⁰ Assembling and disassembling unit trains and delivering and picking up rail cars to and from the project site.

¹¹ Only includes vessels related to the proposed action and REG (formerly Imperium Terminal Services) Expansion Projects, because vessels associated with the Grays Harbor Rail Terminal Project would call at Terminal 3.

based on very conservative assumptions.¹² Moreover, if tankers were used instead of tank barges, berth occupancy could be as low as 318 days per year and there would be sufficient capacity.

The increased vessel traffic could affect commercial fishing by disrupting fishing in the navigation channel, particularly from the Crossover Channel Reach of the navigation channel to the turning basin and at Terminal 1. Vessel traffic would not affect commercial or recreational fishing outside the navigation channel (including crab fishing in the harbor). Conflicts would only occur during the fall salmon fishery. Although it is difficult to predict whether the increased vessel traffic would result in an overall inability of a fisher to reach their limit, increased traffic could limit access to commercial fishing areas. Implementation of mitigation (Table S-1) related to the proposed action to announce vessel arrivals and departures would reduce these impacts further.

Environmental Health and Safety

The spill scenarios used in the risk assessment for the proposed action were also used to assess risks of the cumulative projects. These scenarios looked at terminal operations, rail transportation, and vessel transportation. The increased activities related to the cumulative projects would increase the potential for more frequent spills and the possibility of spilling crude oil. As shown in Table S-4, although the chance of an incident occurring is generally similar to the proposed action, the combined operations of the cumulative projects would result in an increased chance of an incident occurring compared to any single project, such as the proposed action, alone.

¹² Maximum number of vessels (tank barges) and a full 24 hours at dock for each tank barge.

Table S-4. Likelihood of an Incident for Select Spill Scenarios under Cumulative Conditions

Source	Spill Scenario	Occurrence Interval ^a	Probability of Occurrence
Small			
Project site	Up to 2,100 gallons (50 barrels) spilled when transferring oil from rail cars or to vessels at the project site	3 years	0.38 per year
Rail transport	Up to 1,000 gallons (24 barrels) spilled during a derailment along the PS&P rail line	29 years with current rail cars 31 years with rail car improvements	0.034 with current rail cars 0.032 with rail car improvements
Medium			
Project site	Represented by 10,000 gallons (238 barrels) spilled when transferring oil to a vessel at the project site	43 years	0.023 per year
	Represented by 50,400 gallons (1,200 barrels) spilled from pipeline or storage tank at the project site	450 years	0.0022 per year
Rail transport	Represented by 30,000 gallons (714 barrels or the contents of one full tank car) spilled during a derailment along the PS&P rail line	11 years with current rail cars 13 years with rail car improvements	0.0094 with current rail cars 0.0078 with rail car improvements
Large			
Project site	Up to 8.4 million gallons (200,000 barrels, the entire contents of 1 full storage tank) spilled on project site	9,000 years	0.00011 per year
Rail transport	Roughly 90,000 gallons (2,140 barrels or the contents of three full tank cars) spilled during a derailment along the PS&P rail line	73 years with current rail cars 110 years with rail car improvements	0.014 per year with current rail cars 0.0091 per year with rail car improvements
	Roughly 150,000 gallons (3,570 barrels or the contents of five full tank cars) spilled during a derailment along the PS&P rail line	1,400 years with current rail cars 3,300 years with rail car improvements	0.0007 per year with current rail cars 0.0003 per year with rail car improvements
	900,000 gallons (21,400 barrels or the contents of 30 full tank cars) spilled during a derailment along the PS&P rail line	22,000 years with current rail cars 44,000 years with rail car improvements	0.000046 per year with current rail cars 0.000023 per year with rail car improvements
Vessel transport	Up to 105,000 gallons (2,500 barrels) spilled into Grays Harbor from a vessel collision	45 years	0.022 per year
	Up to 1.2 million gallons (29,000 barrels) from a vessel grounding in Grays Harbor	128 years	0.0078 per year
	Up to 15.1 million gallons (360,000 barrels) or the entire contents of one full tanker, including fuel) spilled into Grays Harbor from a vessel collision at harbor entrance	116 years	0.0086 per year
^a Event could occur once in number of years listed.			

What are the potential economic impacts of the proposed action?

Economic impacts were analyzed in accordance with the Hoquiam Municipal Code. No additional economic analysis was conducted as part of the environmental review.

Construction

Construction would temporarily stimulate the economy through purchases of materials, supplies, equipment, and services; payroll to construction workers; and related indirect and induced effects. Construction would result in various tax revenues accruing to state and local governments.

Operations

Operation would likely result in increased employment and income associated with direct spending for labor salaries and material purchases. Additionally, these activities could result in indirect and induced employment and income impacts. The annual economic output of the proposed action in Grays Harbor County is estimated at \$19.9 million. At full buildout, the proposed action would generate an estimated 36 direct jobs in Grays Harbor County.

What are the potential social policy impacts of the proposed action?

Construction

Construction would not result in elements that would bisect, disrupt, or isolate any established communities or change the existing community character, nor would it require relocating any residences or businesses. Construction would not have a significant impact on community welfare because it would not substantially degrade air quality, increase noise, reduce access to recreational facilities, or reduce property values. Construction would not result in the permanent relocation of workers from outside the study area, displacement of local residents, or the requirement for additional housing, and would not disproportionately affect minority and low-income populations.

Operations

Onsite operations of the proposed action would not require acquisition of new properties that would require relocating any residences or businesses, nor would it change the existing community character. Although the PS&P rail line is an existing facility, the increased traffic associated with the proposed action would have an impact on community cohesion in Aberdeen from increased vehicle delay. Vessel traffic and docked vessels associated with the proposed action would have an impact on community cohesion by disrupting commercial and tribal fishing that occurs in the navigation channel and at Terminal 1, respectively. The increase in vessels would limit the timing, duration, and physical area that could be fished.

Community welfare impacts off site would be related to noise, recreation, vehicle traffic, and environmental health and safety impacts as described in the respective sections above. Operation of the proposed action would have a limited potential to affect population demographics.

Routine onsite operations are not anticipated to result in significant environmental impacts and would, therefore, not be expected to disproportionately affect minority and low-income populations

around the project site. For rail and vessel transport, minority and low-income populations closest to the rail line and around Grays Harbor could be disproportionately affected. Potential disproportionate impacts from rail transport would include increased noise and vehicle delay. Potential disproportionate impacts would also include increased exposure to risks of incidents resulting in spills, fires, or explosions.

What are the costs and benefits of the proposed action to the City of Hoquiam?

Cost-benefit impacts were analyzed in accordance with the Hoquiam Municipal Code. No additional cost benefit analysis was conducted as part of the environmental review. Implementation of the proposed action would result in some economic and financial benefits to the City of Hoquiam as well as some costs. Table S-5 summarizes the main benefits and costs that are likely to occur as a result of the proposed action. When enough information was available, monetary estimates are provided in 2013 dollars. Costs that would be incurred in the event of a spill, fire, or explosion are discussed in general below and in more detail in Chapter 7, Section 7.3, Cost-Benefit Analysis.

Table S-5. Main Benefits and Cost of the Proposed Action to the City of Hoquiam (2013 Dollars)

Benefits	Quantification
Direct labor income during construction	Estimate: \$3.8 million to \$4.3 million
Annual direct labor income during each year of operations	Estimate: \$195,000 to \$260,000 per year
Additional labor income associated with indirect and induced jobs in during construction and operations	Not estimated
Property tax collections during construction	Estimate: \$55,783
Property tax collections during each year of operations	Estimate: \$467,161 per year
Additional tax collections during construction and operations from local sales and use tax, business and occupation tax and utility taxes	Not estimated
Costs	
Increased traffic delays	Previous studies estimate: \$9.66 and \$16.18 per person delayed in traffic, per hour, for local traffic \$16.51 and \$24.76 per person delayed in traffic, per hour, for intercity traffic
Increased exposure to traffic accidents risks	Previous studies estimate: \$3,037 per person to \$1.5 million per person involved in a traffic accident, depending on severity of incident
Cost of training for the City of Hoquiam Fire Department on flammable liquid fires risks and to review and practice material release emergency response	Not estimated
Potential decrease in property values	Previous studies estimate: \$3,500 to \$5,800 on average 3 to 5% for increases of 9 trips per day 5 to 20% for increases of 18 trips per day

In addition to those listed in Table S-5, other costs would be incurred in the event of an oil spill. These include direct, market, and nonmarket costs. Direct costs are associated with property damage, such as the market value of the oil spilled; damage to other property; reimbursement for

the state's expenses to respond; assess, and investigate an incident; penalties for violations of federal or state laws; and response and clean-up activities. Market costs include financial losses to local businesses forced to close in the aftermath of an oil spill incident, closure of commercial fisheries, and human health costs. Nonmarket costs include losses of public goods that are not valued in the market. These losses occur when nonpriced services, such as ecosystem services, clean air, clean water, and aesthetic quality, are affected.

What permits and plans apply to the proposed action?

The following permits and/or approvals would be required for the proposed action.

City

- City of Hoquiam Critical Areas Review for fish and wildlife habitat and geologically hazardous areas
- City of Hoquiam Shoreline Substantial Development Permit
- City of Hoquiam Conditional Land Use Permit
- City of Hoquiam Building Permit
- City of Hoquiam Grade and Fill Permit
- City of Hoquiam Fire Department Approval
- City of Hoquiam Demolition Permit
- City of Aberdeen Utility Services Agreement
- City of Aberdeen Critical Areas Review for fish and wildlife habitat and geologically hazardous areas
- City of Aberdeen Building Permit
- City of Aberdeen Grade and Fill Permit
- City of Aberdeen Fire Department Approval

State

- Washington State Department of Ecology National Pollutant Discharge Elimination System Construction Stormwater General Permit
- Washington State Department of Ecology Resource Conservation and Recovery Act Notice of Registration Update
- Washington State Olympic Region Clean Air Agency Approval Order
- Washington State Department of Ecology National Pollutant Discharge Elimination System Industrial Stormwater Permit
- Washington State Department of Ecology Spill Prevention Plan
- Washington State Department of Ecology Spill Contingency Plan
- Washington State Department of Ecology Facility Operations Manual
- Washington State Department of Ecology Oil Handling Facility Training and Certification Report

- Washington State Department of Ecology Oil Handling Facility Safe and Effective Threshold Report

Federal

- U.S. Environmental Protection Agency Facility Response Plan
- U.S. Environmental Protection Agency Spill Prevention Control and Countermeasure Plan
- U.S. Coast Guard Facility Response Plan
- U.S. Coast Guard Letter of Intent
- U.S. Coast Guard Oil Spill Response Plan
- U.S. Coast Guard Facility Security Plan and Facility Security Assessment
- U.S. Coast Guard Operations Manual Update

What are the potential unavoidable and significant adverse impacts?

Implementation of mitigation (Table S-1) would reduce but not completely eliminate significant adverse impacts on noise, tribal resources, vehicle traffic, and environmental health and safety. The following sections describe the unavoidable and significant adverse impacts of the proposed action.

Earth

Although the likelihood of a large-scale tsunami event is relatively low, such an event would likely cause unavoidable and significant adverse environmental impacts at or near the project site if the facility was not constructed to withstand it. If the storage tanks are constructed according to the inputs identified in Section 3.1.7.1, Applicant Mitigation, they are expected to withstand tsunami forces and provide full containment of contents during and after seismic and tsunami events. While the proposed facility may not be operational following a large seismic event, the storage tanks would contain materials until the materials could be safely recovered or the facility returns to operational status.

Noise

The proposed action would result in increased rail traffic that would increase the average noise levels along the PS&P rail line. These increases could result in impacts considered severe, based on the assessment methods developed by the Federal Transit Administration and adopted by the Federal Railroad Administration. These impacts would occur because of horns sounded for public safety near eight grade crossings, representing 33 receptors with up to eight receptors affected at any one grade crossing. Local communities can apply to the Federal Railroad Administration to establish a quiet zone to limit train horn sounding. Mitigation is proposed for the applicant to fund and support a process for the affected communities to establish quiet zones under the Federal Railroad Administration regulations. Quiet zones would eliminate impacts where implemented. Where not implemented, train horns would continue to sound for safety and the potential for exposure to severe impacts would remain.

Tribal Resources

Implementation of mitigation (Table S-1) would reduce but may not completely eliminate impacts on tribal resources. Vessels related to the proposed action would travel through and dock in usual and accustomed fishing areas in Grays Harbor. Under current and future conditions, increased vessel traffic could restrict access to tribal fishing areas in the navigation channel and adjacent to Terminal 1. This conflict is most likely during fall fishing for salmon, steelhead, and sturgeon. Because other factors besides vessel operations affect fishing opportunities, such as the number of fishers, fish distribution, timing, and duration of fish windows, the extent to which vessel operations related to the proposed action would affect tribal fishing is difficult to quantify.

Vehicle Traffic and Safety

Implementation of applicant mitigation measures (Table S-1) could reduce impacts on vehicle traffic but average and peak hour vehicle delays at the following grade crossings in Aberdeen would remain significant.

- Average hour: East Heron Street and Newell Street (Olympic Gateway Plaza area).
- Peak hour: Washington Street (Port of Grays Harbor area).

Addressing vehicle delay at the grade crossings at the Olympic Gateway Plaza area and between Poynor Yard and the project site would require the participation of a broad group of stakeholders in coordination with ongoing regional transportation planning efforts. Ongoing regional transportation planning efforts such as the East Aberdeen Mobility Project could reduce vehicle delay impacts and improve safety conditions at the Olympic Gateway Plaza area. In addition, other regional transportation planning efforts to reduce vehicle delay (such as grade separation, early-warning system, grade-crossing protections) would also help to reduce vehicle delay.

Environmental Health and Safety

Compliance with building codes, design and equipment requirements, and regulatory requirements that address prevention of, preparedness for, and response to incidents involving the release of crude oil and implementation of mitigation (Table S-1) would reduce impacts related to environmental health and safety. However, no mitigation measures would completely eliminate the possibility of a spill, fire, or explosion, nor would they completely eliminate the adverse consequences of a spill, fire, or explosion. Depending on the location of the incident, amount spilled, type of crude oil, and environmental conditions, such as the time of year, water flows, and weather conditions, the potential adverse environmental impacts could be significant.

The following resources could experience significant impacts.

- Water
- Plants
- Animals
- Aesthetics
- Recreation
- Commercial fishing

- Cultural resources
- Tribal resources
- Public services
- Air
- Human health

Cumulative Impacts

Compliance with best management practices, required permit conditions, and recommended mitigation would minimize the potential for the proposed action to result in impacts that would be cumulatively significant with the exception of potentially significant impacts on noise, tribal resources, vehicle traffic, and environmental health and safety. Therefore, the proposed action would contribute to unavoidable adverse impacts on these resources that would also have the potential to be cumulatively significant.

Next Steps

The Final EIS will be used by the local and state agencies in making permit decisions for the proposed action. After a required 7-day waiting period following issuance of the Final EIS, agency action may be taken on the proposed action, including evaluation and issuance of permits required for construction and operation. Construction of the proposed action could begin upon receipt of all required permits and approvals.

Table S-1. Summary of Impacts Requiring Mitigation

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
3.1 Earth	The addition of buildings, storage tanks, and related infrastructure carrying and storing crude oil could expose people to harm if damaged during a seismic event, such as an earthquake. Under the no-action alternative, the risk remains the same as current conditions.	<ul style="list-style-type: none"> • To minimize the potential for impacts at the project site related to unstable soils, the applicant will prepare the project site for construction as described in the applicant’s geotechnical report (Hart Crowser 2013). <ul style="list-style-type: none"> ○ Recompact and/or over-excavate and replace areas observed to be soft, loose, wet, or yielding with structural fill. ○ Install a geotextile stabilization fabric, additional clean gravel material, and/or a greater thickness of fill if areas larger than 0.5 acre of exposed ground are unusually soft or disturbed. ○ In all disturbed areas during construction, remove any soft, loose, or organic zones and replace with structural fill. The upper material provides lateral support for pile foundations. In areas with pile and structural slab systems, rigorous preparation of the subgrade is not required. • To minimize the potential for damage to the storage tanks related to geologic risks and unstable soils, the applicant will install pile-supported foundations that extend to necessary depths to embed in competent soil required to resist seismic forces and maintain stability if liquefaction, lateral spreading, and settlement of surface soils occurs. • To minimize the potential for damage to the storage tanks related to geologic risks and unstable soils, the applicant will develop final design specifications for proposed structures based on the following updated standards/information, including additional site-specific evaluation for the easternmost portion of the project site. <ul style="list-style-type: none"> ○ U.S. Geological Survey ground-shaking report and maps released in July 2014 (Petersen et al. 2014). ○ American Petroleum Institute Standard 650 (2012). ○ International Building Code 2012. • To minimize the potential for spills and leaks that could occur at oil storage tank connection points, the applicant will design and install 	No

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
3.1 Earth	The proposed facility could expose workers at the project site to increased risks of harm from a tsunami. Although the likelihood of a tsunami would remain unchanged compared to existing conditions, the new facility would result in new infrastructure and additional workers that would be exposed to these risks. Under the no-action alternative, the risk remains the same as current conditions.	<p>flush-mounted or internal automatic shut-off valves that allow the tanks to remain isolated from pipe distribution systems that may shear off or be damaged during seismic-related events.</p> <ul style="list-style-type: none"> The applicant will ensure that a tsunami evacuation and emergency management plan is prepared prior to beginning project operations. This plan will consider evacuation planning, identification of safe havens, and identification of evacuation routes to natural high ground and will be developed in coordination with emergency management officials (City of Hoquiam, Grays Harbor County, Washington State, U.S. Coast Guard, ship captains, and pilots). 	No
3.1 Earth	The new storage tanks, and related infrastructure carrying and storing crude oil could rupture in the event of a tsunami and expose people and the environment to increased harm. Under the no-action alternative, the risk remains the same as current conditions.	<ul style="list-style-type: none"> To reduce the potential for environmental damage related to a tsunami event, the applicant will conduct a study to assess the technical feasibility and cost of implementing measures to construct the proposed facility to withstand a Cascadia Subduction Zone (CSZ) L1M_w 9.0 tsunami wave based on the Scenario 2 inputs listed in Table 3 of the <i>Tsunami Impact Modeling and Analysis</i> (Appendix C). If ASCE 7 Standard, <i>Minimum Design Loads for Buildings and Other Structures, Chapter 6 – Tsunami Loads and Effects</i>, is adopted by future Uniform Building Code updates before project design is completed and is more protective, the updated standards will supersede the mitigation measure. Agreed-upon measures will be implemented prior to project design and construction in coordination with the co-lead agencies. 	Yes
3.2 Air	Construction and operation of the proposed action would result in increased air emissions compared to the no-action alternative.	<ul style="list-style-type: none"> The applicant will ensure that all engine-powered equipment and vehicles used in construction, operation, and maintenance at the facility are subject to a regular inspection and maintenance schedule in order to minimize air pollutant emissions, greenhouse gas 	No

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
3.4 Plants/ 3.5 Animals	Increased vessel traffic related to the proposed action could increase the risk of spread of invasive species compared to the no-action alternative.	<p>emissions, and fuel consumption. Preventive maintenance activities will include but not be limited to the following actions.</p> <ul style="list-style-type: none"> ○ Replacing oil and oil filters as recommended by manufacturer instructions. ○ Maintaining proper tire pressure in on-road vehicles. ○ Replacing of worn or end-of-life parts. ○ Scheduling routine equipment service checks. ● The applicant will develop and implement an anti-idling policy for both construction and operation and ensure that equipment operators receive training on best practices for reducing fuel consumption in order to reduce project-related greenhouse gas emissions. The anti-idling policy will include required warmup periods for equipment and prohibit idling beyond these periods. The policy will define any exemptions where idling is permitted for safety or operational reasons, such as when ambient temperatures are below levels required for reliable operation. In addition, the use of technologies such as idle management systems or automatic shutdown features will be considered part of the policy. ● To minimize idling from trains and vessels and resulting emissions, the applicant will coordinate with the Port of Grays Harbor and PS&P to manage waiting times for rail and vessel arrivals or departures. 	No
3.6 Energy	Construction and operation of the proposed action would result in increased energy consumption compared to the no-action alternative, although this would not be a	<ul style="list-style-type: none"> ● Voluntary Measure—To minimize energy use, the applicant will employ the most energy-efficient systems for all pumps, motors, electrical equipment, and process technology equipment as practicable. ● Voluntary Measure—To minimize energy use, the applicant will apply U.S. Green Building Council Leadership in Energy and Environmental 	No

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
3.7 Noise and Vibration	Construction of the proposed action could result in short term, temporary increased in low levels of noise at the project site.	<p>Design (LEED) Silver Standards to the design of new buildings.</p> <ul style="list-style-type: none"> To reduce construction noise at nearby sensitive receptors, the applicant will maintain construction and maintenance equipment in good working order with properly functioning mufflers to control noise. 	No
3.7 Noise and Vibration	Increased rail traffic related to the proposed action would increase average noise levels for residents and other sensitive groups along the PS&P rail line.	<ul style="list-style-type: none"> To address increased noise from rail traffic related to the proposed action that would result in severe impacts on sensitive receptors, the applicant will fund and support a process for the affected communities to establish quiet zones under the Federal Railroad Administration (FRA) regulations. FRA regulations apply to rail corridors with more than one crossing within 0.5 mile, in which case all crossings must be considered. Crossings equipped with signage only will be upgraded to active warning devices (light and gates, constant warning train detection) and other required safety standards. Crossings with existing active warning devices will also likely need to be upgraded to meet minimum standards. If FRA does not approve the quiet zones, the applicant will work with PS&P and fund the installation of wayside horns at crossings to reduce noise impacts. Elimination of locomotive horn sounding at the affected grade crossings would reduce impacts from increased horn noise. Quiet zones and crossings can be established using a procedure established in FRA regulations. The quiet zone allows the installation of enhanced safety measures at grade crossings such that train horns would not be required to be used. Implementation of a quiet zone is subject to FRA approval. Quiet zones include measures to maintain the level of safety while reducing noise. Occasional train horn noise will occur even if quiet zones are established; for example, in situations such as trespassers along the tracks or signal malfunctions. 	Yes

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
3.9 Aesthetics, Light and Glare	The proposed action would result in new structures that would be visible from surrounding areas although the overall impact would not be significant.	<ul style="list-style-type: none"> To reduce potential glare, the applicant will ensure the proposed storage tanks are of a tone that blends into the surrounding landscape and/or match the existing facility tank paint or insulation, appropriate to the existing design and without affecting air emissions for the surrounding structures. To ensure that lighting at the project site does not conflict with other land uses, the applicant will coordinate with the Port of Grays Harbor to develop the proposal for project lighting. 	No
3.10 Recreation	Increased vessel loading activity at the Terminal 1 dock from the proposed action could result in disruption to the attendees of the annual Grays Harbor Shorebird Festival.	<ul style="list-style-type: none"> Voluntary Measure—To acknowledge the importance of the annual Grays Harbor Shorebird Festival to the community and its visitors and to eliminate the potential for a spill from vessel-loading operations occurring during the festival, the applicant will coordinate with the City of Hoquiam to receive advance notice of the date for and will halt crude oil vessel-loading operations for a period of 2 weeks each year overlapping with the event. 	No
3.10 Recreation	Increased vessel traffic related to the proposed action could disrupt recreational vessels although the overall impact would not be significant.	<ul style="list-style-type: none"> While fishing boats are required to follow the U.S. Coast Guard navigation rules, to improve awareness of vessel traffic in the navigation channel, the applicant will work with the Grays Harbor Safety Committee, including the U.S. Coast Guard and Port of Grays Harbor, to establish procedures to announce project-related vessel traffic arrivals and departures over a designated VHF marine radio channel at least 1 hour before arriving and departing. 	No
3.11 Cultural Resources	There is a low but increased possibility that construction activities involving ground disturbance could result in impacts on otherwise unknown archaeological resources compared to the no-action alternative.	<ul style="list-style-type: none"> To reduce the risk of disturbing undocumented cultural resources, the applicant will prepare an unanticipated discovery plan to address previously unidentified archaeological resources should any be discovered during the construction of the proposed action. The applicant will submit the plan to the Washington State Department of Archaeology and Historic Preservation before construction. The plan will contain provisions requiring that if archaeological resources are uncovered during excavations, construction activities will cease immediately and the applicant will notify the City of Hoquiam, the Department of Archaeology and Historic Preservation, the Quinault Indian Nation, and the Confederated Tribes of the Chehalis 	No

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
3.12 Tribal Resources	Increased vessel activity related to the proposed action would increase the potential for conflict with tribal fishing in Grays Harbor compared to the no-action alternative.	<p>Reservation. In such cases, the applicant will provide for a site inspection and evaluation by a professional archaeologist to ensure that all possible valuable archaeological data are properly salvaged or mapped.</p> <ul style="list-style-type: none"> • The applicant will have a qualified professional archaeologist monitor ground-disturbing activities that would result in the excavation and exposure of subsurface deposits at depths greater than 15 feet below the current ground surface. If archaeological monitoring reveals fill deposits at greater depths, these results will be used to establish a 100-foot buffer around the location of the discovery in which no additional archaeological monitoring would be needed to the maximum depth at which fill deposits have been documented. <ul style="list-style-type: none"> • To mitigate potential impacts on tribal fishing, the applicant will coordinate with the Quinault Indian Nation and Washington Department of Fish and Wildlife, annually, as requested, to support review and possible adjustments of docking schedules to minimize conflict with fishing schedules negotiated preseason by the state and tribe. Consultation will account for operations, including anticipated vessel movements related to the proposed action. • While tribal fishing boats are required to follow the U.S. Coast Guard navigation rules, to improve awareness of vessel traffic in the navigation channel, the applicant will work with the Grays Harbor Safety Committee, including the U.S. Coast Guard and Port of Grays Harbor, to establish procedures to announce project-related vessel traffic arrivals and departures over a designated VHF marine radio channel at least 1 hour before arriving or departing. • To mitigate impacts on access to tribal treaty fishing areas, the applicant will initiate a process between stakeholders and Quinault Indian Nation tribal officials to discuss and identify additional mitigation measures. Initiation of the process between the parties will occur before vessel operations begin. 	Yes

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
3.14 Hazardous Materials	Construction of the proposed action could increase the risk of exposing hazardous materials potentially present at the project site compared to the no-action alternative.	<ul style="list-style-type: none"> • If groundwater or odiferous, stained, or discolored soil is encountered during construction activities, or if groundwater encountered is suspected to be contaminated during construction activities, the following mitigation measures will be implemented. <ul style="list-style-type: none"> ○ The applicant will seek the professional recommendation of a consultant specializing in the handling and identification of hazardous materials and contaminated media. ○ If deemed necessary, based on the above consultation, the applicant will conduct soil and/or groundwater testing for identification of possible hazardous materials. ○ Construction personnel will isolate and cover suspect soil until analytical results are reviewed by qualified personnel. ○ The consultant will compare analytical results to the applicable U.S. Environmental Protection Agency’s regional screening levels, which address common environmental pollutants. If hazardous materials are discovered in the soils and/or groundwater at levels above the regional screening levels, the consultant will provide recommendations on the steps required for proper treatment and/or removal and disposal of the contaminated media. 	No
3.16 Vehicle Traffic and Safety	Increased rail traffic related to the proposed action would result in substantial increases in vehicle delay at the Olympic Gateway Plaza and between Poynor Yard and the project site compared to the no-action alternative.	<ul style="list-style-type: none"> • To mitigate vehicle traffic impacts associated with rail operations of the proposed action, the applicant will work with the City of Hoquiam, City of Aberdeen, Port of Grays Harbor, Grays Harbor Council of Governments, and PS&P to address vehicle delay between the project site and Poynor Yard. Washington State Department of Transportation (WSDOT), the City of Hoquiam, City of Aberdeen, and Port of Grays Harbor will approve proposed measures for the areas where they are responsible for vehicle delay. The applicant will ensure measures are in place prior to beginning the proposed operations. The proposed changes should include an evaluation of impacts on potentially affected low-income and minority populations. • To mitigate vehicle traffic impacts associated with rail operations related to the proposed action, the applicant will work with the City of Hoquiam, City of Aberdeen, Port of Grays Harbor, Grays Harbor 	Yes

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
3.16 Vehicle Traffic and Safety	Increased rail traffic related to the proposed action could result in increased in emergency responses times compared to the no-action alternative if alternative access was not available.	<p>Council of Governments, and PS&P to address vehicle delays at PS&P grade crossings into and out of the Olympic Gateway Plaza. WSDOT, the City of Hoquiam, City of Aberdeen, and Port of Grays Harbor will approve proposed measures for the areas where they are responsible for vehicle safety. The applicant will ensure acceptable measures are in place prior to beginning the proposed project operations. The proposed changes should include an evaluation of impacts on potentially affected low-income and minority populations.</p> <ul style="list-style-type: none"> • To address the potential for emergency access conflicts to areas along the PS&P rail line during unplanned unit train stoppages, the applicant will work with PS&P and local emergency service providers along the PS&P rail line to develop and implement a notification protocol to inform local emergency service providers and other interested parties of the duration and magnitude of the unplanned stoppages. The notification protocol will be in place prior to the beginning of operations involving transport of crude oil. • To reduce the potential for increased delay of emergency vehicles at PS&P grade crossings during project operations, the applicant will work with local emergency service providers to provide advance notification of incoming trains. • To improve the timeliness of emergency response, the applicant will work with the Aberdeen and Hoquiam Fire Departments and private landowners along the unpaved road on the south side of the PS&P rail line and west of F Street to identify options for first responder access to properties in this area. 	No
3.17 Vessel Traffic	Increased vessel activity related to routine operations of the proposed action could result in the need for increased coordination among stakeholders in the Port of Grays Harbor.	<ul style="list-style-type: none"> • To improve vessel management and situational awareness and to reduce potential risk of incident of vessel collision or allision in Grays Harbor, the applicant will fund and work with U.S. Coast Guard, Washington State Department of Ecology, Port of Grays Harbor, and Grays Harbor Safety Committee to propose, develop, and implement a formalized vessel management system. The vessel management system will include the ability to schedule, track, and monitor vessel movements in the harbor and off the entrance to the harbor. The 	No

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
		<p>vessel management system will be active prior to the applicant beginning the proposed operations. If a rule is adopted under RCW 88.16, Pilotage Act, prior to beginning operations, the requirements of the new rule would be followed.</p> <p>The vessel management system will assist in the following actions.</p> <ul style="list-style-type: none"> ○ Ensure vessel traffic is limited while a laden tank vessel is in the navigation channel. ○ Prohibit the transit of any other deep-draft vessels within the south channel reach (just off Westport) to Terminal 1 in both directions whenever a laden tank vessel is transiting within the same channel. ○ Include real-time automatic identification system tracking and monitoring. ● To improve vessel management and reduce the risk of an incident, the applicant will coordinate with the Port of Grays Harbor and as a member of the Grays Harbor Safety Committee, work to develop and implement specific procedures for escorting, tethering, refueling, and emergency maneuvering to control laden tank vessels. The procedures must be drafted prior to the proposed operations beginning. These procedures should be included in the Grays Harbor Safety Plan. At a minimum, these must include the following elements. <ul style="list-style-type: none"> ○ Escort configurations and maneuvering characteristics of escorted tankers and tank barges. ○ Specific emergency connection and tethering procedures for connection of escort tugs to tankers and tank barges. ○ Specific maneuvers necessary for the escort tug to maintain control of the tanker while transiting Grays Harbor waters specifically during incidents of loss of propulsion or steering or in bad weather. ○ Appropriate safe speed of transit in Grays Harbor when escort tugs are tethered. ○ Guidelines for tanker or tank barge bridge team to rapidly 	

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
3.17, Vessel Traffic	Increased vessel traffic related to the proposed action could result in conflicts with commercial fishing vessels.	<p>recognize and respond to a loss of power or steering. By improving recognition and reaction time, the escort tugs can more effectively steer the vessel through the navigation channel upon incident.</p> <ul style="list-style-type: none"> ○ Requirement for a pretransit conference. ○ Requirements for refueling of the vessel. 	No
4.4, Environmental Health Risks-Terminal (Onsite)	The proposed action would increase the potential for an incident involving a spill, fire, or explosion of crude oil during onsite operations compared to the no-action alternative.	<ul style="list-style-type: none"> ● To improve response effectiveness in the case of a spill, provide information to support oil spill modeling, identify specialized spill response or prevention equipment for the facility prevention plan and contingency plan, and assist with determinations of safe and effective conditions for prebooming, the applicant will purchase an equipment and software package to supplement information on environmental conditions. Information will include tides, currents, wave heights, wind (speed and direction), air temperature, water temperature, and barometric pressure. This information should be provided for the following locations: at the facility, at the entrance to Grays Harbor, at Oakville on the Chehalis River. In addition, the applicant will purchase and stage a current measuring device that includes direction and velocity at the facility dock. The system will be in place before construction begins. Data will be provided to Ecology at 6, 12, and 18 months after the system is in place. At least 12 months of data will be provided before operations begin. ● To improve oil recovery in the case of a spill during vessel loading at the dock, the applicant will retain a licensed engineer to perform an independent engineering analysis and feasibility study. The engineer 	Yes

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
4.4, Environmental Health Risks-Terminal (Onsite)	The proposed action would increase the potential for environmental damage from an incident involving the spill of crude oil during onsite operations compared to the no-action alternative. Potential impacts are described in general terms in Section 4.7, <i>Impacts on Resources</i> , and apply to the resources described in greater detail in Chapter 3, <i>Affected Environment, Impacts, and Mitigation Measures</i> .	<p>will determine the number of days per year it is safe and effective to preboom oil transfers and will identify site-specific improvements. The applicant will submit the study to Ecology for review and approval before operations begin. If approved, the applicant will implement improvements from the study.</p> <ul style="list-style-type: none"> • If the study identifies no feasible alternative or until the changes are in place, and if prebooming is not feasible, the applicant will implement the following alternative measures during oil transfers in addition to those measures already required by regulation: <ul style="list-style-type: none"> ○ One oil spill response vessel with crew, skimmer, and at least 1,000 feet of boom at the dock. ○ On-water tank barge storage devices (not including bladders) prestaged at the dock with the skimmer to ensure a minimum of 450 barrels of recovery ready to be deployed. • To improve contingency planning and response actions and to minimize potential impacts, the applicant will gather and provide data to improve the GNOME Location File for Grays Harbor. The data will assist in developing trajectories for the GNOME and TAP oil spill models. To support model development and use, the applicant will collect remote sensing data at the facility location, at the entrance to Grays Harbor, at Oakville on the Chehalis River. The data provided will be sufficient so that the models can complete the following actions: <ul style="list-style-type: none"> ○ Predict how wind, currents, and other processes might move and spread oil spilled on the water. ○ Depict a relative distribution of spilled oil movement in Grays Harbor from the entrance to the Pacific Ocean to a point upstream in the Chehalis River near Oakville, Washington. ○ Predict a spills trajectory based on a worst-case spill scenario from spills at the terminal, from vessels transiting to and from the terminal, and from derailments along the PS&P rail line. <p>The applicant will coordinate with Ecology to ensure the data meets the identified criteria. A peer review of the model will be funded by the</p>	Yes

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
		<p>applicant using a third-party reviewer as approved by Ecology. Data will be gathered and the peer review conducted before operations for the proposed facility begin.</p> <ul style="list-style-type: none"> • To reduce the risks and impacts from an oil spill, prior to beginning the proposed operations the applicant will conduct a study to identify an appropriate level of financial responsibility for the potential costs for response and cleanup of oil spills, natural resource damages, and costs to state and affected counties and cities for their response actions. The study should address the factors in RCW 88.40.025, Evidence of Financial Responsibility for Onshore or Offshore Facilities, including a reasonable worst-case spill volume; the cost of cleaning up the spilled oil; the frequency of operations at the facility; prevention measures employed by the facility that could reduce impacts through spill containment, immediate discovery, and shutoff times; and the damages that could result from the spill (including restoration). The study should identify any constraints related to the commercial availability and affordability of financial responsibility. Based on the study, Ecology will determine the appropriate level of financial responsibility and require the applicant to demonstrate their financial responsibility to the satisfaction of Ecology. Proof of financial responsibility will be included as documentation in the applicant's contingency plan. • To improve oil recovery in the case of a spill, equipment required at hour 6 under WAC 173-182-355 must be resident in Grays Harbor. Additionally, the applicant must purchase and stage the following equipment in Grays Harbor: <ul style="list-style-type: none"> ○ An additional 200 feet of boom and temporary storage of at least 196 barrels with the ability to collect, contain, and separate collected oil from water. The additional boom should be capable of encountering oil at advancing speeds of at least 2 knots in waves. This boom will be of a type appropriate for the operating environment. ○ An additional 1,000 feet of shore seal boom. 	

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
4.4, Environmental Health Risks-Terminal (Onsite)	The proposed action would result in increased need for local emergency service response services that could exceed capacity.	<ul style="list-style-type: none"> • To improve oil recovery in the case of a spill of crude oil that weathers, sinks or submerges, the applicant will ensure access through agreements or contracts to have the following equipment available. The equipment will be capable of being on scene within 12 hours of spill notification and the means of access will be documented in the applicant’s contingency plan and available prior to beginning operations. <ul style="list-style-type: none"> ○ Sonar, sampling equipment or other methods to locate the oil on the bottom or suspended in the water column. ○ Containment boom, sorbent boom, silt curtains, or other methods to contain the oil that may remain floating on the surface or to reduce spreading on the bottom. ○ Dredges, pumps, or other equipment necessary to recover oil from the bottom and shoreline. ○ Equipment necessary to assess the impact of such discharges. ○ Other appropriate equipment necessary to respond to a discharge involving the type of oil handled, stored, or transported. • To reduce the impacts from an oil spill, the applicant will establish and implement a procedure for blocking all drains on the dock prior to oil transfers and observing the area for discharges before removal. This best practice will be documented in the facility operations manual for approval by Ecology. <ul style="list-style-type: none"> • Voluntary Measure—Supply three totes of alcohol-resistant aqueous film-forming foam at the project site for use by local fire departments. • To improve preparedness for incidents, including oils spills, explosions, and fires, the applicant will ensure an emergency preparedness workshop is conducted prior to beginning project operations. The applicant will coordinate the workshop with Ecology. The workshop will be no more than 1 day in length and will be held prior to beginning operations and thereafter will become part of the facility drill program. The initial workshop will focus on familiarizing local emergency responders, tribes, and communities with the 	Yes

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
4.5, Environmental Health Risks -	Increased rail transport related to the proposed action would increase the	<p>contents of the Northwest Area Contingency Plan, the Grays Harbor and Chehalis Geographic Response Plans, other local response plans, the facility response plan, and the measures that are in place for a rapid and effective spill response</p> <ul style="list-style-type: none"> • To improve the capability of local emergency responders to respond to spills, fires, or explosions at or near the project site, the applicant will contribute a fair share of the total cost to replace the City Hoquiam Fire Department’s fire apparatus to ensure it is able to handle crude oil fires. Equipment must be available and operational prior to beginning operations. The applicant will consult with the local fire departments to determine specifications for the equipment. The total applicant contribution will be determined by the City and applicant through negotiation at the time of the equipment purchase. • To improve response times and communication in the event of an incident that could affect tribal resources, the applicant will include tribal contacts (names and/or phone numbers) in notification protocols in the oil spill contingency plan. • To reduce risks related to an explosion or fire onsite, the applicant will meet with local emergency management officials including representatives from the City of Hoquiam and City of Aberdeen Fire Departments to identify training needs for local responders who will respond to an emergency on the project site. This effort will include development and execution of a training program for those responders to increase level of awareness and understanding of the hazards associated with a rail tank car incident or a storage tank incident onsite. The training will include identification of notification protocols, use of personal protective equipment, and equipment deployment procedures. This training will be completed before the applicant begins receiving oil trains and will be offered at least annually. <p>• Voluntary Measure—To reduce potential risk from tank car punctures and spills identified with use of DOT-111 tank cars for transport of Bakken crude oil, the applicant will not accept crude oil by rail unless</p>	Yes

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
Rail Transport	likelihood of an incident involving a spill, fire, or explosion of crude oil along the PS&P rail line compared to the no-action alternative.	<p>the following actions occur.</p> <ul style="list-style-type: none"> • The rail cars meet or exceed the new U.S. Department of Transportation specification 117 design or performance criteria. • Existing tank cars are retrofitted in accordance with the U.S. Department of Transportation-prescribed retrofit design or performance standard (80 FR 26643). • To improve the safe transport of crude oils with different volatilities and sinking tendencies, the applicant will not accept crude oil by rail unless the applicant has received verification that a sample of the oil has been tested and properly classified and characterized. • To reduce risks of a spill due to a rail incident, the applicant will not accept crude oil unit trains by rail unless the train has in place a functioning two-way end-of-train device or distributed power for operations on the PS&P rail line to the local yard. • To reduce the risks of derailments and impacts on rail infrastructure due to increased rail traffic and the weight of crude oil trains, the applicant will not accept crude oil by rail until PS&P verifies track integrity based on an evaluation of load limits. The evaluation will be completed prior to beginning operations. 	

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
4.5, Environmental Health Risks - Rail Transport	Increased rail traffic related to the proposed action would result in increased potential for environmental damage from an incident involving the spill of crude oil compared to the no-action alternative. Potential impacts are described in general terms in Section 4.7, <i>Impacts on Resources</i> , and apply to the resources described in greater detail in Chapter 3, <i>Affected Environment, Impacts, and Mitigation Measures</i> .	<ul style="list-style-type: none"> • Due to sensitivity of the local environment, tribal resource concerns, and the potential presence of special-status species, to improve coordination and response capabilities in the event of a rail incident, the applicant will not accept crude oil by rail unless PS&P prepares, submits to Ecology for approval, and implements a contingency plan meeting the requirements identified below. This requirement will remain in place until state contingency plan requirements for railroads are implemented by Ecology pursuant to ESHB 1449, Section 5, and/or amendments to the federal oil spill response plan rule (49 CFR 130) is adopted. <ul style="list-style-type: none"> ○ Disclose full details of the method of response to spills to various sizes. ○ Define a worst-case spill planning volume. ○ Identify response notification and coordination procedures. ○ Identify personnel assigned to implement the plan. ○ Reference applicable Washington State geographic response plans. ○ Describe a training and exercise program for personnel and equipment. ○ Identify prepositioned spill containment and cleanup equipment and trained personnel. ○ Identify arrangement for enlisting qualified and trained cleanup personnel to implement the plan. ○ Describe how plan relates to other relevant contingency plans, such as facility plans, other rail plans, including federal oil spill response plans, and regional plans. ○ Ensure equipment identified that is necessary for determining air quality conditions but not available through local agencies or fire departments will be made available to local fire departments. 	Yes
4.5, Environmental Health Risks - Rail Transport	The proposed action would result in increased need for local emergency service response services that could	<ul style="list-style-type: none"> • Voluntary Measure—Supply three totes of alcohol-resistant aqueous film-forming foam at the project site for use by local fire departments. • To improve preparedness for incidents, including oils spills, explosions, and fires, the applicant will ensure an emergency 	Yes

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
	exceed capacity.	<p>preparedness workshop is conducted prior to beginning project operations. The applicant will coordinate the workshop with Ecology. The workshop will be no more than 1 day in length. It will be held prior to beginning operations and thereafter will become part of the facility drill program. The initial workshop will focus on familiarizing local emergency responders, tribes, and communities with the contents of the Northwest Area Contingency Plan, the Grays Harbor and Chehalis Geographic Response Plans, other local response plans, the facility response plan, and the measures that are in place for a rapid and effective spill response.⁶</p> <ul style="list-style-type: none"> • To increase the timeliness of responses to spills and incidents involving trains and to maximize coordination of responses along the PS&P rail line, the applicant will not accept crude oil by rail unless the following measures are completed. <ul style="list-style-type: none"> ○ PS&P participates with the local fire districts in a public safety drill at least once every 2 years. ○ PS&P tests one geographic response plan strategy annually and invites Ecology to participate. This requirement will remain in place until state contingency plan requirements for railroads are implemented by Ecology pursuant to ESHB 1449, Section 5. ○ PS&P participates in testing the applicant’s oil spill contingency plan with a rail scenario at least once every 3 years. This drill will be designed with Ecology and scheduled on the regional drill calendar. • To improve response capability for spills that may occur on the Chehalis River, the applicant will coordinate with Ecology to advertise and extend registration of Vessels of Opportunity to the Chehalis River and to tribal boat owners prior to beginning operations. Applicants for the Vessel of Opportunity Program should be directed to www.oilspills101.wa.gov for information and registration. • To improve capability to respond to potential incidents involving trains transporting crude oil to the project site, the applicant will not accept crude oil until a foam truck has been provided to the Elma Fire 	

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
		<p>Department. The foam truck will provide fire-fighting capability along the PS&P rail line. The foam truck must be available and operational prior to beginning operations. The applicant will consult with Ecology and the local fire department to determine the capacity of the foam truck.</p> <ul style="list-style-type: none"> • To improve response times to reduce the initial impacts of an oil spill, the applicant will ensure that two trailers containing the spill response equipment listed below are available prior to beginning crude oil operations for use by initial local and emergency responders along the PS&P rail line. This equipment will be offered to fire departments along the PS&P rail line and the Chehalis Indian Tribe. The trailer and equipment will be maintained by the applicant and inspected annually. The equipment will only be provided to fire departments and Chehalis Tribe if they agree to store the equipment in a secure location and ensure the equipment used by appropriately trained personnel. The applicant will work with Ecology and local emergency officials to update the Western Region Response List website (www.wrrl.us), any applicable spills response plans to address the emergency equipment caches and to document notification protocols, necessary training, use of personal protective equipment, and equipment deployment procedures. <p>Mobile trailers of a specific size to hold the below equipment:</p> <ul style="list-style-type: none"> ○ 3,000 feet of river boom ○ 5,000 feet of sausage sorbent boom ○ 30 anchoring systems (anchors, lines, floats) ○ 20 shoreside anchoring systems ○ 1 towing bridle ○ 4 heaving lines ○ 1 machete (or other vegetation cutting tool) ○ 1 pair of bolt cutters ○ 50 sandbags ○ 1 roll plastic sheeting 	

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
		<ul style="list-style-type: none"> ○ 4 each plywood sheets (4 feet by 8 feet) ○ 500 feet 3/8-inch poly line ○ PPE: coveralls or Tyvek ® disposable suits, gloves, outer (chemical-resistant and disposable) boots, safety glasses or chemical splash goggles, hard hats - sufficient for 5 people ● To improve local emergency planning and response, the applicant will fund development of a geographic information system layer that identifies critical facilities near the proposed facility and along the PS&P line. The facilities will include schools, hospitals, community centers, and parks within 0.5 mile of the rail line. The GIS layer will be provided to the Local Emergency Planning Commission, local fire departments, and Ecology. The study will be submitted prior to beginning operations. ● To improve response capability and protect human health, the applicant will contract with an experienced air-monitoring consultant to respond with equipment and personnel for incidents. The contract will be incorporated into the facility's contingency plan and will be approved by Ecology. The contract will be in place prior to beginning operations. ● To reduce risks related to an oil spill, the applicant will not accept crude oil by rail until PS&P meets with local emergency management officials to identify training needs for local responders who will respond to an emergency on the PS&P rail line. This effort will include development and execution of a training program to these responders to increase level of awareness and understanding of the hazards associated with an oil train incident. The training will include identification of notification protocols, use of personal protective equipment, equipment deployment procedures. This training will be completed before the applicant begins receiving oil trains and will be offered at least annually. ● To improve response capability on the Confederated Tribes of the Chehalis Reservation lands in the case of an oil spill, the applicant will ensure that an annual 1-day hazard awareness oil spill training for 	

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
		<p>identified Chehalis tribal members is provided, including conducting and inviting tribal members to participate in drills.</p> <ul style="list-style-type: none"> • To improve response capability in the Grays Harbor area in the case of an oil spill, the applicant will ensure an annual one-day hazard awareness oil spill training is provided for identified Quinault Indian Nation tribal members, including conducting and inviting tribal members to participate in drills. • To increase the timeliness and maximize the coordination of responses to spills and incidents involving crude oil trains along the PS&P rail line, the applicant will ensure the Grays Harbor Local Emergency Planning Committee’s emergency response plan is updated to address the applicant’s operations. This information must be included prior to beginning operations. • To improve oil recovery in the case of a spill, equipment required at hour 6 under WAC 173-182- 355 must be resident in Grays Harbor. Additionally, the applicant must purchase and stage in Grays Harbor: <ul style="list-style-type: none"> ○ An additional 200 feet of boom and temporary storage of at least 196 barrels with the ability to collect, contain, and separate collected oil from water. The additional boom should be capable of encountering oil at advancing speeds of at least 2 knots in waves. This boom shall be of a type appropriate for the operating environment. ○ An additional 1,000 feet of shore seal boom. • To improve oil recovery in the case of a spill of crude oil that weathers, sinks or submerges, the applicant will ensure access through agreements or contracts to provide the following equipment. The equipment will be capable of being on scene within 12 hours of spill notification and the means of access will be documented in the applicant’s contingency plan and available prior to beginning operations. <ul style="list-style-type: none"> ○ Sonar, sampling equipment or other methods to locate the oil on the bottom or suspended in the water column. ○ Containment boom, sorbent boom, silt curtains, or other methods 	

Environmental Resource	Potential Impact	Applicant Mitigation Measure(s) to Address Impact	Potential Unavoidable and Significant Adverse Environmental Impacts?
		<p>to contain the oil that may remain floating on the surface or to reduce spreading on the bottom.</p> <ul style="list-style-type: none"> ○ Dredges, pumps, or other equipment necessary to recover oil from the bottom and shoreline. ○ Equipment necessary to assess the impact of such discharges. ○ Other appropriate equipment necessary to respond to a discharge involving the type of oil handled, stored, or transported. <ul style="list-style-type: none"> ● To improve the capability of local emergency responders to respond to spills, fires, or explosions at or near the project site, the applicant will contribute a fair share of the total cost to replace the City Hoquiam Fire Department’s fire apparatus to ensure it is able to handle crude oil fires and with foam capabilities is available to for the. Equipment must be available and operational prior to beginning operations. The applicant will consult with the local fire departments to determine specifications for the equipment. The total applicant contribution will be determined by the City and applicant through negotiation at the time of the equipment purchase. 	

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4.6, Environmental Health Risks- Vessel Transport	Increased vessel transport related to the proposed action would increase the likelihood of an incident involving the spill of crude oil within Grays Harbor compared to the no-action alternative.	<ul style="list-style-type: none"> • Due to sensitivity of the local environment, tribal resource concerns, and the potential presence of sensitive species, to reduce the risk of incident from loss of propulsion, loss of steering, grounding, or severe weather, the applicant will not receive or load crude oil to tankers or tank barges unless the vessels have tug escorts through Grays Harbor as described below. This requirement will remain in place until rules are implemented pursuant to ESHB 1449, Section 12, at which time the rules will apply to the proposed action. <ul style="list-style-type: none"> ○ At least one tug must accompany a laden tanker or tank barge carrying oil between the Hoquiam River and Grays Harbor entrance, and two tugs (one escort tug and one assist tug) must assist the vessel during mooring procedures. ○ For laden tankers, the escort tug must be appropriately tethered while transiting Grays Harbor. ○ Tugs must have an aggregate shaft horsepower equivalent to at least 5% of the deadweight tons of the escorted oil tanker or tank barge. ○ Tugs must have sufficient mechanical capabilities to provide for safe escort. • To ensure adequate safety for tug operations and thereby reduce the risk of an incident, the applicant will not receive or load crude oil to tankers or tank barges unless the vessels supply Grays Harbor pilots and tug companies with bollard pull capacities of the vessels prior to entering Grays Harbor. • To reduce potential risk of incident of vessel collision or allision in Grays Harbor, the applicant will provide funding for and work with the U.S. Coast Guard, Ecology, Port of Grays Harbor, and Grays Harbor Safety Committee to propose, develop, and implement a formalized vessel management system. The vessel management system will include the ability to schedule, track, and monitor vessel movements in the harbor and off the entrance to the harbor. The vessel management system will be active prior to the applicant beginning the proposed operations. If a rule is adopted under RCW 88.16, Pilotage 	Yes

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		<p>Act, prior to beginning operations, the requirements of the new rule would be followed.</p> <p>To reduce potential risk of vessel collision while in Grays Harbor, the vessel management system should act as follows.</p> <ul style="list-style-type: none"> ○ Ensure vessel traffic is limited while a laden tank vessel is in the navigation channel. ○ Ensure that no other deep-draft vessels are in the navigation channel when a laden tank vessel is transiting the channel. ○ Include real-time Automatic Identification System tracking and monitoring. ● To reduce the risk of a fire or explosion from tank barges, the applicant will not receive or supply Bakken crude oil to tank barges unless the tank barges are able to inert their tanks when carrying Bakken crude oil. ● To reduce the risk of an incident, the applicant will coordinate with the Port of Grays Harbor and, as a member of the Grays Harbor Safety Committee, work to develop and implement specific procedures for escorting, tethering, and emergency maneuvering to control laden tank vessels. The procedures must be drafted prior to the proposed operations beginning. These procedures should be included in the Grays Harbor Safety Plan. At a minimum, these procedures must include the following elements. <ul style="list-style-type: none"> ○ Escort configurations and maneuvering characteristics of escorted tankers and tank barges. ○ Specific emergency connection and tethering procedures for connection of tugs to tankers and tank barges. ○ Specific maneuvers necessary for the tug to maintain control of the tanker while transiting Grays Harbor waters specifically during incidents of loss of propulsion or steering. ○ Appropriate safe speed of transit in Grays Harbor when tugs are tethered. ○ Guidelines for tanker or tank barge bridge team to rapidly 	

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4.6, Environmental Health Risks-Vessel Transport	Increased vessel traffic related to the proposed action would result in increased potential for environmental damage from an incident involving the spill of crude oil compared to the no-action alternative. Potential impacts are described in general terms in Section 4.7, <i>Impacts on Resources</i> , and apply to the resources described in greater detail in Chapter 3, <i>Affected Environment</i> ,	<p>recognize and respond to a loss of power or steering. By improving recognition and reaction time, the tug can more effectively steer the vessel through the navigation channel upon incident.</p> <ul style="list-style-type: none"> ○ Requirement for a pretransit conference. ○ Refueling operations. ● To reduce the risk of an incident during vessel refueling, the applicant will ensure that any tank barges loaded with fuel for purposes of refueling vessels at the project site follow the navigation and safety mitigation measures for crude oil tank barges described in this section. ● To reduce the potential for a spill from a vessel incident, the applicant will allow only tankers with independent fuel tanks (i.e., not located next to the hull) at the dock. To improve response times and increase coordination of responses, the applicant will develop and implement a program approved by Ecology to educate its tankers and tank barge customers on the reporting requirements for vessel incidents resulting in a threat of a spill under RCW 88.46.100, Notification of Vessel Emergencies Resulting in Discharge of Oil, prior to beginning the proposed operations. <ul style="list-style-type: none"> ● To improve response times and communication in the event of an incident that could affect commercial or recreational fishing, the applicant will develop a method for provide information on potential incidents to commercial and recreational fishing boats and will describe this measure in the oil spill contingency plan prior to beginning operations. ● To improve oil recovery in the case of a spill, equipment required at hour 6 under WAC 173-182-355 must be resident in Grays Harbor. Additionally, the applicant must purchase and stage the following equipment in Grays Harbor: <ul style="list-style-type: none"> ○ An additional 200 feet of boom and temporary storage of at least 196 barrels with the ability to collect, contain, and separate collected oil from water. The additional boom should be capable of encountering oil at advancing speeds of at least 2 knots in waves. 	Yes

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	<i>Impacts, and Mitigation Measures.</i>	<p>This boom will be of a type appropriate for the operating environment.</p> <ul style="list-style-type: none"> ○ An additional 1,000 feet of shore seal boom. ● To improve oil recovery in the case of a spill of crude oil that weathers, sinks or submerges, the applicant will ensure access through agreements or contracts to have the following equipment available. The equipment will be capable of being on scene within 12 hours of spill notification and the means of access will be documented in the applicant’s contingency plan and available prior to beginning operations. <ul style="list-style-type: none"> ○ Sonar, sampling equipment or other methods to locate the oil on the bottom or suspended in the water column. ○ Containment boom, sorbent boom, silt curtains, or other methods to contain the oil that may remain floating on the surface or to reduce spreading on the bottom. ○ Dredges, pumps, or other equipment necessary to recover oil from the bottom and shoreline. ○ Equipment necessary to assess the impact of such discharges. ○ Other appropriate equipment necessary to respond to a discharge involving the type of oil handled, stored, or transported. ● To improve response times and communication in the event of an incident that could affect tribal resources, the applicant will include tribal contacts (names and/or phone numbers) in notification protocols in the oil spill contingency plan. 	
4.6, Environmental Health Risks-Vessel Transport	The proposed action would result in increased need for local emergency service response services that could exceed capacity.	<ul style="list-style-type: none"> ● Voluntary Measure—Supply three totes of alcohol-resistant aqueous film-forming foam at the project site for use by local fire departments. ● To improve marine firefighting capabilities in Grays Harbor, the applicant will ensure that marine firefighting equipment (i.e., nozzle and pump) is available to and can be installed in a boat owned by the Grays Harbor Sheriff. The equipment will be available before operations. Specifications will be determined through discussions with the Grays Harbor Sheriff. 	

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6.5.1, Air (Cumulative Impacts)	Increased air emissions under cumulative conditions could exceed acceptable levels of nitrogen oxides near Poynor Yard and at the project site.	<ul style="list-style-type: none"> In order to identify NO_x emissions if the proposed action, REG (formerly Imperium Terminal Services) Expansion Project and Grays Harbor Rail Terminal Projects are permitted, Westway, REG, and Grays Harbor Rail Terminal will ensure air monitoring stations are installed to monitor the NO₂ emissions at or near the facility prior to the third proposed facility beginning operations. Air monitoring reports will be submitted to Olympic Region Clean Air Agency annually. If levels are observed to be approaching the National Ambient Air Quality Standards, then additional measures could be required in the agency's air permit. 	No
7.0 Economics, Social Policy, Cost Benefit Analysis	Operation of the proposed action could result in an increased need to establish ways to provide and share information with the public and City of Hoquiam.	<ul style="list-style-type: none"> The applicant will appoint a community liaison to consult with affected communities, businesses, and agencies; develop cooperative solutions to address local concerns; be available for public meetings; and conduct periodic public outreach. The applicant will provide the name, telephone number, and email address of the community liaison to mayors and other local officials in each community through which the PS&P rail line passes. The applicant will appoint a tribal liaison to assist in addressing issues of concerns to federally recognized tribes; develop cooperative solutions to tribal concerns; be available for tribal meetings; and conduct periodic outreach. The applicant will provide the name, telephone number, and email address of the tribal liaison to officials of each tribe that wish to be notified. The applicant will submit quarterly reports to the City of Hoquiam on the progress of, implementation of, and compliance with all mitigation measures. The reporting period for these reports will begin the first quarter after permit issuance and continue quarterly through the first year of project operations after which the applicant will submit a report annually through the first 5 years of operation. 	No