

Executive Summary

Millennium Bulk Terminals—Longview, LLC (Applicant) is proposing to construct and operate an export terminal in Cowlitz County, Washington, along the Columbia River. The proposed export terminal would receive coal from the Powder River Basin in Montana and Wyoming, and the Uinta Basin in Utah and Colorado, via rail shipment. It would receive, stockpile, blend, and load coal by conveyor onto vessels in the Columbia River for export. The proposed export terminal would be constructed in two stages with a maximum throughput of 44 million metric tons of coal per year.

The Applicant is required to obtain Department of the Army authorization, pursuant to Section 10 of the Rivers and Harbors Act of 1899 (codified as 33 United States Code [USC] § 403) and Section 404 of the Clean Water Act (codified as 33 USC § 1344), to construct the proposed export terminal. The U.S. Army Corps of Engineers' (Corps) decision to issue, issue with conditions, or deny a permit for activities within the Corps' jurisdiction associated with the construction and operation of the proposed export terminal is a Federal Action, requiring National Environmental Policy Act of 1969 (NEPA) review.

On July 13, 2012, the Corps determined the proposed export terminal may have significant individual or cumulative impacts on the human environment pursuant to 33 Code of Federal Regulations (CFR), Part 325 Appendix B; therefore, an Environmental Impact Statement (EIS) is required under NEPA, as amended (42 USC § 4321, et seq.). This document is the Draft EIS, which analyzes the environmental impacts of two action alternatives (the On-Site Alternative and Off-Site Alternative) for the export terminal and the No-Action Alternative. A detailed description of these proposed facilities, as well as the existing facilities and operations, is provided in Chapter 3, *Alternatives*. Preparation of this Draft EIS and a future Final EIS will support the Corps' permit decision.

ES.1 Environmental Review Process

Because Department of the Army authorization is required for the proposed export terminal pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act, the Corps is the lead agency under NEPA as defined in 40 CFR Part 1501.5. As the lead agency, the Corps is responsible for ensuring the respective federal environmental rules and regulations are followed thoroughly and without bias during the NEPA process. This EIS is being prepared for the proposed export terminal as required by NEPA and in accordance with the Corps' procedures for implementing NEPA (33 CFR Part 325, Appendix B).

NEPA implementing regulations allow the lead agency to invite other federal agencies to participate in the NEPA process as cooperating agencies. The NEPA cooperating agencies for this EIS are the U.S. Environmental Protection Agency (EPA) and U.S. Coast Guard (USCG).¹ In December 2014, the Corps, EPA, and USCG signed a Memorandum of Understanding identifying the terms of cooperation between the Corps as the NEPA lead agency and EPA and USCG as cooperating agencies.

¹ The Federal Railroad Administration and Surface Transportation Board were invited as NEPA cooperating agencies but declined the invitation.

In October 2012, the Corps, Cowlitz County, and the Washington State Department of Ecology (Ecology) signed a Memorandum of Understanding, amended on October 1, 2013, to serve as co-lead agencies to oversee a joint process for preparing an EIS under NEPA and a separate EIS under the Washington State Environmental Policy Act (SEPA). Pursuant to this Memorandum of Understanding, the agencies agreed to synchronize their separate NEPA and SEPA environmental reviews. Cowlitz County and Ecology, as the co-lead agencies under SEPA, published a Draft EIS pursuant to SEPA on April 29, 2016.

ES.1.1 Public Involvement, Agency Coordination, and Tribal Consultation

The Corps, Cowlitz County, and Ecology invited local agencies, state agencies, federal agencies, Native American tribes, organizations, and members of the public to comment on the scope of the NEPA and SEPA EISs during concurrent 95-day scoping periods. The scoping periods began on August 16, 2013, and closed November 18, 2013. The co-lead agencies collected over 217,500 comments at in-person scoping meetings, online, and in writing.

A number of issues were identified through public scoping comments. Many comments involved greenhouse gases and climate change, rail and vessel traffic, coal dust, human health, economics, the aquatic environment, and the NEPA process. Issues identified during the scoping process have been taken into account in this EIS. The Corps established the scope of the NEPA Draft EIS based, in part, on comments received during the scoping period and identified elements of the environment that should be addressed in this Draft EIS.

This Draft EIS was released for comments from agencies, Native American tribes, organizations, members of the public, and the Applicant on September 30, 2016. Comments on this Draft EIS will be accepted during a 60-day comment period (September 30 through November 29, 2016). Comments may be submitted in the following ways.

By mail:

Millennium Bulk Terminals—Longview NEPA EIS
c/o ICF International
710 Second Avenue, Suite 550
Seattle, WA 98104

Online:

www.millenniumbulkeiswa.gov

In person:

At the public hearing verbally or in writing:

Monday, October 24, 2016
1:00 p.m. to 4:00 p.m. and 5:00 p.m. to 9:00 p.m.
Cowlitz County Regional Conference Center
1900 7th Avenue
Longview, WA 98632

Tuesday, October 25, 2016
1:00 p.m. to 4:00 p.m. and 5:00 p.m. to 9:00 p.m.
Clark County Event Center
17402 NE Delfel Road
Ridgefield, WA 98642

ES.2 Purpose and Need

The purpose of the proposed project is to construct and operate a terminal for the transfer of western U.S. coal from rail to ocean-going vessels for export to Asia. The Applicant has determined there is sufficient Asian market demand for western U.S. low-sulfur subbituminous coal to warrant development of a terminal in the western United States to export coal. Additionally, the Applicant has determined existing West Coast terminals are unavailable to serve this need. Therefore, the Applicant is proposing to build an export terminal sufficient in throughput to take advantage of economies of scale necessary to allow for efficient rail-to-ship transfer of coal for shipment to Asian markets. The need for the proposed project is to meet Asian demand for low-sulfur subbituminous coal with coal available in the western United States. Chapter 2, *Purpose and Need*, of this Draft EIS describes the project purpose and need in more detail.

ES.3 Alternatives

This Draft EIS evaluates two action alternatives for the proposed export terminal—the On-Site Alternative and the Off-Site Alternative—as well as the No-Action Alternative.

The Applicant completed an alternatives development process to identify the alternatives carried forward for evaluation in this Draft EIS. The Applicant screened potential sites for the proposed export terminal using two tiers of screening criteria. First-tier screening criteria focused on the general location for a new export terminal; second-tier screening criteria focused on specific site characteristics. The Corps and its consultant reviewed the Applicant's screening criteria and screening approach. This process identified two potentially suitable locations, which have been carried forward and analyzed in this Draft EIS. These locations are the Northwest Alloys site in Longview, Washington (the site currently leased by the Applicant and referred to as the "On-Site Alternative"), and the Barlow Point site in Longview, Washington (referred to as the "Off-Site Alternative"). The Applicant considered 35 other sites that did not qualify for further NEPA analysis.

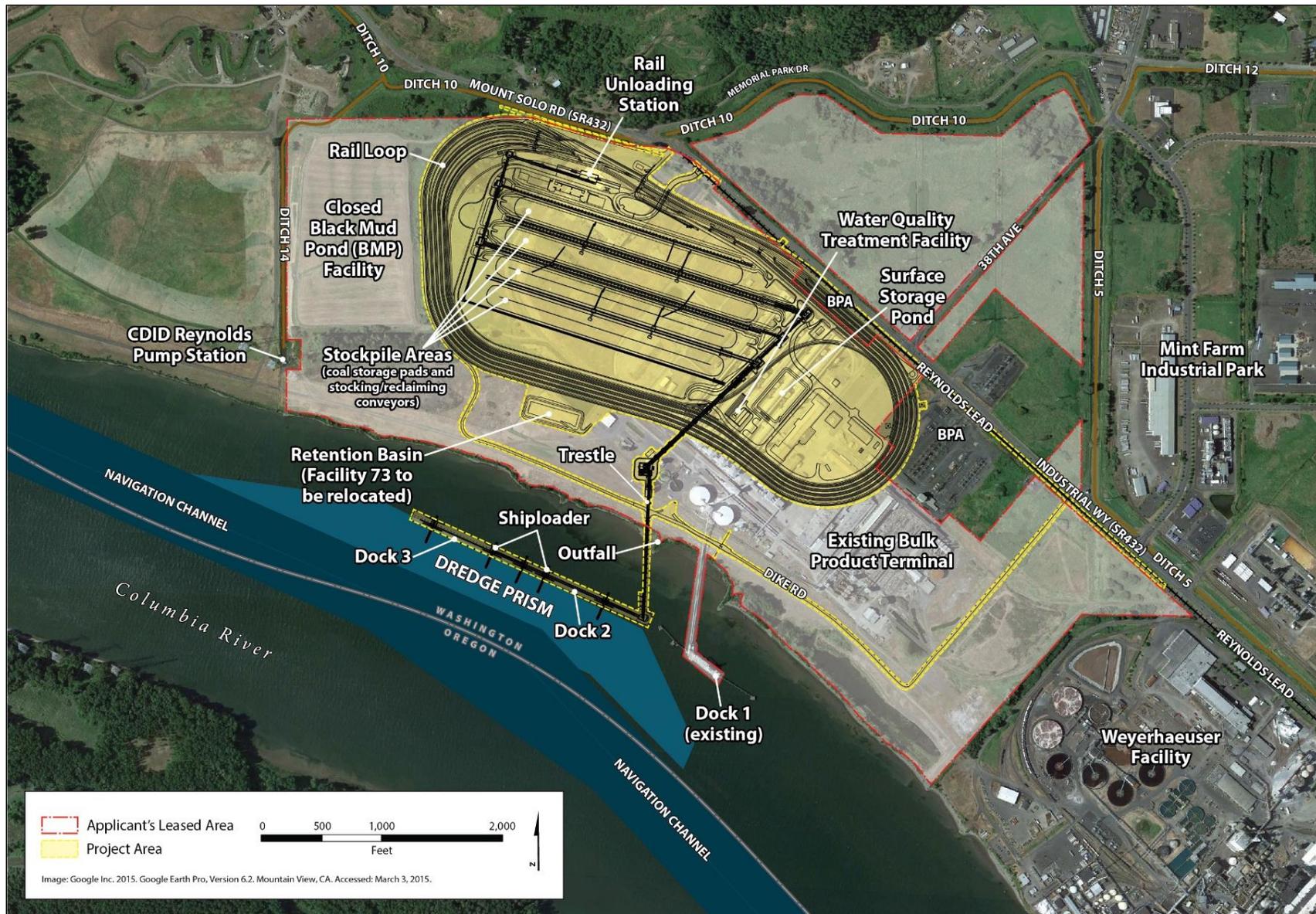
Once a preferred location was selected, the Applicant considered 11 alternative design layouts for the proposed export terminal. The Applicant completed a process to screen the alternative design layouts, which resulted in the selection of the layout evaluated in this Draft EIS.

Chapter 3, *Alternatives*, describes the alternatives development process and the On-Site Alternative, Off-Site Alternative, and No-Action Alternative in more detail.

ES.3.1 On-Site Alternative

Under the On-Site Alternative, the Applicant would construct and operate an export terminal in Cowlitz County, Washington, along the Columbia River (Figure ES-1). The terminal would receive coal via rail shipment from the Powder River Basin in Montana and Wyoming, and Uinta Basin in Utah and Colorado. The coal would be stored on site then loaded and transported by ocean-going vessels via the Columbia River and Pacific Ocean to overseas markets in Asia. The terminal would be capable of receiving, stockpiling, blending, and loading coal by conveyor onto vessels in the Columbia River for export.

Figure ES-1. On-Site Alternative



The On-Site Alternative is located adjacent to the Columbia River in unincorporated Cowlitz County, Washington near Longview, Washington. Under the On-Site Alternative, the Applicant would develop the terminal on 190 acres (project area) primarily within an existing 540-acre site leased by the Applicant (Applicant's leased area). The Applicant currently operates and would continue to operate an independent bulk product terminal adjacent to the project area.

BNSF Railway Company (BNSF) or Union Pacific Railroad (UP) trains would transport coal in unit trains (rail cars carrying the same commodity) from the BNSF main line to the proposed export terminal on the BNSF Spur and Reynolds Lead rail lines. Coal would be unloaded from rail cars, stockpiled and blended, and loaded by conveyor onto ocean-going vessels at two new docks (Docks 2 and 3) located in the Columbia River.

The Applicant anticipates construction would begin in 2018 and be completed by 2024. For this EIS analysis, it is assumed the terminal would become fully operational at maximum capacity (44 million metric tons of coal per year) by 2028. At full terminal operation, approximately 8 unit trains each day would carry coal to the project area and approximately 8 empty unit trains each day would travel from the project area, and an average of 70 ocean-going vessels per month would be loaded with coal. At full operation, the terminal would result in 840 cargo vessel trips (1,680 one-way vessel transits) on the lower Columbia River annually.

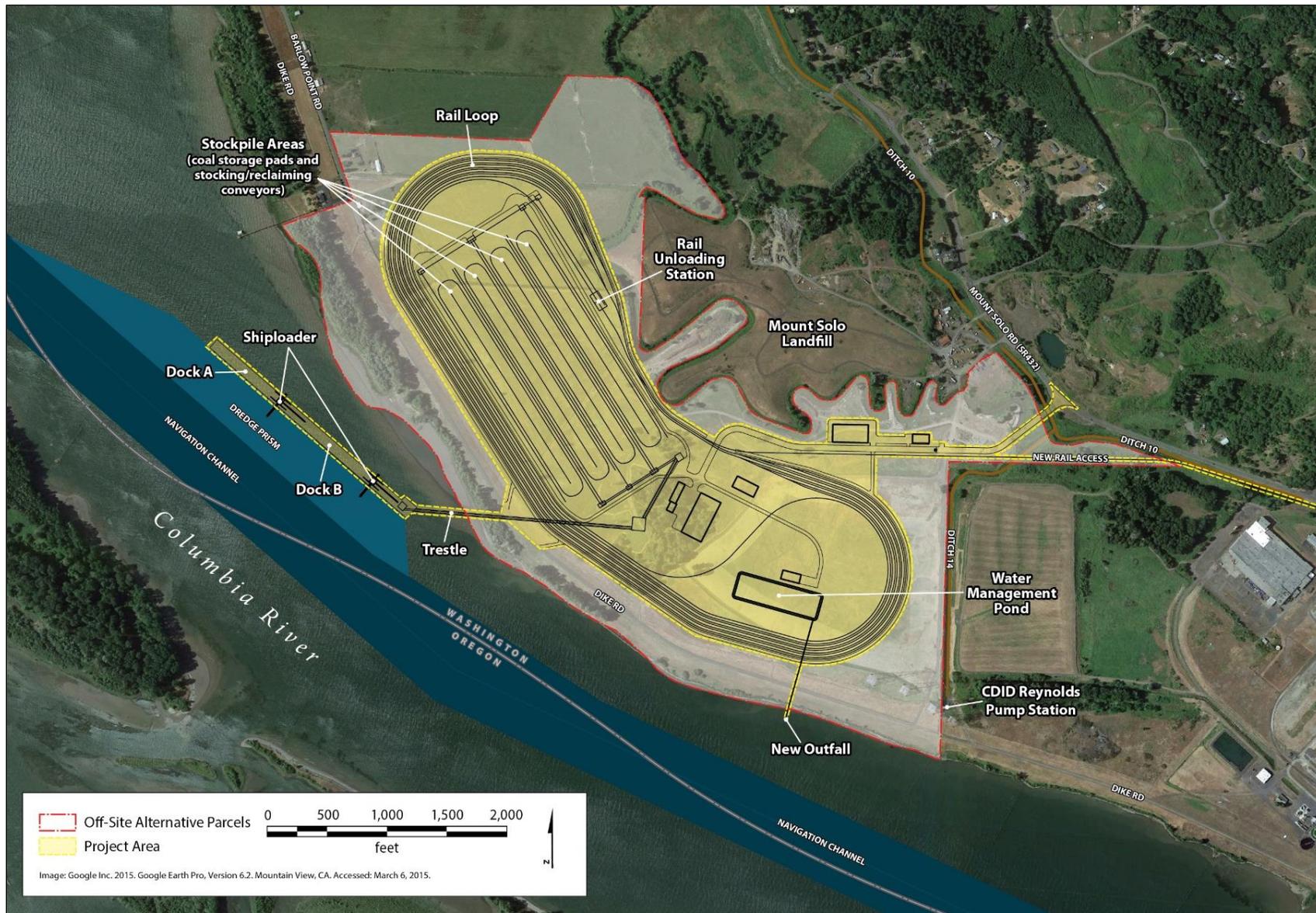
The On-Site Alternative would be located on a portion of the Applicant's leased area. The Applicant currently operates a separate bulk product terminal in the leased area, adjacent to the On-Site Alternative project area. Current operations of the bulk product terminal include storing and transporting alumina and up to 150,000 metric tons per year of coal.

ES.3.2 Off-Site Alternative

Under the Off-Site Alternative, the proposed export terminal would be built on a 220-acre site adjacent to the Columbia River in an area commonly referred to as Barlow Point (Figure ES-2). The project area for the Off-Site Alternative is west and downriver of the project area for the On-Site Alternative. The two project areas are adjacent to one another.

Once construction is complete, the Off-Site Alternative would have an annual throughput capacity of up to 44 million metric tons of coal per year. The terminal would consist of the same elements as the On-Site Alternative: one operating rail track, eight rail tracks for the storage of rail cars, rail car unloading facilities, stockpile areas for coal storage, conveyor and reclaiming facilities, two new docks in the Columbia River (Docks A and B), and shiploading facilities on the two docks. Dredging in the Columbia River would be required to provide access to the Columbia River navigation channel and for berthing at the two new docks. Rail and vessel traffic volumes for the Off-Site Alternative would be the same as the On-Site Alternative.

Figure ES-2. Off-Site Alternative



ES.3.3 No-Action Alternative

Under the No-Action Alternative analyzed in this Draft EIS, the Corps would not issue the requested Department of the Army permit under the Clean Water Act (CWA) Section 404 and the Rivers and Harbors Act (RHA) Section 10. This permit is necessary to allow the Applicant to construct and operate the proposed export terminal.

The Applicant plans to continue operating its existing bulk product terminal located adjacent to the On-Site Alternative project area, as well as expand this business whether or not a Department of the Army permit is issued. Ongoing operations would include storing and transporting alumina and small quantities of coal, and continued use of Dock 1. Maintenance of the existing bulk product terminal would continue, including maintenance dredging at the existing dock every 2 to 3 years. Under the terms of an existing lease, expanded operations could include increased storage and upland transfer of bulk products utilizing new and existing buildings. The Applicant would likely undertake demolition, construction, and other related activities to develop expanded bulk product terminal facilities.

In addition to the current and planned activities, if the requested permit is not issued, the Applicant would intend to expand its bulk product terminal business onto areas that would have been subject to construction and operation of the proposed export terminal. In 2014, the Applicant described a future expansion scenario under the No-Action Alternative that would involve handling bulk materials already permitted for off-loading at Dock 1. Additional bulk product transfer activities could involve products such as a calcine pet coke, coal tar pitch, cement, fly ash, and sand or gravel. While future expansion of the Applicant's bulk product terminal business might not be limited to this scenario, it was analyzed to help provide context to a No-Action Alternative evaluation and because it is a reasonably foreseeable consequence of a Department of the Army denial.

ES.4 Impact Assessment

This section summarizes the environmental impacts likely to result from construction and operation of the proposed export terminal. This section also summarizes cumulative impacts.

ES.4.1 Environmental Resource Areas, Study Areas, and Types of Impacts Analyzed

This Draft EIS studies 23 environmental resource areas (Table ES-1), which are grouped into three categories: the Built Environment, the Natural Environment, and Operations. They are discussed in Chapters 4, 5, and 6, respectively, of this Draft EIS.

Table ES-1. Environmental Resource Areas Discussed in the Draft Environmental Impact Statement

Built Environment	Natural Environment	Operations
Land Use	Geology and Soils	Rail Transportation
Social and Community Resources	Surface Water and Floodplains	Rail Safety
Aesthetics	Wetlands	Vehicle Transportation
Cultural Resources	Groundwater	Vessel Transportation
Tribal Treaty Rights and Trust Responsibilities	Water Quality	Noise and Vibration
Hazardous Materials	Vegetation	Air Quality
Energy	Fish	Coal Dust
	Wildlife	Greenhouse Gas Emissions

This Draft EIS assesses direct and indirect impacts from construction and operation of the proposed export terminal. Direct impacts are caused by the action and occur at the same time and place. Indirect impacts are those that would result from construction or operation of the proposed export terminal and occur outside the project areas or later in time, but are still reasonably foreseeable. The potential direct and indirect impacts of the proposed export terminal are discussed in Chapters 4, 5, and 6 of this Draft EIS. This Draft EIS also evaluates the potential cumulative impacts of the On-Site Alternative and Off-Site Alternative. Cumulative impacts are the incremental impacts of the proposed export terminal when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts are discussed in Chapter 7, *Cumulative Impacts*, of this Draft EIS.

Each environmental resource has a specific study area. The size and location of each study area depend, in part, on physical and/or biological characteristics of the resource, logistics, nature and extent of potential impacts, and how the resource is regulated. Separate study areas are normally identified for direct impacts, indirect impacts, and cumulative impacts.

ES.4.2 Summary of Impacts

This section summarizes the impacts of the proposed export terminal for the built environment, natural environment, and operations resource areas.

ES.4.2.1 Built Environment

Land Use

The assessment of land use addresses potential impacts on land use, parks and recreation, and agricultural land.

Construction of the proposed export terminal at the On-Site Alternative location would not change the current industrial land and shoreline uses of the project area because the area is already zoned for industrial use and the construction activities would replace an existing industrial use with a new industrial use. Operations would be compatible with surrounding land uses and not impact nearby recreational or agricultural land uses. The Applicant would be required to obtain appropriate land use and shoreline permits from Cowlitz County and Ecology to ensure compliance with applicable land use and shoreline management programs.

Construction of the proposed export terminal at the Off-Site Alternative location would change the land use of the project area from agricultural and undeveloped to industrial. Operations would introduce a new heavy industrial land use to the project area, which would change the land use character of the project area. The project area, however, would remain compatible with other land uses in the study area, except for residential/agricultural uses to the north.

The Off-Site Alternative would not be consistent with current Cowlitz County zoning in a portion of the project area or with the City of Longview Comprehensive Plan designation in a portion of the project area. The Applicant would need to obtain an amendment to the Cowlitz County zoning map and City of Longview Comprehensive Plan, as well as land use permits similar to those described for the On-Site Alternative.

Social and Community Resources

The assessment of social and community resources addresses potential impacts related to social and community cohesion, public services, the local economy, utilities, and environmental justice populations. Impacts related to social and community resources would be the same for both the On-Site Alternative and Off-Site Alternative.

Social and Community Cohesion and Public Services

Project-related trains would affect accessibility to community resources and public services during peak travel times because of increasing wait times at crossings along the Reynolds Lead and BNSF Spur if two project-related trains travel during the peak traffic hour, or rail infrastructure improvements are not made. Project-related trains would also increase rail traffic noise levels in Archie Anderson Park, along the Highlands Trail, and in Gerhart Gardens Park.

Local Economy

Construction and operation of the proposed export terminal would generate beneficial economic impacts in terms of jobs, wages, and economic output, as well as state and local sales and use tax revenues and business and occupation tax revenues.

Utilities

Construction would not result in direct or indirect impacts on water and sewer utilities. Operation of the proposed export terminal would not add new demands to public sewer and wastewater utilities or place substantial new demands on the Longview water supply.

Environmental Justice

The analysis concluded horn noise from project-related trains on the Reynolds Lead during operations would have a disproportionately high and adverse effect on minority and low-income populations. Noise impacts would occur because trains related to the proposed export terminal would be required to sound their horns for public safety at grade crossings, and noise levels would exceed applicable criteria at nearby residences. Because there are minority and low-income populations adjacent to the Reynolds Lead rail line, the terminal would have a disproportionately high and adverse effect on minority and low-income populations if no measures were implemented to mitigate this noise impact.

Aesthetics

The assessment of aesthetics addresses potential visual, light, and glare impacts of the proposed export terminal.

Operation of the On-Site Alternative would introduce new visual features and new sources of light and glare from the project area. The visual features of the On-Site Alternative would be consistent with the existing industrial aesthetics of the project area and the surrounding area. The On-Site Alternative would result in no visual impacts or low visual impacts, except for the view from Dibblee Beach. At the Dibblee Beach viewpoint, the On-Site Alternative would be visible to recreational users on the beach and in the river, and new sources of light would be visible and reflected in the waters of the Columbia River. Therefore, the On-Site Alternative would result in a moderate level of impact from the Dibblee Beach viewpoint.

The Off-Site Alternative would displace open space and existing vegetation in the project area and introduce new industrial features. The Off-Site Alternative would result in moderate visual impacts from rural and residential viewpoints, including residential locations on Barlow Point Road and in west Longview. At these locations, the Off-Site Alternative would introduce new industrial uses that would have high visual contrast with adjacent agricultural and open space uses. Therefore, the Off-Site Alternative would result in a moderate level of impact at these locations.

Cultural Resources

The assessment of cultural resources assesses potential impacts on archaeological resources, historical resources, and culturally significant properties. The cultural resources analyses and findings are based on research prepared by the Applicant pursuant to Section 106 of the National Historic Preservation Act. The Corps is carrying out the Section 106 review concurrent with the NEPA EIS process.

The On-Site Alternative would adversely affect cultural resources associated with the Reynolds Metals Reduction Plant Historic District. As a result, the Reynolds Metals Reduction Plant Historic District would no longer be eligible for listing in the National Register of Historic Places. A Memorandum of Agreement is being prepared pursuant to Section 106 of the National Historic Preservation Act. Although demolition of buildings and structures associated with the former Reynolds facility would diminish the integrity of setting and association of the CDID #1 levee and BPA Longview Substation, they would remain individually eligible for listing in the National Register of Historic Places.

Construction of the Off-Site Alternative would not affect the Reynolds Metals Reduction Plant Historic District or any fill deposit or landfill documented as an archaeological site. Construction and operation of the proposed export terminal under the Off-Site Alternative would have no effect on any known cultural resources in the study area.

Tribal Treaty Rights and Trust Responsibilities

For this EIS, *tribal resources* refers to tribal fishing and hunting and gathering practices, including access to traditional cultural areas associated with a tribe's sovereignty or treaty rights. These resources may include plants, animals, or fish, used for commercial, subsistence, and ceremonial purposes. The primary focus is reserved tribal treaty rights, including fishing, hunting, and food gathering rights. As lead federal agency, the Corps has initiated consultation with potentially

affected Indian Tribes. The Corps will continue to consult with tribes to identify potential project impacts that could affect protected tribal lands and resources.

Tribal concerns in regard to the proposed export terminal include potential impacts on fish, vegetation, wildlife, and water. This section builds upon analysis done in those specific resource areas, and more directly looks at the potential impacts on the portions of those as it relates to tribal sovereignty and treaty rights. Tribal fishing generally occurs outside of the study area, primarily upstream of the project areas starting just below Bonneville Dam (Zone 6). Construction and operation of the proposed export terminal would affect fish, vegetation, wildlife and water in the study area, including culturally significant species, but would not be expected to measurably impact tribal fishing. Refer to the fish, wildlife, vegetation, and water quality subsections in this Executive Summary for more information about the potential impacts of the proposed export terminal on these resource areas.

Hazardous Materials

The hazardous materials assessment describes potential impacts that could occur as a result of construction and operation of the proposed export terminal. Cleanup of contamination from the former Reynolds facility is required by state law and occurs separately from the federal action and EIS process. Impacts related to hazardous materials would be the same for both the On-Site Alternative and Off-Site Alternative.

Construction of the terminal would take place in areas undergoing hazardous materials cleanup actions, which would pose risks to human health and the environment should any hazardous materials be encountered. Cleanup actions related to the former Reynolds facility (separate from the proposed export terminal and this EIS) are expected to remove or isolate hazardous materials and ensure remaining contaminant concentrations are below thresholds established by federal, state, and local regulations. For the Off-Site Alternative, screening, sampling, and analysis of the site soil and groundwater would need to be conducted to determine whether any contamination is present.

The transport, use, storage, and disposal of hazardous materials during construction would comply with applicable federal, state and local regulations. In addition, the Applicant would be required to follow local and state construction and demolition standards, including best management practices. These actions would minimize the potential for a spill, release, or explosion, and would ensure a timely cleanup response. The Applicant would also be required to comply with water pollution laws to avoid or minimize pollutants entering surface waters and groundwater by obtaining and complying with the National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit.

During operations, the transport, use, storage, and disposal of hazardous materials by the Applicant would be required to comply with applicable federal, state and local regulations. The Applicant would also be required to comply with water pollution laws to avoid or minimize pollutants entering surface waters and groundwater by obtaining and complying with the NPDES Industrial Stormwater Permit.

Energy

The assessment of energy addresses potential impacts related to the availability and conservation of energy. The analysis concludes that for both the On-Site Alternative and Off-Site Alternative the demand for energy (such as electricity, diesel fuel, gasoline, oil, etc.) during construction and

operation would be minor compared to current regional demand, and could be met by existing local and regional supply.

ES.4.2.2 Natural Environment

Geology and Soils

The following impacts would be the same for both the On-Site Alternative and Off-Site Alternative.

Construction would involve ground-disturbing activities such as grading, railroad and road construction, and excavating for foundations, which could increase soil erosion in the project areas. The project areas have only a slight erosion hazard due to their flat condition. Implementation of best management practices would be expected to reduce the potential for erosion.

Operations could expose people and structures to potential impacts involving catastrophic events such as strong seismic ground shaking, seismic-related ground failure (liquefaction), and landslides. A geotechnical report would be prepared as part of the project to inform project design and construction techniques that could reduce potential risks associated with ground shaking and liquefaction. Additionally, preloading the stockpile areas would reduce the susceptibility of the soils to liquefaction and would reduce the potential for damage to proposed structures that occur in the immediate vicinity of the preloading area. Other geologic hazards, such as landslides, are not anticipated to affect the terminal.

Surface Water and Floodplains

Impacts related to surface water and floodplains would be the same for both the On-Site Alternative and Off-Site Alternative, except where noted.

The project areas for both the On-Site Alternative and the Off-Site Alternative are protected by levees that can withstand a 100-year flood event. Activities occurring landward of the levee would not modify conditions in the Columbia River. Construction and operation of the proposed export terminal would be unlikely to have any measurable impact on floodplain function at the 500-year flood event and would not measurably decrease the ability of the Columbia River to retain floodwaters within the 500-year floodplain. No withdrawal of water from the Columbia River or other surface waters in the study area would be necessary to meet construction or operational water demands. The Columbia River would be permanently altered in the project area by new overwater structures and maintenance dredging activities.

Water for operating the terminal would be supplied by rainfall runoff collected, treated, and stored on site, and from existing on-site groundwater wells (On-Site Alternative) or new wells (Off-Site Alternative). Operations would use water for such activities as coal dust suppression, washdown water, and fire protection. Impacts on surface water and floodplains resulting from operation of the terminal would be considered low. Excess water would be treated and discharged to the Columbia River through Outfall 002A (On-Site Alternative) or a new outfall (Off-Site Alternative) in compliance with an NPDES Industrial Stormwater Permit.

Wetlands

Construction of the proposed export terminal would result in 24.10 acres of permanent wetland loss at the On-Site Alternative location and in 51.28 acres of permanent wetland loss plus 0.08 acre of

permanent wetland vegetation clearing/trimming at the Off-Site Alternative location. Wetlands would be filled to construct rail loops and other facilities associated with transferring and stockpiling coal.

Wetlands extending off the project area would be partially filled resulting in degradation or alteration of wetland functions in remnant wetlands outside the project area, including reductions in hydraulic and habitat functions. Indirect construction impacts could include sedimentation from stormwater runoff. However, best management practices (e.g., silt fencing) required by federal, state, and local permits would reduce or avoid such impacts.

Groundwater

Impacts related to groundwater would be the same for both the On-Site Alternative and Off-Site Alternative.

Construction activities are not expected to substantially affect groundwater recharge patterns or result in groundwater degradation as a result of an accidental contaminant release. Additionally, construction and operation of the proposed export terminal would likely not affect groundwater quality in the Mint Farm Industrial Park wellfield, which draws municipal water from a deep aquifer.

The Applicant would be required to obtain an NPDES Industrial Stormwater Permit and develop a separate system of stormwater collection, treatment, and discharge regulated by the NPDES permit. Operations would not be expected to substantially change groundwater recharge patterns. The total demand on groundwater supplies during terminal operations would account for less than 10% of the maximum pumping limits allowed under existing water rights at the On-Site Alternative location. The Applicant currently has no water rights at the Off-Site Alternative project area.

Runoff from the project area would be directed to on-site drainage systems, treated, and either reused on site or discharged to the Columbia River in accordance with an NPDES Industrial Stormwater Permit. Additionally, the potential for coal dust or other constituents of coal to affect groundwater would be relatively low based on the low recharge rates of soils in the study area.

Water Quality

Impacts related to water quality would be the same for both the On-Site Alternative and Off-Site Alternative.

Construction activities would require demolition of existing structures, disturbing soils and using materials and products that could introduce pollutants to surface waters, which could temporarily degrade water quality during construction. The Applicant would be required to develop a site-specific construction Stormwater Pollution Prevention Plan (SWPPP) and obtain an NPDES Construction Stormwater General permit to reduce the potential for pollutants to enter and contaminate surface waters during construction. The SWPPP would include best management practices for sedimentation control, material handling, and construction waste management.

Construction of the proposed export terminal would require in-water work and dredging that would disturb sediment on the river bottom and temporarily increase suspended sediment and turbidity. The Applicant would be required to use standard best management practices for working in aquatic areas and comply with permit requirements to protect water-quality during construction. During operations accidental releases of contaminants (e.g., fuel, oil, chemicals) could introduce pollutant-laden runoff to surface waters, potentially degrading water quality. The Applicant would be required

to manage stormwater in accordance with the requirements of a new NPDES Industrial Stormwater Permit to minimize impacts on water quality.

Impacts on water quality from vessel transport outside the project area could occur. Potential increases in turbidity from vessel propeller wash would be temporary, localized, and not expected to be measurable beyond the study area. If a release of fuel or hazardous materials were to occur as a result of a vessel incident or collision, vessel operators would be required to implement federal and state emergency response and cleanup actions.

Coal could enter water as either coal dust or as the result of a coal spill. Coal dust and coal dust constituents would be associated with transport, stockpiling, transfer, unloading, and loading of coal. The proposed export terminal would employ dust suppression systems throughout the facility. The potential risk for exposure to toxic chemicals contained in coal would be low because they tend to be bound to the matrix structure and not easily leached. Coal dust particles would likely be transported downriver by river flow and either carried out to sea or distributed over a sufficiently broad area that a measurable increase in concentrations of toxic chemicals in the Columbia River would be unlikely.

Vegetation

Impacts related to vegetation would be the same for both the On-Site Alternative and Off-Site Alternative, except where noted.

Construction of the terminal at the On-Site Alternative location would permanently remove approximately 26 acres of upland forest (including a small area of riparian zone), scrub-shrub, and herbaceous vegetation; 24 acres of wetland vegetation; and approximately 151 acres of previously developed industrial area. The previously developed areas are either devoid of vegetation because of existing structures or areas of disturbed vegetation around existing structures. Construction of the Off-Site Alternative would permanently remove approximately 155 acres of upland forest, scrub-shrub (including a small area of riparian zone), and herbaceous vegetation; 51 acres of wetland vegetation; and approximately 10 acres of previously developed areas. Although no special-status plant species have been recorded in either project area, special-status plant species have the potential to occur based on the presence of potentially suitable habitat.

Operation of the terminal would generate coal dust, which would be deposited on nearby vegetation. The impact of coal dust on vegetation would depend on dust load, climatic conditions, and physical characteristics of the vegetation. Coal dust emissions in the project area would be reduced by using enclosed conveyors, transfer points, and transfer chutes, as well as dust control systems such as a washdown water collection and containment system, a dry fog system, or water spray system. Coal would be transported by vessels with enclosed cargo holds, so coal dust would not likely be deposited on vegetation downstream along the Columbia River.

Fish

Impacts related to fish would be the same for both the On-Site Alternative and Off-Site Alternative, except as noted.

Construction impacts would include underwater noise associated with installation of steel piles using vibratory and impact pile drivers. Noise thresholds would be exceeded during pile driving, resulting in injury and/or behavioral impacts on fish. Installing and removing piles (i.e., partial

removal of existing pile dikes at On-Site Alternative location) and dredging and disposing of dredged materials would temporarily increase turbidity, which would result in behavioral responses by fish.

New overwater structures and an increase in vessel traffic would also affect fish. Overwater structures would increase overwater shading, which would affect primary productivity, fish behavior, predation, and migration. However, project design features, such as designing the proposed trestle to be long and narrow and oriented north to south, would be implemented to minimize shading, which would reduce impacts on fish. Project-related vessel transits would increase the risk of impacts on fish from vessel noise. Sound levels from vessels can affect fish behavior; however, it is unlikely fish would be injured by project-related vessel traffic. Project-related vessel traffic would increase the risk of fish stranding by vessel wakes. Studies indicate that juvenile salmon and other fish are at risk of stranding on wide, gently sloping (i.e., less than 5% slope) beaches as a consequence of wakes generated by deep-draft vessel passage. Depending on various factors such as the slope and breadth of a beach, river stage, tidal stage, depth of water near the vessel, and vessel size, direction of travel, and speed, wakes from passing vessels can travel a considerable distance. When these wakes meet the shoreline, they can carry fish and deposit them on the beach where they are susceptible to stress, suffocation, and predation before they can return to the water.

Coal dust and coal particles generated by the proposed export terminal could affect fish through physical or toxicological means. As with other particulates suspended in water, coal particles can cause tissue abrasion, smothering, and obstruction or damage to feeding and respiratory organs. However, the concentrations of toxic materials in coal are low and the chemicals are not easily leached from coal. Coal particles would also be transported downriver by the flow of the river and distributed over a broad area, diluting potential impacts. The risk of exposure to toxic chemicals in coal would be relatively low.

Wildlife

Impacts on wildlife would be the same for both the On-Site Alternative and Off-Site Alternative.

Clearing and grading to construct the proposed export terminal at the On-Site Alternative location would permanently remove approximately 202 acres of terrestrial habitat, although approximately 151 acres of this habitat are disturbed lands generally not supporting wildlife. The removal of the remaining approximately 51 acres of suitable wildlife habitat would affect wildlife. Construction activities would also result in the permanent loss of approximately 11 acres of aquatic habitat in the project area (excluding the area affected by the docks and dredging in the Columbia River). Clearing and grading to construct the terminal at the Off-Site Alternative location would permanently remove approximately 216 acres of terrestrial habitat, of which approximately 10 acres are disturbed lands generally providing low-quality wildlife habitat.

Construction activities include building overwater structures and dredging in the Columbia River, which would affect aquatic wildlife such as sea lions, harbor seals, and diving birds. Installing steel piles would generate underwater noise that would likely exceed harassment thresholds (behavioral response) on aquatic wildlife. Underwater noise during pile driving could be reduced by using a bubble curtain or other measures to attenuate underwater noise. Dredging at the On-Site Alternative location would further deepen approximately 48 acres of deep water habitat by removing 500,000 cubic yards of substrate, which would affect wildlife (e.g., sea lions and harbor seals) and benthic organisms in the study area. Dredging at the Off-Site Alternative location would further deepen

approximately 15 acres of deep water habitat by removing approximately 50,000 cubic yards of substrate.

Operation of the proposed export terminal would also affect wildlife. Maintenance dredging would affect pinnipeds and benthic organisms. Coal dust and coal particles generated during operation could affect wildlife through physical or toxicological means. As with other particulates suspended in water, coal particles can cause tissue abrasion, smothering, and obstruction or damage to feeding and respiratory organs. However, the concentrations of toxic materials in coal are low and the chemicals are not easily leached from coal. Coal particles would also be transported downriver by the flow of the river and distributed over a broad area, diluting potential impacts. The risk of exposure to toxic chemicals in coal would be relatively low.

ES.4.2.3 Operations

Rail Transportation

Impacts related to rail transportation would be the same for both the On-Site Alternative and Off-Site Alternative.

The transport of construction materials by rail would add an average of 1.3 train trips per day in the peak construction year to the Reynolds Lead and BNSF Spur. This increase over baseline rail traffic would not exceed the capacity of the Reynolds Lead and BNSF Spur.

At full operation, project-related trains would add 8 loaded and 8 empty trains per day (16 train trips per day) on the Reynolds Lead and BNSF Spur. The Reynolds Lead and BNSF Spur have the capacity to handle current baseline rail traffic plus project-related trains. The Longview Switching Company is prepared to increase the capacity of the Reynolds Lead and part of the BNSF Spur as a separate future action should that work be warranted by further increases in rail traffic from existing and future customers.

Rail Safety

Impacts related to rail safety would be the same for both the On-Site Alternative and Off-Site Alternative.

The transport of construction materials by rail would increase the predicted accident frequency on the Reynolds Lead and BNSF Spur. The predicted project-related train accidents during the peak construction year (2018) is 0.02 accident per year on the BNSF Spur and 0.06 accident per year on the Reynolds Lead.² The predicted accident frequency on the Reynolds Lead and BNSF Spur would not increase if all construction materials are delivered by truck.

At full operation, the predicted accident frequency of the Reynolds Lead and BNSF Spur would increase because the proposed export terminal would add 8 loaded and 8 empty trains per day (16 total train trips per day) on the Reynolds Lead and BNSF Spur. With track improvements to the Reynolds Lead and BNSF Spur, the predicted number of accidents is 0.50 per year (or, one accident every 2 years) for project-related trains, compared to 0.20 accident per year in baseline conditions without the terminal.

² The FRA reporting threshold was \$10,500 in 2015, and therefore, accidents include a wide variety of incidents and are not limited to collisions or derailments.

Vehicle Transportation

Transporting construction materials by rail (average of 1.3 train trips per day during the peak construction year) or truck would not adversely affect average vehicle delay at the at-grade crossings on the Reynolds Lead and BNSF Spur.

At full terminal operations in 2028, the 24-hour average vehicle delay at the at-grade crossings along the Reynolds Lead and BNSF Spur would increase because 16 project-related train trips per day would travel over the Reynolds Lead and BNSF Spur. The average delay for drivers at the public at-grade crossings of the Reynolds Lead and BNSF Spur would be up to 55 seconds (level of service “D”) with existing track infrastructure or up to 35 seconds (level of service “C”) with planned Reynolds Lead and BNSF Spur infrastructure improvements. These 24-hour average vehicle delays would not adversely affect vehicle delay.

Project-related trains would adversely affect average vehicle delay at up to four public at-grade crossings if a project-related train traveled over the Reynolds Lead and BNSF Spur during the peak vehicle traffic hour. Average delay for all vehicles would be more than 55 seconds at these four public at-grade crossings.

Increased vehicle delays would affect emergency services under certain conditions. Delays would primarily occur only if a dispatched emergency vehicle needed to pass through an at-grade crossing when a project-related train was already passing through that crossing and an alternate route was not available to the emergency vehicle.

Vessel Transportation

Impacts related to vessel transportation would be the same for On-Site Alternative and Off-Site Alternative.

If construction materials were delivered by barge, approximately 750 barge trips would be required during the peak construction year. Impacts would be temporary and low because barges would avoid interference with larger vessels and would only traverse a local portion of the lower Columbia River. Because the project area does not have an existing barge dock, the material would be off-loaded at an existing dock elsewhere on the Columbia River and transported to the project area by truck.

Operation of the proposed export terminal would load 840 vessels per year, equating to 1,680 vessel transits annually in the lower Columbia River downstream of the project area. The increased vessel traffic could be handled by existing infrastructure and vessel management systems in the lower Columbia River. Additional vessel traffic would increase the risk of incidents while vessels are at the proposed docks and while they are in transit on the lower Columbia River.

While at the proposed docks, the most likely vessel incidents would be a vessel fire or allision.³ Based on incident modeling, the likelihood of an allision is once in 39 years, and most allisions do not result in substantial consequences, such as total vessel loss. The risks associated with a fire on a project-related vessel would be low because vessels are required by federal law to have fire prevention and response features including fire equipment and automated fire suppression systems.

³ An allision occurs when a vessel strikes a fixed structure, such as a dock or a vessel at berth.

While in transit, the potential vessel incidents most likely to result in substantial consequences if they occur are allisions, collisions, groundings, and fires/explosions. Due to the minimal impediments to vessel traffic within the navigation channel, the likelihood of a vessel allision while in transit is very low and allisions do not usually result in substantial consequences. Incident modeling estimated the project-related vessel traffic would increase the frequency of collisions, groundings, and fires by approximately 2.8 incidents per year. For these potential incidents, substantial damage resulting from an incident would be highly unlikely. For example, of the 151 reported incidents in the lower Columbia River from 2001 through 2014, 64% resulted in no damage, 32% resulted in damage, and 3% resulted in total loss. A collision or grounding could also result in a bunker oil spill. Incident modeling estimated the increased likelihood of oil spills caused by a collision or grounding and determined that the likelihood would be once every 224 years for collisions and once every 140 years for groundings.

Noise and Vibration

Construction of the proposed export terminal would temporarily increase noise and vibration levels. The highest noise levels for the On-Site Alternative at nearby residences would result from pile driving. The highest noise levels for the Off-Site Alternative at nearby residences would result from construction to extend the Reynolds Lead to the project area. While construction of the terminal would emit vibration from pile driving, no adverse vibration impacts during construction are expected to occur at nearby residences.

If rail is used to transport construction materials to the project area, an average of 1.3 train trips per day during the peak construction year would emit noise traveling along tracks and sounding their horns near at-grade crossings. Construction-related vehicles would also increase noise.

Noise levels from operations of the terminal are projected to exceed the applicable standard for nighttime noise levels at one residence under the On-Site Alternative and two residences under the Off-Site Alternative. The predicted noise level at the one residence under the On-Site Alternative would be 55 A-weighted decibels (dBA), which is comparable to the current nighttime noise level at this location, but would exceed the applicable noise standard of 50 dBA. The predicted noise levels at the two residences under the Off-Site Alternative would be 53 dBA, and would exceed the applicable noise standard of 50 dBA.

Noise levels would increase from project-related train operations and locomotive horn sounding on the Reynolds Lead and BNSF Spur. The most adverse noise impacts would occur near four public at-grade crossings on the Reynolds Lead: 3rd Avenue, California Way, Oregon Way, and Industrial Way. The increase in noise levels near these at-grade crossings would exceed applicable noise level criteria at approximately 289 residences. Project-related trains would not have an adverse vibration impact.

Air Quality

Impacts related to air quality would be the same for both the On-Site Alternative and Off-Site Alternative.

Sources of air pollutant emissions during construction include construction equipment operation, vehicle delays at railroad crossings, construction worker vehicles, delivery trucks, river barges, and dust from earthwork. The estimated maximum annual construction emissions for the peak construction year would not exceed federal air quality standards.

Sources of air emissions during operation of the proposed export terminal would include emissions from coal handling equipment, coal storage piles, maintenance and operation vehicles, employee commute vehicles, and project-related trains and vessels. The estimated maximum concentrations for each criteria air pollutant would be below the National Ambient Air Quality Standards established by the U.S. Environmental Protection Agency.

Coal Dust

Construction of the proposed export terminal would not result in any impact related to coal dust because construction would not involve any coal handling or transport activities.

The estimated maximum coal dust deposition from terminal operations at the project area boundary would be 0.35 and 0.38 gram per square meter per month for the On-Site Alternative and Off-Site Alternative, respectively. This estimated maximum deposition would be well below the 2.0 grams per square meter per month benchmark used for the analysis.

The terminal would also result in coal dust emissions from project-related trains along the Reynolds Lead and BNSF Spur. The estimated maximum monthly deposition of nuisance-level coal dust at 180 feet from the rail lines would be 0.017 gram per square meter per month, which would be well below the 2.0 grams per square meter per month benchmark used for the analysis.

Greenhouse Gas Emissions

Construction of the proposed export terminal would generate greenhouse gas emissions from operation of construction equipment, employees commuting to and from the project area, and construction materials delivered to and from the project area. Construction would also contribute to greenhouse gas emissions by removing vegetation and soil, which sequester carbon dioxide (a greenhouse gas), from the project areas. Greenhouse gases would be generated by operation of the terminal and rail and vessel transport. Total greenhouse gas emissions associated with the On-Site Alternative would be 926,866 metric tons of carbon dioxide equivalent (MtCO_{2e}) from 2018 to 2038, while total greenhouse gas emissions associated with the Off-Site Alternative would be 939,830 MtCO_{2e} over the same time period in the study area.

In 2015, the Environmental Protection Agency (EPA) finalized state-specific targets in its Clean Power Plan to reduce carbon dioxide emissions in the power sector to 32% below 2005 levels by 2030. The statewide mass-based carbon dioxide performance goal for Washington State is approximately 10.74 million short tons (9.74 million metric tons) (U.S. Environmental Protection Agency 2016). The 2028 total emissions for the On-Site Alternative (63,167 MtCO_{2e}) and Off-Site Alternative (62,414 MtCO_{2e}) would be approximately 0.6% of that total. While the emission sources of the terminal fall outside the scope of emissions covered under the Clean Power Plan, this comparison provides context by comparing the scale of emissions from the proposed export terminal to a reduction target for a major source of emissions in Washington State.

ES.4.2.4 Cumulative Impacts

Cumulative impacts are the incremental impacts of the proposed export terminal when added to other past, present, and reasonably foreseeable future actions. This Draft EIS assesses cumulative impacts in 2038 that would result from construction and operation of the terminal under the On-Site

Alternative or the Off-Site Alternative in combination with other reasonably foreseeable future actions.⁴

The following types of potential future actions were considered in the cumulative impact analysis.

- Projects introducing new vessel traffic to the lower Columbia River.
- Projects introducing rail traffic to or modifying the infrastructure of the Reynolds Lead and BNSF Spur.
- Construction and operation activities in or near the cities of Longview and Kelso.

The cumulative impacts of the proposed export terminal vary depending on the specific environmental resource and study area identified for the cumulative analysis. If the terminal would not result in adverse impacts on a particular environmental resource area, it would not contribute to cumulative impacts for that environmental resource area.

The potential impacts of the proposed export terminal in combination with the reasonably foreseeable future actions could result in cumulative impacts on the following environmental resource areas: land use, social and community resources, aesthetics, cultural resources, tribal treaty rights and trust responsibilities, energy, geology and soils, surface water, wetlands, water quality, vegetation, fish, wildlife, rail transportation, rail safety, vehicle transportation, vessel transportation, noise, air quality, coal dust, and greenhouse gas emissions. Chapter 7, *Cumulative Impacts*, of this Draft EIS presents the findings of the cumulative impacts analysis.

ES.5 Next Steps

The Corps published and circulated this Draft EIS on September 30, 2016, for review and comment and will accept comments on the Draft EIS through November 29, 2016. After the comment period, the Corps will prepare and circulate a Final EIS that will identify a preferred alternative and address the comments received. The Final EIS will support the Corps' Department of the Army permit decision, after which the Corps will prepare and publish a Record of Decision (ROD) to document the Corps' permit decision for the proposed action. The ROD will conclude the Corps' NEPA process.

⁴ The selected cumulative impacts analysis year represents the year the proposed export terminal would be fully operational at its maximum stated throughput of 44 million metric tons of coal per year. In addition, this analysis year conservatively accounts for future actions that might only be in the planning stage now but can reasonably be expected to be operational within about 20 years.