

Chapter 3

**Built Environment:  
Existing Conditions, Project Impacts,  
and Proposed Mitigation Measures**

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## **3.0 Introduction**

For the purposes of this Final Environmental Impact Statement (Final EIS), environmental resource areas have been divided into three categories: the Built Environment, the Natural Environment, and Operations (Chapters 3, 4, and 5, respectively). The purpose of this chapter is to provide a discussion of the built environment resource areas assessed for the Millennium Bulk Terminals—Longview project (Proposed Action).

Information contained in this Final EIS was extracted from technical reports prepared specifically for the Proposed Action. Provided in Volume III of this Final EIS, the technical reports are incorporated by reference and include the determination of study areas, analysis methods, existing conditions, and potential impacts.

Data sources used for this analysis are briefly discussed for each resource. In addition, a detailed list of sources is provided in Appendix A, *References*, of this Final EIS.

### **3.0.1 Built Environment Resource Areas**

Chapter 3, *Built Environment: Existing Conditions, Project Impacts, and Proposed Mitigation Measures*, evaluates the communities, cultural past, and use of land relevant to the Proposed Action. The resource areas reviewed as part of the built environment analysis include land and shoreline use; social and community resources; aesthetics, light, and glare; cultural resources; tribal resources; and hazardous materials (Table 3.0-1). Additional detailed information about these resources can also be found in the corresponding technical reports in Volume III of this Final EIS.

In addition to these resource areas, Chapter 6, *Cumulative Impacts*, discusses cumulative impacts resulting from the Proposed Action combined with other past, present, and reasonably foreseeable actions.

**Table 3.0-1. Resource Areas and Corresponding Final EIS Chapters**

<b>Chapter</b>	<b>Section Number</b>	<b>Environmental Resource Area</b>
Chapter 3, Built Environment: Existing Conditions, Project Impacts, and Proposed Mitigation Measures	3.1	Land and Shoreline Use
	3.2	Social and Community Resources
	3.3	Aesthetics, Light, and Glare
	3.4	Cultural Resources
	3.5	Tribal Resources
	3.6	Hazardous Materials
Chapter 4, Natural Environment: Existing Conditions, Project Impacts, and Proposed Mitigation Measures	4.1	Geology and Soils
	4.2	Surface Water and Floodplains
	4.3	Wetlands
	4.4	Groundwater
	4.5	Water Quality
	4.6	Vegetation
	4.7	Fish
	4.8	Wildlife
	4.9	Energy and Natural Resources
Chapter 5, Operations: Existing Conditions, Project Impacts, and Proposed Mitigation Measures	5.1	Rail Transportation
	5.2	Rail Safety
	5.3	Vehicle Transportation
	5.4	Vessel Transportation
	5.5	Noise and Vibration
	5.6	Air Quality
	5.7	Coal Dust
	5.8	Greenhouse Gas Emissions and Climate Change

## 3.0.2 Alternatives and Timeframe for Analysis

This chapter analyzes the impacts that could occur as a result of construction and operation of the Proposed Action. The analysis contained in this chapter assumes construction beginning in 2018 and full operations<sup>1</sup> occurring by 2028. Throughout this chapter, the 190-acre coal export terminal site is referred to as the *project area*. The impacts identified in 2028 would occur for the lifetime of the Proposed Action. Proposed mitigation measures are intended to apply for the lifetime of the Proposed Action.

This chapter also analyzes impacts that could occur if the Proposed Action were not approved (the No-Action Alternative). Chapter 2, *Project Objectives, Proposed Action, and Alternatives*, of this Final EIS provides a description of the Proposed Action and No-Action Alternative.

<sup>1</sup> Full operation means the coal export terminal would have a maximum throughput of up to 44 million metric tons of coal per year, as described in Chapter 2, *Project Objectives, Proposed Action, and Alternatives*.

### 3.0.3 Study Areas and Type of Impacts Analyzed

Each resource area has its own study area depending on its physical characteristics or regulations that oversee the resource area. Two types of study areas were identified—a direct impacts study area and an indirect impacts study area. Table 3.0-2 explains the differences between these two study areas. In some cases, both study areas are the same.

**Table 3.0-2. Types of Impacts**

Type of Impact <sup>a</sup>	Description	Description of Impact Categories
Direct	An impact resulting from either construction or operation of the Proposed Action that occurs in the project area.	<ul style="list-style-type: none"> <li>• <b>Construction:</b> Temporary impacts within the project area that are resolved or mitigated by the end of construction activity, or permanent impacts that result from changes to the project area due to construction of the coal export terminal.</li> <li>• <b>Operation:</b> Impacts occurring in the project area resulting from rail unloading, coal storage, machinery operations, equipment, vessel loading, etc.</li> </ul>
Indirect	An impact resulting from either construction or operations of the Proposed Action that occurs beyond the project area.	<ul style="list-style-type: none"> <li>• <b>Construction:</b> Impacts from activities beyond the project area during construction, such as vehicle and rail traffic.</li> <li>• <b>Operation:</b> Impacts from activities beyond the project area during operations, such as rail, vehicle and vessel traffic.</li> </ul>

Notes:  
<sup>a</sup> Washington Administrative Code (WAC) 197-11-792.

Table 3.0-3 provides a summary of the direct impacts and indirect impacts study areas by Chapter 3 resource.

**Table 3.0-3. Direct and Indirect Impact Study Areas by Resource**

Section and Resource	Direct Impacts Study Area	Indirect Impacts Study Area	
		Cowlitz County	Washington State (beyond Cowlitz County)
Section 3.1, Land and Shoreline Use	<ul style="list-style-type: none"> <li>Land and Shoreline Use: Project area and the area within 500 feet of the project area</li> <li>Parks and Recreational Facilities: The area within 0.5 mile of the project area</li> <li>Agricultural Land: Project area</li> </ul>	<ul style="list-style-type: none"> <li>Land and Shoreline Use: Longview-Kelso urban area and nearby unincorporated areas</li> <li>Parks and Recreational Facilities: The area within 0.5 mile of the project area</li> <li>Agricultural Land: Within 500 feet of the project area</li> </ul>	No additional study area <sup>a</sup>
Section 3.2, Social and Community Resources	<ul style="list-style-type: none"> <li>Social and Community Cohesion and Public Services: Project area and the area within 0.5 mile of the project area</li> <li>Utilities: The project area and the area within 0.5 mile of the project area</li> <li>Minority and Low-Income Populations: Project area and area within approximately 1 mile of the project area</li> </ul>	<ul style="list-style-type: none"> <li>Social and Community Cohesion and Public Services: The area within 0.5 mile of rail routes for Proposed Action-related trains</li> <li>Utilities: The area within 0.5 mile of the project area</li> <li>Minority and Low-Income Populations: The area within 0.5 mile of rail routes for Proposed Action-related trains</li> </ul>	No additional study area
Section 3.3, Aesthetics, Light, and Glare	The area within a 3-mile radius of the project area	The area within a 3-mile radius of the project area	No additional study area
Section 3.4, Cultural Resources	<ul style="list-style-type: none"> <li>Project area</li> <li>Areas of the Columbia River</li> <li>Land surrounding the project area</li> <li>Vantage points of the project area</li> </ul>	No additional study area <sup>b</sup>	

Section and Resource	Direct Impacts Study Area	Indirect Impacts Study Area	
		Cowlitz County	Washington State (beyond Cowlitz County)
Section 3.5, Tribal Resources	Areas in and near the project area	<ul style="list-style-type: none"> <li>• Tribal resources and access to resources on rail routes for Proposed Action-related trains</li> <li>• Proposed Action-related vessel route along the Columbia River</li> </ul>	<ul style="list-style-type: none"> <li>• Tribal resources and access to resources on rail routes for Proposed Action-related trains</li> <li>• Proposed Action-related vessel route along the Columbia River between Zone 6 and 3 nautical miles offshore</li> </ul>
Section 3.6, Hazardous Materials	Project area	Area within 1 mile of the project area	No additional study area

Notes:

<sup>a</sup> Appendix F, *Rail and Vessel Corridor Information*, provides additional information for the Proposed Action-related rail and vessel corridors from the *Tesoro Savage Vancouver Energy Distribution Terminal Facility Draft Environmental Impact Statement* (Washington State Energy Facility Site Evaluation Council 2015).

<sup>b</sup> Although Cowlitz County and Washington State were not included in the study area, existing conditions and potential impacts for the Proposed Action-related rail and vessel corridors are presented in this section.

### 3.0.4 Mitigation Measures Development Approach

Applicable regulations, potential permit conditions, and required planning documents were evaluated to determine if they would address potentially significant adverse environmental impacts identified in this Final EIS. When applicable, each section describes specific voluntary measures (Voluntary Mitigation) to be executed by the Applicant during construction or operations. When potential significant adverse environmental impacts remained, proposed mitigation measures were identified that would reduce the identified impact (Applicant Mitigation). Mitigation measures included in permit conditions would become legal requirements of the Applicant. In addition to the proposed mitigation measures identified in each section of this chapter, the following measure is proposed.

- The Applicant will provide to Cowlitz County and the Washington State Department of Ecology an annual report of compliance with mitigation requirements of an issued permit. Mitigation compliance reports will be part of the public record.

Proposed mitigation measures were identified as required by the Washington State Environmental Policy Act (SEPA) consistent with Washington Administrative Code (WAC) 197-11-660, which states that mitigation shall be reasonable, capable of being accomplished, and imposed to the extent attributable to the identified adverse impact of the proposal.

The thresholds of significance and proposed mitigation measures were determined by the co-lead agencies (Cowlitz County and the Washington State Department of Ecology). Additionally, when applicable, each section identifies proposed mitigation measures to be considered by other agencies, groups, or companies (Other Measures to be Considered) to reduce potential Proposed Action-related impacts that are beyond the Applicant's control or authority.

## 3.1 Land and Shoreline Use

Land and shoreline use refers to how land and shorelines are developed for various purposes, including residential, commercial, parks and recreation, agricultural, and industrial uses. It also refers to the preservation or protection of land for natural uses. Development projects, such as the Proposed Action, must be compatible with surrounding land uses and must comply with all state and local regulations and policies governing land and shoreline use.

This section describes land and shoreline use and zoning in the study areas, and the consistency of the Proposed Action with land use plans and public policies. It then describes impacts on land and shoreline use that could result from construction and operation of the Proposed Action and No-Action Alternative. This section also presents the measures identified to mitigate impacts resulting from the Proposed Action.

### 3.1.1 Regulatory Setting

Laws and regulations relevant to land and shoreline use are summarized in Table 3.1-1.

**Table 3.1-1. Regulations, Statutes, and Guidelines for Land and Shoreline Use**

Regulation, Statute, Guideline	Description
<b>Federal</b>	
Clean Water Act (33 USC 1251 <i>et seq.</i> )	Authorizes EPA to establish the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters.
<b>State</b>	
Washington State Growth Management Act (WAC 365-196, RCW 36.70A)	Requires state and local governments to manage Washington’s growth by identifying and protecting critical areas and natural resource lands, designating urban growth areas, and preparing comprehensive plans and implementing them through capital investments and development regulations. Cowlitz County is required to designate and protect critical areas under the GMA, but is otherwise not required to fully plan under GMA.
Washington State Shoreline Management Act (WAC 173. 27 <i>et seq.</i> , RCW 90.58)	Governs the use and development of “shorelines of the state.” Requires local jurisdictions with “shorelines of the state” to develop and adopt a shoreline master program to carry out the policies of the SMA.
Washington State Harbor Improvement Plans (RCW 53.20)	Requires port commissions to develop and adopt a comprehensive scheme of harbor improvements and to make harbor improvements substantially in accordance with the adopted plan.
State Water Pollution Control Law (RCW 90.48)	Provides Ecology with the jurisdiction to control and prevent the pollution of streams, lakes, rivers, ponds, inland water, salt waters, watercourses, and other surface and groundwater in the state.

Regulation, Statute, Guideline	Description
<b>Local</b>	
Cowlitz County Shorelines Management Regulations (CCC 19.20)	Adopted in 1977 in accordance with requirements of the SMA and Cowlitz County shorelines management regulations. Defines goals, policies, and objectives that apply to development within shoreline areas of Cowlitz County. A draft update is currently in review by Ecology.
Cowlitz County Critical Areas Regulations (CCC 19.15)	Designates critical areas within Cowlitz County and adopts development regulations to preserve them, in accordance with the requirements of GMA.
Cowlitz County Land Use Ordinance (CCC 18.10)	Establishes official land use controls (including zoning regulations) for unincorporated areas of Cowlitz County. The zoning regulations are the principal tool for implementing the goals and policies of the Cowlitz County Comprehensive Plan.
Cowlitz County Comprehensive Plan (Cowlitz County 1976)	Adopted in 1976 to manage Cowlitz County growth. A draft update is currently in development.
City of Longview Comprehensive Plan	Comprehensive plan adopted in 2006 to manage the City of Longview's growth.
City of Longview Zoning Ordinance (LMC Title 19)	Establishes zoning regulations for the City of Longview.
Notes: USC = United States Code; EPA = U.S. Environmental Protection Agency; WAC = Washington Administrative Code; RCW = Revised Code of Washington; GMA = Growth Management Act; SMA = Shoreline Management Act; Ecology = Washington State Department of Ecology; CCC = Cowlitz County Code; LMC = Longview Municipal Code	

The plans and public policies that guide land use and shoreline resources in the study area are discussed in Section 3.1.4, *Existing Conditions*.

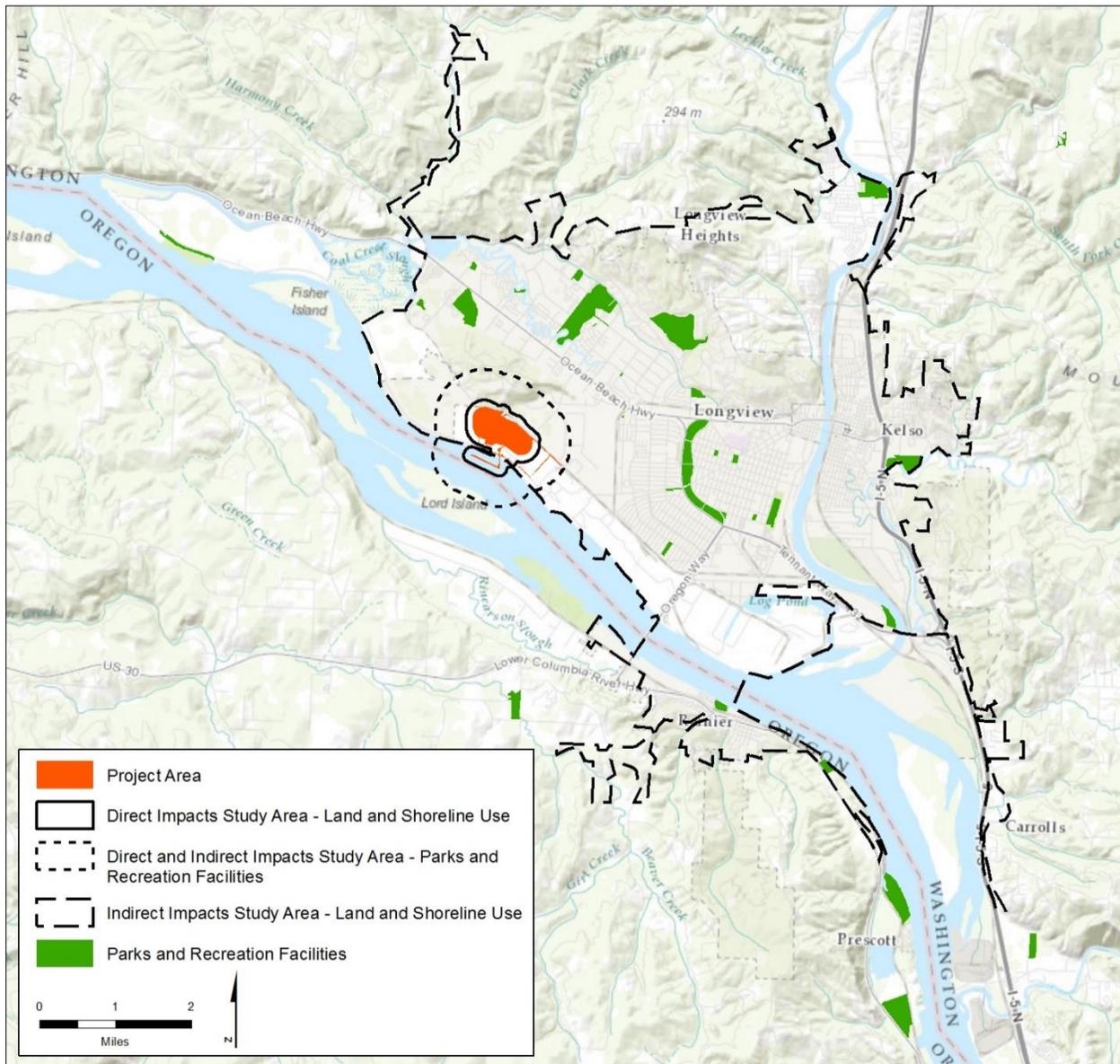
### 3.1.2 Study Area

The analysis of land and shoreline use encompasses three built environment elements, each of which has its own study area. The following identifies the study areas used for this analysis, which are also depicted in Figure 3.1-1.

- Land and Shoreline Use, including Zoning and Consistency with Comprehensive Plans.** For direct impacts, the study area for land use and shoreline use is the project area and the area within 500 feet of it, including the Columbia River. For indirect impacts, the study area is the Longview-Kelso urban area and nearby unincorporated areas of Cowlitz County.<sup>1</sup> When assessing consistency with zoning regulations, comprehensive plans, and other public plans and policies, the study area is the project area and the area within 500 feet of it.

<sup>1</sup> This broader land use study area is the Longview-Kelso urban area as defined in the 2010 U.S. Census and adjusted to include the unincorporated areas of Cowlitz County adjacent to the project area, which are not part of the Census-defined urban area.

**Figure 3.1-1. Land and Shoreline Use Study Areas**



- **Parks and Recreation Facilities.** For direct and indirect impacts, the study area for parks and recreation facilities is the area within 0.5 mile of the project area. The study area also includes the nearby Willow Grove boat launch on the Washington side of the Columbia River and the Rainier Riverfront Park boat launch on the Oregon side. These boat launches are more than 0.5 mile from the project area, but provide public boating access to the Columbia River near the project area.
- **Agricultural Land.** For direct impacts, the study area for agricultural land is the project area. For indirect impacts, the study area is the area within 500 feet of the project area.

### 3.1.3 Methods

This section describes the information sources used to characterize the existing conditions and the methods used to assess the potential impacts of the Proposed Action and No-Action Alternative on land and shoreline use.

#### 3.1.3.1 Information Sources

A variety of data sources were used to evaluate the land and shoreline use characteristics of the study areas and to define applicable public policies. These sources included field surveys, geographic information systems data, census data, comprehensive plans and shoreline master programs for Cowlitz County (County), other public policy documents, government and private business websites, and other documents. A full inventory of data sources used in the land use analysis is provided in the *SEPA Land and Shoreline Use Technical Report* (ICF and BergerABAM 2017).

#### 3.1.3.2 Impact Analysis

The impact analysis assesses whether the changes to land and shoreline use in the project area would be compatible with surrounding land uses and with applicable land use plans and policies, zoning ordinances, and shoreline regulations. In general, the assessment of the compatibility of land and shoreline use is based on the types of uses, their intensities, and their proximity to one another.

### 3.1.4 Existing Conditions

This section describes the existing environmental conditions in the study areas related to land and shoreline use that could be affected by the construction and operation of the Proposed Action and the No-Action Alternative.

#### 3.1.4.1 Land Use Plans and Public Policies

Land use and shoreline resources in the study areas are guided by a variety of land use plans and public policies, which include comprehensive plans, shoreline master programs (SMPs), transportation plans, critical area regulations, and other plans. The applicable land use plans and public policies are discussed in detail in the *SEPA Land and Shoreline Use Technical Report*. The *Cowlitz County Comprehensive Plan* (Comprehensive Plan) (Cowlitz County 1976), *Shorelines Management Master Program for Cowlitz County, Washington* (SMP) (Cowlitz County 1977), and Cowlitz County Critical Areas Protection ordinance are summarized below.

##### **Cowlitz County Comprehensive Plan**

According to the Washington State Growth Management Act (GMA), counties and cities meeting specific population and growth criteria are required to prepare comprehensive plans in accordance with GMA goals. The County is not required to fully plan under the GMA, but counties not fully planning under the GMA are required to prepare a comprehensive plan with elements defined in Revised Code of Washington (RCW) 36.70.330.

The Comprehensive Plan designates the project area as Heavy Industrial (Cowlitz County 1976). The plan states that the purpose of the industrial classification is to “assure the presence of adequate

amounts of land for industrial growth in Cowlitz County.” Appropriate uses in the Heavy Industrial designation include lumber and plywood mills, metal manufacturing, sand and gravel operations, foundry or iron works, quarries, agriculture, nonresidential commercial, and forest management and processing (Cowlitz County 1976). The *SEPA Land and Shoreline Use Technical Report* includes the applicable Comprehensive Plan map for the project area. The technical report also summarizes the eight goals in the Comprehensive Plan that relate to the Heavy Industrial designation.

The draft Comprehensive Plan designates the project area as Economic Resource Lands – Industrial (Cowlitz County 2016a).

### **Cowlitz County Shoreline Management Master Program**

The Shoreline Management Act (SMA) applies to all counties and cities that have “shorelines of the state,” as defined in RCW 90.58.030. The County’s current SMP was approved in 1977. It includes four basic shoreline environment designations: natural, conservancy, rural, and urban. The Columbia River, part of the project area, is a shoreline of statewide significance. The areas under shoreline jurisdiction in the project area include the Columbia River and all areas within 200 feet of the ordinary high water mark (OHWM) (Figure 3.1-2). The County’s SMP designates the shoreline environment at the project area as urban, making it suitable for intensive recreation, residential, industrial, and commercial development (Cowlitz County 1977). The objective of the urban designation is to identify those defined areas that are currently in and potentially capable of such use to satisfy the socioeconomic needs of the present and future populations of Cowlitz County. Figure 3.1-2 shows the regulated shoreline jurisdiction within the project area.

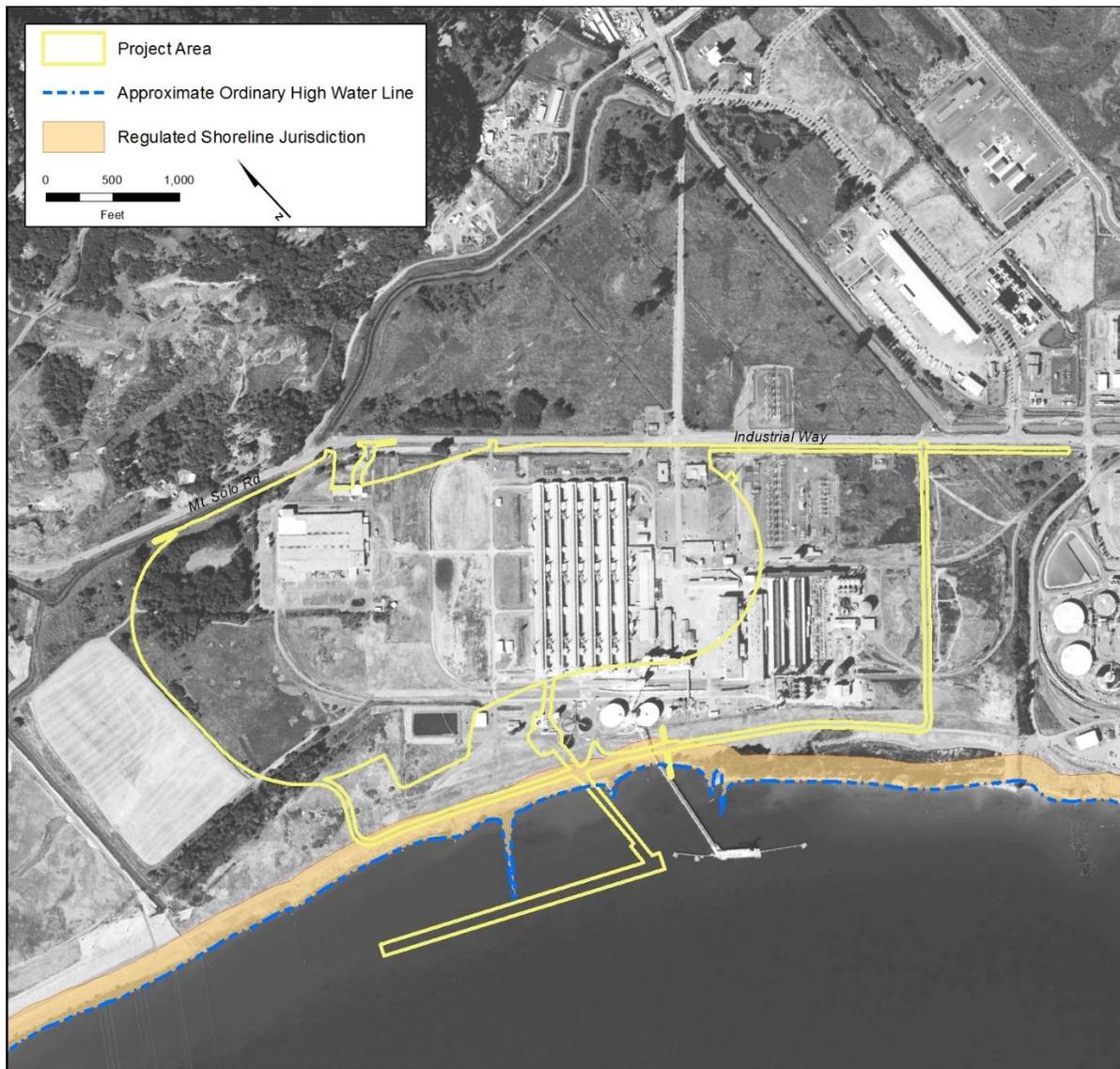
The County’s SMP establishes use regulations for 21 shoreline use activities. These use regulations supplement other land use regulations and identify the shoreline management issues that must be addressed to implement the goals of the SMP. According to these regulations, ports and water-related industries are permitted uses in urban shorelines.

To achieve the overall goals of the Shoreline Management Act, the County’s SMP also outlines a series of specific goals related to circulation, conservation, economic development, historical/cultural, recreation, residential, public access, and shoreline uses. Policies related to ports and water-related industries are identified under the economic development goal of the SMP.

The County’s SMP is undergoing a comprehensive update to meet the requirements of the revised 2003 and 2011 Shoreline Master Program Guidelines based on Washington Administrative Code (WAC) 173-26. The draft updated SMP shoreline maps designate the shoreline environment at the project area as High Intensity and Aquatic (Cowlitz County 2016b). The draft updated SMP is subject to review and approval by the Washington State Department of Ecology (Ecology) and adoption by the Cowlitz County Board of Commissioners.

Portions of the shoreline just downstream from the project area are under the jurisdiction of the City of Longview. The City of Longview updated SMP became effective August 10, 2015.

**Figure 3.1-2. Regulated Shoreline Jurisdiction**



### **Cowlitz County Critical Areas Protection**

CCC 19.15, the Cowlitz County Critical Areas Ordinance, provides protection for designated critical areas. As mandated by the GMA (RCW 36.70A.060), the County is required to develop and adopt a critical areas protection ordinance that designates critical areas in the County and sets out development regulations to ensure their protection. The ordinance must classify, designate, and protect critical areas, which include critical aquifer recharge areas, frequently flooded areas, geological hazard areas, wetland areas, and fish and wildlife habitat conservation areas. The critical areas identified on the upland portions of the project area include geologic hazard areas, critical aquifer recharge areas, and wetlands (URS Corporation 2014). Frequently flooded areas and fish and wildlife habitat conservation areas are found along the shoreline of and within the Columbia River.

These plans and policies set the context for land use and shoreline development in the study areas.

### **3.1.4.2 Land Use and Shoreline Resources**

The following section presents the characteristics of the existing environment related to land use and shoreline resources by study area.

#### **Direct Impacts Study Area**

The direct impacts study area includes portions of unincorporated Cowlitz County and the City of Longview. Unincorporated areas of Cowlitz County, which includes the project area, are subject to Cowlitz County Code (CCC). County zoning regulations are established in the Land Use Ordinance (CCC 18.10). The zoning regulations establish permitted uses, various building and lot dimension standards, and other requirements for development in Cowlitz County. The zoning regulations are the principal tool for implementing the goals and policies of the Comprehensive Plan (Cowlitz County 1976).

The project area is zoned Heavy Manufacturing, as shown in Figure 3.1-3.

Per CCC 18.10.235, the purpose of the Heavy Manufacturing zone is as follows.

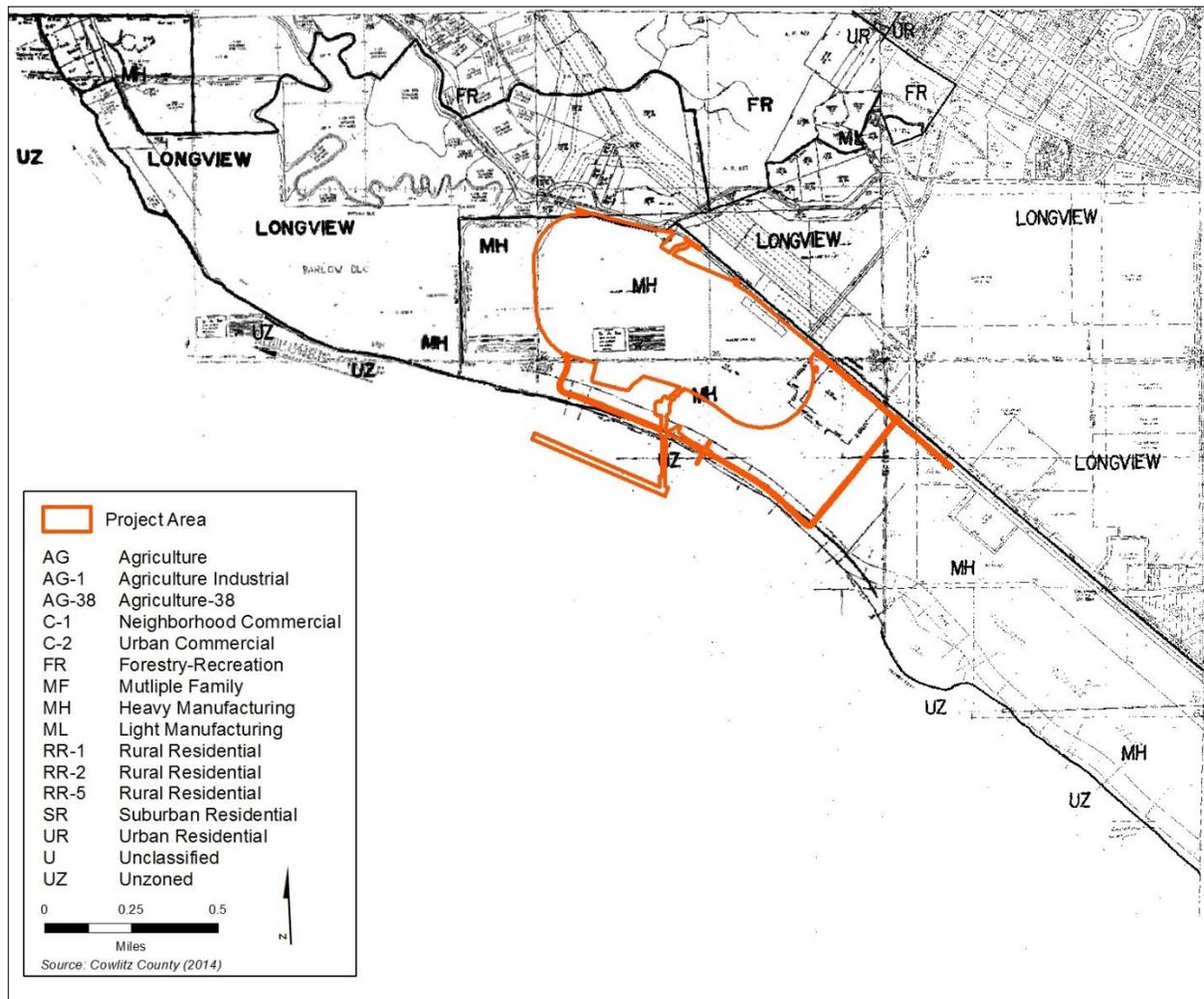
... to allow Heavy Industrial uses or structures where the primary use involves fabrication, manufacturing, assembly, processing and distribution of raw materials, primarily serving nonlocal wholesale and retail markets. Heavy industrial uses may generate some noise, smoke, dust, odors, toxic gases, vibration, glare, heat and other environmental pollutants in conformance with applicable regulations and must be tolerated, to the benefit of the economy and general welfare of the county. Heavy industrial uses are dependent upon rail, water or arterial access to the interstate highway system.

The permitted uses in the Heavy Manufacturing zone are identified in CCC 18.10.236 and include “[s]torage and distribution of petroleum, propane, liquefied gas, coal, and wood.” Minimum standards regarding lot area, setbacks, and lot coverage have not been established for Heavy Manufacturing zones, except for rear and side yard setback requirements for buildings exceeding 35 feet in height.

The project area is an approximate 190-acre site primarily within the Applicant’s leased area, as well as the in-water area where two proposed docks would be constructed in the Columbia River. The project area consists of all or portions of eight Cowlitz County tax parcels (619530400, 61950, 61953, 6195303, 61954, 61951, 61948, and WI3100003). These parcels are owned by Northwest Alloys, BNSF Railway Company (BNSF), and the Bonneville Power Administration (BPA) (Cowlitz County 2014). The project area also includes portions of the Columbia River that are owned by the Washington State Department of Natural Resources and subject to an aquatic lands lease (Lease No. 20-B09222). Northwest Alloys leases the aquatic lands, but the Applicant is under contract as the operator of the marine and upland facilities at the project area.

The Applicant’s leased area has been in industrial use since 1941. Reynolds Metals Company constructed and operated an aluminum smelter and aluminum casting facility within the project area from 1941 until 2000. Northwest Alloys purchased the site in May 2000 and remains the owner, and the Applicant now operates the existing facility on a ground lease with Northwest Alloys (Washington State Department of Ecology 2014).

**Figure 3.1-3. Cowlitz County Zoning**



The Reynolds Metals Company facility was an intensive industrial use and, at the time of its closure in 2001, it employed approximately 800 workers and operated 24 hours per day, 7 days per week. In December 2004, Chinook Ventures purchased the facility assets and obtained a ground lease to store and transport fly ash, petroleum coke, alumina, and cement from 2004 to 2010. The Applicant purchased the facility assets from Chinook Ventures in January 2011, and now operates on a ground lease with Northwest Alloys. Today, portions of the project area are used for industrial purposes,<sup>2</sup> but overall the project area is underused, with industrial activities occurring at a much lower intensity than historical levels.

Portions of the project area are also the subject of ongoing hazardous materials cleanup activities to address contamination from the former aluminum smelting and casting uses (Washington State Department of Ecology 2014).

<sup>2</sup> A full list of existing uses in the project area and the Applicant's leased area is provided in the *SEPA Land and Shoreline Use Technical Report*.

The Applicant states that facilities in the project area include four office buildings, maintenance sheds, potlines for storing materials, two cast house buildings, a combined stormwater and wastewater treatment facility, an industrial wastewater treatment plant, a carbon plant, the former cable plant building and associated structures and rail facilities associated with the Reynolds Metals Company operations. The project area also includes two parcels currently owned by BPA and parcels owned by BNSF. The BPA parcels contain BPA facilities, including an access road and substation along Industrial Way. The parcels owned by BNSF contain portions of the Reynolds Lead rail line.

While most of the project area is developed, its undeveloped western portion consists of open areas of grass and wetlands, and there is an approximate 6-acre forested wetland in the northwest corner of the property. No formally designated recreation sites or activities are located on the project area. An extensive levee system along the Columbia River is maintained by the Consolidated Diking Improvement District (CDID) #1.

Figure 3.1-4 shows the existing land uses in the vicinity of the project area; land uses in the indirect impacts study area are discussed further in this section.

The portions of the direct impacts study area in Longview are subject to the zoning established by Title 19 of the Longview Municipal Code (LMC).

The zoning designations for parcels in the direct impacts study area within 500 feet of the project area are provided in the *SEPA Land and Shoreline Use Technical Report*. The parcels in the City of Longview are within the Heavy Industrial and Mixed Use – Commercial/Industrial zones (City of Longview 2014).

LMC 19 states the Heavy Industrial zone is intended

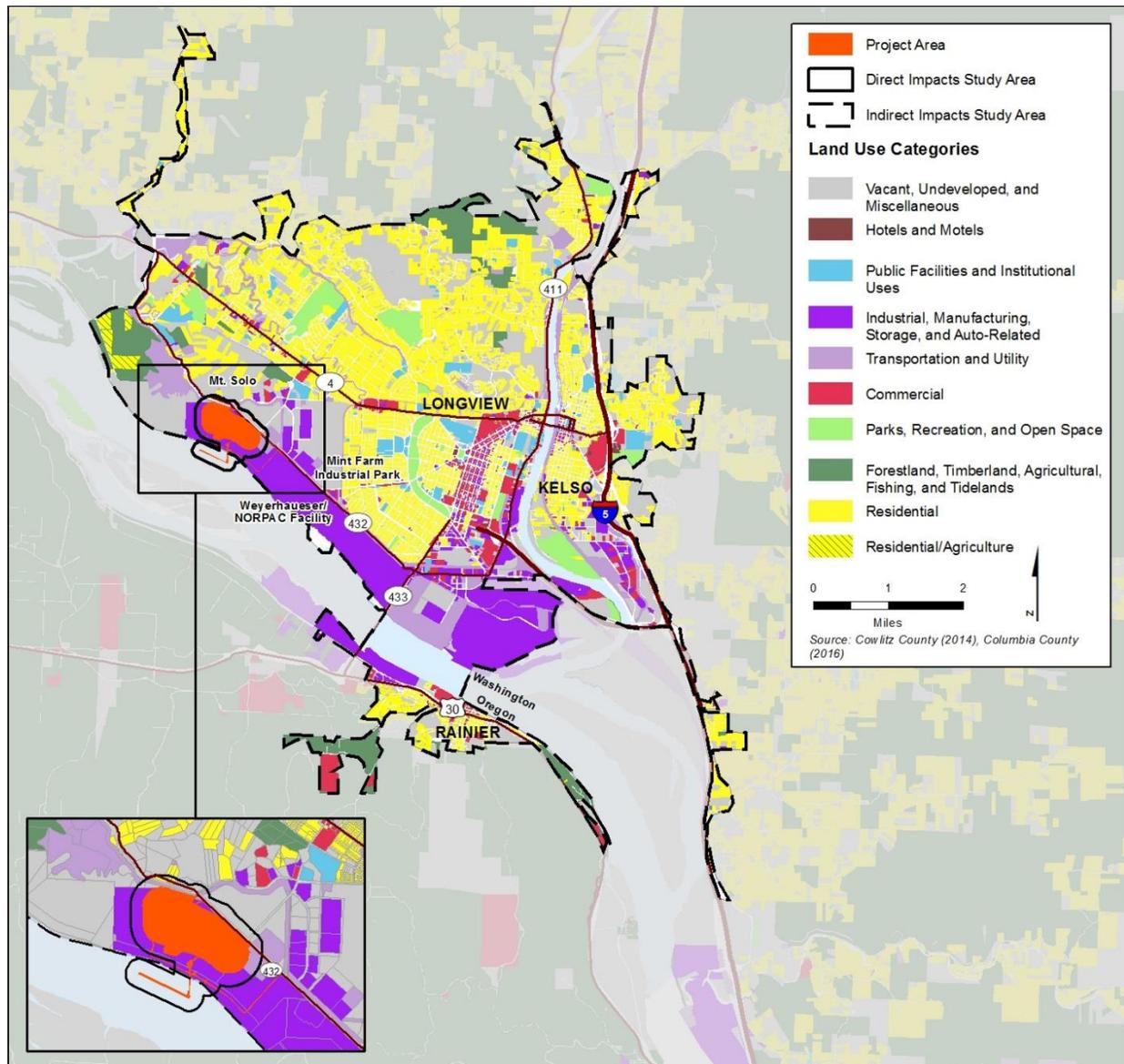
... for industrial uses that tend to involve processing of natural and manmade materials into finished goods for sale, and may take place in interior and/or exterior settings. Uses in this district may require some handling of hazardous or flammable materials, may require outdoor storage, and may create some external emissions of noise, odor, glare, vibration, etc., but these are largely contained on-site.

LMC 19 states the Mixed Use – Commercial/Industrial zone is intended to

... allow low intensity industrial uses, including light manufacturing, warehousing and distribution, research and development, and regional commercial services. Commercial uses should be compatible to and complement low-intensity industrial uses and provide a convenient business environment for employees and visitors. High quality employment facilities are encouraged, such as corporate office headquarters and technology centers.

LMC 19.58.030 establishes dimensional standards (i.e., minimum lot size, frontage, setbacks; maximum building heights, and maximum impervious area) for the Heavy Industrial and Mixed Use – Commercial/Industrial zoning districts.

**Figure 3.1-4. Existing Land Use**



The portions of the direct impacts study area within 500 feet of the project area contain predominantly industrial and transportation/utility land uses, along with two single-family residences. A portion of the direct impacts study area is occupied by an existing bulk products terminal within the Applicant’s leased area, which includes upland facilities, a dock on the Columbia River capable of receiving Panamax-sized vessels, and rail and road connections. The bulk products terminal is used by the Applicant to import, store, and transfer bulk alumina and coal. Alumina imported by ship is stored and then transferred by rail to an Alcoa smelter near Wenatchee, Washington. The coal is currently imported by rail, stored, and then transferred by truck to the adjacent Weyerhaeuser lumber products manufacturing facility, where it is used to power the facility.

Industrial Way (State Route 432) is northeast of the project area. Trains on the Reynolds Lead deliver and ship alumina and coal from the existing bulk products terminal. The area east of Industrial Way from the project area is also part of the Applicant's leased area and contains open land with overhead electrical wires and towers.

Immediately west of the project area is the closed Black Mud Pond (BMP) facility, which previously served the Reynolds Metals Company facility. A cryolite recovery plant was constructed in 1953 as part of the Reynolds facility. A byproduct of the cryolite recovery process was black mud, which was disposed of in several fill deposits. One such pond was located in the West Plant area near Landfill 2. The 33-acre BMP impoundment, which was formally closed in 1992, has been subject to an approved ongoing maintenance and monitoring program overseen by Ecology. No further remedial activities related to the closed BMP facility are required in the final cleanup action plan.

Other uses in the direct impacts study area include rights-of-way for CDID #1 and various vacant lands owned by the Port of Longview. The CDID #1 rights-of-way contain flood protection facilities such as levees, drainage ditches, and pump stations.

Two single-family residences are across Industrial Way/Mt. Solo Road from the project area and are the only residential uses in the direct impacts study area. The residences are located in the City of Longview Heavy Industrial zoning district. These houses are on wooded lots set back from the street.

While no formally designated recreation areas or activities occur in the upland portion of the direct impacts study area, the Columbia River is used for boating, fishing, and other forms of water recreation. In addition, the 146-mile Lower Columbia River Water Trail on the Columbia River passes by the project area (Lower Columbia Estuary Partnership 2014).

No agricultural land or activities occur in the direct impacts study area.

The *SEPA Land and Shoreline Use Technical Report* lists the parcels and associated land uses located in the direct impacts study area.

## **Indirect Impacts Study Area**

The indirect impacts study area includes the Longview-Kelso urban area as defined in the 2010 U.S. Census and the unincorporated areas of Cowlitz County adjacent to the project area (which are not part of the Census-defined urban area). The Cities of Longview and Kelso, Washington; and Rainier, Oregon, are in this study area (Figure 3.1-1).

The indirect impacts study area includes a range of industrial, residential, commercial, recreation, and public facility land uses. Development patterns throughout the study area generally consist of areas dominated by a single land use (e.g., residential neighborhoods, commercial shopping centers), except for limited mixed-use development in downtown Longview and Kelso.

Major road corridors through the indirect impacts study area include Ocean Beach Highway (State Route 4), Industrial Way (State Route 432), Interstate 5, State Route 433, and State Route 411 through Longview and Kelso, Washington, along with U.S. Route 30 (US 30) in Rainier, Oregon. Another prominent transportation link in the study area is the BNSF main line and the Columbia & Cowlitz Railway. The BNSF main line generally runs along the Columbia and Cowlitz Rivers, with spurs serving downtown Longview and the industrial areas along the Columbia River, including the project area (BNSF Spur and Reynolds Lead). The Columbia River is a key marine transportation link

servicing the study area. Overall, the integrated network of road, rail, and marine transportation in the indirect impacts study area has facilitated the area's development as an industrial and commercial hub along the Columbia River.

There is a wide corridor of industrial and transportation/utility land uses along the Columbia River in the indirect impacts study area. This corridor includes the project area; the 550-acre Weyerhaeuser Company lumber products manufacturing site/North Pacific Paper Corporation facility along the Columbia River; the Port of Longview's 478-acre Port Industrial Marine property, which includes eight marine terminals; and the Mint Farm Industrial Park, a partially developed 445-acre industrial site operated as a public-private partnership between the City of Longview and the Weyerhaeuser Real Estate Development Company. The Barlow Point property, an undeveloped area downstream (west) of the project area along the Columbia River and within the City of Longview, was recently purchased by the Port for future port improvements (Port of Longview 2011).

Aside from the two residences located across Industrial Way/Mt. Solo Road from the project area, nearby residential uses include several single-family residences on Mount Solo, a steep hill approximately 0.5 to 0.75 mile north of the project area. More densely developed residential areas are located at least 1 mile away from the project area to the north and east in Longview and across the Cowlitz River in the City of Kelso. Commercial uses in the indirect impacts study area include retail, office, and storage uses concentrated along Ocean Beach Highway and in downtown Longview and Kelso.

Development in Kelso is concentrated primarily between the Cowlitz River and Interstate 5. Land use patterns are characterized by commercial uses along Ocean Beach Highway. Residential uses exist further north and south of the corridor, and there is a mix of industrial, commercial, and undeveloped land uses in the southern portion of the City of Longview near the confluence of the Cowlitz and Columbia Rivers. As in Longview, residential uses in Kelso are predominantly low-density, single-family, detached dwellings.

As shown in Figure 3.1-1, the indirect impacts study area extends well beyond the project area and the downtown cores of Longview and Kelso. To the north, the outer portions of the indirect impacts study area encompass suburban and exurban areas with scattered residential development interspersed among forested areas.

The Lewis and Clark Bridge (State Route 433) spans the Columbia River upriver from the project area and provides access to Rainier, Oregon. This portion of the study area is approximately 2 to 5 miles from the project area; it is characterized by industrial and open-storage uses along the Columbia River, low-density residential and commercial development within Rainier, agricultural uses, and undeveloped and forested land.

A variety of public facility uses serve the indirect impacts study area, including schools, police and fire facilities, libraries, community centers, health care facilities, and government facilities. The *SEPA Land and Shoreline Use Technical Report* identifies the locations of the major public facilities in the indirect impacts study area.

### **3.1.4.3 Parks and Recreation Facilities**

There are no parks or recreation facilities in the study area. However, the Columbia River is used for boating, fishing, and other forms of water-related recreation. The 146-mile-long Lower Columbia

River Water Trail, which extends from Bonneville Dam to the mouth of the Columbia River, passes by the project area. Recreational boaters must share the river with commercial vessels, including oceangoing cargo ships. The nearest parks are Roy Morse Park located 1 mile north of the project area, Mint Valley Golf Course located 1 mile northeast of the project area, and a primitive campsite (i.e., a campsite with no support facilities) on Lord Island 0.8 mile south of the project area (Lower Columbia Estuary Partnership 2014). The nearest boat launches are located at Rainier Riverfront Park, across the Columbia River in Rainier, Oregon, approximately 4 miles upriver of the project area, and at Willow Grove Boat Launch, located on the Washington side of the river approximately 4 miles downstream of the project area. The *SEPA Land and Shoreline Use Technical Report* includes a map of these nearby park and recreation uses.

#### **3.1.4.4 Agricultural Land**

As defined previously, the study area for agricultural land uses is the project area and the area within 500 feet of it. There are no agricultural zoned land or agricultural land uses in the study area.

### **3.1.5 Impacts**

This section describes the potential direct and indirect impacts related to land and shoreline use that would result from construction and operation of the Proposed Action and No-Action Alternative.

#### **3.1.5.1 Proposed Action**

This section describes the potential impacts that could occur in the study areas as a result of construction and operation of the Proposed Action.

Construction would proceed in two stages and would last approximately 9 years. Construction activities would include building demolition, site preparation (e.g., clearing, grading, and earthwork), ground preloading in preparation for coal stockpiles, equipment installation, rail loop construction, dredging, and in-water and upland construction of docks, trestles, and conveyors. As construction of the initial stages of the Proposed Action is completed, start-up operations would commence while the remainder of the Proposed Action is under construction. Therefore, both construction and operational activities would occur at the project area during part of the overall construction period. Construction of the coal export terminal would temporarily generate traffic, noise, dust, smoke, vibration, and other impacts.

#### **Construction—Direct Impacts**

Chapter 2, *Project Objectives, Proposed Action, and Alternatives*, describes construction-related activities within the project area. Construction would not result in direct impacts on land use because the project area is currently an industrial use and would remain an industrial use upon completion of construction activities.

#### **Construction—Indirect Impacts**

Construction of the Proposed Action would not result in indirect impacts on land and shoreline use because it would be limited to the project area and construction activities would not affect land and shoreline use outside the project area.

## **Operations—Direct Impacts**

Operation of the Proposed Action would result in direct impacts. Operations-related activities are described in detail in Chapter 2, *Project Objectives, Proposed Action, and Alternatives*. In operation, the Proposed Action could have a maximum annual throughput capacity of up to 44 million metric tons of coal per year. The Proposed Action would consist of one operating rail track, eight rail tracks for storing up to eight unit trains, rail car unloading facilities, a stockpile area for coal storage, conveyor and reclaiming facilities, two new docks in the Columbia River (Docks 2 and 3), and shiploading facilities on the two docks. Trains would transport coal in unit trains (meaning all the rail cars would carry the same commodity) from the BNSF main line at Longview Junction, Washington to the project area via the BNSF Spur and Reynolds Lead. Coal would be unloaded from rail cars, stockpiled, and loaded by conveyor onto ocean-going vessels at Docks 2 and 3. Dredging of the Columbia River would be required to provide access to and from the Columbia River navigation channel and for berthing at Docks 2 and 3. Vehicles would access the project area from Industrial Way, and vessels would access the project area via the Columbia River and berth at Dock 2 or 3. Terminal operations would occur 24 hours per day, 7 days per week.

## **Land Use and Shoreline Resources**

Direct operations-related impacts on land and shoreline use are discussed below.

### **Modify Existing Land and Shoreline Uses in the Project Area**

The Proposed Action would modify existing land use in the project area by replacing the existing industrial uses with a new export terminal. The export terminal would include a rail loop system and rail unloading facilities, coal handling and stockpile areas, shiploading facilities (including the two new docks in the Columbia River), and associated rail and coal handling facilities. The Proposed Action would be a more intensive industrial use of the project area than under existing conditions. However, because the project area and surrounding area already contain industrial uses, the Proposed Action would not change the land use of the project area substantially.

### **Introduce New, Intensive Industrial Use near Residential Land Uses**

The Proposed Action would introduce new, intensive industrial uses near two single-family residences north of the project area in the direct impacts study area. These residences currently coexist with industrial uses in the project area and nearby and, as noted above, are located in the City of Longview Heavy Industrial zoning district. Therefore, the Proposed Action would not directly affect these uses with respect to land use compatibility.

## **Parks and Recreation Facilities**

The Proposed Action would not directly affect the continued use of the Columbia River for recreation purposes, nor would it have any impact on the Willow Grove and Rainier Riverfront Park boat launches. There are no other parks or recreation facilities in the study area. Therefore, the Proposed Action would not result in any direct impacts on parks and recreation facilities.

## **Agricultural Land**

There are no agricultural zoned land or agricultural land uses in the study area. Therefore, the Proposed Action would not result in any direct impacts on agricultural land uses.

## Operations—Indirect Impacts

Operations-related activities are described in Chapter 2, *Project Objectives, Proposed Action, and Alternatives*.

### Land Use and Shoreline Resources

The Proposed Action would be compatible with land use conditions in the indirect impacts study area and the existing concentration of industrial land uses along the Columbia River, in particular the Weyerhaeuser and Port facilities immediately upriver from the project area.

The Proposed Action would not change land use patterns in the remainder of the indirect impacts study area. Most land uses outside the corridor of industrial and transportation/utility uses along the Columbia River are located at least 1 mile from the project area. Furthermore, the residential uses to the north on Mount Solo are approximately 0.5 mile north of the project area. Other residential neighborhoods to the north are buffered from the project area by Mount Solo. Land uses in the Rainier, Oregon, portion of the study area would continue to be separated from the project area by the Columbia River. Thus, the Proposed Action would not affect land use conditions in the Rainier area.

Increased rail traffic from the Proposed Action would use existing rail infrastructure and would not affect current land use. The Proposed Action would increase commercial ship traffic along the Columbia River. However, the Columbia River is currently used for marine transportation. The additional ship traffic would not change this ongoing use.

Overall, the Proposed Action would not affect land use trends or conditions in the indirect impacts study area.

### Parks and Recreation Facilities and Agricultural Land

The Proposed Action at full capacity would introduce approximately 70 additional ships per month (840 per year) to the Columbia River. Although the Proposed Action would add commercial ship traffic to the river, recreational users (such as those using the river for fishing or boating) currently must take account of commercial vessels, including large ocean-going ships. With the additional vessels, the Proposed Action would result in an approximate 46% increase over current river vessel traffic.<sup>3</sup> While this would be a substantial increase, the vessels would operate in the navigation channel except when arriving or departing the proposed docks under the assistance of tugs, and operations would be similar to current vessel traffic. Recreational boats are smaller and are not limited to using the navigation channel, and the Willow Grove and Rainier Riverfront Park boat launches are distant from the project area. Therefore, it is not expected that recreational boaters would be substantially affected by vessels and tugs using the proposed docks. The Proposed Action would not result in indirect impacts on parks and recreation facilities or on agricultural land.

### Consistency with Zoning

The Proposed Action would be consistent with the existing Heavy Manufacturing zoning designation and comply with the currently permitted uses and associated development standards and

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<sup>3</sup> Based on 2014 large commercial vessel traffic in the Columbia River according to Bar Pilots records, which was 3,638 transits or 1,819 vessels. See Chapter 5, Section 5.4, *Vessel Transportation*, for additional information.

requirements. The Proposed Action would introduce a coal export terminal dependent on rail and marine transportation, and thus, would be consistent with the purpose of the Heavy Manufacturing zone. Per CCC 18.10.236, the proposed coal export terminal would be a permitted use. Furthermore, minimum standards regarding lot area, setbacks, and lot coverage have not been established for Heavy Manufacturing zones, except for rear and side yard setback requirements for buildings exceeding 35 feet in height (CCC 18.10.501). The Proposed Action would comply with the limited rear and side yard setback requirements for any proposed structures exceeding 35 feet in height. Overall, the Proposed Action would be consistent with existing zoning regulations.

### **Consistency with Land Use Plans and Public Policies**

The Proposed Action's consistency with the Cowlitz County Comprehensive Plan, SMP, and Critical Areas Protection Ordinance are summarized below. A full discussion of the Proposed Action's consistency with all applicable land use plans and public policies is provided in the *SEPA Land and Shoreline Use Technical Report*.

#### **Cowlitz County Comprehensive Plan**

As discussed above, the current Comprehensive Plan designates the project area as Heavy Industrial. The purpose of this classification is to "assure the presence of adequate amounts of land for industrial growth in Cowlitz County." The Proposed Action would maintain and expand the industrial use of the project area and would be consistent with the Comprehensive Plan designation. Furthermore, the currently effective, adopted Comprehensive Plan articulates several goals regarding industrial development that are applicable to the Proposed Action. The Proposed Action would be consistent with these goals, as analyzed in the *SEPA Land and Shoreline Use Technical Report*.

The Proposed Action would also be consistent with the Economic Resource Lands – Industrial designation of the project area in the draft updated Comprehensive Plan. By redeveloping an existing industrial site with a new, active industrial use, the Proposed Action would be supportive of the draft Comprehensive Plan goals to identify and protect industrial land.

#### **Cowlitz County Shoreline Management Master Program**

The Proposed Action would result in development within the shoreline area regulated by the County's SMP. It designates the shoreline environment at the project area as urban, which includes areas suitable for intensive recreation, residential, industrial, and commercial development. The Proposed Action would be consistent with the objective of the urban designation. Furthermore, ports and water-related industries, such as the Proposed Action, are permitted uses on urban shorelines per the SMP.

The County's SMP is undergoing a comprehensive update to meet the requirements of the revised 2003 and 2011 Shoreline Master Program Guidelines based on WAC 173-26. The proposed industrial use is a preferred use under the Shoreline Management Act as a water-dependent use.

Newly proposed dredging is a conditional use on urban shorelines. Therefore, new development on the project area would require a Shoreline Substantial Development Permit for any new structures within the shoreline jurisdiction, and a Conditional Use Permit for proposed dredging activities.

The Proposed Action's consistency with the applicable policies and use activity regulations of the SMP are discussed in the *SEPA Land and Shoreline Use Technical Report*.

### **Cowlitz County Critical Areas Protection**

The Proposed Action would result in development within designated critical areas, including geologically hazardous areas, critical aquifer recharge areas, wetlands, frequently flooded areas, and fish and wildlife habitat conservation areas. The Applicant would be required to obtain a critical areas permit, and any necessary mitigation measures would be required as a condition of the permit. With these mitigation measures, any impacts on regulated critical areas would be offset or minimized such that there would be no net loss of critical area functions and values. Therefore, the Proposed Action would be consistent with the policy related to critical areas protection.

### **3.1.5.2 No-Action Alternative**

The following sections describe the potential impacts on land and shoreline use related to construction and operation of the No-Action Alternative.

#### **Construction—Direct Impacts**

Although the coal export terminal would not be constructed under the No-Action Alternative, new construction, demolition, or related activities to develop the project area into an expanded bulk product terminal would occur on previously developed upland portions of the project area. Upland areas of the site are zoned Heavy Industrial and it is assumed that newly proposed industrial uses in these upland areas could be permitted in the future. Construction of new buildings could involve demolition and replacement of existing buildings and new or modified permits. However, no new docks would be built and no new dredging would occur. Construction would not result in direct impacts on land use because the project area is currently an industrial use and would remain an industrial use upon completion of construction activities.

#### **Construction—Indirect Impacts**

The No-Action Alternative would not result in indirect construction impacts on land and shoreline use because construction would be limited to the project area. These activities would not change land and shoreline use outside the project area during construction.

#### **Operations—Direct Impacts**

The No-Action Alternative would continue and expand the existing bulk product terminal use in the project area. The following direct impacts on land use may result from operation of the No-Action Alternative.

#### **Land and Shoreline Resources**

Direct operations-related impacts on land and shoreline resources are discussed below.

##### **Modify Existing Land Uses on the Project Area**

As with the Proposed Action, the No-Action Alternative would expand existing or introduce a new industrial use to the project area. However, because the project area and surrounding area already contain industrial uses, the No-Action Alternative would not change the land use of the project area substantially.

### **Introduce Expanded or New Industrial Use near Residential Land Uses**

Two single-family residential uses are located adjacent to the project area within the direct impacts study area. These uses currently coexist with existing industrial uses on the project area and nearby. Therefore, the No-Action Alternative would not likely directly affect the adjacent residential uses regarding land use compatibility. Potential impacts on these residential uses related to vehicle transportation, noise, air quality, and coal dust are discussed in Chapter 5, Sections 5.3, *Vehicle Transportation*; 5.5, *Noise and Vibration*; 5.6, *Air Quality*; and 5.7, *Coal Dust*.

### **Parks and Recreation Facilities and Agricultural Land**

The No-Action Alternative would not directly affect parks and recreation land uses because of the distance between the project area and such uses, nor would it result in direct impacts on agricultural land uses.

### **Operations—Indirect Impacts**

The No-Action Alternative would be compatible with land use conditions in the indirect impacts study area. In particular, the No-Action Alternative would be consistent with the existing concentration of industrial land uses along the Columbia River, and would not affect land use conditions in the remainder of the study area. Most land uses outside the corridor of industrial and transportation/utility uses along the Columbia River are located at least 1 mile from the project area. Furthermore, the nearest residential uses to the north on Mount Solo (aside from the two residences adjacent to the project area) are located approximately 0.5 mile from the project area and are buffered by dense vegetation on Mount Solo. Other residential neighborhoods to the north are buffered from the project area by Mount Solo.

The No-Action Alternative could increase rail and truck traffic due to expanded coal, alumina, and industrial chemical handling operations. This increase in rail and truck traffic would be compatible with existing industrial land uses along these transportation corridors. Land uses adjacent to the rail lines currently coexist with rail traffic, including the transportation of coal and other commodities. The No-Action Alternative would not change the land uses along the rail corridors. Overall, the operation of the No-Action Alternative would not result in indirect impacts on land or shoreline use.

### **Consistency with Zoning, Land Use Plans, and Public Policies**

The No-Action Alternative would be consistent with the stated purpose of the County's existing Heavy Manufacturing zoning designation and would comply with the permitted uses and associated development standards and requirements. The No-Action Alternative would maintain and expand the industrial use of the project area and would be consistent with the current Heavy Industrial designation of the project area in the Comprehensive Plan, as well as the Economic Resource Lands – Industrial designation in the draft update of the Comprehensive Plan.

The No-Action Alternative could result in development within the shoreline jurisdiction that would require a Shoreline Substantial Development Permit from the County. Development under the No-Action Alternative would be expected to be consistent with the objective of the urban designation of the site. As with the Proposed Action, the No-Action Alternative would be required to obtain a critical areas permit for any development within designated critical areas, including any required mitigation measures, and as a result would be consistent with public policy related to critical areas

protection. The No-Action Alternative would also need to comply with legal restrictions or covenants tied to cleanup of the site.

Overall, the No-Action Alternative would be consistent with zoning and public land use plans and policies applicable to the project area.

### 3.1.6 Required Permits

The Proposed Action would require the following permits for land and shoreline use.

- **Shoreline Substantial Development—Cowlitz County Department of Building and Planning.** The Proposed Action would result in new development in the shoreline area regulated by the County's SMP. Therefore, it would require a Shoreline Substantial Development Permit.
- **Shoreline Conditional Use Permit—Cowlitz County Department of Building and Planning/Washington State Department of Ecology.** The Proposed Action may require dredging activities on urban shorelines. New dredging is a conditional use on urban shorelines; the Proposed Action would require a Conditional Use Permit from the County. The Conditional Use Permit requires final approval from Ecology.
- **Critical Areas Permit—Cowlitz County Department of Building and Planning.** The Proposed Action would be constructed within designated critical areas and therefore would require a Critical Areas Permit.
- **Building and Site Development Permits—Cowlitz County Department of Building and Planning.** The Proposed Action would require building and site development permits, such as fill and grade permits, plumbing permits, fire permits, mechanical permits, etc., from the Cowlitz County Department of Building and Planning for any earthwork, construction of new structures, or alteration of existing structures.

### 3.1.7 Proposed Mitigation Measures

The Proposed Action would be compatible with surrounding industrial land uses and consistent with the existing zoning and comprehensive plan designations for the project area. Although the Proposed Action would introduce a new industrial use nearby the two single-family residences adjacent to the project area, the Proposed Action would not directly affect these uses with respect to land use compatibility. Therefore, no land use and shoreline use mitigation measures are proposed.

### 3.1.8 Unavoidable and Significant Adverse Environmental Impacts

There would be no unavoidable and significant adverse environmental impacts on land and shoreline use.

## 3.2 Social and Community Resources

The social and community resources of an area include the public services in a community that bring people together and create cohesion. These resources include population characteristics, economic activity, and utility services. Changes to social and community resources occur when a project affects any of these elements. This section evaluates the potential adverse impacts on social and community resources resulting from construction and operation of the Proposed Action and No-Action Alternative. Social and community resources addressed in this section include social and community cohesion, public services, and utilities.

Potential impacts on minority and low-income populations are also evaluated in this section, in an environmental justice analysis.<sup>1</sup> The environmental justice analysis addresses potential disproportionately high and adverse effects on minority and low-income populations. This analysis describes the minority and low-income populations in the study area. It then describes impacts on these populations that could result from construction and operation of the Proposed Action and No-Action Alternative, and assesses whether these impacts would be disproportionately high and adverse.

This section also presents the measures identified to mitigate impacts resulting from the Proposed Action and any remaining unavoidable and significant adverse impacts.

### 3.2.1 Regulatory Setting

Laws and regulations relevant to social and community resources are summarized in Table 3.2-1. As shown, these laws and regulations pertain to the assessment of minority and low-income populations.

**Table 3.2-1. Regulations, Statutes, and Guidelines for Minority and Low-Income Populations**

Regulation, Statute, Guideline	Description
<b>Federal</b>	
Title VI of the Civil Rights Act of 1964 (42 USC 2000d) as amended by the Civil Rights Restoration Act of 1987 (P.L. 100-209)	Prohibits discrimination based on race, color, sex, and national origin in the provision of benefits and services resulting from federally assisted programs and activities.
Americans with Disabilities Act, 42 USC 126 § 12101, <i>et seq.</i> (as amended)	Prohibits discrimination based on disability.
Presidential Executive Order 12898, Environmental Justice	Promotes nondiscrimination in federal programs substantially affecting human health and the environment and provides minority and low-income community access to public information on, and an opportunity for public participation in, matters relating to human health or the environment.
Notes: USC = United States Code; P.L. = Public Law	

<sup>1</sup> The U.S. Environmental Protection Agency (EPA) defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”

## 3.2.2 Study Area

The study area for direct and indirect impacts on social and community resources include study areas for each element of the social and community resource analysis: social and community cohesion and public services, utilities, and minority and low-income populations. The study areas for each element are listed below.

- **Social and Community Cohesion and Public Services.** For direct impacts, the study area is the project area and the area within 0.5 mile of the project area. For indirect impacts, the study area is the area within 0.5 mile of the affected rail lines in Cowlitz County (Reynolds Lead, BNSF Railway Company [BNSF] Spur, and BNSF main line). Figure 3.2-1 illustrates these study areas.
- **Utilities.** For direct impacts, the study area is the project area and the area within 0.5 mile of the project area. This study area only relates to construction and operation of the Proposed Action. For indirect impacts, the study area is the area within 0.5 mile of the project area.
- **Minority and Low-Income Populations.** For direct impacts, the study area is the project area and the area within approximately 1 mile of the project area (Figure 3.2-2). This study area only relates to construction and operation of the Proposed Action. For indirect impacts, the study area is the area within 0.5 mile of the affected rail lines in Cowlitz County.

## 3.2.3 Methods

This section describes the sources of information and methods used to evaluate the potential impacts on social and community resources associated with the construction and operation of the Proposed Action and No-Action Alternative.

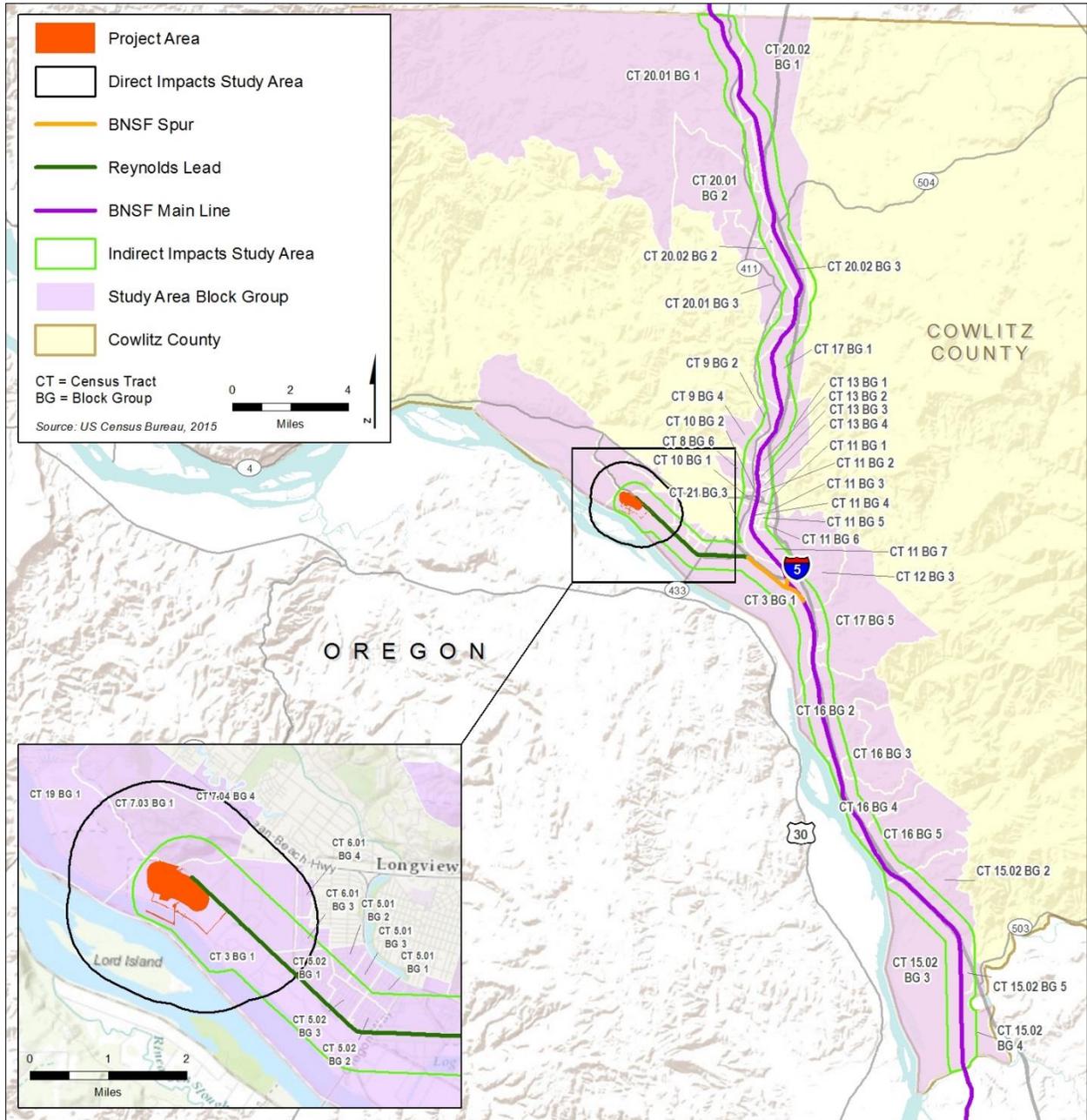
### 3.2.3.1 Information Sources

The following sources of information were used to define the existing conditions relevant to social and community resources, and identify the potential impacts of the Proposed Action and No-Action Alternative on social and community resources.

- U.S. Census Bureau, Census 2000 and 2010 data (U.S. Census Bureau 2000 and 2010) and 2009–2013 American Community Survey (ACS) data (U.S. Census Bureau 2013a) available on American FactFinder
- State of Washington Office of Financial Management data
- Cowlitz-Wahkiakum Council of Governments data
- Various websites to inventory public service facilities in the study areas, including Google Maps and websites for Cowlitz County and the Cities of Castle Rock, Kelso, Woodland, and Longview.



**Figure 3.2-2. Minority and Low-Income Populations Study Area**



### 3.2.3.2 Impact Analysis

The following methods were used to evaluate the potential impacts of the Proposed Action and No Action Alternative on social and community resources.

#### **Social and Community Cohesion and Public Services**

This analysis describes existing social and community cohesion in terms of the area's population characteristics, the various public services and social institutions that serve the community and create cohesion (such as parks, schools, and places of religious worship), and the access and linkages between the community and those services. Demographic data were compiled based on the U.S. Census Bureau (census) block group boundaries within the social and community cohesion study area: Census Tract 3 Block Group 1, Census Tract 7.03 Block Group 1, and Census Tract 19 Block Group 1 (Figure 3.2-3).

The analysis then evaluates if the Proposed Action could affect social and community cohesion by altering population characteristics, dividing or isolating a neighborhood, or separating residents from public services by changing travel patterns. This evaluation considers the location of public services in the study areas relative to characteristics of the Proposed Action. Impacts on social and community cohesion occur when an action does one of the following.

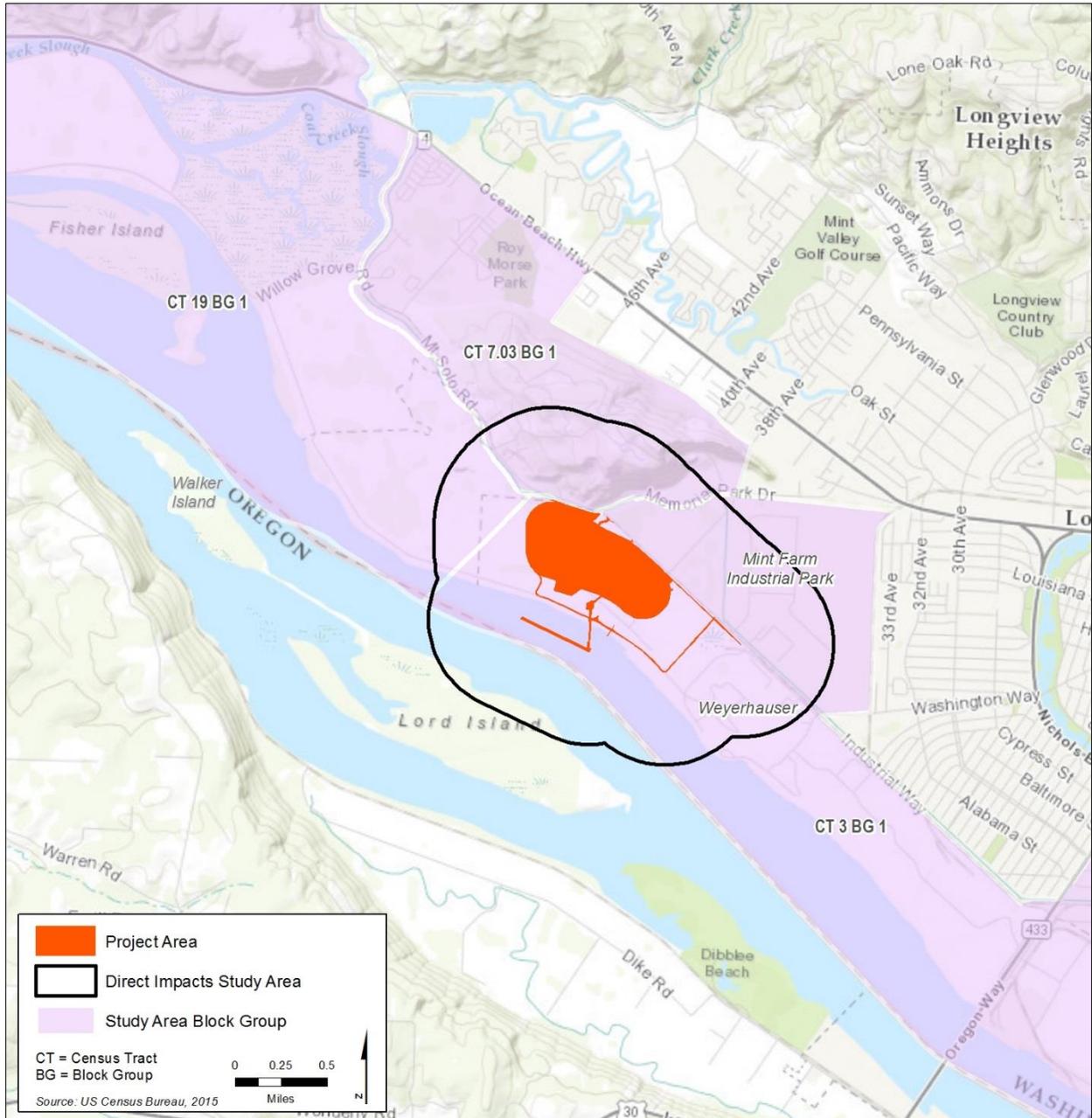
- Divides or isolates part of a neighborhood.
- Displaces or alters a public service facility, such as an educational facility, library, public park, or recreational facility.
- Generates substantial new development or changes property values leading to the displacement of substantial portions of the existing community.

Impacts on public services occur when an action introduces a new population or service demand that affects the services delivered by a public service facility, or if an action separates residents from public services by changing travel patterns or access to the service.

#### **Utilities**

The assessment of utilities focuses on water utilities, including potable water and wastewater service, and electrical utilities. Electricity and natural gas consumption are addressed in Chapter 4, Section 4.9, *Energy and Natural Resources*. This evaluation assesses whether the Proposed Action would have the potential to affect utility service directly by altering the water supply or wastewater conveyance system or electrical utilities. The evaluation also assesses the potential for indirect impacts from new demands on water supply capacity and/or wastewater treatment capacity.

**Figure 3.2-3. Census Tract and Block Groups in the Direct Impacts Study Area for Social and Community Cohesion and Public Services**



## Minority and Low-Income Populations

The assessment of minority and low-income populations used guidance published by the Council on Environmental Quality (CEQ) (1997), which involved the following six steps.

1. Identify the area where the Proposed Action could cause adverse effects either during construction or operation (i.e., the study area, described in Section 3.2.2, *Study Area*).
2. Compile minority and low-income data for the census block groups in the study area and identify minority and low-income populations.
3. Identify the Proposed Action's potential adverse effects on minority and low-income populations.
4. Evaluate the Proposed Action's potential adverse effects on minority and low-income communities relative to the effects on the overall population to determine if potential adverse effects on those communities would be disproportionately high and adverse.
5. Discuss proposed mitigation measures for any identified disproportionate adverse effects.
6. Describe the public outreach and participation process for effectively engaging minority and low-income populations in the decision-making process.

### Identification of Minority and Low-Income Populations

Census block groups were selected as the geographic unit for analysis to avoid artificially diluting or inflating the affected populations, consistent with CEQ guidance. As shown in Figure 3.2-2, the study area for direct and indirect effects includes 46 census block groups.

Data on race, ethnicity, and poverty status were gathered from the U.S. Census Bureau's 2009–2013 ACS for the census block groups in the study area. For comparison purposes, data for the City of Longview and Cowlitz County were also compiled. Based on census data and CEQ guidance, potential minority and low-income populations were identified as follows.

- **Minority populations.** CEQ guidance defines minorities to include American Indians or Alaskan Natives, Asian and Pacific Islanders, African Americans or Black persons, and Hispanic persons. This analysis also considers minority populations to include persons who identified themselves as being either "some other race" or "two or more races" in the 2009–2013 ACS. Following CEQ guidance, minority populations were identified where either 1) the minority population of the affected area exceeds 50%; or 2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate comparison unit of geographic analysis (Council on Environmental Quality 1997). For the purposes of this analysis, *meaningfully greater* is interpreted as *at least 50% greater*. This analysis used Cowlitz County as the primary comparison area. In Cowlitz County, the minority population in the 2009–2013 ACS was 14.6% of the total population. Therefore, this analysis considers any study area block group with a minority population of greater than 21.9% to be a minority community.
- **Low-income populations.** This study defines low-income populations as the percent of individuals living below the poverty level in each census block group, as presented in the 2009–2013 ACS. CEQ guidance does not specify a threshold for identifying clusters of low-income populations. Therefore, for this analysis, any census block group with a percentage of low-income population at least 50% greater than the percentage in Cowlitz County as a whole was

considered a low-income community. In Cowlitz County, the low-income population (the population with incomes below the poverty level) is approximately 17.6% of the total population. Therefore, this assessment identifies low-income communities as those in which the census block group population living below the poverty level exceeds 26.4%.

### **Identification of Potential Disproportionately High and Adverse Effects**

The determination of the Proposed Action's potential to result in disproportionately high and adverse effects involved the following considerations.

- If the adverse project impact is considered significant.
- If the impacts on minority or low-income populations would appreciably exceed, or would be likely to appreciably exceed, the risk or rate to the general population.
- If the minority or low-income population would be affected by cumulative or multiple adverse exposures from environmental hazards.<sup>2</sup>

In making this determination following CEQ guidance, it was recognized that effects on minority or low-income populations may be different from effects on the general population (e.g., due to a community's distinct cultural practices, such as a pattern of living that relies on subsistence fish, vegetation, or wildlife consumption). The determination of disproportionately high and adverse effects also involved consideration of proposed mitigation measures and offsetting benefits.

All resource sections in Chapters 3, 4, and 5 present the impacts resulting from construction and operation of the Proposed Action. These impacts were evaluated for their potential to result in disproportionately high and adverse effects on minority and low-income communities in the *SEPA Social and Community Resources Technical Report* (ICF and BergerABAM 2017). A summary of the evaluation is provided in Section 3.2.5, *Impacts*.

As discussed in the *SEPA Social and Community Resources Technical Report*, the assessment of disproportionately high and adverse effects on minority and low-income communities focused on potential impacts that could affect minority and low-income populations, including impacts related to aesthetics, light, and glare; air quality; cultural resources; tribal resources; fish; geology and soils; groundwater; noise and vibration; and vehicle transportation. In other resource areas, the Proposed Action would not result in adverse impacts or would result in low or minor impacts that would be avoided or minimized with standard best management practices or other mitigation measures. In certain resource areas (e.g., climate change and greenhouse gas emissions), the Proposed Action would result in impacts that occur within a global context. Based on the analysis presented in the *SEPA Social and Community Resources Technical Report*, the Proposed Action would not have the potential to result in disproportionately high and adverse effects on minority and low-income populations in these resource areas.

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<sup>2</sup> According to CEQ guidance, the term "environmental hazard" means a chemical, biological, physical, or radiological agent, situation, or source that has the potential for deleterious effects to the environment and/or human health.

## 3.2.4 Existing Conditions

This section describes the existing environmental conditions related to social and community resources that could be affected by the construction and operation of the Proposed Action and the No-Action Alternative.

### 3.2.4.1 Social and Community Cohesion and Public Services

This section describes social and community cohesion in terms of population, the various public services and social institutions that serve the community, and the access and linkages between the community and those services.

The direct impacts study area (project area and within 0.5 mile of the project area) is characterized by predominantly industrial and transportation/utility land uses, along with limited residential uses to the north of Mount Solo Road. The area east of the project area is part of a wide corridor of industrial land uses along the Columbia River. Notable uses include the Weyerhaeuser Company lumber products manufacturing site/North Pacific Paper Corporation (NORPAC) facility and Mint Farm Industrial Park. The area west of the project area is Barlow Point, which includes an undeveloped parcel owned by the Port of Longview, the closed Mount Solo Landfill, and large-lot residential and agricultural land uses south of Industrial Way. Neighborhoods in the direct impacts study area include Barlow Point, Memorial Park, and Mint Farm (City of Longview 2007).

The indirect impacts study area along the Reynolds Lead and BNSF Spur (within 0.5 mile of these rail lines) includes the Highlands neighborhood and the Industrial and California Way neighborhood in Longview. The Highlands neighborhood is predominantly residential. The Industrial Way and California Way neighborhood includes a mix of commercial and industrial uses. On the BNSF main line, the indirect impacts study area (within 0.5 mile of the rail line) includes undeveloped and low-density rural land uses, and urban areas, including Castle Rock, Kelso, Kalama, and Woodland.

#### Population Characteristics

Key population characteristics, including local population and population projections, are summarized below. The *SEPA Social and Community Resources Technical Report* provides a full discussion of population characteristics, including local population, population projections, age distribution, households, family composition, race and ethnicity, limited English proficiency, disability status, median household income and poverty status, and housing characteristics.

Table 3.2-2 presents the population for the direct impacts study area, Longview, and Cowlitz County in 2000, 2010, and 2013. The population of the study area has declined by approximately 3% since 2000. In comparison, the populations of both Longview and Cowlitz County grew from 2000 to 2010 and remained flat from 2010 to 2013. Census Tract and Block Groups are shown in Figure 3.2-3.

**Table 3.2-2. Population Estimates for Years 2000, 2010, and 2013**

Area	Population 2000	Population 2010	Percent (%) Change 2000-2010	Population 2013	Percent (%) Change 2010-2013
<b>Direct Impacts Study Area (Project Area and within 0.5 mile of the Project Area)</b>					
Census Tract 3 Block Group 1 <sup>a</sup>	868	509	-41.4	570	12.0
Census Tract 7.03 Block Group 1 <sup>b</sup>	1,367	1,601	--	1,373	-14.2
Census Tract 19 Block Group 1	827	956	15.6	1,021	6.8
	<b>3,062</b>	<b>3,066</b>	<b>0.1</b>	<b>2,964</b>	<b>-3.3</b>
<b>Longview</b>	<b>34,660</b>	<b>36,648</b>	<b>5.7</b>	<b>36,656</b>	<b>0.0</b>
<b>Cowlitz County</b>	<b>92,948</b>	<b>102,410</b>	<b>10.2</b>	<b>102,110</b>	<b>-0.3</b>

Notes:

<sup>a</sup> The drop in population in this census tract is largely due to the displacement of mobile home units from 2000 to 2010. In particular, the 166-space River City RV and Mobile Home Park, located near the corner of California Way and 7th Avenue, closed in 2009 for the development of a Super Walmart.

<sup>b</sup> Census Tract 7.03 Block Group 1 applies to demographic data for 2010 and 2013. In the 2000 Census, this area is closely approximated by Census Tract 7.01 Block Group 4. The 2000 Census data are presented for informational purposes, but a percent change is not presented because the geographic areas are not identical.

Source: U.S. Census Bureau 2000; U.S. Census Bureau 2010; U.S. Census Bureau 2013a.

Table 3.2-3 shows Cowlitz County population projections to 2040 (Washington State Office of Financial Management 2012). The population of Cowlitz County is projected to grow by approximately 6% from 2010 to 2020. Lower growth rates are estimated from 2020 to 2040. Over the coming decades, it is projected that the age distribution in Cowlitz County will shift, with an increase in the elderly population (age 65 and over) and a decrease in the school-age population (age 0 to 17) (Cowlitz County 2015). It is also expected that the proportion of the population with a disability will increase as the share of elderly population increases.

**Table 3.2-3. Cowlitz County Population Projections to 2040**

Area	Population 2010	Population 2020	Population 2030	Population 2040	Percent (%) Change 2010-2040
Cowlitz County	102,410	108,588	114,158	116,897	14.1
Percent Change over Previous 10 Years	--	6.0	5.1	2.4	--

Notes:

Source: Washington State Office of Financial Management 2012.

## Public Services

For the purposes of this assessment, public services include educational facilities, religious institutions, social institutions, medical facilities, fire protection and emergency medical services, police services, cemeteries, public park and recreation facilities, and other notable public services and government institutions.

There are no public service facilities in the direct impacts study area (project area and within 0.5 mile of the project area). Table 3.2-4 illustrates the public service facilities in the indirect impacts study area (within 0.5 mile of the Reynolds Lead, BNSF Spur, and BNSF main line).

**Table 3.2-4. Public Service Facilities in the Indirect Impacts Study Area**

Type of Facility	Area					
	Longview	Kelso	Kalama	Castle Rock	Woodland	Unincorporated Cowlitz County
Educational Facility	2	3	2	3	4	1
Religious Institution	4	11	2	6	3	6
Social Institution	1	4	1	3	3	0
Medical Facility	2	2	0	1	2	0
Fire Protection	1	2	1	1	1	2
Police Facility	1	3	1	1	1	0
Cemetery	0	0	0	0	0	3
Library	0	1	0	1	1	0
Parks and Recreation Facility	3	10	1	4	3	1
Other	7	14	2	2	2	1
<b>Total</b>	<b>21</b>	<b>50</b>	<b>10</b>	<b>22</b>	<b>20</b>	<b>14</b>

### Access and Linkages

A variety of roadway, pedestrian, transit, and bicycle transportation facilities provide access to and among the various public service facilities. Local roadways, Interstate 5, and state highways provide access to public service facilities and between the urban areas within Cowlitz County. In general, pedestrian access is better in the downtown urban areas located along the rail line, such as in Longview and Kelso, than in more rural, suburban, and industrial areas.

River Cities Transit provides public transit throughout the Longview/Kelso area. The closest transit route to the project area is Route 31, which runs along 32nd Avenue, Washington Way, and Alabama Street into downtown Longview. The nearest portion of Route 31 is approximately 1 mile from the project area. Route 33 and Route 44 both run along Ocean Beach Highway and are approximately 1 to 2 miles from the project area. No fixed transit routes directly serve the project area, nor do any routes cross the Reynolds Lead. Frequent and comprehensive transit service is a critical support service to residents with no access to a vehicle, especially those who are low-income, homeless, and/or reliant on public transit (River Cities Transit 2015).

Within Cowlitz County, there are various bicycle trails in parks and along certain waterfront areas and in the indirect impacts study area. Several bicycle trails are located along the Columbia and Cowlitz rivers; however, there are no designated bicycle trails within the direct impacts study area (0.5 mile from the project area). The Highlands Trail is a 2-mile trail that runs along Industrial Way from Oregon Way to 32nd Avenue and Washington Way. Bicycle trails that may provide access to public services are discussed in more detail in the *SEPA Social and Community Resources Technical Report*.

### **Fire Protection and Emergency Medical Services**

The Cowlitz 2 Fire & Rescue District and American Medical Response (AMR) provide emergency medical services and fire protection for the project area. A brief description of each of these service providers is below; additional information on the stations, facilities, and apparatus of each is provided in the *SEPA Social and Community Resources Technical Report*.

Cowlitz 2 Fire & Rescue provides fire protection services, and serves approximately 34,000 citizens in the City of Kelso and unincorporated Cowlitz County, responding to approximately 4,100 calls per year (Cowlitz 2 Fire & Rescue 2015). The district is staffed by approximately 120 full-time and volunteer members in five active fire stations, two of which are staffed with full-time EMT and paramedic firefighters. Volunteer firefighter EMTs also respond on an on-call basis.

AMR is a private ambulance company that provides emergency and non-emergency medical transport service. AMR includes approximately 35 paramedics and EMTs, and handles an average of 7,500 calls annually (American Medical Response 2015). The medical transport vehicles are based out of the facility near the Cowlitz Way intersection with Long Avenue.

#### **3.2.4.2 Utilities**

This section describes existing utility services provided to the project area. This assessment focuses on water utilities, including potable water and wastewater service, and electrical utilities. Electricity and natural gas consumption are addressed in Chapter 4, Section 4.9, *Energy and Natural Resources*. For direct impacts on utilities, the study area is the project area and the area within 0.5 mile of the project area. For indirect impacts on utilities, the study area is the area within 0.5 mile of the project area.

An existing on-site industrial wastewater treatment facility and stormwater/wastewater collection and treatment system provides wastewater treatment. The Applicant replaced pre-existing sanitary sewer collection and treatment systems with a new collection system and connection to the Longview sewer system (URS Corporation 2014). With the new connection, project area sewage flows are conveyed to the Three Rivers Regional Treatment Plant. This wastewater treatment plant has a design capacity of 26.0 million gallons per day (Washington State Department of Ecology 2012). From 2001 to 2009, the plant received an average wet-weather (typically the highest rate) flow of 3.04 million gallons per day (City of Kelso 2011).

The Mint Farm Regional Water Treatment Plant supplies drinking water to more than 45,000 people in the Longview area. Groundwater is tapped from wells in the Mint Farm Industrial Park, and the water plant consists of four high-capacity (4,000 gallons per minute) groundwater wells. The project area receives potable water from Longview through a connection on Industrial Way. This water is for domestic usage such as sinks and toilets in existing facilities (URS Corporation 2014).

For stormwater, the project area also includes on-site stormwater ponds that provide water for dust control and other production needs. The stormwater ponds are supplemented with groundwater well withdrawals during dry periods (URS Corporation 2014).

As noted in Chapter 4, Section 4.9, *Energy and Natural Resources*, the Cowlitz Public Utility District provides electricity service to the project area. The project area also includes two Bonneville Power Administration (BPA) parcels. One parcel includes high-power transmission lines and the second parcel includes a power substation with an access road.

### 3.2.4.3 Minority and Low-Income Populations

This section describes the existing minority and low-income populations in the study areas that could be affected by the construction and operation of the Proposed Action and the No-Action Alternative. For direct impacts on minority and low-income populations, the study area is the project area and the area within approximately 1 mile of the project area. The study area for indirect impacts is the area within 0.5 mile of the affected rail lines in Cowlitz County.

Race, ethnicity, and poverty characteristics were compiled for the study area’s block groups, Longview, and Cowlitz County as a whole. Table 3.2-5 provides the population, percent minority, and percent low-income for each block group in the study areas. Of the 46 census block groups within the study area, 16 have minority populations that exceed the 21.9% threshold, ranging from 23.7 to 42.4%. In addition, 18 of the census block groups have low-income populations that exceed the 26.4% threshold, ranging from 26.6 to 57.6%. The *SEPA Social and Community Resources Technical Report* provides detailed data on race, ethnicity, and poverty status for the study area. Overall, 21 of the study area’s 46 block groups are considered minority and/or low-income communities for the purposes of this analysis. The remaining 25 block groups are not considered minority or low-income communities. Figure 3.2-4 shows the location of minority and low-income communities within the study area.

**Table 3.2-5. Minority and Low-Income Status by Block Group**

Census Block Group	2013 Total Population	Percent Minority <sup>a</sup>	Percent Low-Income <sup>a</sup>
<b>Direct Impacts Study Area Census Block Groups (Project Area and Area within 1 Mile of the Project Area)</b>			
Census Tract 3, Block Group 1	570	35.4	44.7
Census Tract 6.01, Block Group 3	1,025	42.4	32.0
Census Tract 6.01, Block Group 4	881	20.0	31.4
Census Tract 7.03, Block Group 1	1,373	15.1	23.7
Census Tract 7.04, Block Group 4	1,912	11.9	18.8
Census Tract 19, Block Group 1	1,021	2.0	23.5
<b>Direct Impacts Study Area Census Block Groups<sup>b</sup></b>	<b>6,782</b>	<b>18.7</b>	<b>26.3</b>
<b>Indirect Impacts Study Area Census Block Groups (Within 0.5 Mile of the Reynolds Lead, BNSF Spur, and BNSF Main Line)</b>			
Census Tract 5.01, Block Group 1	846	24.3	24.7
Census Tract 5.01, Block Group 2	1,047	23.7	21.2
Census Tract 5.01, Block Group 3	952	8.3	18.8
Census Tract 5.02, Block Group 1	1,587	33.1	39.6
Census Tract 5.02, Block Group 2	1,841	28.1	57.6
Census Tract 5.02, Block Group 3	1,454	26.4	44.8
Census Tract 8, Block Group 6	1,203	5.2	7.7
Census Tract 9, Block Group 2	2,980	21.9	5.5
Census Tract 9, Block Group 4	1,891	11.3	8.7
Census Tract 10, Block Group 1	899	35.2	41.6
Census Tract 10, Block Group 2	288	2.1	28.5
Census Tract 11, Block Group 1	717	9.6	24.1

<b>Census Block Group</b>	<b>2013 Total Population</b>	<b>Percent Minority<sup>a</sup></b>	<b>Percent Low-Income<sup>a</sup></b>
Census Tract 11, Block Group 2	506	25.1	46.6
Census Tract 11, Block Group 3	704	30.5	39.2
Census Tract 11, Block Group 4	579	13.5	27.8
Census Tract 11, Block Group 5	1,361	35.9	37.5
Census Tract 11, Block Group 6	716	12.7	24.7
Census Tract 11, Block Group 7	714	16.8	33.8
Census Tract 12, Block Group 3	1,338	11.0	17.8
Census Tract 13, Block Group 1	977	3.6	21.5
Census Tract 13, Block Group 2	899	29.1	26.7
Census Tract 13, Block Group 3	752	19.9	11.7
Census Tract 13, Block Group 4	983	26.6	47.8
Census Tract 15.02, Block Group 2	934	13.8	6.2
Census Tract 15.02, Block Group 3	599	23.7	57.8
Census Tract 15.02, Block Group 4	1,602	32.8	14.0
Census Tract 15.02, Block Group 5	504	26.8	38.5
Census Tract 16, Block Group 2	881	5.3	7.7
Census Tract 16, Block Group 3	1,510	1.8	4.2
Census Tract 16, Block Group 4	1,470	17.9	11.4
Census Tract 16, Block Group 5	2,233	7.5	11.2
Census Tract 17, Block Group 1	535	0.0	10.8
Census Tract 17, Block Group 5	1,900	12.9	4.8
Census Tract 20.01, Block Group 1	847	17.7	26.6
Census Tract 20.01, Block Group 2	1,172	5.6	1.2
Census Tract 20.01, Block Group 3	1,083	4.5	3.4
Census Tract 20.02, Block Group 1	1,378	11.7	12.1
Census Tract 20.02, Block Group 2	1,294	16.1	12.1
Census Tract 20.02, Block Group 3	1,031	0.0	3.4
Census Tract 21, Block Group 3	1,164	18.0	17.7
<b>Indirect Impacts Study Area Census Block Groups<sup>c</sup></b>	<b>45,371</b>	<b>17.1</b>	<b>20.4</b>
<b>Longview</b>	<b>36,656</b>	<b>18.4</b>	<b>22.6</b>
<b>Cowlitz County</b>	<b>102,110</b>	<b>14.6</b>	<b>17.6</b>

Notes:

Shading indicates a minority and/or low-income community. The threshold for a minority community was a percent minority of at least 21.9%. The threshold for a low-income community was a percent low-income of at least 26.4%.

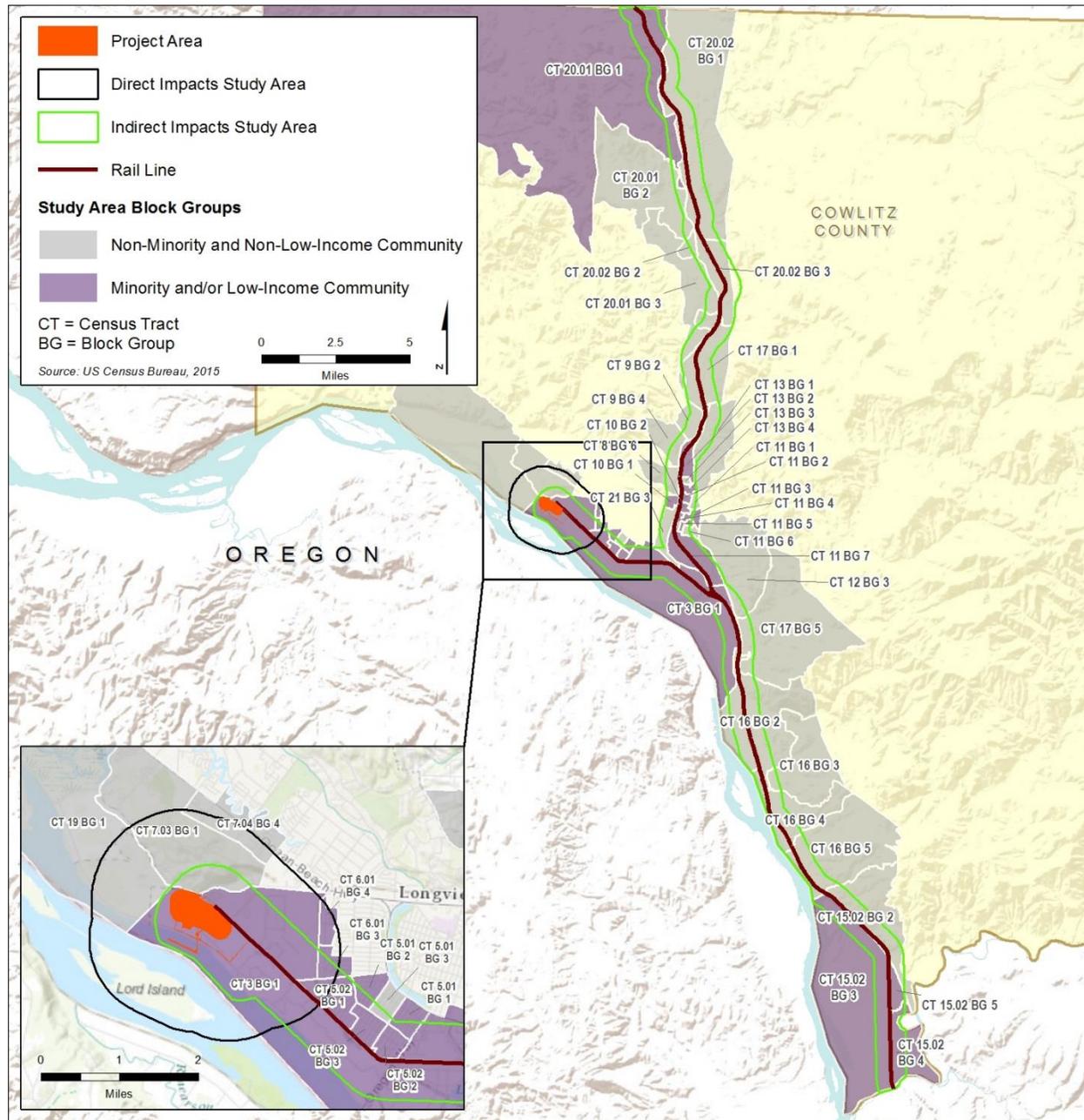
<sup>a</sup> Minority status includes individuals defined in the census as any race or ethnicity other than white alone and not Hispanic or Latino. Percent low-income is based on the population for whom the Census Bureau can determine poverty status. For some block groups, the population for whom poverty status is determined is slightly smaller than the total population.

<sup>b</sup> Census Block Groups within 1 mile of the project areas.

<sup>c</sup> Census Block Groups within 0.5 mile of affected rail lines in Cowlitz County.

Source: U.S. Census Bureau 2013a.

**Figure 3.2-4. Minority and Low-Income Communities**



Within the direct impacts study area, three of six block groups are identified as minority or low income communities. These block groups are located to the east of the project area. These block groups contain industrial uses in the areas nearest the project area, and residential uses are located approximately 1 mile or more from the project area. The nearest residences to the project area (those located north of State Route 432) are not located within a minority and/or low-income community.

Within the indirect impacts study area, 18 of 40 block groups are identified as minority or low income communities. These block groups are located along the Reynolds Lead and BNSF Spur in Longview and along the BNSF main line primarily in Longview, Kelso, and Woodland.

During interviews conducted for the Proposed Action's public involvement plan, stakeholders expressed that the Highlands neighborhood in the City of Longview warranted environmental justice consideration under Executive Order 12898. Consistent with that recommendation, this analysis identifies the Highlands neighborhood in the City of Longview as a minority and low income community. The Highlands neighborhood corresponds with Census Tract 5.02, Block Groups 1, 2, and 3, which are shown in Figure 3.2-4.

### 3.2.5 Impacts

This section describes the potential direct and indirect impacts related to social and community resources that would result from construction and operation of the Proposed Action and the No-Action Alternative.

The study areas for direct and indirect impacts for each element of this social and community resources are listed below.

- **Social and Community Cohesion and Public Services.** For direct impacts, the study area is the project area and the area within 0.5 mile of the project area. For indirect impacts, the study area is the area within 0.5 mile of the affected rail lines in Cowlitz County.
- **Utilities.** For direct impacts, the study area is the project area and the area within 0.5 mile of the project area. For indirect impacts, the study area is the area within 0.5 mile of the project area.
- **Minority and Low-Income Populations.** For direct impacts, the study area is the project area and the area within approximately 1 mile of the project area. For indirect impacts, the study area is the area within 0.5 mile of the affected rail lines in Cowlitz County.

#### 3.2.5.1 Proposed Action

This section describes potential impacts that could occur in the study areas as a result of construction and operation of the Proposed Action.

##### Construction—Direct Impacts

Construction-related activities associated with the Proposed Action would result in direct impacts as described below.

### **Social and Community Cohesion and Public Services**

Construction of the Proposed Action would not directly affect social and community cohesion or public services because construction activities would be limited to the project area and there are no public service facilities in the direct impacts study area.

### **Utilities**

Construction of the Proposed Action is not anticipated to result in direct impacts on water and sewer service. Construction activities would use groundwater for dust suppression and would not affect water utility service. Construction practices would ensure that the water supply and sewer connections are not disrupted for surrounding users.

### **Affect BPA-Owned Parcels**

As described in *Chapter 2, Project Objectives, Proposed Action, and Alternatives*, if the Applicant obtains easements from BPA, construction of the Proposed Action would affect two BPA-owned parcels in the project area.<sup>3</sup> The Applicant would coordinate with BPA on potential impacts on BPA infrastructure to minimize adverse impacts.

### **Minority and Low-Income Populations**

Direct impacts resulting from construction of the Proposed Action would be temporary and limited to the project area and the immediate vicinity (for example, construction noise directly affecting nearby residences). As discussed above, the nearest residences in minority or low-income communities in the direct impacts study area are located approximately 1 mile from the project area. Because of the distance between the project area and identified minority and low-income communities, the direct construction impacts of the Proposed Action would not affect minority or low-income communities at a rate that would appreciably exceed the rate to the general population. Therefore, the analysis concluded that the direct impacts resulting from construction of the Proposed Action would not have a disproportionately high and adverse effect on minority and low-income communities.

### **Construction—Indirect Impacts**

Construction-related activities associated with the Proposed Action would result in indirect impacts as described below.

### **Social and Community Cohesion and Public Services**

As described in Chapter 2, *Project Objectives, Proposed Action, and Alternatives*, construction materials would be delivered to the project area by truck or rail (truck delivery and rail delivery scenarios). As described in Chapter 5, Section 5.3, *Vehicle Transportation*, construction activities would not adversely affect vehicle delay at at-grade crossings on the Reynolds Lead, BNSF Spur, and BNSF main line because average vehicle delay would not substantially change during construction, except during the peak traffic hour at two public at-grade crossings on the Reynolds Lead under the rail delivery scenario. This vehicle delay impact would only occur if a Proposed Action-related construction train (average of 1.3 train trips per day) passes during the peak traffic hour. If a public

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<sup>3</sup> This impact would occur if BPA grants an easement to the Applicant prior to construction of the Proposed Action. The impact would not occur if BPA sells the land to the Applicant prior to construction.

service vehicle arrives at the same time as a Proposed Action-related train along the Reynolds Lead, it would experience an approximate 9-minute delay. Therefore, vehicle delay during construction of the Proposed Action would have negligible impacts on social and community cohesion and access to public services.

Construction of the Proposed Action under the rail delivery scenario would increase delay for pedestrians and bicyclists as described below.

### **Affect Pedestrian and Bicyclist Travel**

Proposed Action-related construction trains under the rail delivery scenario would cause pedestrian and bicyclist delay at at-grade crossings if pedestrians or bicyclists are blocked by a Proposed Action-related construction train. Alternative routes would require out-of-direction travel. The amount of delay would depend on when a pedestrian or bicyclist arrives at the crossing. If a pedestrian or bicyclist arrives at the same time as a Proposed Action-related construction train, they could experience approximately 9 minutes of delay at the public at-grade crossings along the Reynolds Lead. Pedestrians and bicyclists could also be affected by motor vehicle congestion and queuing at intersections adjacent to the at-grade crossings. Vehicle queuing at at-grade crossings could spill into the adjacent intersections and reduce or block sight distance for pedestrians and bicyclists. There would be no change in delay to pedestrian and bicycle travel at at-grade crossings on the Reynolds Lead if construction materials are delivered by truck (truck delivery scenario).

### **Utilities**

Demand for water and sewer utility services during construction of the Proposed Action would be confined to activities in the project area. Construction of the Proposed Action would not result in new indirect demands on water supply, sewer utility services, or wastewater treatment. Therefore, construction of the Proposed Action would not result in indirect impacts on utilities.

### **Minority and Low-Income Populations**

As noted above, the assessment of disproportionately high and adverse effects on minority and low-income communities focused on potential impacts related to aesthetics, light, and glare; air quality; tribal resources; cultural resources; fish; geology and soils; groundwater; noise and vibration; and vehicle transportation. The Proposed Action would not result in indirect construction impacts in any of these resource areas except vehicle transportation. As described in Chapter 5, Section 5.3, *Vehicle Transportation*, construction of the Proposed Action would result in an indirect impact related to increased vehicle delay from construction rail traffic during the peak traffic hour at two public at-grade crossings on the Reynolds Lead under the rail delivery scenario. The vehicle delay impacts would only occur if a Proposed Action-related construction train (average of 1.3 train trips per day) travels during the peak traffic hour and would be temporary (limited to the peak traffic hour during the construction period). Therefore, the analysis concluded that the indirect impacts resulting from construction of the Proposed Action would not have a disproportionately high and adverse effect on minority and low-income populations.

### **Operations—Direct Impacts**

Operation of the Proposed Action would result in the following direct impacts. Operations-related activities are described in Chapter 2, *Project Objectives, Proposed Action, and Alternatives*.

## **Social and Community Cohesion and Public Services**

Operation of the Proposed Action would not divide or isolate neighborhoods because operations would be confined to the project area, nor would it lead to the displacement of substantial portions of the existing community. Operations also would not physically displace or alter any public service facility, but it would place new demands on fire protection services, as discussed below.

### **Place New Demands on Fire Protection Services**

The Proposed Action would place new demands on Cowlitz 2 Fire & Rescue protection services. Required fire and life safety systems would be installed in the project area according to fire code standards. These systems would be regularly inspected and maintained. The Applicant would also maintain a surface water storage pond with a reserve of 0.36 million gallons for fire suppression.

## **Utilities**

The Proposed Action would directly affect water and sewer utilities and electrical utilities. Operation of the Proposed Action would result in the following direct impacts.

### **Affect BPA-Owned Parcels**

As described in *Chapter 2, Project Objectives, Proposed Action, and Alternatives*, if the Applicant obtains an easement from BPA, operation of the Proposed Action would be located on two BPA-owned parcels within the project area. The Applicant would coordinate with BPA to minimize adverse impacts.<sup>4</sup>

### **Create New Sanitary Sewage Flows**

As described in Section 3.2.4.3, *Utilities*, the project area and the Applicant's leased area are served by a sanitary sewer collection system and connection to the Longview sewer system. A new sanitary sewer conveyance system and connection to the Longview sewer system would be developed under the Proposed Action. New sanitary sewer flows from the Proposed Action would be small. The Three Rivers Wastewater Treatment Plant has sufficient capacity to treat additional wastewater flows generated by the Proposed Action. The Applicant would be required to obtain a permit to discharge wastewater, as described in Section 3.2.6, *Required Permits*.

The Proposed Action would not convey industrial process wastewater to the Longview sewer system or the Three Rivers Wastewater Treatment Plant. Industrial process wastewater would be treated in the on-site water treatment facility, used on site, and would not add new demands to public sewer and wastewater utilities.

### **Create New Water Demand**

The Proposed Action would use potable municipal water supplies for domestic uses such as drinking, sinks, and toilets. The Proposed Action would not use potable water supplies for

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<sup>4</sup> This impact would occur if BPA grants an easement to the Applicant prior to construction of the Proposed Action. The impact would not occur if BPA sells the land to the Applicant prior to construction.

industrial needs. Therefore, the Proposed Action would result in a small increase in demand for potable water.

Non-potable water would be used for industrial processes such as dust control, stockpile sprays, wash down, clean up, and fire protection. This water would be supplied by treated water from the proposed water management system and storage ponds and supplemented by wells during dry seasons. Therefore, the industrial water use would not place new demands on the Longview water supply.

### **Minority and Low-Income Populations**

Direct impacts resulting from operation of the Proposed Action would be limited to the project area and the immediate vicinity (for example, operational noise directly affecting adjacent residences). As discussed above, the nearest residences in minority or low-income communities within the direct impacts study area are located approximately 1 mile from the project area. Because of the distance between the project area and identified minority and low-income communities, the direct impacts of the Proposed Action during operations would not likely have the potential to affect minority or low-income communities at a rate that would appreciably exceed the rate to the general population. Therefore, the analysis concluded that the direct impacts resulting from operation of the Proposed Action would not likely have a disproportionately high and adverse effect on minority and low-income populations.

### **Operations—Indirect Impacts**

Operation of the Proposed Action would result in the following indirect impacts.

#### **Social and Community Cohesion and Public Services**

Operation of the Proposed Action would result in the following indirect impacts on social and community cohesion, and public services.

#### **Affect Accessibility to Community Resources and Public Services**

As described in Chapter 5, Section 5.3, *Vehicle Transportation*, Proposed Action-related trains would not adversely impact daily average vehicle delay at public at-grade crossings on the Reynolds Lead, BNSF Spur, and BNSF main line because average vehicle delay would not change substantially. Peak traffic hour vehicle delay would also not be adversely affected if track improvements are made to the Reynolds Lead and BNSF Lead (as described in Chapter 5, Section 5.1, *Rail Transportation*)<sup>5</sup> and only one Proposed Action-related train travels during the peak traffic hour. Therefore, under these scenarios, accessibility to social and community resources and public services would not change substantially under the Proposed Action.

However, if two Proposed-Action trains travel during the peak traffic hour, or infrastructure improvements are not made to the Reynolds Lead and BNSF Spur (as described in Chapter 5, Section 5.1, *Rail Transportation*), vehicle delay would substantially change at six public at-grade

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<sup>5</sup> The owner of the Reynolds Lead and BNSF Spur has indicated that track improvements would be made, but these plans have not been submitted or permitted.

crossings along the Reynolds Lead and BNSF main line during the peak traffic hour.<sup>6</sup> These vehicle delay impacts would be temporary (limited to the peak traffic hour), and the probability for two trains to pass during the peak vehicle traffic hour would be low. Under these scenarios, Proposed Action-related trains would adversely affect the accessibility to community resources and public services at selected public at-grade crossings on the Reynolds Lead, BNSF Spur, and BNSF main line.

### **Affect Pedestrian and Bicyclist Travel**

Proposed Action-related trains would cause pedestrian and bicyclist delay at at-grade crossings if pedestrians or bicyclists are blocked by a Proposed Action-related train. Alternative routes would require out-of-direction travel. The amount of delay would depend on when a pedestrian or bicyclist arrives at the crossing. If a pedestrian or bicyclist arrives at the same time as a Proposed Action-related train, they could experience approximately 10 minutes of delay at the public at-grade crossings along the Reynolds Lead with current track infrastructure. Pedestrians and bicyclists could also be affected by motor vehicle congestion and queuing at intersections adjacent to the at-grade crossings. Vehicle queuing at at-grade crossings could spill into the adjacent intersections and reduce or block sight distance for pedestrians and bicyclists.

### **Increase Noise Levels in Archie Anderson Park, Highlands Trail, and Gerhart Gardens Park**

Proposed Action-related trains would increase rail traffic-related noise levels in Archie Anderson Park, along the Highlands Trail, and in Gerhart Gardens Park, all of which are located within 1,000 feet of the Reynolds Lead or BNSF Spur. The increased noise levels could reduce the attractiveness of the features in these parks that are more sensitive to increased noise levels, such as picnic facilities and sitting areas. Archie Anderson Park, the Highlands Trail, and Gerhart Gardens also include features that are not particularly sensitive to increased noise levels (e.g., facilities that are used for sports, exercise, or active play), such as walking and running trails, baseball fields, and basketball courts.

Increased noise levels would occur because Proposed Action-related trains would be required to sound their horns for public safety at at-grade crossings per Federal Railroad Administration (FRA) regulations.

### **Utilities**

Operation of the Proposed Action would not result in indirect impacts on water and sewer utilities because demand for these utilities would be limited to the project area.

### **Minority and Low-Income Populations**

The Proposed Action's indirect impacts during operations were evaluated for their potential to result in disproportionately high and adverse effects on minority and low-income communities in the *SEPA Social and Community Resources Technical Report*. The assessment concluded the indirect impacts related to noise, vehicle delay along the Reynolds Lead, and diesel particulate matter

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<sup>6</sup> The public at-grade crossings are Industrial Way, Oregon Way, California Way, and 3rd Avenue on the Reynolds Lead, and Mill Street and S River Road on the BNSF main line. See Chapter 5, Section 5.3, *Vehicle Transportation*, for additional information.

inhalation risk would affect minority or low-income communities at a rate that would appreciably exceed the rate to the general population. Each of these potential disproportionate impacts is discussed below.

### **Noise**

The analysis concluded that horn noise from Proposed Action-related trains on the Reynolds Lead during operations would have a disproportionately high and adverse effect on minority and low-income populations. Proposed mitigation measures are discussed in the mitigation section below. Indirect noise impacts would occur because Proposed Action-related trains would be required to sound their horns for public safety at at-grade crossings per FRA regulations, and noise levels would exceed applicable criteria at adjacent land uses near four at-grade crossings on the Reynolds Lead (Chapter 5, Section 5.5, *Noise and Vibration*). Because there are minority and low-income communities adjacent to the Reynolds Lead (Figure 3.2-4),<sup>7</sup> the Proposed Action would have a disproportionately high and adverse effect on minority and low-income populations if no measures were implemented to mitigate this indirect noise impact. As described in Chapter 5, Section 5.5, *Noise and Vibration*, indirect noise impacts from Proposed Action-related trains on the BNSF main line in Cowlitz County would not be expected, and therefore, the Proposed Action would not likely have a disproportionately high and adverse effect on minority and low-income populations along the BNSF main line in Cowlitz County.

### **Vehicle Delay**

With the current track infrastructure on the Reynolds Lead, a Proposed Action-related train traveling during the peak traffic hour would result in a vehicle delay impact at four public at-grade crossings—Industrial Way, Oregon Way, California Way, and 3rd Avenue—in minority and low-income areas in 2028 (Figure 3.2-4). These vehicle delay impacts would constitute a disproportionately high and adverse effect on minority and low-income populations. The disproportionate impacts related to vehicle delay would not occur if the planned improvements to the Reynolds Lead are completed.

### **Diesel Particulate Matter Inhalation Risk**

Based on the inhalation-only health risk assessment described in Chapter 5, Section 5.6, *Air Quality*, diesel particulate matter emissions primarily from Proposed Action-related train locomotives traveling along the Reynolds Lead, BNSF Spur, and BNSF main line in Cowlitz County would result in areas of increased cancer risk. The maximum modeled cancer risk increase in the City of Longview would be 50 cancers per million in the Highlands neighborhood, a low-income and minority community. This impact would constitute a disproportionately high and adverse effect on minority and low-income populations.

## **3.2.5.2 No-Action Alternative**

Under the No-Action Alternative, the Applicant would not construct the coal export terminal. The Applicant would continue with current and future increased operations in the project area. The project area could be developed for other industrial uses including an expanded bulk product

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<sup>7</sup> There are approximately 242 residences in Census Tract 3 Block Group 1, Census Tract 5.02 Block Group 1, and Census Tract 5.02 Block Group 2. All of these census block groups have been identified as minority and/or low-income communities.

terminal or other industrial uses. The Applicant has indicated that, over the long term, it would expand the existing bulk product terminal and develop new facilities to handle more products such as calcine petroleum coke, coal tar pitch, and cement.

### **Social/Community Cohesion and Public Services**

Construction activity under the No-Action Alternative would not result in direct impacts on social and community cohesion or public services. Construction activities would be limited to the project area, and therefore, would not divide or isolate neighborhoods or disrupt community cohesion.

Operation of the No-Action Alternative would not divide or isolate neighborhoods because any new facilities would be constructed on an existing industrial site within a wide corridor of similar industrial uses, and operations would not physically displace or alter any public service facility. Therefore, operation of the No-Action Alternative would not result in direct impacts on social and community cohesion and public services.

Operation of the No-Action Alternative would not result in indirect impacts on social and community cohesion as a result of changes to property values or by generating substantial new development. The No-Action Alternative is located on an existing industrial site within a larger industrial area, and would use an existing freight rail line. Therefore, operation of the No-Action Alternative would not constitute a new land use with the potential to change property values substantially or induce new development in the surrounding area. In addition, the No-Action Alternative would not result in the introduction of a new population that could place demands on public service providers. The No-Action Alternative would not be expected to affect vehicle delay, and therefore, would not affect social and community cohesion and public services.

### **Utilities**

Construction of the No-Action Alternative is not anticipated to result in direct impacts on water and sewer service. Operation of the No-Action Alternative could result in new sanitary sewage flows and new water demand from the project area. The Three Rivers Wastewater Treatment Plant has sufficient capacity to treat additional wastewater flows, and it is expected that any new demand for potable water would be small compared to the capacity of the Longview water supply. Water used for industrial purposes, such as dust control, would continue to be drawn from stormwater ponds and supplemented with groundwater well withdrawals during dry periods.

### **Minority and Low-Income Populations**

The No-Action Alternative would increase rail operations along the Reynolds Lead as described in Chapter 2, Section 2.3, *No-Action Alternative*. Noise levels under the No-Action Alternative would be higher than under existing conditions, but would not result in noise impacts, as described in Section 5.5, *Noise and Vibration*. As described in Chapter 5, Section 5.3, *Vehicle Transportation*, and Section 5.6, *Air Quality*, the No-Action Alternative would not result in peak traffic hour vehicle delay impacts at the at-grade crossings on the Reynolds Lead, nor would it cause a substantial change in air quality or adversely affect nearby population areas. Effects on other environmental resource areas under the No-Action Alternative would generally be similar to or less than impacts under the Proposed Action. Therefore, the No-Action Alternative would not have disproportionately high and adverse effects on minority and low-income populations.

## 3.2.6 Required Permits

The Proposed Action would require the following permits.

- **Wastewater Discharge Permit—Three Rivers Regional Wastewater Authority.** This permit would be required to discharge wastewater to the Three River Regional Wastewater Treatment Plant. A survey form would be completed first to allow the Three Rivers Regional Wastewater Authority to determine whether a permit is required.
- **Utility Service Permit—City of Longview.** The project area receives potable water from the City of Longview through a connection on Industrial Way. This permit would be required to receive water service and to convey wastewater flows via the City of Longview's system.

## 3.2.7 Proposed Mitigation Measures

This section describes the proposed mitigation measures that would reduce impacts on social and community resources from the construction and operation of the Proposed Action. These mitigation measures would be implemented in addition to project design measures, best management practices, and compliance with environmental permits, plans, and authorizations that are assumed as part of the Proposed Action.

### 3.2.7.1 Voluntary Mitigation

The Applicant has committed to implementing the following measures to mitigate impacts on social and community resources.

- To reduce rail noise along the Reynolds Lead, the Applicant will work with Longview Switching Company and other stakeholders to convert the Oregon Way and Industrial Way crossings to "quiet crossings." The Applicant will fund additional electronics, barricades, and crossing gates to convert the crossings to "quiet crossings." A Quiet Zone is subject to FRA approval. If approved by FRA, this measure would reduce noise levels at Archie Anderson Park and along the Highlands Trail.
- Prior to beginning operations, the Applicant will prepare a fire response plan and submit the plan to the Cowlitz County Fire Marshal for review and approval.
- The Applicant will feed the firewater system from on-site wells, filling a 4-hour storage tank as recommended by Chapter 7 of the National Fire Protection Association 307 Standard for the Construction of Fire Protection of Marine Terminals, Piers, and Wharves.

### 3.2.7.2 Applicant Mitigation

The following proposed mitigation measures identified in Chapter 5, Sections 5.3, *Vehicle Transportation*, and 5.5, *Noise and Vibration*, to mitigate impacts on vehicle transportation and noise would also mitigate the disproportionately high and adverse noise effects on minority and low-income populations.

If approved by FRA, the following measure would reduce noise levels at Archie Anderson Park and along the Highlands Trail. It would also eliminate the disproportionately high and adverse noise effects on minority and low-income populations.

### **MM NV-2. Support Implementation of a Quiet Zone along the Reynolds Lead.**

To address moderate and severe noise impacts along the Reynolds Lead due to rail traffic, before beginning full operations, the Applicant will coordinate with the City of Longview, Cowlitz County, Longview Switching Company, and the affected community to inform interested parties on the FRA process to implement a Quiet Zone that will include the 3rd Avenue and California Avenue crossings. Public outreach on the Quiet Zone process will include low-income and minority populations. The Applicant will assist interested parties in the preparation and submission of the Quiet Zone application to FRA. If the Quiet Zone is approved, the Applicant will fund the Quiet Zone improvements, which could include electronics, barricades, and crossing gates.

If FRA does not approve the Quiet Zone for the Reynolds Lead, the Applicant will implement the following measure.

### **MM NV-3. Explore Feasibility of Reducing Sound Levels.**

If the Quiet Zone for the Reynolds Lead is not implemented, the Applicant will fund a sound reduction study to identify ways to mitigate the moderate and severe impacts from train noise from Proposed Action-related trains along the Reynolds Lead. The study methods will be discussed with Cowlitz County, Ecology, and Washington State Department of Health for approval.

The following proposed mitigation measure could reduce but would not eliminate the disproportionately high and adverse vehicle delay effects on minority and low-income populations.

### **MM VT-1. Notify Local Agencies about Operations on the Reynolds Lead and BNSF Spur.**

To address vehicle delay impacts at grade crossings on the Reynolds Lead and BNSF Spur, the Applicant will notify Cowlitz County, City of Longview, Cowlitz Fire District, City of Rainier (Oregon), Port of Longview, and Cowlitz-Wahkiakum Council of Governments before each identified operational stage (Stage 1a, Stage 1b, and Stage 2) that will change average daily rail traffic on the Reynolds Lead and BNSF Spur. The Applicant will prepare a memorandum to document the changes to average daily rail traffic. The memorandum will be submitted to these agencies at least 6 months before the change in average daily rail traffic.

## **3.2.8 Unavoidable and Significant Adverse Environmental Effects**

Implementation of the voluntary and applicant mitigation measures identified above would reduce impacts on social and community resources and minority and low-income populations. There would be no unavoidable and significant adverse environmental impacts on social and community cohesion and public services or utilities (two of the three elements of the social and community resources analysis).

Implementation of the Proposed Action would increase rail traffic that would increase noise levels along the Reynolds Lead and BNSF Spur in Cowlitz County. The increased noise levels from 16 Proposed Action-related train trips per day would exceed applicable criteria for noise impacts at noise-sensitive receptors. Noise impacts would occur near at-grade crossings on the Reynolds Lead (Industrial Way, Oregon Way, California Way, and 3rd Avenue) from train horn noise intended for

public safety. These noise impacts would occur in areas with minority and low-income populations; therefore, the Proposed Action would have a disproportionately high and adverse effect on minority and low-income populations. If a Quiet Zone is implemented, it would eliminate the need for Proposed Action-related trains to sound horns as they approach the at-grade crossings, and it would eliminate the potential disproportionately high and adverse effect on minority and low-income populations. However, without approval and implementation of a Quiet Zone, the Proposed Action's disproportionately high and adverse noise effects on minority and low-income populations would be unavoidable and significant.

With the current track infrastructure on the Reynolds Lead, a Proposed Action-related train traveling during the peak traffic hour would result in a vehicle delay impact at four public at-grade crossings—Industrial Way, Oregon Way, California Way, and 3rd Avenue—in minority and low-income areas in 2028. This would constitute a disproportionately high and adverse effect on minority and low-income populations. The disproportionate impacts related to vehicle delay would not occur with planned improvements to the Reynolds Lead. Without the planned improvements to the Reynolds Lead, the Proposed Action's disproportionately high and adverse vehicle delay effects on minority and low-income populations would be unavoidable and significant.

Use of Tier 4<sup>8</sup> locomotives by BNSF and UP would reduce but not eliminate the disproportionately high and adverse effects in the Highlands neighborhood related to increased risk of greater than 10 cancers per million from diesel particulate matter inhalation. This impact would be unavoidable and significant.

### **3.2.9 Public Outreach and Participation Process**

Cowlitz County and the Washington State Department of Ecology (Ecology) engaged in a robust public outreach effort. The primary components of this effort were two formal comment periods required by the State Environmental Policy Act (SEPA): 1) the scoping phase comment period, and 2) the Draft Environmental Impact Statement (Draft EIS) comment period. A public involvement plan developed for the SEPA process guided the public outreach effort.

Population demographics regarding minority status and limited English proficiency also informed the public outreach effort. Table 3.2-6 shows the percentage of the population over age 5 with limited English proficiency in the social and community cohesion direct impacts study area, Longview, and Cowlitz County. In all three areas, a low percentage of the population over age 5 has limited English proficiency; approximately 3% of the population of the direct impacts study area, the City of Longview, and Cowlitz County have limited English proficiency.

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<sup>8</sup> Locomotives that are compliant with EPA locomotive emissions standards that went into effect in 2015.

**Table 3.2-6. 2013 Limited English Proficiency**

Area	Population Age 5 and Over	Population Age 5 and Over with Limited English Proficiency <sup>a</sup>	Percentage Population with Limited English Proficiency <sup>a</sup>
Social and Community Cohesion Direct Impacts Study Area <sup>b</sup>	2,754	90	3.3
Longview	34,354	1,194	3.5
Cowlitz County	95,579	2,939	3.1

Note:

<sup>a</sup> Limited English proficiency includes individuals who speak English less than very well (i.e. those identified as speaking English “well,” “not well,” or “not at all” in Census data).

<sup>b</sup> The project area and within 0.5 mile of the project area.

Source: U.S. Census Bureau 2013a.

Table 3.2-7 shows the minority percentage of the population in the minority and low-income direct and indirect impacts study areas, City of Longview, and Cowlitz County. As shown, both the direct and indirect impacts study areas and the City of Longview have higher percentages of minority population than Cowlitz County.

Prior to the scoping meeting, stakeholder interviews were conducted to guide planning for the scoping process. These interviews were conducted with stakeholders representing a diverse range of interests and demographics including city and county jurisdictions, environmental and conservation groups, landowner organizations, labor organizations, economic development and business organizations, port authorities, river pilots, and local community groups. A project website was also developed ([www.millenniumbulkeiswa.gov](http://www.millenniumbulkeiswa.gov)) providing information in English and Spanish. This website serves as an information hub, a public-comment portal, and a document review and download repository throughout development of the EIS. The website was promoted in news releases, ads in local media, and printed project information.

**Table 3.2-7. 2013 Minority Status**

Census Block Group	2013 Total Population	Percent Minority <sup>a</sup>
Direct Impacts Study Area Census Block Groups <sup>b</sup>	6,782	18.7
Indirect Impacts Study Area Census Block Groups <sup>c</sup>	45,371	17.1
<b>Longview</b>	<b>36,656</b>	<b>18.4</b>
<b>Cowlitz County</b>	<b>102,110</b>	<b>14.6</b>

Notes:

<sup>a</sup> Minority status includes individuals defined in the census as any race or ethnicity other than white alone and not Hispanic or Latino.

<sup>b</sup> Census Block Groups within 1 mile of the project areas.

<sup>c</sup> Census Block Groups within 0.5 mile of affected rail lines in Cowlitz County.

Source: U.S. Census Bureau 2013a.

The public scoping meetings were announced in various publications. Notices were published in the *Federal Register* and *Washington State Register*, and the co-lead agencies also issued a press release. Display ads were placed in local newspapers where scoping meetings were held, including *The Spokane Spokesman-Review*, *The Tri-City Herald* (Pasco), *The Columbian* (Vancouver/Clark County),

*The Longview Daily News*, and *The Tacoma News-Tribune*. Announcements were also sent to a listserv group consisting of parties who have requested to be informed about project activities, and an informational flyer was mailed to 6,000 residents in neighborhoods near the project area, including the Highlands neighborhood in Longview. A Spanish translation of the informational flyer was also distributed.

Cowlitz County and Ecology held five scoping meetings to receive SEPA-related scoping comments. Scoping meetings were held on the following dates and locations.

- September 17, 2013, in Longview
- September 25, 2013, in Spokane
- October 1, 2013, in Pasco
- October 9, 2013, in Ridgefield
- October 17, 2013, in Tacoma

All meetings used an open-house format to provide process information for the Draft EIS and details about the Proposed Action, and to receive comments on the scope of the Draft EIS. In total, the co-lead agencies received over 217,500 scoping comments. Spanish-language handouts and Spanish translation services were available at each meeting. All facilities were Americans with Disabilities Act-accessible.

Cowlitz County and Ecology held three public hearings to receive comments on the Draft EIS. The public hearings were held on the following dates and locations.

- May 24, 2016, in Longview
- May 26, 2016, in Spokane
- June 2, 2016, in Pasco

Each public hearing included an open house, which allowed the public to interact with agency representatives and to access information about the SEPA EIS process as well as details about the Proposed Action. Spanish-language handouts and Spanish translation services were available at each public hearing. All facilities were Americans with Disabilities Act-accessible. In total, the co-lead agencies received approximately 267,000 comments during the Draft EIS comment period. Volume IV of this Final EIS includes responses to comments on the Draft EIS.

More information about public outreach can be found in Chapter 7, *Public Involvement and Agency Coordination*, of this Final EIS.

## 3.3 Aesthetics, Light, and Glare

The aesthetic value of an area is based on the visual character and quality of the natural and human-made features of the site. It is also a function of viewers' perceptions of these features, which can vary according to how sensitive the viewer is and how much they are exposed to certain views. In a developed area, light and glare can also affect the visual landscape by detracting from the aesthetic quality and by interfering with adjacent land uses. For example, increased nighttime lighting can be a nuisance to adjacent residents if the lighting is bright enough.

This section describes the aesthetics, light, and glare in the study area. It then describes impacts on aesthetics that could result from construction and operation of the Proposed Action and under the No-Action Alternative. This section also presents the measures identified to mitigate impacts resulting from the Proposed Action.

### 3.3.1 Regulatory Setting

No local, state, or federal laws or regulations pertaining to aesthetics, light, and glare apply to the Proposed Action.

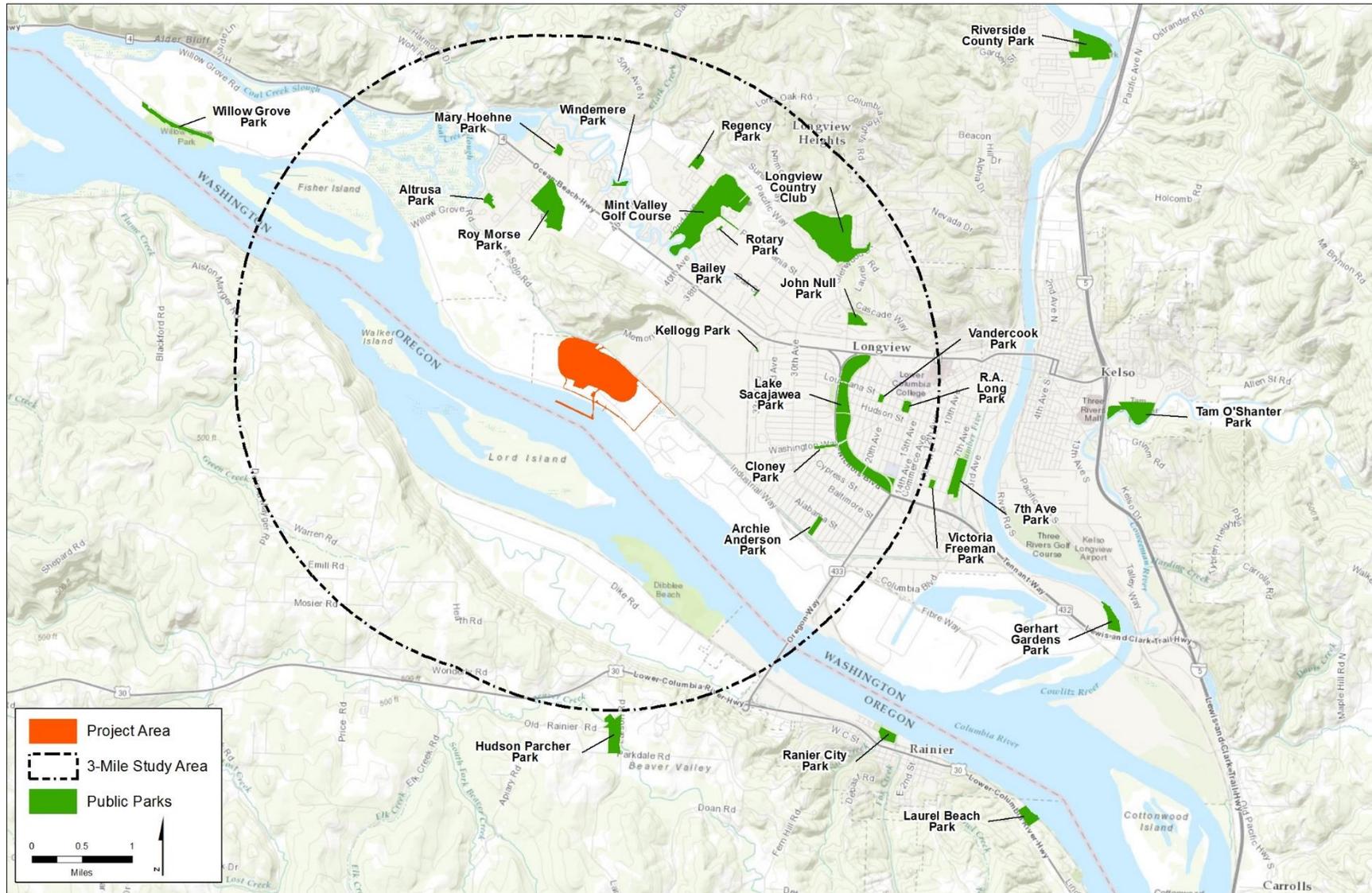
### 3.3.2 Study Area

The study area for aesthetics, light, and glare is the area within visual range of the project area for the Proposed Action. This study area encompasses ground-based locations from which the activities and structures on the project area could be observed in detail (Bureau of Land Management 1986). The Proposed Action would be observable by viewers at ground-based locations within approximately 3 miles of the project area. Beyond 3 miles, the Proposed Action would blend into the visual background and be obscured by the area's topography, vegetation, and built environment. The study area is, therefore, defined as the area within a 3-mile radius of the project area (Figure 3.3-1).

### 3.3.3 Methods

This section describes the sources of information and methods used to evaluate the potential impacts on aesthetics associated with the construction and operation of the Proposed Action and No-Action Alternative.

Figure 3.3-1. Study Area for Aesthetics, Light, and Glare



### 3.3.3.1 Information Sources

The following sources of information were used to identify the potential impacts of the Proposed Action and No-Action Alternative on aesthetics in the study area.

- *Landscape Aesthetics, A Handbook for Scenery Management* (U.S. Forest Service 1995)
- *Visual Impact Assessment for Highway Projects* (Federal Highway Administration 1988)
- *The Visual Resource Management System* (Bureau of Land Management 1986)

Although these agency guides are tailored to fit the general types of projects falling within each agency's jurisdiction and are not directly applicable to the Proposed Action, the visual impact assessment methods they contain were appropriate to inform the methods used in this section.

### 3.3.3.2 Impact Analysis

Visual impact assessments are based on evaluations of visual quality and viewer sensitivity. Viewer sensitivity is considered in the context of reasonable expectations for views of a heavily industrialized area. The following levels of impact were used to assess visual impacts.

- **High level of impact (H).** Operations, buildings, or other structures would be highly visible to a large number of sensitive viewers and would affect the visual quality of the landscape negatively.<sup>1</sup> Mitigation measures may or may not reduce this level of impact.
- **Moderate level of impact (M).** Operations, buildings, or other structures would be visible to a moderate number of sensitive viewers. Project elements may be generally consistent with adjacent land uses. Some mitigation may be required to reduce this level of impact.
- **Low level of impact (L).** Operations, buildings, or other structures would be minimally visible to a low number of viewers. Distance or visual compatibility with other existing land uses would make project elements difficult to perceive.
- **No impact (N).** Operations, buildings, or other structures would not be visible or would have no impact on viewers.

The following process was used to evaluate the potential impacts of the Proposed Action and No-Action Alternative for aesthetics.

1. Define the viewshed area.
2. Determine the key viewpoints of the project area.
3. Determine the types of viewers or viewer groups with views of the project area and their relative sensitivity to the changes in aesthetic conditions.
4. Prepare visual simulations of the Proposed Action.

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<sup>1</sup> The number of sensitive viewers is relative to the total potential viewers of the project area. In this case, the total potential viewers are the residents, workers, and travelers in the 3-mile study area. A *large* number of viewers applies to viewpoints where many of the total viewers would have views of the project area. A *low* number of viewers applies to viewpoints where very few of the total viewers would have views of the project area. A *moderate* number of viewers applies to viewpoints where a number of the total viewers would have views of the project area.

The methods for each step are summarized in this section. The *SEPA Aesthetics, Light, and Glare Technical Report* (ICF and BergerABAM 2017) provides a full discussion of each step.

## Define the Viewshed

A viewshed is the area within visual range of a given viewpoint (i.e., the viewer's location) which is defined by the regional physiography, vegetation, and built environment. The viewshed from which aesthetic changes on the project area could be experienced was determined by consulting city and county maps, U.S. Geological Survey quadrangle maps, project maps, and aerial and project area photographs. These helped to show which large-scale physiographic features in the study area influence views of the project area and define the visual environment. A digital elevation model was then used to identify the viewshed of the project area for the Proposed Action based on topographic screening (excluding vegetation) (Figure 3.3-2). Viewpoints were selected within the viewshed. As shown in Figure 3.3-2, the viewshed encompasses most areas in the Columbia River floodplain to the west, south, and east of the project area. Views from the north are obstructed by the topography, of Mount Solo.

The viewshed determination is a screening-level assessment that accounts only for topography in determining which locations may have views of the project area. The selection of the viewpoints themselves accounts for vegetation and the built environment.

## Determine Key Viewpoints

Eleven viewpoints were identified from which views of the project area could be altered by the Proposed Action (Figure 3.3-3).

The assessment involved verifying views at each viewpoint and using a high-resolution digital single-lens reflex camera with a 50-millimeter lens to take daytime and nighttime photographs. A sequence of photographs was taken at the height of an average viewer's eye (5 feet 5 inches above ground level) and digitally grouped together to form panoramas to approximate what the human eye would see at each viewpoint. Based on the existing land uses and environmental conditions at the viewpoints, the assessment classified views of the project area into three categories: urban and industrial, rural and residential, and natural views.

- **Urban and industrial views.** Viewers in this landscape view the project area in the context of existing urban and industrial areas.
- **Rural and residential views.** Viewers in this landscape view the project area in the context of a mixture of surrounding natural and human-made features and patterns, including land used for housing, farming, mineral extraction, or forestry.
- **Natural views.** Viewers in this landscape view the project area in the context of surrounding natural features and a largely undisturbed rural or open space setting. Few human-made developments or disturbances are present.

Figure 3.3-2. Viewshed Determination

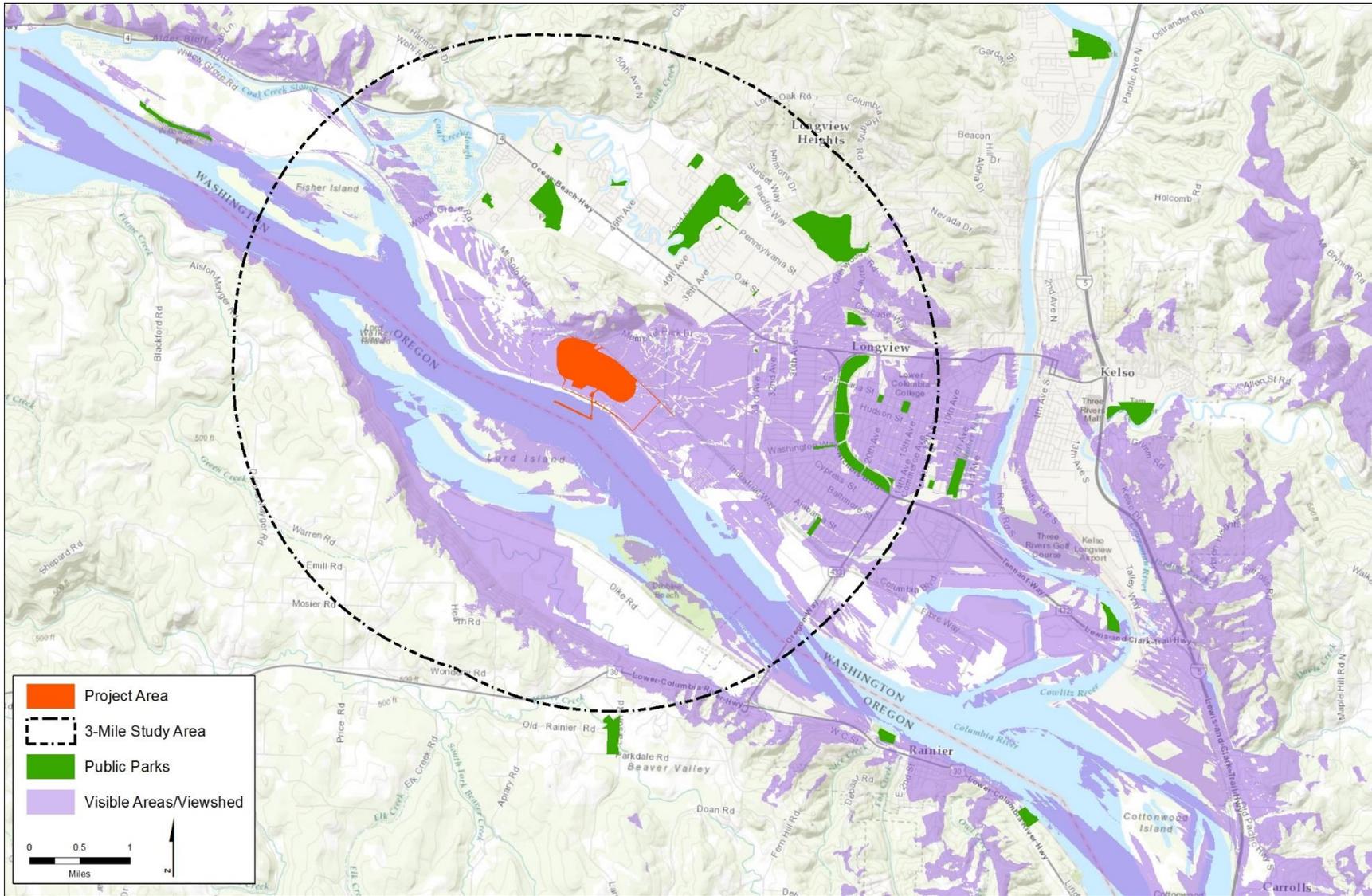
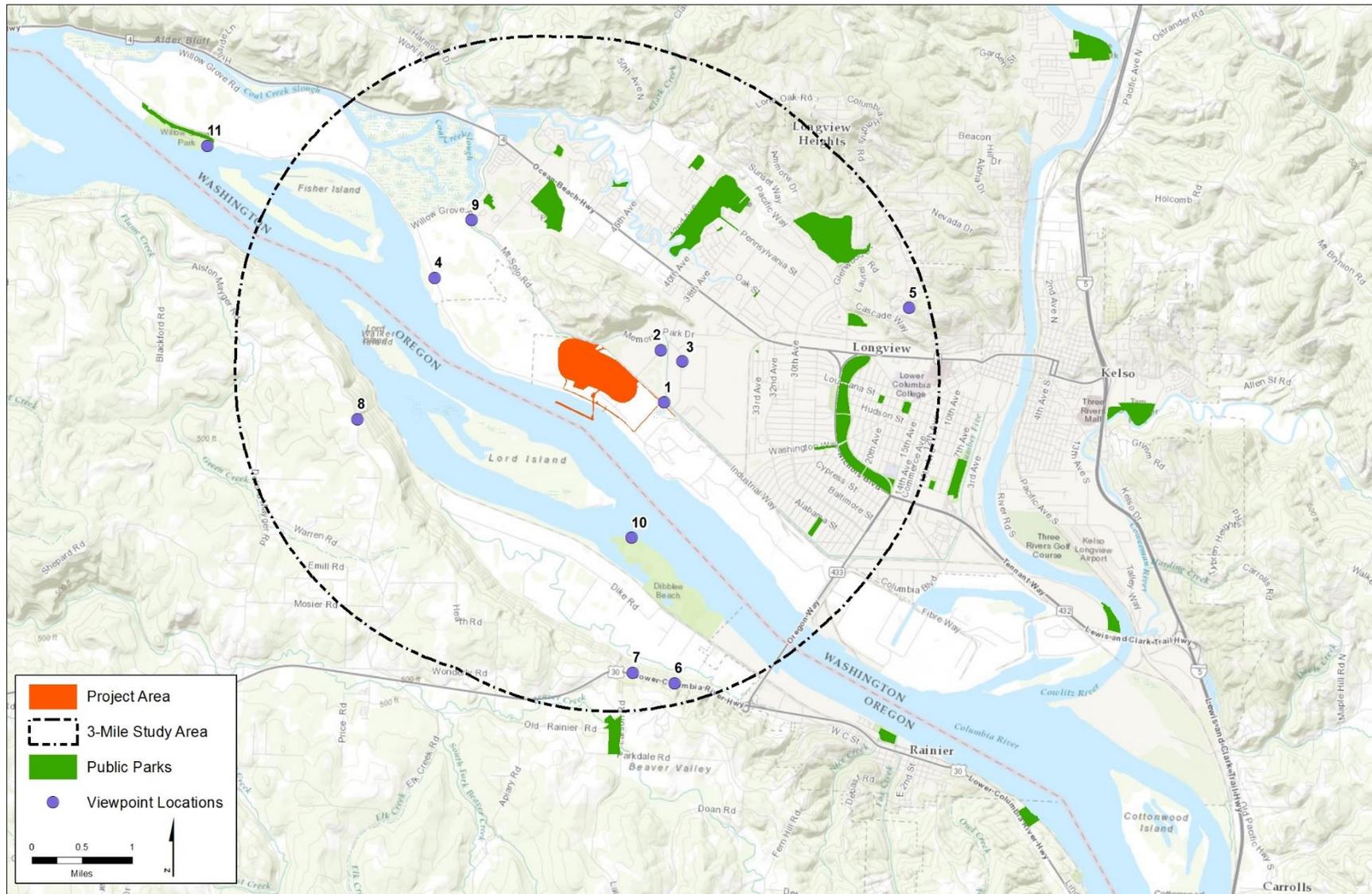


Figure 3.3-3. Viewpoint Locations



## Determine Viewer Groups and Viewer Sensitivity

Viewer sensitivity is the measure of the concern for visual quality and the response to changes to the elements of the natural and constructed environments the viewer experiences through sight. Viewer sensitivity is related to changes in the available views of the landscape and buildings, the construction and demolition of structures, operational equipment, and emissions.

The effects of these changes on viewers depend on the types of users, the amount of use (number of viewers and view frequency), and adjacent land uses, as described as follows.

- **Types of users.** Based on the viewpoint locations, the types of viewers who see the project area can be generally characterized as residents, workers, travelers, and recreationalists. Visual perception and sensitivity vary between types of users. Residents or recreational sightseers could be highly sensitive to any changes, while those in a work setting, such as industrial, manufacturing, or warehouse workers, could have no to low sensitivity. A working viewer's activity, awareness, and sensitivity are typically limited to the visual setting immediately outside the workplace and do not extend to surrounding views.
- **Amount of use.** Areas used by large numbers of people are considered to have a higher exposure, or sensitivity, because more viewers could be affected. Protection of visual quality usually becomes more important as the number of viewers and the duration of views increase.
- **Adjacent land uses.** Proposed changes could affect the visual quality or other aspects of adjacent land uses. The visual elements of adjacent landscapes and natural areas, buildings, structures, and operations define a visual context with which the proposed uses and facilities could be compatible or in conflict.

## Prepare Visual Simulations

To assess the impacts of the Proposed Action on aesthetics and visual quality, visual simulations were prepared to illustrate how it would appear if constructed. The visual simulations were developed using existing conditions photographs from each of the viewpoints and a three-dimensional model of the project area and surrounding area. The completed visual simulations show the visual change associated each action alternative through "before and after" images. No other photo editing or touch-up work was done to the simulations. The visual simulation task and analysis provided the basis for the visual assessment (*SEPA Aesthetics, Light, and Glare Technical Report*).

### 3.3.4 Existing Conditions

This section describes the existing environmental conditions in the study area related to aesthetics that could be affected by the construction and operation of the Proposed Action and the No-Action Alternative.

The Applicant's leased area was originally a floodplain that supported wetland and shoreline habitats used by wildlife, birds, and people. Industrial use dates back to 1941. Today, the Applicant uses an area adjoining the project area (within the leased area) as a bulk product terminal to import, store, and transfer bulk alumina and coal. The project area includes upland facilities, a dock in the Columbia River capable of receiving Panamax-sized ships, and rail and road connections. While most

of the existing project area is developed, the undeveloped western sections consist of open grasslands, wetlands, and a small forested area in the northwest corner.

Adjacent land uses include those in the leased area as well as various other industrial, utility, transportation, commercial, and residential uses. The 550-acre Weyerhaeuser Company lumber products manufacturing facility is located east of the project area and the 478-acre Port Industrial Marine property is located upriver of the Weyerhaeuser site. Port facilities include eight marine terminals that primarily handle commodities such as bulk goods, forest products, wind energy products, steel, and heavy-lift project cargo (Port of Longview 2011). Port properties also include the recently purchased Barlow Point property, located northwest of the project area within the city limits of Longview. The Barlow Point property is currently undeveloped, but the Cowlitz County Public Utility District and Bonneville Power Administration use this and adjacent properties for high-power utility lines and a power substation. The approximate 75-foot-tall, 47-acre Mount Solo Landfill is located west of the project area and adjacent to the northern boundary of the Barlow Point property. The 445-acre Mint Farm Industrial Park, another prominent adjacent industrial use, is located north of Industrial Way within city limits. Two single-family residences are located across Industrial Way from the project area. These residential uses are on wooded lots set back from the street. Overall, the project area is located in a wide corridor of industrial, transportation, and utility land uses along the Columbia River.

### **3.3.4.1 Viewshed**

The project area and most of Longview and Kelso, along with rural areas south of the Columbia River, lie in the Columbia River floodplain. The floodplain affords wide views of the Columbia River and surrounding area because of its flat topography and limited landform interruptions, and is a defining feature of the affected viewshed. The extent of the flat floodplain varies based on the proximity of hillsides to the north and south of the river. At the project area, the floodplain extends approximately 4 miles perpendicular to the river. With the exception of Mount Solo (elevation 610 feet) directly north of the project area, the elevation of the floodplain varies little across the Longview and Kelso area, ranging from approximately 5 feet to 30 feet. The hillsides north and south of the floodplain rise steeply and are generally heavily forested and in a natural condition. The natural vegetation of the floodplain is composed of riparian and lowland deciduous forest vegetation, but in most areas, depending on the level of existing development, the vegetation has been highly modified. The built environment and existing vegetation block most views of the project area across the relatively flat floodplain.

From the project area, downtown Longview is approximately 3 miles east, Kelso is approximately 5 miles east along the Cowlitz River, and Rainier, Oregon, is approximately 4 miles upriver (southeast) along the south bank of the Columbia River. These cities contain a wide range of industrial, residential, commercial, recreation, and public facility land uses.

Industrial Way, which extends along the north side of the project area, is the nearest land transportation corridor. The project area includes multiple driveway access points and a short line rail connection to the main line rail operated by BNSF Railway Company (BNSF). The Lewis and Clark Bridge (State Route 433) is located approximately 3 miles upriver from the project area.

Except for the two single-family residences across Industrial Way from the project area, most residential areas are located within Longview city limits or unincorporated Cowlitz County and are at least 1 mile away from the project area.

There are numerous recreational opportunities and sites in the broader Longview, Kelso, and Rainier urban area. The Columbia River is a prominent recreational resource and supports boating, fishing, and other forms of water recreation. In addition, two major recreational trails pass through the study area: the 146-mile Lower Columbia River Water Trail, which extends from Bonneville Dam to the mouth of the Columbia River, and the Lewis and Clark National Historic Trail.

Cowlitz County owns 21 parks and boat launches within 10 miles of the project area and the City of Longview, which adjoins the project area, administers 33 recreational facilities including 17 public parks (URS Corporation 2014). Because of existing topography, vegetation, and urban development, none of the parks within the county and the city portions of the study area has a view of the project area. However, users of the Columbia River and Dibblee Beach in Oregon do have views of the project area. Dibblee Beach, an undeveloped recreational area, is located on the south shore of the Columbia River, directly southeast of the project area. Lord and Walker Islands are in Oregon, directly south across the Columbia River. The islands are undeveloped and have no land access, but are part of the water trail network, and are used for primitive camping (i.e., a campsite with no support facilities). Other areas in the Columbia River floodplain on the south side of the river in Oregon are primarily composed of undeveloped rural or agricultural land.

### 3.3.4.2 Viewer Groups and Key Viewpoints

The following sections describe viewer sensitivity and associated key viewpoints for the types of views identified: urban and industrial views, rural and residential views, and natural views. These types of views are described in more detail below. Eleven key viewpoints from which views of the Proposed Action project area could be affected were identified (Table 3.3-1).

**Table 3.3-1. Viewpoints, Viewer Sensitivity, and Existing Visual Quality**

<b>View-point</b>	<b>View</b>	<b>Viewer Sensitivity</b>	<b>Viewer Description</b>	<b>Type</b>
1	Looking west on Industrial Way	Low	Industrial workers and commuters traveling on Industrial Way and other local roads. Would experience frequent views of the project area from nearby industrial areas.	Urban/ Industrial
2	Looking south along 38th Avenue	Low	Industrial workers and commuters traveling on 38th Avenue and other local roads. Would experience frequent views of the project area from nearby industrial areas.	Urban/ Industrial/ Rural
3	Looking southwest from Mint Farm Industrial Area (from Prudential Boulevard)	Low	Industrial workers and commuters traveling Prudential Boulevard and other local roads. Would likely experience frequent views of the project area from nearby industrial areas.	Urban/ Industrial/ Commercial

<b>View-point</b>	<b>View</b>	<b>Viewer Sensitivity</b>	<b>Viewer Description</b>	<b>Type</b>
4	Looking east from Barlow Point Road	High	Residents and agricultural workers looking east toward the project area. Would likely experience frequent views of the project area from rural areas located within the City of Longview and unincorporated Cowlitz County. Views could be of long duration and viewers could have a high sensitivity to change.	Rural/ Residential
5	Looking southwest from Hillside Residential (from Alexia Court)	High	Residents and travelers on local roads. Viewers would experience frequent dispersed views of the project area at various times of day and for long durations.	Rural/ Residential
6, 7	Looking north/northwest from US 30 viewpoints	Moderate	Highway travelers looking northwest from US 30 and scenic pullouts. Viewers would experience views of the project area for short durations. Frequency could range from infrequent for visitors to daily for commuters.	Rural
8	Looking northeast from Alston Mayger Road	Moderate/ High	Residents and travelers looking northeast from rural residential areas along this road would experience frequent dispersed views of the project area at various times and for long durations.	Rural/ Residential
9	Looking southeast from West Longview Neighborhood	None	Residents looking southeast toward the project area. Views of the project area are obstructed by Mount Solo Landfill and existing vegetation.	Rural/ Residential
10	Looking north from Dibblee Beach	High	Public beach and on-water recreationalists looking north toward the project area. Infrequent, short-duration views of the project area, but viewers could be highly aware of change. Few night viewers.	Natural
11	Looking east from Willow Grove Park and Boat Launch	None	Boaters and recreationalists looking east toward project area. Views would be obstructed by vegetation on Fisher and Hump Islands in Columbia River. Boaters traveling upriver could experience varying views of the project area.	Natural

### Urban and Industrial Views

The typical viewers in this area are assumed to be industrial workers and commuters traveling on Industrial Way. Visual sensitivity in the industrial use area along the Columbia River is expected to be low because of the existing industrial character of the landscape. Existing industrial facilities appear large in scale and dominate the landscape character. Artificial lighting is common throughout

the industrial area and clearly defines the extent of the heavy industrial area at night. The concentration of similar facilities and land uses can make changes in nighttime lighting difficult to discern.

## Rural and Residential Views

The typical viewers in this area are presumed to be residents of the city neighborhoods or of surrounding low-density unincorporated residential properties, including areas south of the river in Oregon. Some travelers on local and state transportation corridors, such as U.S. Route 30 (US 30) on the rural south side of the Columbia River, also have views of the project area.

The general landscape of the rural and residential area consists of natural and human-made features and patterns, often the result of an altered landscape that now supports rural farming or forestry development. The existing large-scale industrial facilities, high-voltage electrical transmission lines, electrical substations, and plumes of industrial emissions may or may not be clearly discernible.

Individual sites and uses are more difficult to discern within the surrounding industrial landscape when viewed from longer distances. For example, a viewer at the Hillside Residential viewpoint (Viewpoint 5) is located approximately 3 miles northeast of the project area; from this view, it would be difficult to identify changes to the existing area. Industrial emission plumes and artificial lighting are common throughout the industrial area along the Columbia River. Moreover, the concentration of emissions and light sources at similar facilities and land uses in this industrial area reduces the visual distinction of any single site or facility.

## Natural Views

The typical viewers in natural areas are recreationalists using the Columbia River or public parks. As noted above, the Columbia River offers a variety of recreational opportunities such as boating, fishing, and other forms of water recreation, and two recreational trails pass through the study area. Dibblee Beach offers public beach and water access, fishing, swimming, picnicking, sunbathing, hiking and bird watching. The landscape character of natural areas is formed by distinctive and memorable natural features (e.g., landforms, rock, outcrops) and patterns (vegetation and open space) with few human-made features. Visual texture consists of rough natural surfaces and colors, including browns, yellows, and greens, and the smooth waters of the Columbia River. Views for a typical recreationalist are generally infrequent and of short to moderate duration; however, viewer sensitivity tends to be high due to interest in natural areas and the inconsistency of natural and industrial lands.

In addition to being used by recreationalists, the Columbia River is also navigable by commercial boat operators. Viewers from commercial boats are expected to have a low sensitivity to visual changes because of the infrequent and transitory nature of their views; it is unlikely that they would focus on changes to the project area.

## Key Viewpoints

Table 3.3-1 lists the viewpoints and summarizes the levels of viewer sensitivity, and the existing visual quality of each viewpoint as they relate to the Proposed Action. The *SEPA Aesthetics, Light, and Glare Technical Report* provides a detailed discussion of each viewpoint. Appendix G, *Viewpoints for Aesthetics, Light, and Glare Analysis*, describes the viewpoints and show the existing views from each viewpoint.

### 3.3.5 Impacts

This section describes the potential direct and indirect impacts related to aesthetics, light, and glare that would result from construction and operation of the Proposed Action and the No-Action Alternative.

This section describes and illustrates the impacts associated with each viewpoint for the Proposed Action and the No-Action Alternative. Impacts on the visual quality of the study area would vary depending on the location of the viewer, the sensitivity of the viewer, the duration of the view, and the operational practices at each project area.

#### 3.3.5.1 Proposed Action

The following sections describe the potential aesthetic impacts attributable to the construction and operation of the Proposed Action. The levels of impact for each viewpoint are identified as high, moderate, low, and no impact, as defined in Section 3.3.3, *Methods*.

##### Construction—Direct Impacts

As explained in Chapter 2, *Project Objectives, Proposed Action, and Alternatives*, construction-related activities include demolishing existing structures and preparing the site, constructing the rail loop and dock, and constructing supporting infrastructure (i.e., conveyors and transfer towers).

Construction of the Proposed Action would begin with demolishing the existing cable plant and pottline buildings and ancillary structures and facilities. Demolition activities also would include the removal of approximately 6 acres of forested wetland in the northwest corner of the project area. The existing trees are directly south of Mount Solo and east of the Mount Solo landfill along Industrial Way; their removal would mainly affect travelers along Industrial Way.

Following demolition and general area preparation, the project area would be preloaded to increase the strength of the underlying project area soils to accommodate the four future coal stockpiles. A rolling preload of material would be used to improve the load-bearing capacity of the soils (i.e., one stockpile pad at a time would be preloaded). Preloading material would be placed in a pile approximately 35 feet high covering the area of the berm and adjacent stockpile pads and would be left in place until soil consolidation is achieved. Following consolidation, preloading material would be moved to another berm and stockpile pad location, with supplementary import material added to achieve a pile approximately 35 feet high. The process would be repeated at each berm and stockpile location until soil consolidation is achieved across the entire stockpile area. Ground improvement would occur progressively and would take up to 7 years to complete. The preloading activities would be the longest phase of construction.

During construction, activities would include the use of heavy machinery such as cranes, wheel loaders, dozers, dump trucks, excavators, graders, rollers, compactors, drill rigs, pile driving equipment, portable ready-mix batch plant, ready-mix trucks, concrete pumps, elevated work platforms, forklifts, rail track laying equipment, welders, water pumps, river dredging barges, and other related equipment. Construction would also involve construction lighting and project area safety lighting or warning flashers as well as shoreline and in-water construction activities for the proposed docks.

Construction-related activities associated with the Proposed Action could result in direct impacts as described below.

### **Change Visual Features of Project Area**

Construction activities in the project area would be visible to residents, workers, commuters, recreationalists, and boat operators, but these activities would be temporary and consistent with the general industrial context of the surrounding area. Although preloading berms could remain in place for up to 7 years, these would not be a prominent visual feature in the larger industrial waterfront. Furthermore, in this industrial context, it would be difficult for more distant viewers, particularly rural and residential viewers at Viewpoints 6, 7, and 8 (Appendix G, *Viewpoints for Aesthetics, Light, and Glare Analysis*) to perceive noticeable changes during construction. Construction of the Proposed Action would result in a low level of impact on visual quality.

The Applicant anticipates that construction activities would occur primarily during daylight hours. Therefore, construction of the Proposed Action would not result in adverse impacts related to light and glare.

### **Construction—Indirect Impacts**

Construction of the Proposed Action would not result in indirect impacts on aesthetics and visual quality.

### **Operations—Direct Impacts**

Operations-related activities are described in Chapter 2, *Project Objectives, Proposed Action, and Alternatives*. The Proposed Action would consist of one operating rail track, eight rail tracks for storing up to 8 unit trains, rail car unloading facilities, a stockpile area for coal storage, conveyor and reclaiming facilities, two new docks in the Columbia River (Docks 2 and 3), and ship-loading facilities on the two docks. Coal would be unloaded from rail cars, stockpiled, and loaded by conveyor onto ocean-going vessels at two new docks for export. Prominent new visual features and structures would include the coal stockpiles (approximately 85 feet high), eight transfer towers and two shiploaders (80 to 90 feet high), a surge bin (approximately 146 feet high), and vessels at the docks (approximately 190 feet high for Panamax vessels). Vehicles would access the project area from Industrial Way, and vessels would access the project area via the Columbia River and berth at one of the two new docks. Terminal operations would occur 24 hours per day, 7 days per week.

Overall, the visual quality of the Proposed Action would be similar to the existing surrounding industrial development. The forms, lines, colors, and scale of existing and proposed buildings and elements would be similar to nearby heavy industrial developments and the facility would be visually compatible with the surrounding industrial uses.

The Proposed Action would introduce new light sources to the project area. The new artificial light would be partially offset by removing some outdoor lighting during the demolition of existing buildings and facilities. Lighting plans are preliminary and it is expected that the Proposed Action would require lighting ranging from low-level lighting for general area lighting (e.g., streetlights) to high-intensity, spot-level lighting (e.g., lighting on the docks at night).

- **Low-level lighting.** Low-level ambient light would be required for general area lighting. This level of lighting would be used along pedestrian and vehicular access roads, in the maintenance

and storage areas, and at the water treatment and pump stations. Most ambient lights would be standard, pole-mounted streetlights (approximately 30 feet high) or structure-mounted lights. Typical access lighting in some areas, such as stairways and walkways on the stackers and reclaimers or conveyor transfer points, would be turned on with light and motion sensors as needed for operator safety. In addition, most conveyor lighting would be contained within the structures enclosing the conveyors and light spill would be limited.

- **Moderate-level lighting.** Moderate-level lighting would provide safety and operation lighting at key points such as the head or tail end of the conveyor system or indexers. Colored navigational lights on the docks and clearance lights at the top of tall structures are also considered a moderate-level light. In most instances, moderate-level lights would be directed sources.
- **High-intensity, spot-level lighting.** High-intensity, spot-level lighting would be required for vessel arrival and departure and for accessing equipment on the docks during nighttime operation. One or two ships would be moored at the terminal at a time and would be lit with suitable working and safety lighting. Stockpiles would not be lit except for some high-intensity, directed lighting to illuminate areas where stackers and reclaimers are working during periods of low light. Stackers and reclaimers would be unmanned but monitored with cameras; this lighting would be necessary for camera visibility. It is anticipated that only one stacker and one or two reclaimers and the associated lighting would operate at any given time.

Table 3.3-2 summarizes the proposed operational areas and light conditions. Figure 3.3-4 identifies the operational areas discussed in the table.

**Table 3.3-2. Proposed Operational Areas and Lighting**

Area	Function	Level of Lighting	Type of Lighting <sup>a</sup>
<b>Rail Operations</b>			
Train arrivals and departures	Lighting for areas for crew changes, switching points, etc.	Low	Area. Mounted on 30-foot poles.
Indexer	Lighting for placement and operation of indexer and sufficient for camera to monitor safety of work and equipment use	Moderate	Directed.
<b>Stockyard</b>			
Berm conveyors	Lighting for personnel access along length of conveyor; more lighting at tail and head ends of conveyors	Low/ Moderate	Area.
Conveyor transfer points	Pedestrian-level lighting; higher levels around head and tail ends of conveyors	Low	Directed. Mostly within enclosed structures.
Stackers and reclaimers	Pedestrian-level stair and walkway lighting; higher levels for work areas, operational equipment, and clearance lights at top of equipment masts	Low/ Moderate/ High	Directed. Illuminates stacking and reclaiming operation for camera visibility. Access lights would be motion/light-sensor controlled.

<b>Area</b>	<b>Function</b>	<b>Level of Lighting</b>	<b>Type of Lighting<sup>a</sup></b>
<b>Enclosure Conveyor</b>			
Receiving and shipping	Lighting for pedestrian access along conveyor and through gallery	Low	Directed. Access lights would be motion/light-sensor controlled.
<b>Dock</b>			
Conveyors	Pedestrian-level lighting along length of conveyors	Low	Area.
Conveyor transfer points	Pedestrian-level lighting; higher levels around head and tail ends of conveyors	Moderate	Directed.
Mooring, deck	Lighting for vessel arrival/departure and for dock plant and equipment	High	Directed. As required to illuminate operations and to ensure edge of dock is clearly visible.
Navigation	Clearance lighting	Moderate	Point. Shows extent and height of facilities.
<b>General Area</b>			
Access road	Lighting for clear identification of roadways	Low	Area. Lighting for roadways. Mounted on 30-foot poles.
Maintenance area and storage	Maintenance/services/repair lighting for work and safety	Low	Area. Lighting for roadways. Mounted on 30-foot poles.
Water treatment and pump stations	Plant and equipment lighting for operation and maintenance	Low	Area. Lighting walkway and work areas.
Structures, towers, and docks	Air clearance lighting to warn of equipment proximity and potential interference	Moderate	Point. Shows extent and height of facilities.
Notes:			
<sup>a</sup> Area Lighting: General illumination for pedestrian and vehicle travel, general task lighting, or security. Directed Lighting: Illumination for function purposes such as inspections, safe equipment operation and maintenance, and work areas. Point Lighting: Light sources identifying direction or navigational extents, height, or direction.			
Source: Millennium Bulk Terminals—Longview 2014			

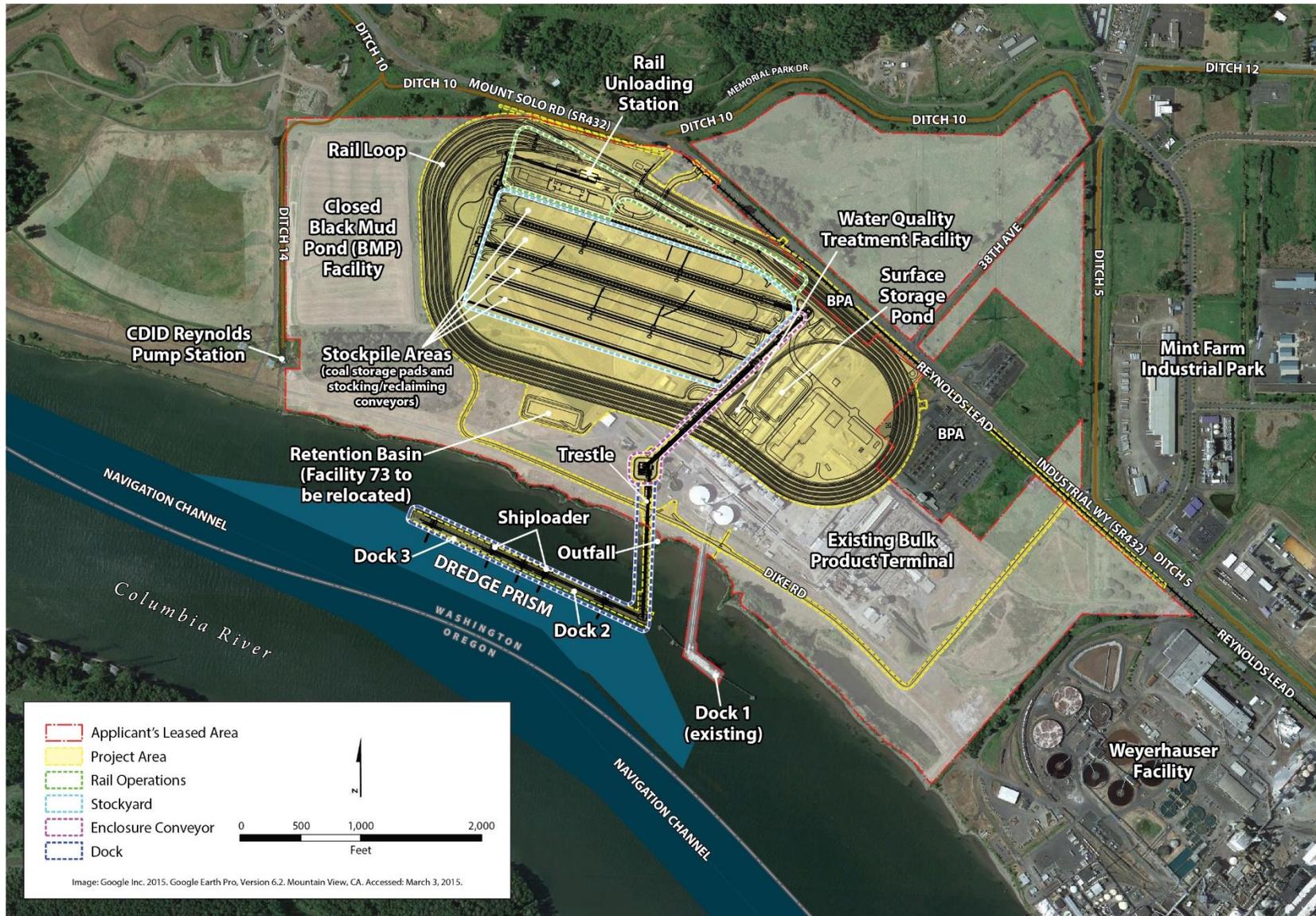
Operation of the Proposed Action would result in the following direct impacts.

### **Urban and Industrial Views**

#### **Change Visual Features of Project Area**

Operation of the Proposed Action would introduce new visual features to the project area. The new visual features would include new structures and equipment, additional workers, and increased vehicle, train, and ship movements on and adjacent to the project area. It is also anticipated that at least one Panamax-sized vessel would be moored at the proposed dock facilities at any given time. These features would alter the aesthetics of the project area. The new activities would also result in new sources of light and glare. However, these changes would be consistent with the existing industrial aesthetics of the project area and the surrounding area.

Figure 3.3-4. Proposed Operational Areas



Viewpoints from urban and industrial areas are generally near the project area. Views are dominated by existing industrial facilities, operations, and activities. Large-scale buildings, heavy utility transmission lines, industrial plumes, and ancillary facilities and equipment define the existing visual character of the project area. The coal stockpiles and conveyor systems, rail lines, and other equipment and structures would be consistent with the overall visual character of the urban and industrial viewpoints. With the Proposed Action, the existing rectangular, straight-line potline and cable plant buildings would be replaced by coal stockpiles. The sizes and long, straight lines of the coal piles would be similar to the concrete and metal buildings, and the horizontal ground-level rail lines would be less visually dominant than the existing buildings. Vessels moored at the proposed docks are not expected to be visible from most urban and industrial viewpoints. Appendix G, *Viewpoints for Aesthetics, Light, and Glare Analysis*, of this Final EIS provides the photo simulations for Viewpoints 1 and 2. Overall, because the Proposed Action would be visually compatible with surrounding industrial uses and would affect a low number of sensitive viewers, the Proposed Action would have a low level of impact on views from urban and industrial viewpoints.

### **Introduce New Sources of Light and Glare to the Project Area**

Artificial light is common throughout the Longview industrial area and along the Columbia River adjacent to the Port of Longview. The extent and concentration of similar heavy industrial operations facilities and land uses would make changes in nighttime lighting in a particular area difficult to discern. The new artificial light produced by the Proposed Action would be partially offset by the removal of some outdoor ambient lighting during demolition of existing buildings and facilities. Also, the Proposed Action would have considerably fewer reflective surfaces than the existing buildings. Glare impacts for urban and industrial viewers would be reduced because metal, concrete, and other reflective materials (including windows) would be demolished under the Proposed Action. Overall, the Proposed Action would result in no new light and glare impacts on views from urban and industrial areas.

### **Change Visual Perception by Viewers**

The viewers in this area would be industrial workers and commuters traveling on Industrial Way. The visual perception of these viewers is limited because their attention is focused on work, construction, or commuting activities. Project area operations would occur 24 hours per day, similar to adjacent industrial areas. The general sensitivity of workers at adjacent facilities is considered low. The Proposed Action would result in a low level of impacts on viewers' visual perception from urban and industrial Viewpoints 1, 2, and 3.

Table 3.3-3 summarizes the visual, light and glare, and viewer impacts from Viewpoints 1, 2, and 3 for photo simulations of Viewpoints 1 and 2.

**Table 3.3-3. Visual, Light and Glare, and Viewer Impacts (Viewpoints 1, 2, and 3)—  
Proposed Action**

<b>View-point</b>	<b>View</b>	<b>Distance (feet)<sup>a</sup></b>	<b>Visual Impact</b>	<b>Light &amp; Glare Impact</b>	<b>Viewer Impact</b>
1	Looking west on Industrial Way. Primary view would be of rail lines and stockpile areas. Demolition of existing buildings and lighting and reduction of manmade materials would reduce visual impacts. Visual impact also would be reduced because views would be partially obscured by utility transmission lines and structures.	1,620	L	N	L
2	Looking south along 38th Street. Main views would be almost perpendicular to project area. Demolition of existing buildings and lighting and reduction of manmade materials would reduce visual impacts and resulting colors and textures would partially blend into background and natural environments.	2,050	L	N	L
3	Looking southwest from Mint Farm Industrial Area (from Prudential Boulevard). Most views would be screened by vegetation. Some structures and facilities could be seen more easily during winter months when vegetation is dormant.	2,680	L	N	L

Notes:

<sup>a</sup> Distance from project area.

L = low level of impact; N = no impact.

## Rural and Residential Views

### Change Visual Features of Project Area

Prominent views from the rural and residential viewpoints include the existing industrial area along the Columbia River and a broader context that includes Mount St. Helens, Mount Rainier, the Columbia River, surrounding hillsides, rural farmland, and continuous stands of native vegetation and other features that bring natural characteristics into the visual character.

Views from the upland viewpoints would change as the large, rectangular potline and cable plant buildings are demolished and replaced by large coal piles with the Proposed Action. The demolition of approximately 6 acres of forested wetland would change the visual character of the northwest corner of the project area. However, due to the proximity to Mount Solo and the Mount Solo Landfill, which obstruct views from many rural and residential areas, this part of the project area is seen by a limited number of viewers and commuters traveling along US 30 in Oregon. Overall, the project area would continue to appear in a larger context of existing vegetated and undeveloped areas. The Proposed Action would not obstruct views of Mount St. Helens, Mount Rainier, or the Columbia River from rural and residential viewpoints. Views of the shoreline would be obstructed by the proposed docks, which would be up to 2,300 feet long.

Appendix G, *Viewpoints for Aesthetics, Light, and Glare Analysis*, presents the photo simulations for Viewpoints 5, 6, and 8.

The scale of the proposed docks, vessels, shiploaders, coal piles, and related conveyors would be discernible from the more distant rural and residential viewpoints. However, these facilities would appear in the context of the existing upland industrial facilities and adjacent heavy industrial areas as a relatively continuous visual resource for viewers. Overall, visual impacts on rural and residential views due to the Proposed Action would be difficult to perceive because of the distance between the viewpoints and the project area, as well as the Proposed Action's visual compatibility with adjacent industrial uses. Therefore, the Proposed Action would result in a low level of impact on rural and residential views from Viewpoints 5, 6, 7, and 8. The Proposed Action would not be visible from Viewpoints 4 and 9 and would result in no impact on views from these viewpoints.

### **Introduce New Sources of Light and Glare to Project Area**

New artificial light produced by the Proposed Action would be partially offset by the removal of some outdoor ambient lighting during demolition of existing buildings and facilities. In addition, glare would be reduced because most demolished facilities include extensive metal, concrete, or other reflective surfaces (including windows). In distant views from hillsides in Longview (Viewpoint 5), the Proposed Action's artificial lighting would likely be difficult to discern given the distance between the viewpoint and the project area and the existing context of lighted industrial uses along the Columbia River. Furthermore, the Proposed Action would not be visible from Viewpoint 4 on Barlow Point and Viewpoint 9 in West Longview because of the Mount Solo Landfill and existing vegetation. Therefore, the Proposed Action would result in a low level of impact on rural and residential views from Viewpoint 5 and no impact on rural and residential views from Viewpoints 4 and 9.

The proposed dock facilities would require prolonged moderate to high levels of light for operation at night while vessels are arriving, departing, or being loaded. Proposed lighting associated with the dock facilities would be reflected in the waters of the Columbia River and could be visible from some rural and residential viewpoints (Viewpoints 6, 7, and 8). However, the distance to these viewpoints and the existing concentration of similar facilities and land uses along the waterfront would make changes in nighttime lighting difficult to discern. Therefore, the Proposed Action would have a low level of impact on light and glare at these viewpoints. Overall, light and glare impacts for rural and residential views would range from no impact to low impact.

### **Change Visual Perception by Viewers**

Viewers in the rural and residential area are presumed to be residents within the City of Longview neighborhoods or of surrounding low-density residential areas, including areas south of the Columbia River in Oregon. Some travelers on local and state transportation corridors such as US 30 south of the Columbia River would also have dispersed views of the project area. Visual sensitivity in the rural and residential area is assumed high because views are often prolonged and stationary and residential viewers are sensitive to change. However, most residents would not have direct views of the project area and the Proposed Action would be in keeping with the existing industrial character of the surrounding area. Therefore, the Proposed Action would

result in a low level of impact on viewers' visual perceptions from Viewpoints 5, 6, 7, and 8, and no impact on views from Viewpoints 4 and 9.

Table 3.3-4 provides a summary of visual, light and glare, and viewer impacts from Viewpoints 4 through 9 (Appendix G, *Viewpoints for Aesthetics, Light, and Glare Analysis*).

**Table 3.3-4. Visual, Light and Glare, and Viewer Impacts (Viewpoints 4 through 9)—Proposed Action**

<b>View-point</b>	<b>View</b>	<b>Distance (feet)<sup>a</sup></b>	<b>Visual Impact</b>	<b>Light &amp; Glare Impact</b>	<b>Viewer Impact</b>
4	Looking east from Barlow Point Road. General visual character is agricultural with large tracts of farmland and dispersed housing. Views obstructed by small hill, broad row of trees, and Columbia River levee. Project area would not be visible from this location. Direct sources of light would not be seen.	7,500	N	N	N
5	Looking southwest from hillside residential areas (from Alexia Court). Views are elevated above the project area. Small portion of proposed facility would be visible in this view; other locations on hillside are expected to have views of project area. Areas are characterized by contiguous residential neighborhoods on winding hillsides. Most views partially or completely blocked by vegetation and Mount Solo. Light sources could be discerned but no single facility expected to dominate views.	14,875	L	L	L
6 & 7	Looking north/northwest from US 30. Views are from vehicles traveling along highway and from two scenic viewpoints. Views of Mount St. Helens, Mount Rainier, the Columbia River, rural farmland, and surrounding hillsides are prominent scenic focal points. Individual facilities and vessels can be discerned but no single facility expected to dominate views. Lighting for dock facilities could be visible and reflected by Columbia River while vessels are arriving, departing, or being loaded.	13,390– 14,980	L	L	L

<b>View-point</b>	<b>View</b>	<b>Distance (feet)<sup>a</sup></b>	<b>Visual Impact</b>	<b>Light &amp; Glare Impact</b>	<b>Viewer Impact</b>
8	Looking northeast from Alston Mayger Road. Views of project area occur primarily from single-family residences. Viewpoint dominated by scenic views of Mount St. Helens, Columbia River, and Lord and Walker Islands. Individual facilities and vessels can be discerned but no single facility expected to dominate views. Lighting for dock facilities could be visible and reflected by Columbia River while vessels are arriving, departing, or being loaded.	10,930	L	L	L
9	Looking south from West Longview residential neighborhood. Project area is not be visible from this location.	8,000	N	N	N

Notes:

<sup>a</sup> Distance from project area.

L = low level of impact; N = no impact, US 30 = U.S. Route 30

## Natural Views

### Change Visual Features of Project Area

The proposed docks, shiploaders, coal stockpiles, trestles, and ancillary equipment associated with the Proposed Action would introduce new large-scale industrial uses along the Columbia River. The Proposed Action would introduce straight lines, geometric forms, hard visual textures, and human-made materials to the project area. It is also anticipated that at least one vessel would be moored at the proposed docks at any given time. The Panamax-sized vessels that would use the proposed docks would be approximately 950 feet in length, 106 feet wide (beam), and 190 feet high. These changes would be visible to on-water recreational users and viewers from Dibblee Beach on the south shore of the river (Viewpoint 10). However, the new facilities would be contiguous and visually consistent with existing industrial facilities, and vessels are commonly traveling up river, anchored, or moored along the Port of Longview shoreline. Therefore, the Proposed Action would have a moderate level of impact on views from Viewpoint 10 because it would introduce operations, buildings, and structures that would be visible to sensitive viewers, but would be consistent with adjacent land uses.

Appendix G, *Viewpoints for Aesthetics, Light, and Glare Analysis*, presents the photo simulation for Viewpoint 10. The Proposed Action would not be visible from Viewpoint 11 and would not result in impacts on views from Viewpoint 11. Proposed mitigation (Section 3.3.7.2, *Applicant Mitigation*) would minimize the moderate level of impacts on views from Viewpoint 10.

### Introduce New Sources of Light and Glare to Project Area

New lighting associated with the dock facilities would result in a moderate level of light impacts on views from Dibblee Beach (Viewpoint 10) where the Proposed Action's lighting would be visible and would be reflected in the waters of the Columbia River. For distant viewers, artificial

lighting is common throughout the Port of Longview industrial area on the Columbia River, and the concentration of similar facilities and land uses would make changes in nighttime lighting difficult to discern. The Proposed Action would result in moderate impacts related to light and glare because most recreational viewers in natural areas view the project area during daylight conditions. Proposed mitigation (Section 3.3.7.2, *Applicant Mitigation*) would minimize the moderate level of impacts on viewers from Viewpoint 10.

### Change Visual Perception by Viewers

The views from natural areas are presumed to be from on-water recreational viewers (e.g., anglers, water trail users, cruisers) and viewers from Dibblee Beach on the south bank of the Columbia River. For a typical recreationalist, views would be infrequent and of short to moderate duration. However, viewer sensitivity tends to be high because of viewers' expectation of natural views, the public nature of and interest in some natural areas, and the contrast between natural and industrial lands. Moreover, the movement of ships, trains, and equipment introduces additional visual impacts on viewers from natural areas.

The Columbia River is also navigated by commercial boat operators. Viewers from commercial boats are expected to have a low sensitivity to changes in aesthetics. Because of low sensitivity, infrequent views, and the transitory nature of boat operator views, it is unlikely that viewers would experience negative visual impacts based on changes to the existing project area. Overall, the Proposed Action would not result in impacts on viewers' visual perceptions from Viewpoint 11 and would result in a moderate level of impact on viewers' visual perceptions from Viewpoint 10. Proposed mitigation (Section 3.3.7.2, *Applicant Mitigation*) would minimize would minimize the moderate level of impacts on viewers from Viewpoint 10.

Table 3.3-5 summarizes the visual, light and glare, and viewer impacts from Viewpoints 10 and 11. Appendix G, *Viewpoints for Aesthetics, Light, and Glare Analysis*, provides a photo simulation of Viewpoint 10.

**Table 3.3-5. Visual, Light and Glare, and Viewer Impacts (Viewpoints 10 and 11)—  
Proposed Action**

View-point	View	Distance (feet) <sup>a</sup>	Visual Impact	Light & Glare Impact	Viewer Impact
10 <sup>b</sup>	Looking north/northwest from Dibblee Beach. Views are of wide flat-water channel with Lord and Walker Islands to west. Heavy industrial uses and facilities characterize north riverbank. Light sources could be discerned and glare impacts are increased by water; however, no single facility expected to dominate views and recreational viewers are limited at night. Lighting for dock facilities could be visible and reflected by Columbia River while vessels are arriving, departing, or being loaded.	6,500	M	M	M

<b>View-point</b>	<b>View</b>	<b>Distance (feet)<sup>a</sup></b>	<b>Visual Impact</b>	<b>Light &amp; Glare Impact</b>	<b>Viewer Impact</b>
11	Looking east from Willow Point Boat Launch. Views of project area are obstructed by vegetation on two islands in Columbia River and light sources would have no impact. Located outside the study area, approximately 4.5 miles northwest of Longview on Columbia River, but allows river access from which public could travel upriver and into study area, where views of project area could be affected as for Viewpoint 9.	21,375	N	N	N

Notes:

<sup>a</sup> Distance from project area.

<sup>b</sup> This viewpoint also represents the potential impacts of the Proposed Action for on-water viewers. Views would be comparable from Dibblee Beach and an on-water location.

M = moderate level of impact; N = no impact

### Operations—Indirect Impacts

Operation of the Proposed Action would not result in indirect impacts on aesthetics and visual quality.

#### 3.3.5.2 No-Action Alternative

The following sections describe the potential aesthetic impacts attributable to the construction and operation of the No-Action Alternative.

### Construction—Direct Impacts

Operation of the No-Action Alternative would result in the following direct impact on aesthetics and visual quality.

#### Change Visual Features of Project Area

Construction of the No-Action Alternative could involve the demolition and replacement of some existing buildings on the project area to facilitate the expansion of current operations and the development of an expanded bulk product terminal. As with the Proposed Action, construction activities under the No-Action Alternative would be visible to residents, workers, commuters, recreationalists, and boat operators, but these activities would be temporary and consistent with the general industrial context of the surrounding area. Furthermore, given the more limited physical changes to the project area under the No-Action Alternative compared to the Proposed Action, construction activities would be expected to be of shorter duration and intensity. Like the Proposed Action, it would be difficult for more distant viewers (particularly rural and residential viewers at Viewpoints 6, 7 and 8) to perceive noticeable changes during construction under the No-Action Alternative. The No-Action Alternative would not involve physical changes to the existing dock (Dock 1) nor construction of new docks; therefore, recreational viewers on the Columbia River (Viewpoint 10) would not be affected. It is expected that construction of the

No-Action Alternative would occur primarily during daylight hours. Therefore, construction of the No-Action Alternative would not result in impacts related to light and glare.

Overall, construction of the No-Action Alternative would have a low level of impact on aesthetics and visual quality.

### **Construction—Indirect Impacts**

Construction of the No-Action Alternative would not result in indirect impacts on aesthetics and visual quality.

### **Operations—Direct Impacts**

Operation of the No-Action Alternative would result in the following direct impacts on aesthetics and visual quality.

#### **Change Visual Features of Project Area and Introduce New Sources of Light and Glare**

As allowed under existing zoning, the No-Action Alternative could result in new buildings or structures on the project area, an expanded bulk product terminal, and increased bulk product transfer activities. Changes to aesthetic and visual conditions would occur as a result of these new structures and changes to operations, which would include the increased movements of people, equipment, vehicles, trains and ships as bulk product transfer activities increase. These activities would alter the aesthetics of the project area. However, the changes would be consistent with the existing industrial aesthetics of the project area and the surrounding area, and would therefore result in a low level of impact.

New activities and structures under the No-Action Alternative would be visible to viewers at industrial viewpoints (Viewpoints 1, 2, and 3) but, as noted above, these viewers tend to have low sensitivity to changes in visual conditions. Furthermore, the facilities and activities under this alternative would not change the project area's existing visual attributes substantially, and new industrial forms would be compatible with the existing visual character of the surrounding industrial area. Therefore, the No-Action Alternative would result in a low level of impacts on views from industrial viewpoints.

From more distant viewpoints (Viewpoints 4, 5, 6, 7, 8, and 10), changes to project area operations would become more difficult to perceive, and new or changed buildings or facilities would appear as a relatively continuous industrial waterfront for viewers. Therefore, the No-Action Alternative would result in a low level of impacts on views from more distant viewpoints (Viewpoints 4, 5, 6, 7, and 8). The No-Action Alternative would not be visible from Viewpoints 9 and 11 and would therefore result in no impact on views from these viewpoints.

As with the Proposed Action, the No-Action Alternative would be visible to viewers at Dibblee Beach (Viewpoint 10) and on the Columbia River. However, new or changed facilities would be located among existing industrial facilities on the project area and would remain contiguous and visually consistent with existing industrial facilities along the Longview shoreline. No additional docks would be built under the No-Action Alternative; therefore, the No-Action Alternative would have a low level of impact on views from Viewpoint 10.

The No-Action Alternative would not change the existing dock, but there could be an increase in the volume or timing of material transport operations and lighting on the dock. Light and glare

impacts on recreational viewers on the Columbia River (Viewpoint 10) would be low because most recreational viewers access the river during daylight hours and would not experience increased light and glare impacts. Furthermore, potential changes to nighttime lighting under the No-Action Alternative would be seen within the industrial visual context of this section of the Columbia River waterfront. Additional lighting under the No-Action Alternative would not dramatically increase ambient or point source light sources in the industrial area. Therefore, the No-Action Alternative would have a low level of light and glare impacts.

### **Operations—Indirect Impacts**

Operation of the No-Action Alternative would not result in indirect impacts on aesthetics and visual quality.

## **3.3.6 Required Permits**

No permits related to aesthetics, light, and glare would be required for the Proposed Action.

## **3.3.7 Proposed Mitigation Measures**

This section describes the mitigation measures that would reduce impacts related to aesthetics, light, and glare from construction and operation of the Proposed Action. These mitigation measures would be implemented in addition to project design measures, best management practices, and compliance with environmental permits, plans, and authorizations that are assumed as part of the Proposed Action.

### **3.3.7.1 Voluntary Mitigation**

The Applicant has committed to implementing the following measures to mitigate impacts on aesthetics.

- Typical industrial lighting would be provided and installed in a manner to prevent light and glare from spilling from the site.
- Night lighting would be restricted to the minimum required for operational and safety requirements and would be directed away from roads and sensitive viewpoints, where practicable.
- Light shields would be used to limit the spill of lighting where practicable.

### **3.3.7.2 Applicant Mitigation**

Implementing the following mitigation measure would reduce aesthetics impacts associated with the Proposed Action.

#### **MM ALG-1. Modify Lighting and Appearance of Facility Surfaces to Minimize Visual Impacts**

To minimize the aesthetic, light, and glare impacts, the Applicant will do the following.

- Use directional lighting with full box cut-off fixtures, or equivalent, and use motion- or user-controlled light systems, where practicable and feasible.

- Use neutral colors to blend with or complement surrounding environment for non-safety-related structures and equipment, and use nonreflecting materials and finishes, where practicable and feasible.

### **3.3.8 Unavoidable and Significant Adverse Environmental Impacts**

Implementation of mitigation measures identified above would reduce impacts on aesthetics. There would be no unavoidable and significant adverse environmental impacts on aesthetics.

## 3.4 Cultural Resources

The term *cultural resources* refers to the broad range of resources that represent or convey a place's heritage or help tell the story of a region's past. These resources are considered important to a community and worth preserving. A cultural resource can be any building, structure, object, site, landscape, or district associated with human manipulation of the environment. These resources are often valued (monetarily, aesthetically, or religiously) by a particular group of people and can be historic in character or date to the prehistoric past (i.e., prior to written records).

Three categories of cultural resources are discussed in this section: archaeological resources, historical resources, and culturally significant properties. Archaeological resources encompass features and deposits located on or below the ground surface that are evidence of prior human occupation or use in a particular area. Historical resources are elements of the built environment, such as buildings or structures, or human-made objects or landscapes. Finally, culturally significant properties are sites or locations considered culturally important to the history of a group of people, or are locations where culturally important events or practices are known to have occurred. In contrast, tribal resources refers to the collective rights and resources associated with a tribe's sovereignty and/or formal treaty rights. Tribal resources are addressed in Section 3.5, *Tribal Resources*.

This section describes cultural resources in the study area. It then describes impacts on cultural resources that could result from construction and operation of the Proposed Action and under the No-Action Alternative. This section also presents the measures identified to mitigate impacts resulting from the Proposed Action and any remaining unavoidable and significant adverse impacts.

The analyses and findings from this section are based on research prepared by the Applicant pursuant to Section 106 of the National Historic Preservation Act of 1966 (NHPA) (Section 106). The U.S. Army Corps of Engineers (Corps) is carrying out the Section 106 review concurrent to the Proposed Action's compliance with the Washington State Environmental Policy Act (SEPA) and National Environmental Policy Act (NEPA). As a result, cultural resources studies prepared for the Proposed Action are being used to support each of these review processes and the SEPA process will reflect the outcomes of the Section 106 and NEPA reviews, as they are available.

### 3.4.1 Regulatory Setting

Laws and regulations relevant to cultural resources are summarized in Table 3.4-1.

**Table 3.4-1. Regulations, Statutes, and Guidelines for Cultural Resources**

<b>Regulation, Statute, Guideline</b>	<b>Description</b>
<b>Federal</b>	
National Register of Historic Places (54 USC 3021)	The NRHP is the official list of the nation's historic places worthy of preservation and is administered by the National Park Service as part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America's historical and archaeological resources.
National Historic Preservation Act, Protection of Historic Properties (54 USC 300101) (36 CFR 800)	Stipulates the protection of historic properties and outlines the Section 106 process of the NHPA.
Archaeological Resources Protection Act (16 USC 470aa)	Provides for the protection of archaeological resources and sites on public lands and Indian lands, and seeks to foster cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals.
Native American Graves Protection and Repatriation Act (25 USC 3001)	Describes the rights of Native American descendants, Indian tribes, and Native Hawaiian organizations with respect to the treatment, repatriation, and disposition of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony.
American Indian Religious Freedom Act (42 USC 1996)	Protects and preserves the traditional religious rights and cultural practices of American Indians, Eskimos, Aleuts, and Native Hawaiians.
<b>State</b>	
Indian Graves and Records (RCW 27.44)	Protects Native American graves and burial grounds, encourages voluntary reporting of said sites when they are discovered, and mandates a penalty for disturbance or desecration of such sites.
Archaeological Sites and Resources (RCW 27.53)	Governs the protection and preservation of archaeological sites and resources and establishes DAHP as the administering agency for these regulations.
Abandoned and Historic Cemeteries and Historic Graves (RCW 68.60)	Protects and preserves abandoned and historic cemeteries and historic graves.
Shoreline Management Act (RCW 90.58)	Provides a statewide framework for managing, accessing, and protecting the Washington's significant shorelines including rivers, lakes, and coastal waters, including the consideration of significant cultural resources in these areas.

<b>Regulation, Statute, Guideline</b>	<b>Description</b>
<b>Local</b>	
Historic Preservation Ordinance of Cowlitz County (CCC 18.80)	Provides for the identification, evaluation, designation, and protection of designated historic and prehistoric resources within Cowlitz County. Maintains a local register of historic places.
Longview Historic Preservation Ordinance (LMC 16.12)	Safeguards the heritage of the City of Longview by the identification, evaluation, designation, and protection of historic properties. Maintains a local register of historic places in each jurisdiction.
Notes: USC = United States Code; NRHP = National Register of Historic Places; RCW = Revised Code of Washington; DAHP = Washington State Department of Archaeology and Historic Preservation; LMC = Longview Municipal Code; NHPA = National Historic Preservation Act; CCC = Cowlitz County Code	

### 3.4.2 Study Area

The study area for cultural resources consists of the project area, the areas of the Columbia River that would be directly affected by overwater structures and dredging, and surrounding areas that would be affected by the construction of the Proposed Action (Figure 3.4-1). The study area also includes vantage points on the Oregon side of the Columbia River along U.S. Route 30 (US 30) to account for potential visual effects.

### 3.4.3 Methods

This section describes the sources of information and methods used to evaluate the potential impacts on cultural resources associated with the construction and operation of the Proposed Action and No-Action Alternative. This section also addresses how Cowlitz County and the Corps have initiated consultation with the Washington State Department of Archaeology and Historic Preservation (DAHP), City of Longview, Bonneville Power Administration (BPA), National Park Service, potentially affected Native American tribes, and the Applicant regarding the Proposed Action and potential impacts on cultural resources.

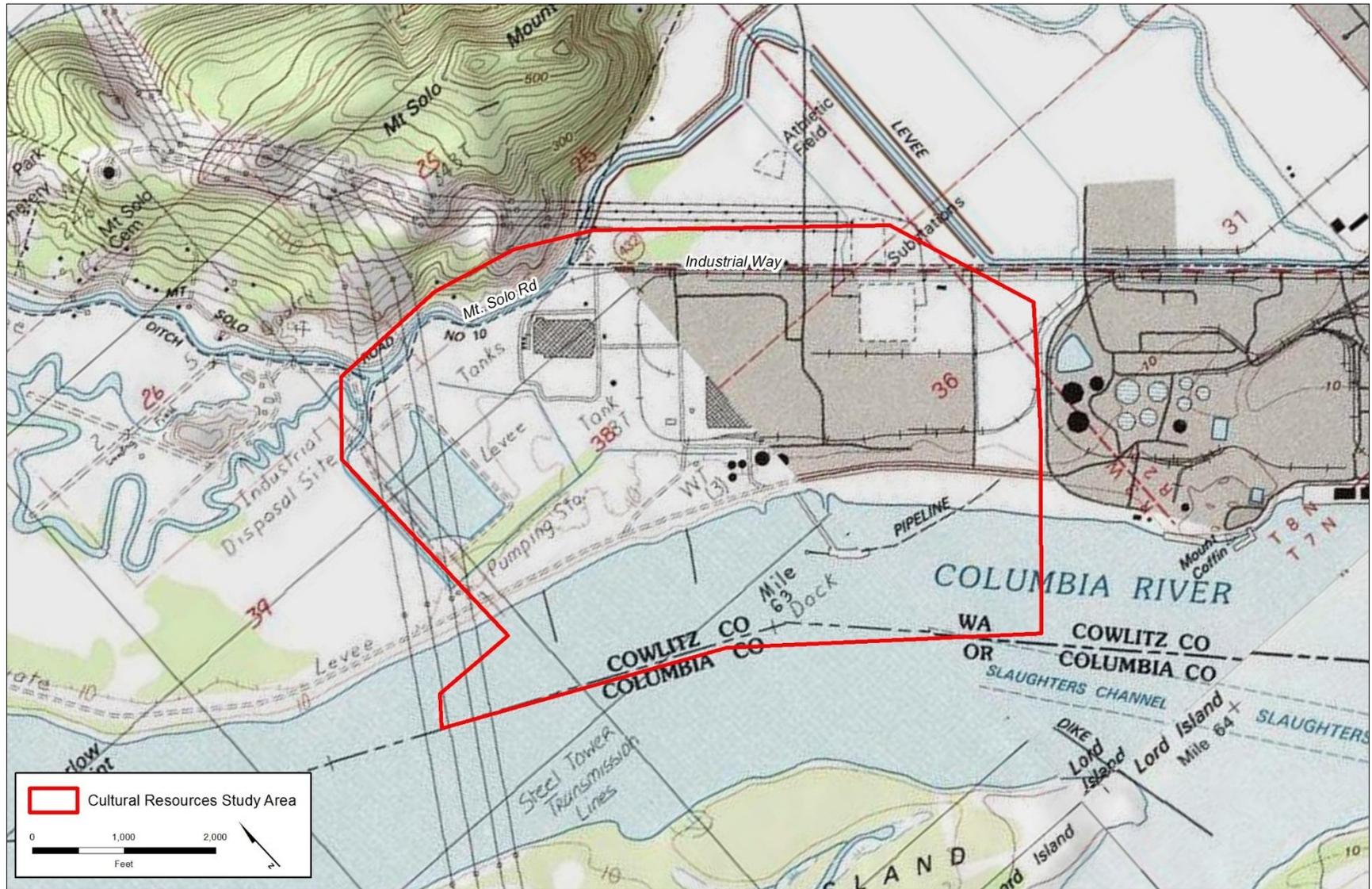
#### 3.4.3.1 Information Sources

The following sources of information were used to identify the potential impacts of the Proposed Action and No-Action Alternative on cultural resources in the study area.

#### Data Sources

A literature review and records search was conducted to establish prehistoric and historic contexts and to identify previously recorded cultural resources in the study area.

Figure 3.4-1. Cultural Resources Study Area—U.S. Geological Survey Map



These efforts used the following sources of information.

- A search of DAHP's Washington Information System for Architectural and Archaeological Records Database (WISAARD) for previously completed cultural resources studies and previously documented archaeological, ethnographic, and historical resources within a 1-mile radius of the project area. An initial DAHP file search was conducted in November 2011. Updated searches of data at DAHP were completed in November 2013 and again in November 2014.
- Primary and secondary resources from local repositories, including the Cowlitz County Historical Museum.
- Historic maps, including General Land Office plat maps and topographic quadrangle maps from the U.S. Geological Survey (USGS).
- Geological and historical documents and prior geotechnical studies that characterize the local geology and landform development history.
- Aerial photographs from the 1960s obtained from the Applicant and additional aerial photographs from the Cowlitz County Historical Museum.
- Interviews with former employees of the former Reynolds Metal Company facility (Reynolds facility), currently employed by the Applicant, conducted in November 2014.
- Outreach efforts and consultation with affected tribes.

Information for this section was also extracted from the following technical reports. These documents contain confidential historic and archaeological information and access to this information is restricted by the National Historic Preservation Act of 1966, as amended, and the Archaeological Resources Protection Act of 1979, as amended. These documents are only available to agencies with jurisdiction.

- *Identification of Historic Properties: Existing Information and Proposed Research, Millennium Coal Export Terminal, Cowlitz County, Washington—June 19, 2015 (AECOM 2015)*
- *Identification of Historic Properties: Existing Information and Proposed Research, Millennium Coal Export Terminal, Cowlitz County, Washington—August 18, 2015 (AECOM 2015)*
- *Historic and Cultural Resources Assessment, Millennium Coal Export Terminal, Cowlitz County, Washington—October 1, 2015 (AECOM 2015)*

## Fieldwork

Field investigations were conducted between 2011 and 2015 to identify cultural resources in the study area. These investigations considered the archaeological and historical resources and the landform development of the project area.

- Windshield survey and walkthrough of the study area in November 2011 to assess existing conditions.
- Historic resource surveys conducted in April 2014 and January 2015 to prepare a historic property inventory of resources associated with the former Reynolds facility, which is part of the Applicant's leased area. The architectural inventory included photographic documentation, resource descriptions, and statements of significance for buildings, structures, and landscape

features. Individual resources were recorded on Washington Historic Property Inventory forms in WISAARD. In addition, a nomination form for the National Register of Historic Places (NRHP) was prepared for the former Reynolds facility for evaluation as a historic district.

- Pedestrian survey of the study area in January 2015, to document landscape features associated with the former Reynolds facility such as several former landfills and surface impoundments. These features were documented as individual resources on Washington Archaeological Site forms, per guidance from DAHP and the Corps. Building foundations associated with the South Plant portion of the former Reynolds facility were likewise documented as an archaeological site, consistent with protocols established through consultation with DAHP and the Corps.
- Geotechnical investigations of upland soils in the project area using two sampling methods: geoprob<sup>1</sup> and mud rotary coring. Geoprobe sampling was used to recover 21 intact, sediment cores to anticipated maximum depths of 25 feet (the maximum depth of the Proposed Action's anticipated compression effects). A maximum total volume of 1.23 cubic feet was recovered from each geoprobe sample. Seven geotechnical borings were drilled to a minimum depth of 70 feet (the maximum depth of proposed support piles). The 70-foot cores were drilled using a mud rotary method and sediment samples were obtained using split-spoon samplers and Shelby tubes. A maximum total soil volume of 2.03 cubic foot was recovered from each geotechnical boring. Soil samples were collected from two cores for radiocarbon dating and from three cores for tephra<sup>2</sup> identification. These efforts helped determine the chronology of the landform creation in the project area and the area's potential to contain archaeological resources.

## Research Design

Research and field data described above were collected, compiled, and analyzed by qualified cultural resources professionals. A research design for the identification and evaluation of cultural resources was prepared for the Proposed Action in June 2015 (McDaniel et al. 2015 cited in AECOM 2015). This document provided the following information used to refine identification of resources.

- A definition of the affected environment.
- A photographic inventory of former buildings at the South Plant portion of the former Reynolds facility.
- An archaeological work plan.
- An analysis of potential impacts on shorelines caused by increases in marine vessel traffic.
- A comprehensive study of historical channel migration at the study area. The latter addressed the potential for cultural resources to be present in the proposed in-water dredge prism (the extent of the area to be dredged).

### 3.4.3.2 Impacts Analysis

The following methods were used to identify and evaluate the potential impacts of the Proposed Action and No-Action Alternative on cultural resources.

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<sup>1</sup> A geoprobe is a tubular tool driven into the ground to sample soil.

<sup>2</sup> Tephra is fragmental material produced by a volcanic eruption.

The shoreline analysis included a desktop review of information sources and the development of a geographic information system (GIS) model. The GIS model helped identify previously documented archaeological sites as the most at risk for shoreline erosion. These sites were then inspected at a reconnaissance level. The historical channel analysis included an assessment of historical bathymetric and channel migration data to address in-water conditions in the study area and the potential for eroded cultural materials to be present in the proposed dredging prism.

### **Historic Resources**

For historic resources, buildings and structures at least 45 years old in the study area were evaluated to determine their eligibility for listing in the NRHP and the Washington Heritage Register (WHR). An NRHP nomination form was prepared for the former Reynolds facility, so the many elements of the property could be evaluated as a possible historic district. The nomination form comprehensively accounted for all buildings, structures, and landscape features situated on the former Reynolds facility.

### **Archaeological Resources**

For archaeological resources, field investigators were precluded from using traditional methods of subsurface archaeological investigation, such as exploratory shovel probing or trenching, due to existing development and the depths of fill materials within the study area. Instead, prior geotechnical studies and over 100 previous geotechnical bore logs were reviewed to address the extent of fill within the study area and the potential existence of buried archaeological remains (Anchor QEA 2011; GRI 2012, both cited in AECOM 2015). These data were used to help guide the placement of additional deep test borings (Bundy 2010; Anchor QEA 2012, both cited in AECOM 2015), as described in Section 3.4.3.1, *Information Sources, Fieldwork*. The prior studies and the soil samples indicated a potential for direct impacts on cultural resources in the study area. Impacts were determined by evaluating if construction and operations would alter any characteristic of a cultural resource that qualifies the resource for inclusion in the NRHP or the WHR, or affect a recorded archaeological site.

#### **3.4.3.3 Agency and Tribal Consultation**

The Corps has initiated consultation with Cowlitz County, DAHP, the City of Longview, BPA, National Park Service, potentially affected Native American tribes, and the Applicant regarding the Proposed Action and potential impacts on cultural resources. In addition, the Corps has conducted a review of what it defines as the Proposed Action in compliance with Section 106 of the NHPA. The Corps is currently consulting under Section 106. The Corps expects a Memorandum of Agreement will be signed by the Corps and consulting parties and will stipulate measures to help mitigate the Proposed Action's impacts on cultural resources in the study area.

#### **3.4.4 Existing Conditions**

This section describes the existing environmental conditions in the study area related to cultural resources that could be affected by the construction and operation of the Proposed Action and the No-Action Alternative.

### 3.4.4.1 Setting

This section provides the context and setting for cultural resources in the study area.

#### Precontact Context

Studies of the archaeology and prehistory of the Pacific Northwest divide the prehistory of the region into multiple phases or periods from about 6,000 years Before the Common Era (BCE) to the 1850s. These periods are delineated by changes in regional patterns of land use, subsistence, and tool types over time. These periods are academic constructs and do not necessarily reflect Native American viewpoints. A generally accepted cultural sequence for the prehistory of the lower Columbia River region consists of four periods (Minor 1983 cited in AECOM 2015). These periods include the Youngs River complex (6000 to 4000 years BCE), the Seal Island phase (4000 BCE to the Common Era [CE] 0), the Ilwaco phase (CE 0 to 1775), and the Ethnographic period (CE 1775 to 1851).

The Youngs River complex corresponds to the end of the Archaic period. It is defined by sites with lanceolate and shouldered-lanceolate points, stemmed scrapers, and bola stones (Pettigrew 1990 cited in AECOM 2015). The later Seal Island phase is characterized by broad-necked stemmed points, cobble flake tools, harpoon darts, adzes, netsinkers, and atlatl weights, as well as the emergence of large shell middens along the coast. Intensive fishing activities are indicated by these material items. During the Ilwaco phase, a generally more diverse artifact assemblage emerged, indicative of bow and arrow technology and the use of composite toggling harpoons, and permanent villages with large houses were present. The Ethnographic period is distinguished from the earlier Ilwaco phase by the introduction of nonaboriginal artifacts and an increase in exotic personal items including shell, glass, and copper beads.

#### Ethnographic Context

The study area falls within the territory principally used by two groups. The Cathlamet, an Upper Chinookan-speaking people, resided along the Columbia River, east of the Lower Chinook and west of the Multnomah groups. The Cowlitz, a Salish-speaking group, resided in the Cowlitz River drainage from its mouth to below Mayfield Dam, along segments of the Toutle, Newaukum, and South Fork of the Chehalis Rivers (Curtis 1913; Hajda 1990; Silverstein 1990, all cited in AECOM 2015). During the early 19th century, the Skilloot, a subset of the Chinookan Cathlamet, resided along both sides of the Columbia River near the study area (Lewis 2013 cited in AECOM 2015). These peoples were prolific traders who transported goods between coastal groups and interior tribes (Kinkade 1997; Thorsgard et al. 2013 cited in AECOM 2015).

Native groups subsisted primarily on salmon and supplemented their diet with seasonal plant and animal resources, including berries, camas, wapato, deer, elk, bear, and waterfowl. Tribes seasonally fished and gathered roots along the Longview waterfront (Nisbet 2003:127 cited in AECOM 2015) and fishing camps were temporarily inhabited along the Columbia River (Minor 1983:72–73 cited in AECOM 2015). Houses and longhouses constructed from cedar planks were built along the Columbia River and its tributaries. Funeral customs along the lower Columbia River included the placement of the deceased in canoes elevated on trees or posts (Boyd 2013:196 cited in AECOM 2015). Graveyards were commonly located on islands or plots located near the river (Ray 1938:75 cited in AECOM 2015).

One such burial location in the vicinity of the study area was Mount Coffin. Called *Yee-eh-mas-tee*, Mount Coffin was a 240-foot-high knoll composed of volcanic rock situated on the north bank of the Columbia River approximately 0.7 mile southeast of the project area (Thorsgard et al. 2013; Moulton 1990:29-30). The site is commonly confused with Coffin Rock, a physically similar landform located about 7 miles upriver. Mount Coffin was a prominent navigational feature on the Columbia River and even more significant as a distinctive burial site, which remains important to Native American tribes in the region. Beginning circa 1906 and continuing through the 1950s, quarrying of Mount Coffin's volcanic rock gradually reduced the landform in size until it was removed.

Contact with European Americans prompted rapid change to traditional life among Native Americans. Disease devastated native populations and large groups of European-American settlers and homesteaders entering the region supplanted the local indigenous communities. The U.S. government entered into treaties with local Native Americans during the 1850s. Chinookan Cathlamet peoples, including the Skilloot, were signatories to a treaty that ceded their lands in 1851. Along with several other Lower and Middle Chinook groups, many eventually relocated to the Grand Ronde Reservation (Lewis 2013; Ruby and Brown 1992:12, 25, 208, both cited in AECOM 2015). Nonreservation Cathlamets combined with other tribes into the Chinook Nation in 1951 to file a claim with the Indian Claims Commission; the Chinook Nation continues to apply for federal recognition (Fisher and Jette 2013; Ruby and Brown 1992:2, both cited in AECOM 2015). The Cowlitz Tribe attended the Chehalis River Treaty Council in 1855 but did not sign a treaty because a reservation in their territory was not offered (Ruby and Brown 1992:70-71 cited in AECOM 2015). Some removed to the Chehalis Reservation after 1864, and others continued to reside in the Longview area (Weber, Denni, and Maxey 2012:25 cited in AECOM 2015). Local Cowlitz maintained an independent organization that became federally recognized as an Indian tribal government in 2000 (Hajda 1990:514–515 cited in AECOM 2015).

## Historic Context

The first nonnative group to visit the region was a 1792 British expedition led by Lieutenant Broughton under the command of George Vancouver. This group explored the Columbia River from its mouth to the Sandy River (Mockford 2005:552 cited in AECOM 2015). Other later explorers included Hudson's Bay Company fur traders and members of the 1805–1806 Lewis and Clark expedition (Nisbet 2003 cited in AECOM 2015). Intensive settlement of the territory by European Americans began following passage of the Donation Land Act of 1850. During this period, Oregon Trail emigrants settled along the Columbia River near what later became the City of Longview. These early pioneers established the communities of Monticello (or Mount Solo) on the present site of Longview in 1850, the town of Mount Coffin (named after the prominent landform on the Columbia River; later renamed LaDu), and a settlement near what is now Barlow Point.

The property in the study area was eventually acquired and developed for industrial uses beginning in the early 20th century. The Star Sand and Gravel Company of Portland began quarrying rock from Mount Coffin east of the study area in 1906 and the Long-Bell Lumber Company established a large lumber mill in this same area in the 1920s. North of the study area, the Long-Bell Lumber Company also established the town of Longview as a planned community to support its operations. Considered the world's largest mill at the time, construction of the 2,000-acre mill changed the character of the Columbia River waterway by replacing its agricultural farms with a new industrial setting (Ramsey 1978:169-171, 196 cited in AECOM 2015).

As part of this construction, the Long-Bell Lumber Company built 15 miles of levee to protect its operations from flooding (McClary 2008 cited in AECOM 2015). Settlers had previously constructed dikes to protect the Columbia River's low-lying valley lands as early as the 1890s. In 1894, a record-setting flood led to the passage of legislation enabling the formation of diking and drainage districts. Diking District No.1 was created in 1911 to minimize seasonal and event-level floods and was the first flood management district in Cowlitz County (Erlich 2008:10-11 cited in AECOM 2015). The district constructed a levee near the study area in 1913 (Wilt 1972 cited in AECOM 2015).

Rapidly increasing industrial, commercial, and residential growth generated the need for a uniform stormwater management and flood-protection program in the early 1920s. As a result, six diking districts were combined to form the Consolidated Diking Improvement District (CDID) #1 in 1923. The Long-Bell Lumber Company worked with CDID #1 to enlarge and expand the area's existing system of dikes to protect the company's mill and town sites (Erlich 2008:11; McClelland 1976:20 both cited in AECOM 2015). CDID #1 and the Corps raised the levees in 1949 with additional improvements in later years to better facilitate stormwater removal and accommodate new developments (Consolidated Diking Improvement District #1 2013 cited in AECOM 2015).

No development is known to have occurred within the study area prior to the 1940s, except for the levees and diking improvements. In 1929, the Weyerhaeuser Timber Company built its sawmill on a 700-acre site east of the study area, between it and the Long-Bell Company mill. However, the study area itself remained primarily agricultural until the construction of the former Reynolds facility in the study area, beginning in the early 1940s.

In 1941, the Reynolds Metals Company established a new aluminum reduction plant on 400 acres of riverfront property west of the Long-Bell Lumber Company, acquired from the Long-Bell Lumber Company. The new facility benefited from rail and water transportation access, an abundance of wood for fuel and facility construction, and major hydroelectric power provided by BPA along the Columbia River (McClary 2008; Donovan and Associates 2013:2, both cited in AECOM 2015). The Reynolds Metal Company entered into a 20-year contract with BPA for 40,000 kilowatts of power to serve the facility (Bonneville Power Administration 1953:3 cited in AECOM 2015).

The Reynolds Metals Company completed construction of its Longview plant in November 1942. The plant was designed as a duplicate of the company's older aluminum plant in Listerhill, Alabama, and primarily consisted of those structures built in the South Plant area. The consulting engineer for the plant's construction was the J. E. Serrine & Company of Granville, South Carolina and the builder was Austin & Company of Seattle, Washington. To prepare the property for construction of the new plant, the Reynolds Metals Company placed extensive amounts of fill behind the existing river levees to raise the property's elevation from between 5 and 10 feet to a level surface across the site (Bechtel Engineering 1968 cited in AECOM 2015).

The now-former Reynolds facility was one of five Pacific Northwest aluminum plants constructed before and during World War II. Aluminum was an important component of shipbuilding during World War II, and these plants supplied large quantities of the metal to the Kaiser Shipyards in Portland, Oregon, and Vancouver, Washington, in addition to many other wartime production facilities throughout the region (Oregon Blue Book 2014 cited in AECOM 2015). Four additional aluminum-reduction plants were built in the Pacific Northwest during the postwar period. Only two plants are still actively used for aluminum reduction today.

Following World War II, the aluminum industry grew rapidly in the 1950s and 1960s with the introduction of innovative new products and rising consumer demand. To accommodate this growth, the Reynolds Metals Company “modernized” its Longview plant. The company expanded its existing production lines in the South Plant in the early 1950s and further increased the plant’s capacity in the late 1960s by expanding and altering the existing plant and constructing additional facilities at the property’s western end. These improvements more than doubled the Longview plant’s production capacity by 1969, making it the third largest employer in Cowlitz County and one of the largest aluminum manufacturers in the Pacific Northwest (Weber, Denni, and Maxey 2012:84 cited in AECOM 2015).

Over the next 30 years, the aluminum industry gradually declined in the Pacific Northwest. The Reynolds Metals Company continued operations at its Longview plant until 2000, when it was purchased by Alcoa, Inc. as a wholly owned subsidiary. Alcoa operated the plant through 2001. Thereafter, the property was owned and operated by several companies and investment groups until it was fully decommissioned by Chinook Ventures, Inc. in 2005. The property is currently owned by Northwest Alloys who sold the plant’s assets to the Applicant in January 2011 (Donovan and Associates 2013:3 cited in AECOM 2015).

#### **3.4.4.2 Archaeological Resources**

This section describes the results of archaeological investigations within the study area, including previous and current archaeological surveys and geotechnical monitoring conducted for the Proposed Action.

##### **Archaeological Surveys**

No previously recorded archaeological sites are known to exist within or in the immediate vicinity of the study area. The pedestrian archaeological surveys conducted in January 2015 identified eight landscape features in the study area, which were newly documented as archaeological sites. These eight documented sites consist of three landfills, four fill deposits, and the area of the former South Plant. All eight sites were associated with the former Reynolds facility. Seven were determined to be 45 years of age or older. Of these, six were found to retain good integrity. These six sites were determined eligible for listing in the NRHP as contributing elements of a NRHP-eligible historic district encompassing the former Reynolds facility.

The South Plant area and one landfill were determined not eligible for listing in the NRHP. The landfill was found to be less than 45 years of age. The South Plant area consists of recently demolished resources that no longer retained sufficient integrity to convey historical significance. Demolition of the resources in the South Plant area had previously occurred as a separate, unrelated project.

##### **Geotechnical Investigations**

No precontact archaeological resources were identified as a result of the geotechnical investigations. Observations made during the investigations generally correlated with the results of previous geotechnical work in the study area. These studies indicated that much of the study area was likely a stable, low-lying wetland prior to the relatively recent filling and industrial development, and possibly had been in this condition for thousands of years. The results were also consistent with historical General Land Office and USGS maps showing past landforms in the study area.

Fill materials were found to extend across the study area in depths of about 5 to 10 feet on average, except in the portions of the study area farthest from the Columbia River, where fill depths may be 1 to 2 feet. Fill materials are overlying native alluvial sediments. Most or all of the alluvium observed during the geotechnical investigations was determined to be from the Holocene Epoch with no substantial soil development, reaching depths of up to 70 feet. The Holocene alluvium was interpreted to have accumulated in channel, near-channel, or floodplain environments that would have been perennially or seasonally saturated, such as in a low-lying wetland. This conclusion was substantiated by the characteristic features of the soils.

Five samples of organic debris and tephra recovered during the geotechnical investigations were submitted for chronological dating to better understand landform formation in the study area. The chronological dates of these samples helped establish the overall pattern of depth, character, and thickness of alluvial sediments within the study area.

No potential archaeological resources were identified in the proposed dredge prism for the Proposed Action based on historical data and recent in-water surveys. Dredging of the Columbia River began in the late 1800s and has continued up to the present (Grette and Associates and Coast Harbor Engineering 2015 cited in AECOM 2015). Below-water surveys conducted for the Northwest Alloys remedial investigation and feasibility study indicate that this section of the Columbia River is subjected to fast-moving currents. A recent below-water hydrogeographic survey did not indicate the presence of anomalies (e.g., shipwrecks, piers, or canoes) in the proposed dredge prism for the Proposed Action (David Evans and Associates 2009 cited in AECOM 2015). Near-surface submerged deposits may have been subjected to substantial historic to modern disturbance via erosion (Grette and Associates and Coast Harbor Engineering 2015 cited in AECOM 2015).

### **3.4.4.3 Historic Resources**

The historic resources survey identified four built environment resources in the study area. These resources are the former Reynolds facility, the CDID #1 levee, the BPA Longview Substation, and the Reynolds Federal Credit Union. The Lewis and Clark National Historic Trail, which is a nationally significant trail that traverses the study area, was also considered.

#### **Reynolds Metals Reduction Plant Historic District**

The former Reynolds facility was evaluated as a historic district and documented on an NRHP nomination form as part of the concurrent Section 106 review undertaken by the Corps (Gratrek et al. 2015). Referred to as the Reynolds Metals Reduction Plant Historic District, the property was determined eligible for listing in the NRHP through this process as a historic district under NRHP Criteria A and C.<sup>3</sup> Under Criterion A, the historic district's buildings and structures are associated with the aluminum industry's major growth periods during World War II and through the 1960s.

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<sup>3</sup> The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. That are associated with the lives of significant persons in our past; or
- C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. That have yielded or may be likely to yield, information important in history or prehistory.

Under Criterion C, the former Reynolds facility represents the aluminum industry's development in the Pacific Northwest and conveys its trend toward functional integration that occurred between World War II and the 1960s, which led to combining the reduction process with product manufacturing. The Reynolds Metals Reduction Plant Historic District consists of 53 separate resources, including 33 buildings, 12 structures, and eight landscape features (recorded as the aforementioned archaeological sites). Of these 53 identified resources, 39 were determined to contribute to the historic district's significance. Fourteen resources were determined to be noncontributing elements to the historic district because their construction postdates the historic district's period of significance or they have been heavily altered.

### **CDID #1 Levee and the BPA Longview Substation**

The CDID #1 levee and the BPA Longview Substation were both determined to be contributors to the Reynolds Metals Reduction Plant Historic District and individually eligible for listing in the NRHP.

### **Lewis and Clark National Historic Trail**

The portion of the Lewis and Clark National Historic Trail that traverses the study area is known as the Lower Columbia River Water Trail. No individual sites associated with the Lewis and Clark National Historic Trail were identified in the study area. The National Park Service is currently identifying high potential historic sites and high potential route segments along the trail; however, this list has not been released to the public (Gladstone 2014 cited in AECOM 2015). Because of the significant industrial development along on the north side of the Columbia River, it is unlikely that landscape features in or near the study area would contribute to the significance of the Lewis and Clark National Historic Trail.

### **Other Historic Resources**

The Reynolds Federal Credit Union building was evaluated as not eligible for listing in the NRHP. Outside the study area, the nearest recorded historic property is the J.D. Tennant house, or Rutherglen Mansion, which is listed in the NRHP. This property is located approximately 0.5 mile north of the study area at the base of Mount Solo. Two cemeteries are also located on Mount Solo about 1.2 miles north of the study area: Longview Memorial Park Cemetery and Mount Solo Cemetery.

#### **3.4.4.4 Culturally Significant Properties**

No culturally significant properties were identified within the study area. Outside the study area, four ethnographic sites are known to exist within several miles of the study area close to the Columbia River: three Native American village locations and the site of Mount Coffin. The latter is significant to the Confederated Tribes of the Grand Ronde Community of Oregon and has been identified as a traditional cultural property eligible for listing in the NRHP. Although other areas of ethnographic significance may be located near the study area, they are not documented in the available literature.

### **3.4.4.5 Rail and Vessel Corridors in Washington State**

While not part of the stated study area, this section considers presence of cultural resources along the rail and vessel transportation corridors associated with the Proposed Action in Washington State. These corridors extend beyond the study area considered by the Section 106 review process led by the Corps and were not included as part of that undertaking. WISAARD and the aforementioned information sources were used to identify previously recorded cultural resources outside the study area in the vicinity of the rail and vessel transportation corridors and to establish possible resource types in these areas.

#### **Rail Transportation Corridor**

##### **Archaeological Resources**

Several types of archaeological resources may occur along the rail transportation corridor. The precontact and ethnographic contexts of the Columbia River basin indicate that the river and its many tributaries were important for habitation and resource gathering, and as an inland travel corridor. Previously recorded archaeological sites and isolated finds are known to exist along the rail corridor, and there likely many more that have not been discovered. The types of precontact archaeological sites that might exist within the rail transportation corridor include village sites, camps, lithic scatters, cairns, rock alignments, house pits, petroglyphs, pictographs, shell middens, talus pits, burials, fishing stations, and trails. Historic-era archaeological sites are also present. The most common of these include historical agriculture, homestead, logging, and railroad-related properties.

The rail transportation corridor passes through seven known archaeological districts. The Plymouth District, Sk'in Village Cultural District, and Vancouver Lakes Archaeological District contain precontact and historic components. The Crow Butte Island District, Columbia Hills Archaeological District, Miller Island District, and Wishram Indian Village Site all contain precontact features and sites. The highest concentration of previously recorded archaeological resources along the Columbia River are situated near the Celilo Falls area at the confluence with the Deschutes River, The Dalles, and Portland Basin. The quantity and distribution of archaeological sites depends on the types of activities that occurred in the different geographic regions through which the rail transportation corridor passes and the level of archaeological inquiry that has occurred in these areas.

##### **Historic Resources**

Railroads were important to the development of Washington and several types of historic resources may occur along the Proposed Action's rail transportation corridor. These resources include previously recorded NRHP and WHR-eligible properties, as well as historically significant resources that have not yet been identified. Rail transportation has taken place along the banks of the Columbia River and contributed to the development of communities in this vicinity since the 1850s. As a result, historic resources are known to exist throughout this area with the highest concentration occurring in urbanized areas near Spokane and Vancouver. The types of historic resources typically found along the rail transportation corridor include railroad-related structures, single-family and multifamily residences, and commercial and industrial properties.

NRHP and WHR-eligible historic districts contain high concentrations of resources that are linked by their period of development and significance in American history. Several historic districts exist

along the rail transportation corridor. These districts includes the Millwood Historic District, West Downtown Historic District, and Riverside Avenue Historic District in Spokane, the Ritzville Historic District and Cheney Historic District in Ritzville and Cheney, respectively, and the Fort Vancouver National Historic District in Vancouver. The latter is also a designated National Historic Landmark.

## **Vessel Transportation Corridor**

### **Archaeological Resources**

Precontact peoples used the upland shorelines of the Columbia River and its tributaries for habitation, plant gathering, and hunting; and the river itself for fishing and resource harvesting. Previously recorded archaeological sites and isolated finds are known to exist along the vessel transportation corridor, and there are likely many more that have not been discovered. The types of precontact archaeological sites and culturally significant properties that might exist within the vessel transportation corridor are similar to those that might occur in the rail transportation corridor. The highest concentration of previously recorded archaeological resources occurs near the Columbia River mouth. However, the quantity and distribution of archaeological sites depends on the types of activities that occurred in the different geographic regions through which the vessel transportation corridor passes and the level of archaeological inquiry that has occurred in these areas.

### **Historic Resources**

The vessel transportation corridor contains concentrations of historic resources. The types of historic resources in these areas are similar to those found along the rail transportation corridor.

## **3.4.5 Impacts**

This section describes the potential direct and indirect impacts related to cultural resources that would result from construction and operation of the Proposed Action and the No-Action Alternative.

### **3.4.5.1 Proposed Action**

This section describes the potential impacts that could occur in the study area as a result of construction and operation of the Proposed Action.

#### **Construction—Direct Impacts**

Construction-related activities associated with the Proposed Action could result in direct impacts as described below. As explained in Chapter 2, *Project Objectives, Proposed Action, and Alternatives*, construction-related activities include demolishing existing structures and preparing the site, constructing the rail loop and dock, and constructing supporting infrastructure (i.e., conveyors and transfer towers).

Construction of the Proposed Action would occur adjacent to the current shoreline and include dredging and in-water construction of two docks in the Columbia River. This work would demolish 30 of the 39 identified resources in the study area that contribute to the historical significance of the Reynolds Metals Reduction Plant Historic District. The Proposed Action would adversely affect cultural resources through the demolition of buildings and structures that contribute to the Reynolds Metals Reduction Plant Historic District. The anticipated adverse impacts on these

resources would diminish the integrity of design, setting, materials, workmanship, feeling, and association that make the historic district eligible for listing in the NRHP. If the Proposed Action is constructed, the Reynolds Metals Reduction Plant Historic District would no longer be eligible for listing in the NRHP.

The demolition of buildings and structures associated with the former Reynolds facility could affect the CDID #1 levee and the BPA Longview Substation. Both resources have been determined eligible for listing in the NRHP individually and as contributing elements of the Reynolds Metals Reduction Plant Historic District. The resources' integrity of setting and association would be diminished by the demolition of buildings and structures that contribute to the Reynolds Metals Reduction Plant Historic District, because the historic district would no longer be eligible for listing in the NRHP. Despite these impacts, the CDID #1 and BPA Longview Substation would remain individually eligible for listing in the NRHP.

The J. D. Tennant House is located on a terrace of Mount Solo about 0.5 mile north of the study area. This property is listed in the NRHP. The J. D. Tennant House, however, was oriented to face the former Long-Bell Lumber Mill (now Weyerhaeuser property), and is most closely associated with the lumber mill. The former Reynolds facility did not exist when the house was constructed. Although the J. D. Tennant House may have a view of the southeast corner of the project area, no adverse impacts are anticipated.

The Proposed Action would also involve the extension of dock supports and/or conveyors over the CDID #1 levee and the construction of support structure on either side of the resource. Impacts from these activities are expected to be minimal and would not diminish the levee's integrity as a flood control structure. Construction activities near the BPA Longview Substation would not affect its physical integrity and it would remain functional.

Because the upland areas of the project area landward of the levee consist largely of fill material that deeply covers a historic low-lying wetland, there is limited potential to encounter undocumented archaeological sites. However, as described in Chapter 2, *Project Objectives, Proposed Action, and Alternatives*, construction of the Proposed Action would require surface grading, compaction to a depth of approximately 25 feet, and pile driving to a depth of approximately 70 feet. Based on the results of the geotechnical investigations conducted in and near the project area, archaeological resources could exist in native soil below the existing fill. Geotechnical investigations indicated that the depths of fill in the study area typically range from 5 to 10 feet on average below the existing surface. The only impacts expected to extend below this depth are the compaction/displacement impacts and installation of deep piles associated with the coal stockpiling development area; neither activity would yield sediment for observation.

An Inadvertent Discovery Plan would address the discovery of any previously unidentified archaeological resources during construction.<sup>4</sup>

### **Construction—Indirect Impacts**

Construction of the Proposed Action would not result in any indirect impacts on cultural resources because construction would be limited to the project area.

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<sup>4</sup> An Inadvertent Discovery Plan (also referred to as an Unanticipated Discovery Plan) outlines procedures to be followed if previously unknown archaeological or historical resources are discovered during project activities.

## **Operations—Direct Impacts**

Operation of the Proposed Action would result in the following direct impacts. Operations-related activities are described in Chapter 2, *Project Objectives, Proposed Action, and Alternatives*.

Routine operation and maintenance of the coal export terminal are not expected to affect cultural resources in the study area. Remaining portions of the Reynolds Metals Reduction Plant Historic District would no longer be eligible for listing in the NRHP, due to a loss of integrity caused by the removal. The CDID #1 levee and BPA Longview Substation, meanwhile, would remain individually eligible for listing in the NRHP.

Archaeological resources in the project area discovered during construction could be vulnerable to inadvertent disturbance during routine operations and maintenance. If previously undocumented archaeological resources are encountered in the project area during routine operations, they would be addressed through implementation of an Inadvertent Discovery Plan.

Increased vessel transport could also affect the Lewis and Clark National Historic Trail. However, due to the industrial development near the study area, these impacts are anticipated to be minimal. The portion of the trail in the study area does not retain historic integrity. The features present during the Lewis and Clark expedition have been significantly modified by existing industrial development.

## **Operations—Indirect Impacts**

Operation of the Proposed Action would not result in any indirect impacts on cultural resources in the study area.

Outside the study area within the rail and vessel transportation corridors, impacts on cultural resources were assessed qualitatively based on an expectation of the types of resources likely to be present and an assessment of how they could be affected by routine operations. Impacts were determined by evaluating if operations would alter any characteristic of a cultural resource (archaeological, historical, or culturally significant) that qualifies the resource for inclusion in the NRHP or WHR, or affect a recorded archaeological site.

### **Rail Transportation Corridor**

#### ***Archaeological Resources***

An increase in the duration of noise and visual interruptions from trains associated with the Proposed Action could impact the setting of archaeological resources along the rail transportation corridor. Increased dirt and dust from passing trains could affect the setting of these resources. These resources are currently subjected to existing rail traffic along existing rail lines.

Rail transport of coal under the Proposed Action would occur along existing railroad lines along the rail transportation corridor. Increased rail traffic along these railroad lines under the Proposed Action could affect resources located nearby as a result of visual and audible intrusions or vibrations. The setting of archaeological resources along the rail transportation corridor could be impacted.

As discussed in Chapter 5, Section 5.5, *Noise and Vibration*, the Proposed Action would result in noise impacts due to train's sounding their horns. However, increased noise from locomotive or car

traffic alone (without horn sounding) would not result in noise impacts that would adversely affect cultural resources. Moreover, if resources along the line contain prominent and distinctive character-defining visual features, the alteration of the views from increased traffic would not affect these resources to the extent that they would no longer be considered historically significant (Section 3.3, *Aesthetics, Light, and Glare*). Therefore, impacts on archaeological resources as a result of routine rail transport under the Proposed Action are not considered significant.

#### ***Historic Resources***

Similar to archaeological resources, historic resources could be impacted by increased rail traffic under the Proposed Action along the rail transportation corridor. Visual and audible intrusions or vibrations could affect resources located in the vicinity of the railroad lines. These impacts would be the same as those described above for archaeological resources. In addition, some historic resources along the rail transportation corridor, such as bridges, tunnels, and other features, associated with the existing rail system, could be impacted by increased usage that would degrade these rail facilities, necessitating more frequent repairs and limitations on use during repairs. Physical access to some historic resources could also be obstructed as a result of increased gate closures due to passing trains associated with the Proposed Action.

#### **Vessel Transportation Corridor**

##### ***Archaeological Resources***

Vessel transport would occur within the existing navigation channel on the Columbia River. Increased vessel traffic under the Proposed Action could result in an incremental increase in shoreline erosion. The shoreline analysis concluded that impacts on archaeological sites along the lower Columbia River were not likely to result from an increase in Proposed Action-related vessel traffic because individual site conditions would inhibit, reduce, and or minimize vessel wake energy, thus minimizing the potential for measurable erosion from vessel wakes (McDaniel et al. 2015:88 cited in AECOM 2015).

##### ***Historic Resources***

Visual and audible intrusions or vibrations could affect historic resources located in the vicinity of the vessel transportation corridor. These impacts would be the similar to those described above for the rail transportation corridor. Impacts on historic resources along the vessel corridor could include more frequent noise from increases in the number of vessels passing such resources. Historic resources along the vessel transportation corridor are subject to existing vessel traffic.

### **3.4.5.2 No-Action Alternative**

Under the No Action Alternative, the Applicant would not construct the coal export terminal and impacts on cultural resources related to construction and operation of the Proposed Action would not occur. The Applicant would continue with current and future increased operations in the project area. The project area could be developed for other industrial uses, including an expanded bulk product terminal or other industrial uses. The Applicant has indicated that, over the long term, it would expand the existing bulk product terminal and develop new facilities to handle more products such as calcine petroleum coke, coal tar pitch, and cement.

This new industrial development would be subject to environmental review under SEPA and/or NEPA and substantive regulatory approvals, including building demolition, and/or expanded industrial operations and the construction of upland facilities related to such potential operations. Such development could result in impacts similar to those described above for the Proposed Action.

### 3.4.6 Required Permits

Federal permits would be required from the Corps for what the Corps has defined as the Proposed Action. A decision by the Corps on whether to issue or deny a Department of the Army permit would be considered a federal undertaking subject to the requirements of NEPA and Section 106 of the NHPA. In compliance with Section 106 of the NHPA, the Corps has initiated consultation as described in Section 3.4.3.3, *Agency and Tribal Consultation*.

Based on the outcome of the Section 106 consultation process, the Applicant would be required to comply with the provisions of the Memorandum of Agreement to resolve adverse effects of the Proposed Action.

An Inadvertent Discovery Plan would be required to address any discovery of previously unidentified archaeological resources during construction. The Applicant would submit the plan to DAHP for review and would not begin construction until approval of the plan. The Inadvertent Discovery Plan would require work to immediately stop in the vicinity of a discovery and would require the Corps, Cowlitz County, DAHP, and potentially affected Native American tribes be notified. If archaeological resources are discovered, construction could be halted in the area until the Corps, in consultation with DAHP and tribes, determines the appropriate course of action.

### 3.4.7 Proposed Mitigation Measures

This section describes the proposed mitigation measures that would reduce impacts related to cultural resources from construction and operation of the Proposed Action. These mitigation measures would be implemented in addition to project design measures, best management practices, and environmental compliance that are assumed as part of the Proposed Action.

#### 3.4.7.1 Applicant Mitigation

The Applicant would implement the following measure to mitigate impacts on cultural resources.

##### **MM CR-1. Monitor Ground-Disturbing Activities**

To protect archaeological resources that may occur in subsurface deposits, the Applicant will have a qualified professional archaeologist monitor ground-disturbing activities. If archaeological resources are discovered, construction could be halted in the area until the Corps, in consultation with DAHP and tribes, determines the appropriate course of action.

### **3.4.8 Unavoidable and Significant Adverse Environmental Impacts**

Demolition of the Reynolds Metals Reduction Plant Historic District is an unavoidable and significant adverse environmental impact. The Memorandum of Agreement is currently being negotiated among the Corps, Cowlitz County, DAHP, City of Longview, BPA, National Park Service, potentially affected Native American tribes, and the Applicant. The Memorandum of Agreement may resolve this impact in compliance with Section 106 of the NHPA.

## 3.5 Tribal Resources

For the purposes of this EIS, the term *tribal resources* refers to tribal fishing and gathering practices and treaty rights, specifically, the collective rights and access to traditional areas associated with a tribe’s sovereignty or formal treaty rights. These resources may include plants or fish used for commercial, subsistence, and ceremonial purposes.

This section describes tribal resources in the study area, including resources important to the Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of Warm Springs, Cowlitz Indian Tribe, and Nez Perce Tribe as identified by the tribes, Columbia River Inter-Tribal Fish Commission and Bureau of Indian Affairs. It then describes impacts on tribal resources that could result from construction and operation of the Proposed Action and under the No-Action Alternative. This section also presents the measures identified to mitigate impacts resulting from the Proposed Action and any remaining unavoidable and significant adverse impacts.

### 3.5.1 Regulatory Setting

Laws and regulations relevant to tribal resources are summarized in Table 3.5-1.

**Table 3.5-1. Laws, Regulations, and Treaty Rights for Tribal Resources**

<b>Laws, Regulations, Court Cases, and Treaties</b>	<b>Description</b>
<b>Federal</b>	
Treaty With The Yakama (1855)	Set aside reservation land and reserve fishing, gathering and hunting rights for the Confederated Tribes and Bands of the Yakama Nation.
Treaty with the Walla Walla, Cayuse, etc. (1855)	Set aside reservation land and reserve fishing, gathering and hunting, and pasturing rights for the Confederated Tribes of the Umatilla Indian Reservation.
Treaty with the Nez Perce (1855)	Set aside reservation land and reserve fishing, gathering and hunting rights for the Nez Perce Tribe.
Treaty with the Tribes of Middle Oregon (1855)	Set aside reservation land and reserve fishing, gathering and hunting for the Confederated Tribes of Warm Springs
United States v. Winans, 198 U.S. 371 (1905)	U.S. Supreme Court held that the Treaty with the Yakama of 1855, and similar treaties, protects tribal access rights to fishing, hunting, and other privileges on off-reservation lands.
United States v. Oregon 302 F. Supp. 899 (D. Or. 1969)	Ongoing federal court case that protects and implements the reserved fishing rights of Columbia River treaty tribes. The federal court continues to oversee the management of the Columbia River through the United States v. Oregon proceedings. Fisheries in the Columbia River and its tributaries are co-managed by the states of Washington, Oregon, and Idaho as well as four treaty tribes and other tribe’s traditional fishing areas.

<b>Laws, Regulations, Court Cases, and Treaties</b>	<b>Description</b>
Endangered Species Act of 1973 (16 USC 1531 et seq.)	NMFS is responsible for managing, conserving, and protecting ESA-listed marine and anadromous species. All state and treaty fisheries are subject to review by NOAA Fisheries for compliance with the Endangered Species Act.
United States v. Washington, 384 F. Supp. 312 (W.D. Wash. 1974) “Boldt Decision”	Federal district court interpreted the rights of treaty tribes to take fish in their “usual and accustomed places in common with all citizens” to mean that treaty tribes have a treaty-reserved right to harvest 50% of the harvestable portion of fish.
Lower Snake River Compensation Plan (1975)	Compensation plan for loss of downstream-migrating juvenile salmon and steelhead at each of the four federal dams on the Snake River.
John Day Mitigation (1978)	Authorized by Congress in 1978 to mitigate the losses in salmonid spawning and rearing habitat caused by the construction of The Dalles Dam and John Day Dam with hatchery facilities.
Pacific Salmon Treaty (1985)	Agreement between Canada and the United States to prevent overfishing and optimize production with fisheries and enhancement programs. Ensures both countries receive benefits commensurate to the salmon production originating in their waters. Treaty was renewed in 1999 and 2009.
Secretarial Order 3206 (1997)	Clarifies the responsibilities of the Department of the Interior and Department of Commerce to ensure that Indian tribes do not bear a disproportionate burden for the conservation of listed species.
Final Determination to Acknowledge the Cowlitz Indian Tribe (2000)	Notice given that the Cowlitz Indian Tribe exists as an Indian tribe within the meaning of Federal Law – i.e., a Federally recognized Indian tribe (Final Determination, Federal Register Notice, 2000.02.18, 65 FR 8436-8438)
Executive Order 13175; Consultation and Coordination with Indian Tribal Governments (2000)	Establishes regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications
Reconsidered Final Determination to Affirm Decision to Acknowledge the Cowlitz Indian Tribe (2001)	Notice given to affirm the final determination that the Cowlitz Indian Tribe exists as an Indian tribe within the meaning of Federal Law – i.e., a Federally recognized Indian tribe (Reconsidered Final Determination, Federal Register Notice, 2002.01.04, 67 FR 607-608)
Columbia Basin Fish Accords (2008–2018) (2008)	Agreement between BPA, the Corps, Reclamation, the Confederated Tribes of Require adaptive management of dam operations to meet survival and passage needs of salmon.
Commerce Department Administrative Order (DAO 218-8) (2012)	Implements Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, and describes the actions to be followed by the Department of Commerce concerning tribal self-government, trust resources, treaty, and other rights.
Federal Columbia River Power System Biological Opinion (Supp. 2014)	As a supplemental biological opinion to the 2008 BiOp, verifies improvements at federal dams on the Columbia and Snake Rivers, habitat restoration, and other actions were in fact benefiting affected salmon and steelhead.

<b>Laws, Regulations, Court Cases, and Treaties</b>	<b>Description</b>
Grand Ronde v. Jewell (2014)	Reaffirmed the Federal Government’s decision to acquire and hold in trust 152 acres in Clark County in the Cowlitz watershed for the Cowlitz Indian Tribe.
Public Law 100-581 – Nov. 1, 1988; Title IV – Columbia River Treaty Fishing Access Sites	Federal lands acquired by the Secretary of the Army and transferred to the Secretary of the Interior to be administered to provide access to usual and accustomed fishing areas and ancillary fishing facilities on the Columbia River for treaty tribes.
<b>State</b>	
Washington Department of Fish and Wildlife Hatchery and Fishery Reform (Policy C-3619) (2009)	Advances the conservation and recovery of wild salmon and steelhead by promoting and guiding the implementation of hatchery reform. Treaty fisheries are not subject to this policy, but this policy influences negotiations between the treaty tribes and Washington State on number of fish produced from hatcheries in the Columbia River, number of fish available for harvest, and fishing gear types.
<b>Local</b>	
No local laws, regulations, or treaties apply to tribal resources.	
<p>Notes:            NMFS = National Marine Fisheries Service; ESA = Endangered Species Act; NOAA = National Oceanic and Atmospheric Administration; v = versus; BPA = Bonneville Power Administration; Corps = U.S. Army Corps of Engineers, Reclamation = U.S. Bureau of Reclamation; BiOp = Biological Opinion</p>	

### 3.5.2 Study Area

The study area for direct impacts on tribal resources consists of tribal resources in and near the project area that could be affected by construction and operation of the Proposed Action.

The study area for indirect impacts includes tribal resources and access to those resources that could be affected during rail transport along the expected rail routes for Proposed Action-related trains in Washington State. The study area for indirect impacts from Proposed Action-related vessel transport is the route for Proposed Action-related vessels in the Columbia River from the project area to 3 nautical miles offshore. The indirect study area also includes the Columbia River upriver to McNary Dam, including the tribal commercial, subsistence, and ceremonial fishing zone on the Columbia River known as Zone 6 (Figure 3.5-1).

### 3.5.3 Methods

This section describes the sources of information and methods used to evaluate the potential impacts on tribal resources associated with the construction and operation of the Proposed Action and No-Action Alternative.

Figure 3.5-1. Tribal Resources Study Area



### 3.5.3.1 Information Sources

The following sources of information were used to identify the potential impacts of the Proposed Action and No-Action Alternative on tribal fishing in the study areas. These sources focus on tribal fishing locations, times, and catch specifically to treaty harvest of salmon, steelhead and sturgeon.

- *SEPA Rail Transportation Technical Report* (ICF and Hellerworx 2017)
- *Final Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs* (National Marine Fisheries Service 2014)
- Information about Columbia River Treaty Tribes and Columbia River fishing sites (Columbia River Inter-Tribal Fish Commission 2015)
- Information about the Confederated Tribes of Warm Springs (Confederated Tribes of Warm Springs 2015)
- Columbia River treaties (U.S. Fish and Wildlife Service 2015)
- Information about Cowlitz Indian Tribe and fisheries (Cowlitz Indian Tribe 2015)
- Information about stock status and fisheries for chinook, coho, steelhead, and sturgeon (Washington Department of Fish and Wildlife and Oregon Department of Fish and Wildlife 2014, 2015)
- Conversation with Michael Broncheau, Columbia Treaty Fishing Site Manager, Columbia River Inter-Tribal Fish Commission, December 18, 2015

### 3.5.3.2 Impact Analysis

The following methods were used to evaluate the potential impacts of the Proposed Action and No-Action Alternative on tribal resources.

Impacts on tribal resources were assessed by evaluating how the Proposed Action and No-Action Alternative could affect access to tribal resources in the study areas. The analysis considered information about fishing, gathering, gear and tools, and traditional areas provided by the tribes and agencies, including practices and areas used by the four treaty tribes (Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of Warm Springs, and Nez Perce Tribe) west of Bonneville Dam to McNary Dam. Salmon are central to the spiritual and cultural identity of the four treaty tribes.

The impact analysis evaluated how construction and operation of the Proposed Action could reduce the amount of time available to fish, change the time when fishers could deploy gear, or exclude members from fishing areas typically fished by tribal members.

### 3.5.4 Existing Conditions

This section describes the tribes and tribal resources in the study areas that could be affected by construction and operation of the Proposed Action and No-Action Alternative. This section provides the general context for tribal resources in the study areas.

As stated in Section 3.5.2, *Study Area*, the study areas include a tribal commercial, subsistence, and ceremonial fishing zone known as Zone 6. Zone 6 is a 147-mile section of the river that stretches

from west of Bonneville Dam to McNary Dam, including tributaries (Columbia River Inter-Tribal Fish Commission 2015). Figure 3.5-2 presents an overview of Zone 6 and the five other zones along the Columbia River. Zone 6 is closed to non-treaty commercial fishing, but is open to sport fishers.

The Columbia River west of the Bonneville Dam is open to non-treaty commercial fishers and sport fishers. Tribal members may occasionally fish in the mainstem or tributaries west of Bonneville Dam to better access certain species or runs (*United States v. Oregon* 2008).

Salmon are central to the spiritual and cultural identity of the four Columbia River treaty tribes. Tribal members gather and camp at multiple sites along the Columbia River beginning in May and many stay until fall to harvest salmon and steelhead from the Columbia River and its tributaries (Broncheau pers. comm.). Thirty-one sites were established by Congress (Public Law 100-581 – Nov. 1, 1988; Title IV – Columbia river Treaty Fishing Access Sites) along the Columbia River in Zone 6 on the Washington and Oregon sides of the river to replace traditional sites inundated by the three Columbia River dams (Bonneville Dam, The Dalles Dam, and John Day Dam). The sites are near historical fishing villages and sites used by the tribes.

### **3.5.4.1 Tribes**

The federally recognized tribes in the study area are the Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of Warm Springs, Cowlitz Indian Tribe, and Nez Perce Tribe. The four treaty tribes that have reserved treaty rights for commercial, subsistence and ceremonial fishing are the Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of Warm Springs, and Nez Perce Tribe.

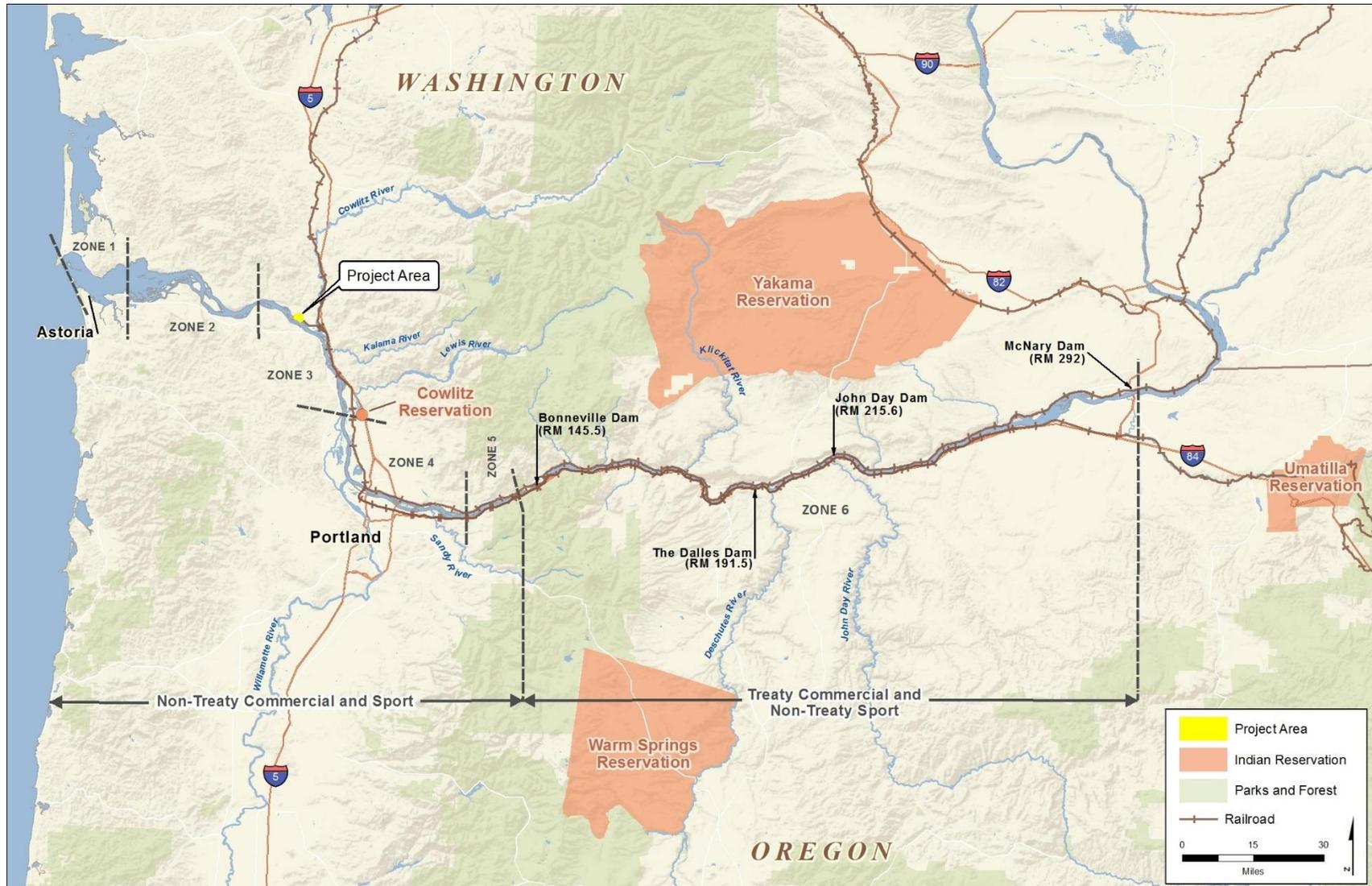
#### **Columbia River Tribal Fisheries**

The Columbia River Inter-Tribal Fish Commission (CRITFC) consists of the four treaty tribes (Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of Warm Springs, and Nez Perce Tribe) with reserved rights to fish in the Columbia River and its tributaries. The CRITFC mission is to “coordinate management policy and provide fisheries technical services” to the treaty tribes (Columbia River Inter-Tribal Fish Commission 2015).

All fisheries in the Columbia River are co-managed by the states of Washington, Oregon, and Idaho, the four treaty tribes, and other non-treaty tribes that traditionally fished in the Columbia River, such as the Cowlitz Indian Tribe. Fisheries are managed by the states and treaty tribes subject to the terms of the *2008–2017 United States v. Oregon Management Agreement*.

This agreement establishes tribal treaty harvest allocations and upholds the right of tribes to fish for salmon in their usual and accustomed fishing grounds. Non-treaty commercial fisheries in these waters are managed under the Columbia River Compact, a congressionally mandated process that adopts seasons and rules for Columbia River commercial fisheries. All fisheries are subject to review by NOAA Fisheries for compliance with the Endangered Species Act. Enforcement of treaty fisheries is handled by CRITFC. This arrangement was established in 1972 as a method to recover the damaged fisheries of the Columbia River (Columbia River Inter-Tribal Fish Commission 2015).

Figure 3.5-2. Columbia River Fishing Zones



Source: Oregon Department of Fish and Wildlife no date.

The Columbia River downstream of McNary Dam is divided into six zones for fisheries management. Zones 1 through 5 are west of Bonneville Dam (western extent is Beacon Rock west of Bonneville Dam) and are managed for non-treaty commercial and sport fisheries. Zone 6 is a 147-mile section of the river that stretches from west of Bonneville Dam to McNary Dam, including tributaries (Columbia River Inter-Tribal Fish Commission 2015). Zone 6 also includes a short section west of Bonneville Dam. Zone 6 is set aside for the exclusive use by treaty commercial fishers, meaning it is closed to non-treaty commercial harvest; however, it is open to non-treaty sport fishers. Treaty tribe fishers may fish in the mainstem Columbia River or tributaries west of Bonneville Dam by special agreement to better access certain species or runs for commercial, subsistence, or ceremonial harvest (*United States v. Oregon* 2008). The Cowlitz Indian Tribe may schedule subsistence and ceremonial fisheries in coordination with Washington Department of Fish and Wildlife (WDFW) (e.g., eulachon/smelt fishery in the Cowlitz River).

Treaty catch of salmon, steelhead, sturgeon in commercial, ceremonial, and subsistence fisheries in Zone 6 of the Columbia River are reported in Table 3.5-2. Chinook salmon is the most abundant species in the reported catch. The largest portion being summer and fall run Chinook. Reported catch does not include salmon and steelhead harvested in tributaries entering the Columbia River in Zone 6, on the Columbia River upstream of McNary Dam, and on the lower Snake River. Catch in those fisheries are recorded by the tribes, but not centrally reported. Catch in the tributaries varies considerably across tributaries and the number of hatchery adults returning to the tributary. All tributaries entering the Columbia River between Bonneville Dam and McNary Dam have some tribal fishing.

**Table 3.5-2. Annual Catch of Salmon, Steelhead, and White Sturgeon in Treaty Commercial, Ceremonial, and Subsistence Fisheries in Zone 6 of the Columbia River**

Year	Chinook Catch (# fish)	Coho Catch (# fish)	Steelhead Catch (# fish)	White Sturgeon Catch (# fish)
2002	164,464	1,649	19,217	1,829
2003	147,344	5,670	20,553	1,539
2004	151,890	10,287	20,518	1,812
2005	128,509	5,413	17,413	2,052
2006	101,557	7,577	22,646	1,061
2007	54,380	8,035	22,416	1,285
2008	137,287	21,625	31,593	1,814
2009	137,602	15,675	38,255	1,837
2010	186,026	11,485	37,985	3,176
2011	169,819	25,998	31,848	3,818
2012	113,995	7,070	16,893	4,505
2013	255,815	8,850	21,418	3,051
2014	308,320	40,480	34,582	2,263
2015	333,040	2,956	19,781	1,368
<b>Average</b>	<b>170,718</b>	<b>12,341</b>	<b>25,366</b>	<b>2,244</b>

Notes:

Source: National Marine Fisheries Service 2014; Washington Department of Fish and Wildlife and Oregon Department of Fish and Wildlife 2014, 2015.

The Department of Interior through the Bureau of Indian Affairs has established 31 fishing access sites on the Columbia River between Bonneville Dam and McNary Dam for the exclusive use of the treaty tribal fishers (Public Law 100-581 – Nov. 1, 1988; Title IV – Columbia River Treaty Fishing Access Sites). The sites are managed by CRITFC for fishers from the four CRITFC member tribes. Three sites have shared-use facilities for the general public. These sites were set aside by U.S. Congress to provide fishing access to tribal fishers whose traditional fishing grounds were inundated by the Columbia River dams. The sites are culturally significant to the treaty tribes in that they are at or near traditional villages or fishing locations on the Columbia River. Of the 31 sites, 20 are located on the Washington side of the Columbia River. Many of the access points on the Washington side include a variety of amenities such as camping facilities, showers, and fish-cleaning stations. Four of the access sites are unimproved with no facilities. The sites are fenced, gated, and have signs stating they are not open to the general public. The general public may only enter a site to buy fish. Figure 3.5-3 provides a general overview of these access site locations.

Tribal fishers use the access sites to gather, camp, and to access fishing sites along the river by boat. Fishing sites are located along the entire 147-mile section of river on both sides of the river. Fishers also access fishing sites from the highway via unimproved dirt tracks at many other locations along the river (Broncheau pers. comm.).

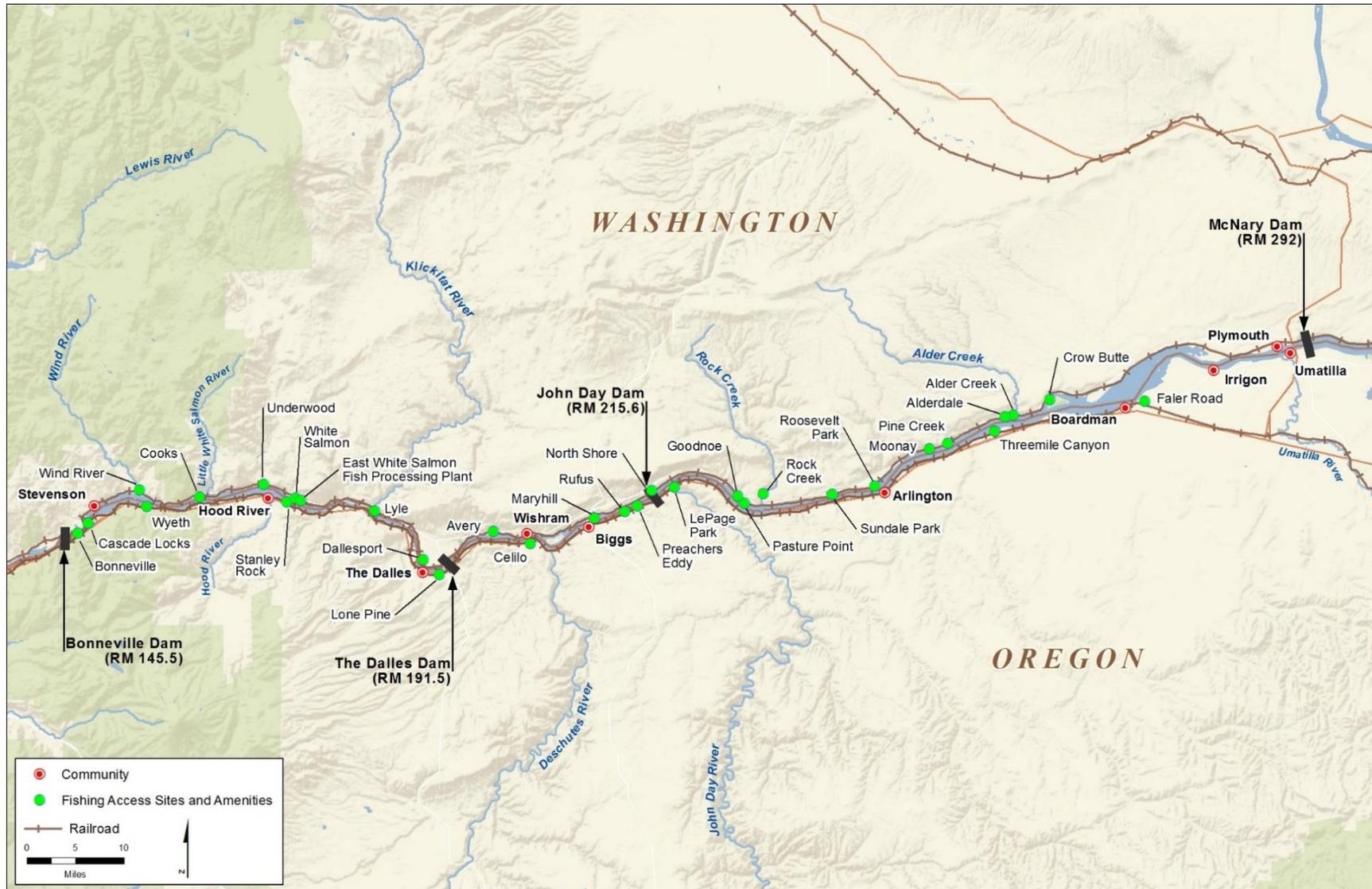
The fishing access sites are heavily used by tribal fishers from May to October. In the last decade salmon and steelhead populations in the Columbia River have increased to levels that allow a commercial treaty fishery during this period. Treaty fishers set up residence at the sites in May take part in commercial, subsistence, and ceremonial fisheries and will stay there into October (Broncheau pers. comm.). At times during this period there may be as many as 80 tribal members camping at a site.

Commercial sales to the public can be directly from the bank at one of the access sites, be from tribal members, who purchase fish from the fishers, who then sell along the highway or from a nearby town, or by delivery to a fish processing station for distribution to other markets.

Fish gear used by tribal fishers to harvest salmon and steelhead from the Columbia River mainstem and its tributaries are a combination of set gillnets, bank and platform hook and line, and platform dip net gear (Columbia River Inter-Tribal Fish Commission 2015). The platform and hook-and-line subsistence fisheries are open all year to provide harvest opportunities to the tribal members. Gillnet commercial fisheries are managed by season and fish entering the river. Fisheries are set by month long to several day openings to manage total catch by species and run. The spring Chinook fishery is typically from mid-May to mid-June. Summer fisheries are targeting summer Chinook, sockeye, and summer Steelhead. Fall fisheries are targeting fall Chinook, steelhead, and coho salmon.

Treaty harvest of sturgeon in Zone 6 is by hook and line, setlines (line of hooks anchored to the bottom), and gillnets (set gillnets anchored to the bank) (Washington Department of Fish and Wildlife 2014). Most sturgeon are harvested during the winter season (January to March). The length of time a fishery is open is adjusted depending on the number of fish available for harvest and cumulative catch. Fishing can occur all seven days in the week when the fishery is open. Depending on number of fish available for harvest there may be an additional commercial fishery in the fall on sturgeon with a fixed duration of days. Subsistence fisheries on sturgeon are open all year.

Figure 3.5-3. Zone 6 Access Locations



Source: Columbia River Inter-Tribal Fish Commission 2015.

Eulachon (also known as Pacific or Columbia River smelt; scientific name *Thaleichthys pacificus*) return to the Columbia River to spawn in the mainstem Columbia River and its tributaries west of Bonneville Dam. Eulachon return every year to the lower Cowlitz River to spawn. Their harvest is a culturally important part of the tribe's subsistence and ceremonial fisheries and in some years tribal fishers from the Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of Warm Springs, and Cowlitz Indian Tribe harvest this species from the lower Cowlitz River. Eulachon are harvested by dip net from the bank or from a boat.

### **Confederated Tribes and Bands of the Yakama Nation**

The Confederated Tribes and Bands of the Yakama Nation (Yakama Nation) is a federally recognized tribe that consists of 14 bands and tribes including Kah-milt-pah, Klickitat, Klinquit, Kow-was-say-ee, Li-ay-was, Oche-chotes, Palouse, Pisuose, Se-ap-cat, Shyiks, Skinpah, Wenatshapam, Wishram, and Yakama. The Yakama Nation reservation is located in south central Washington State and spans across 1.2 million acres. The number of enrolled members as of 2011 was 10,200 (Columbia River Inter-Tribal Fish Commission 2015).

The Yakama Nation signed a treaty with the United States called the Treaty with the Yakama on June 9, 1855. This treaty reserved their inherent right to fish, hunt, and gather traditional foods and medicines throughout the ceded lands.

The Yakama Nation maintains a strong connection to salmon and the Columbia River. The tribes treaty "usual and accustomed lands" include the Columbia River and its tributaries and areas outside of the Columbia River Basin. Celilo Falls on the Columbia River near The Dalles, Oregon was an important gathering, fishing, and trading place for the tribe.

The Yakama Nation operates a fisheries program to protect their rights that were reserved by the 1855 Treaty, and to restore the Columbia River corresponding to their culture and traditions. The Yakama Nation Fisheries program includes over 11 subbasins, extending from the Willamette River upstream to the Methow River in the upper Columbia. The Yakama Nation people fish for salmon, steelhead, lamprey, and sturgeon for commercial, subsistence, and ceremonial purposes. Fishing locations include the mainstem Columbia River from west of Bonneville Dam to McNary Dam (Zone 6) and the tributaries flowing into the Columbia River on the Washington State side of the river. The Yakama Nation also maintains their right to hunt, gather roots and berries, and pasture their horses on open and unclaimed land on and off reservation.

The Yakama Nation is a participant in the Cowlitz River Hydroelectric Project license held by Tacoma Power (Tacoma Power 2000). The Yakama Nation has an interest in the protection and restoration of salmon and steelhead in the upper Cowlitz River. Yakama Nation fishers are not known to fish for salmon in the Cowlitz River. The Yakama Nation Fish and Wildlife Commission does authorize limited fishery openings for smelt for ceremonial or subsistence harvest by tribal members (Yakama Nation 2016).

### **Confederated Tribes of the Umatilla Indian Reservation**

The Confederated Tribes of the Umatilla Indian Reservation are a federally recognized tribe that consists of three tribes. These tribes include the Umatilla, Cayuse, and the Walla Walla tribes (Columbia River Inter-Tribal Fish Commission 2015). They are located in northeastern Oregon and

have a reservation that spans 172,000 acres. The enrolled population in 2011 was approximately 2,800 tribal members.

The Confederated Tribes of the Umatilla Indian Reservation and United States signed the Treaty with the Walla Walla, Cayuse, etc., 1855 on June 9, 1855. This treaty reserved their inherent rights to fish, hunt, and gather traditional foods and medicines throughout the ceded lands. The tribes still protect and exercise those rights within the 6.4 million acres of land in what is now northeastern Oregon and southeastern Washington (Columbia River Inter-Tribal Fish Commission 2015).

Traditionally the Confederated Tribes of the Umatilla Indian Reservation used the land for grazing their horses. They also gathered at hunting camps and to fishing sites to celebrate and trade. Traditional activities included travel to different areas to fish for salmon, to gather roots and berries at higher elevations in the summer and move to the lowlands to hunt in the fall and reside through the winter (Confederated Tribes of the Umatilla Indian Reservation 2015). Celilo Falls was an important fishing and trading area for the tribe.

They retain their rights to hunt and fish on “usual and accustomed” lands and work cooperatively with the WDFW to manage fisheries and wildlife. The tribe has focused their fish restoration activities on the Umatilla and Grande Ronde tributaries. In addition to the Columbia River, the tribe has co-management responsibilities for the Snake, Walla Walla, Tucannon, Grande Ronde, John Day, and Imnaha tributaries.

### **Confederated Tribes of Warm Springs**

The Confederated Tribes of Warm Springs is a federally recognized confederation of tribes in Oregon (Columbia River Inter-Tribal Fish Commission 2015). It consists of the Warm Springs, Wasco, and Paiute tribes, and in 2011, the enrolled population was approximately 5,000 tribal members. The reservation is in Central Oregon and encompasses 640,000 acres. The Confederated Tribes of Warm Springs signed the Treaty with the Tribes of Middle Oregon, 1855 with the United States on June 9, 1855. The treaty reserved the confederation’s rights to fish, hunt, and gather traditional foods and medicines throughout the ceded lands.

In addition to fishing the mainstem Columbia River, tribal members fish with dip nets and nets set with wooden scaffolding on the Deschutes River, a major tributary of the Columbia River, at the falls near Sherar’s Bridge (Columbia River Inter-Tribal Fish Commission 2015). The economy of the confederation is based on natural resources, including hydropower, forest products, and ranching, as well as tourism and recreation (Confederated Tribes of Warm Springs 2015). In addition to the Columbia River, the Confederated Tribes of Warm Springs co-manages the Deschutes, Fifteenmile Creek, John Day and Hood River tributaries which are located in Oregon.

### **Cowlitz Indian Tribe**

The Cowlitz Indian Tribe<sup>1</sup> was officially granted a reservation in Clark County in 2014 following a court decision issued by United States District Court on December 12, 2014. This decision dismissed an appeal by an opponent of the reservation and reaffirmed the Federal Government’s decision to

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<sup>1</sup> The Cowlitz Indian Tribe became a federally recognized tribe on February 14, 2000 (Final Determination, Federal Register Notice, 2000.02.18, 65 FR 8436-8438 and Reconsidered Final Determination, Federal Register Notice, 2002.01.04, 67 FR 607-608).

take 152 acres in Clark County into trust for the Cowlitz Indian Tribe. The reservation is located approximately 20 miles south of Longview near the Lewis River.

The Cowlitz Indian Tribe does not have treaty reserved fishing rights on the Columbia River or in the Cowlitz River. However, the Cowlitz Indian Tribe has an active interest in protecting and restoring fish, wildlife, plants, and habitat on their ancestral lands. The Cowlitz Indian Tribe signed a Memorandum of Understanding (MOU) with WDFW to maintain healthy populations of fish and wildlife in southwest Washington as a common interest for both parties (Washington Department of Fish and Wildlife and Cowlitz Tribe n.d.).

In 2014, the Cowlitz Indian Tribe was awarded a grant from the National Oceanic and Atmospheric Administration (NOAA) for a eulachon species recovery program in the Cowlitz River (National Oceanic and Atmospheric Administration 2010). The Cowlitz Indian Tribe holds smelt, salmon, and river ceremonies on the Cowlitz River and participates with other tribes in canoe journeys on major waterways (Cowlitz Indian Tribe 2015).

### **Nez Perce Tribe**

The Nez Perce Tribe is a federally recognized tribe that inhabits North Central Idaho (Columbia River Inter-Tribal Fish Commission 2015). Its reservation is 750,000 acres, and the enrolled population in 2011 was approximately 3,500 tribal members. The Nez Perce Tribe call themselves Nimi'ipuu - The People (Columbia River Inter-Tribal Fish Commission 2015). On June 11, 1855, the Nez Perce Tribe signed the Nez Perce Treaty with the United States. This treaty ensured the tribe's exclusive right of taking fish in all the streams that run through or border the reservation and the right for taking fish in usual and accustomed lands.

The Nez Perce Tribe was historically nomadic and traveled from the Great Plains to hunt buffalo, to Celilo Falls in the Columbia River Gorge to fish for salmon. Although its reservation is located outside of Washington State, the Nez Perce Tribe retains its reserved right to hunt within the state and work cooperatively with WDFW to manage fish and wildlife resources. The Nez Perce Tribe has established the Nez Perce Fish and Wildlife Commission and the Nez Perce Department of Fisheries Resources Management to conserve, enhance, and manage the tribe's natural resources. In addition to the Columbia River, the Nez Perce Tribe has co-management responsibilities for the Snake, Tucannon, Grande Ronde, Imnaha, Clearwater, and Salmon tributaries.

#### **3.5.4.2 Tribal Resources in the Study Areas**

The direct impacts study area consists of tribal resources in and near the project area. There are no known tribal resources in this study area. Adjacent aquatic or terrestrial habitat support culturally important species to tribes such as salmon, eulachon, and Columbian white-tailed deer. Lord Island is adjacent to the study area and is designated by WDFW as important Columbian white-tailed deer habitat.

Treaty tribal fishers access the Columbia River Zone 6 fishery at 31 established fishing sites in the section of river between west of Bonneville Dam and McNary Dam (Figure 3.5-3). Of the 31 sites, 20 are located on the Washington side of the Columbia River.

In addition to these managed sites, tribal fishers also access the river at many other unimproved points along the Zone 6 fishing area on the Columbia River (Broncheau pers. comm.).

## 3.5.5 Impacts

This section describes the potential direct and indirect impacts related to tribal resources that could result from the construction and operation of the Proposed Action and No-Action Alternative.

### 3.5.5.1 Proposed Action

This section describes the potential impacts that could occur in the study areas as a result of construction and operation of the Proposed Action.

#### Construction—Direct Impacts

As explained in Chapter 2, *Project Objectives, Proposed Action, and Alternatives*, construction-related activities include removing vegetation from the site, filling 24 acres of wetlands, demolishing existing structures and preparing the site, constructing the rail loop, driving piles and constructing docks, dredging Columbia River sediments, and constructing supporting infrastructure (i.e., conveyors and transfer towers). No tribal resource areas are in the direct impacts study area; therefore, construction of the coal export terminal including dock construction would not result in direct impacts on tribal resources. As described in Chapter 4, Sections 4.5, *Water Quality*, and 4.7, *Fish*, in-water construction-related activities such as dredging, pile-driving and dock construction could cause physical or behavioral responses in fish and would also affect and remove aquatic habitat. These impacts could reduce the number of fish surviving to adulthood and returning to areas east of Bonneville Dam as described below.

#### Construction—Indirect Impacts

Construction-related activities that could result in impacts on fish habitat, behavior, or survival are described in Chapter 4, Sections 4.5, *Water Quality*, and 4.7, *Fish*. As discussed in Section 4.7, *Fish*, underwater sound generated by impact pile-driving could affect fish in several ways, ranging from alteration of behavior to physical injury or mortality. However, pile-driving activities during construction would be conducted within an approved in-water work window, which would be defined as part of the permitting process for the Proposed Action. Adherence to the approved in-water work window would be protective of the most vulnerable life-history stages for affected fish and, thus, would minimize but not eliminate impacts on juvenile Chinook salmon, particularly subyearling fish. In addition, proposed mitigation measures presented in Section 4.7, *Fish*, would minimize but not eliminate impacts on fish, including injury as a result of pile-driving. Behavioral effects would likely occur to some individual fish if they were present in the area of effect. Construction-related activities could cause physical or behavioral responses in fish and would affect aquatic habitat, which could reduce the number of fish surviving to adulthood and returning to Zone 6, and could affect the number of fish available for harvest by the tribes.

#### Operations—Direct Impacts

Operations-related activities are described in Chapter 2, *Project Objectives, Proposed Action, and Alternatives*. Operation of the coal export terminal including dock operations would not result in direct impacts on tribal resources because tribal resource areas are outside the direct impacts study area.

## Operations—Indirect Impacts

Operations-related activities are described in Chapter 2, *Project Objectives, Proposed Action, and Alternatives*. Operation of the Proposed Action would result in the following indirect impacts.

### Potential to Affect Access to Columbia River Tribal Fishing Areas

Proposed Action-related trains would travel along the BNSF Railway Company (BNSF) main line adjacent to the Columbia River. Proposed Action-related trains could result in delays to tribal fishers' access to traditional fishing sites and delivery of fish to buyers. As described in Chapter 5, Section 5.1, *Rail Transportation*, approximately 34 trains per day traveled this route in 2015. By 2028, the number of trains is projected to increase to approximately 48 trains per day without Proposed Action-related trains. The Proposed Action would add 8 loaded trains per day by 2028, or an approximately 17% increase.<sup>2</sup>

Proposed Action-related trains would be approximately 1.3 miles long. The time for each Proposed Action-related train to pass at grade crossings would range from approximately 8.5 minutes at 10 miles per hour to 2.25 minutes if the train is traveling at 50 miles per hour. Proposed Action-related trains could increase delay of tribal fishers' access to the 20 managed fishing sites on the Washington side of the river as compared to conditions under the No-Action Alternative. While most of the access road crossings are not at-grade with the rail line, or the rail line is inland from the highway and river access site, trains could increase delay, which would affect tribal fishers' access to the established access sites managed by CRITFC.

In addition, tribal fishers access the Columbia River at multiple unmapped locations using unimproved, at-grade crossings (Broncheau pers. comm.). Proposed Action-related rail traffic could delay tribal fishers' ability to access these unmapped traditional fishing locations. The heaviest use of these sites is from May to October during summer salmon and steelhead season (Broncheau pers. comm.).

### Potential to Affect Columbia River Fish Habitat and Fish Available for Harvest by Tribes

Potential impacts on aquatic habitat affecting fish behavior or resulting in physical injury from operations of the Proposed Action are described in Chapter 4, Sections 4.5, *Water Quality*, and 4.7, *Fish*. Fish stranding associated with wakes from Proposed Action-related vessels would likely occur, as discussed in Section 4.7, *Fish*. This potential impact is based on the understanding of the timing of outmigration of juvenile salmonids and genetic data that suggest the majority of the fish in the nearshore, shallow-water areas of the lower Columbia River (within the study area) tend to be subyearling Chinook salmon from the Lower Columbia River Evolutionarily Significant Unit, most of which likely originate below Hood River, mainly outside Zone 6. Nonetheless, operation of the Proposed Action could result in indirect impacts on tribal resources through Proposed Action-related activities causing physical or behavioral responses and by affecting aquatic and upland habitat. These impacts could reduce the number of fish surviving to adulthood and returning to Zone 6, and could affect the number of fish available for harvest by the tribes.

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<sup>2</sup> Empty Proposed Action-related trains are expected to return via Stampede Pass and not through the Columbia River Gorge.

### **Potential to Affect Columbian White-Tailed Deer**

Patches of potentially suitable, but mostly degraded, upland and wetland habitat in the undeveloped areas in the western portion of the project area, which could support foraging and cover for Columbian white-tailed deer, would be removed with construction of the Proposed Action. Because existing conditions currently hinder and create impediments for Columbian white-tailed deer movement along the Columbia River, construction of the Proposed Action would not have an impact on migration or movement of the species. During construction, project area noise levels would increase above ambient levels. Because wildlife in the terrestrial study area are likely habituated to noise levels associated with industrial areas and are generally mobile, construction-related noise could affect individuals of a species, but would not affect a species' whole population or the overall fitness of a population.

Mitigation would be required to compensate for the loss of wetlands and their habitat functions as part of the Clean Water Act Section 401 and Section 404 permit process. Columbian white-tailed deer and habitat are described in Chapter 4, Section 4.8, *Wildlife*. Habitat functions of wetlands in the project area are described in Chapter 4, Section 4.3, *Wetlands*.

### **Generate and Disperse Coal Dust in the Environment**

Fugitive coal dust particles would be generated by the Proposed Action through the dispersal of coal dust during rail transport (Chapter 5, Section 5.7, *Coal Dust*). Maximum coal dust concentrations would occur within approximately 100 feet from the rail line, but total concentrations would not exceed applicable air quality standards, as described in Chapter 5, Section 5.7, *Coal Dust*. A review of the chemical composition of coal dust (U.S. Geological Survey 2007) suggests that the risk of exposure to concentrations of toxic materials (e.g., polycyclic aromatic hydrocarbons and trace metals) from coal dust are low because the concentrations are low and toxic materials are bound to coal and not easily leached.

As described in Chapter 4, Section 4.7, *Fish*, fugitive coal dust particles generated by the coal export terminal and Proposed Action-related trains would enter the aquatic environment through movement of coal into and around the project area and during rail transport. Fugitive coal dust and potential coal spills are not expected to significantly affect fish because the potential risk for exposure to toxic chemicals contained in coal would be relatively low (ranging from 1.99 grams per square meter per year adjacent to the project area to less than 0.01 gram per square meter per year approximately 2.4 miles from the project area). Fugitive coal dust entering the aquatic environment would be unavoidable, but would not be expected to affect behavior or survival of fish. Fugitive coal dust from operations of the Proposed Action would increase suspended solids in the Columbia River but is not expected to be at a level where there would be a demonstrable effect on fish distribution, abundance, or survival, or acute physical effects. Additionally, the potential risk for exposure to toxic chemicals contained in coal (e.g., polyaromatic hydrocarbons and trace metals) is expected to be relatively low because these chemicals tend to bind with coal and not quickly or easily leach. Coal particles would be transported downstream by river flow and either carried out to sea or distributed over a broad area.

### **3.5.5.2 No-Action Alternative**

Under the No-Action Alternative, the Applicant would not construct the coal export terminal. The Applicant would continue with current and future increased operations in the project area. The project area could be developed for other industrial uses including an expanded bulk product terminal or other industrial uses. The Applicant has indicated that, over the long term, it would expand the existing bulk product terminal and develop new facilities to handle more products such as calcine petroleum coke, coal tar pitch, and cement. The Applicant's planned growth under the No-Action Alternative would require approximately two trains per day. If No-Action Alternative-related trains travel along the BNSF main line adjacent to the Columbia River in Washington State, access to tribal fishing areas along the Columbia River could be affected.

### **3.5.6 Required Permits**

No permits related to tribal resources would be required for the Proposed Action.

Concurrent with the Washington State Environmental Policy Act (SEPA) review process, the Corps, as federal lead agency, is conducting a review of the Proposed Action under the National Environmental Policy Act (NEPA). Pursuant to NEPA, the Corps is assessing potential impacts of the Proposed Action on tribal resources, including potential impacts related to tribal sovereignty and treaty rights. The Corps published the NEPA Draft EIS on September 30, 2016. In addition, the Corps is consulting under Section 7 of the federal Endangered Species Act with the U.S. Fish and Wildlife Service and National Marine Fisheries Service. Additional measures may be identified under one or both of these processes that could further reduce potential impacts on fish, and therefore reduce potential impacts on tribal resources.

The Corps is also consulting under Section 106 of the National Historic Preservation Act. The Corps has initiated consultation with Cowlitz County, the Washington State Department of Archaeology and Historic Preservation, the City of Longview, the Bonneville Power Administration, National Park Service, potentially affected Native American tribes, and the Applicant regarding the Proposed Action and potential impacts on cultural resources. The Corps expects to sign a Memorandum of Agreement along with consulting parties, which will stipulate measures to help mitigate the Proposed Action's impacts on cultural resources.

### **3.5.7 Proposed Mitigation Measures**

This section describes the proposed mitigation measures that would reduce impacts related to tribal resources from construction and operation of the Proposed Action. These mitigation measures would be implemented in addition to project design measures, best management practices, and with environmental permits, plans, and authorizations that are assumed as part of the Proposed Action.

#### **3.5.7.1 Applicant Mitigation**

The proposed mitigation measures identified in Chapter 4, Sections 4.5, *Water Quality*, and 4.7, *Fish*, to mitigate impacts on water quality and fish would also mitigate potential impacts on tribal fishing.

### **MM WQ-2. Develop and Implement a Coal Spill Containment and Cleanup Plan.**

To limit the exposure of spilled coal to the terrestrial, aquatic, and built environments during coal handling, the Applicant will develop a containment and cleanup plan. The plan will be reviewed by Cowlitz County and Ecology and implemented prior to beginning export terminal operations. In the event of a coal spill in the aquatic environment by the Applicant during export terminal operations, action will be taken based on the specific coal spill, and the Applicant will develop a cleanup and monitoring plan consistent with the approved containment and cleanup plan. This plan will include water quality and sediment monitoring to determine the potential impact of the coal spill on the aquatic habitat and aquatic species. The Applicant will develop the cleanup and monitoring plan in coordination with Cowlitz County, Ecology, and the Corps. The cleanup and monitoring will be similar in scope to the monitoring completed for the Aquatic Impact Assessment (Borealis 2015) associated with a coal spill in British Columbia, Canada in 2014.

### **MM FISH-1. Implement Best Available Noise Attenuation Method for Pile-Driving.**

To minimize underwater noise impacts on fish during pile-driving, the Applicant will employ the best available noise attenuation methods during pile-driving. These methods may include, but are not limited to, confined bubble curtain, temporary noise attenuation pile, double-walled noise attenuation pile, or other similar technology. The Applicant is currently proposing use of a confined bubble curtain, but other methods may be found to be better at attenuating noise impacts during the Endangered Species Act Section 7 consultation or by the time construction begins. Should other methods in the future prove to attenuate underwater noise better than a confined bubble curtain, those methods will be employed.

### **MM FISH-2. Implement a “Soft-Start” Method during Pile-Driving.**

To minimize underwater noise impacts on fish during pile-driving, the Applicant will commence impact pile-driving using a “soft-start,” or other similar method. The “soft-start” method is a method of slowly building energy of the pile driver over the course of several pile strikes until full energy is reached. This “soft-start” method cues fish and wildlife to pile-driving commencing and allows them to move away from the pile-driving activity.

### **MM FISH-3. Monitor Pile-Driving and Dredging Activities for Distress to Fish and Wildlife.**

To minimize the potential harm to marine mammals, diving birds, or fish, a professional biologist will observe the waters near pile-driving and dredging activities for signs of distress from fish and wildlife during these activities. If any fish or wildlife species were to show signs of distress during pile-driving, the biologist will issue a stop work order until the species are recovered, moved, or relocated from the area. The Applicant will immediately report any distressed fish or wildlife observed to the appropriate agencies (i.e., Washington Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and National Marine Fisheries Service) and determine the appropriate course of action.

### **MM FISH-4. Conduct Eulachon Surveys.**

Should in-water work be permitted to occur between December and May, the Applicant will conduct advance underwater surveys at least 1 year before in-water work would occur for eulachon (adult, eggs, and larvae) in those areas where in-water work would occur (i.e., Docks 2

and 3 and the dredge prism). Surveys would be conducted starting in December when water temperatures are near 40 degrees Fahrenheit (°F) in the lower Columbia River, which appears to trigger river entry for adults, and continue through May, when larval eulachon have generally hatched and drifted out of the system. Survey design and results would be provided to WDFW and National Marine Fisheries Service. If adult or larval eulachon or eulachon eggs are observed and in-water work is proposed, the Applicant would coordinate with the fish and wildlife agencies on the appropriate measures to avoid and minimize impacts on eulachon and implement those measures.

#### **MM FISH-5. Conduct Fish Monitoring During Hydraulic Dredging Operations.**

The Applicant will develop and implement fish community monitoring in coordination with WDFW, U.S. Fish and Wildlife Service, and National Marine Fisheries Service. Fish community monitoring will include surveys conducted prior to dredging to identify fish species and life-stages present in the area to be dredged. As part of the coordination with WDFW, U.S. Fish and Wildlife Service, and National Marine Fisheries Service, measures to reduce the entrainment of fish anticipated to be present during dredging will also be developed, which may include timing restrictions for hydraulic dredging.

The Applicant will also develop and implement dredge entrainment monitoring for hydraulic dredging, in coordination with WDFW, U.S. Fish and Wildlife Service, and National Marine Fisheries Service. Dredge entrainment monitoring will involve screening the dredge output at the point of discharge (i.e., barge) to determine the number, life-stage, and species of fish entrained by hydraulic dredging. The information gathered during dredge monitoring will be provided to WDFW, U.S. Fish and Wildlife Service, and National Marine Fisheries Service.

### **3.5.7.2 Other Measures to Be Considered**

Other measures that could be implemented to mitigate impacts on tribal include the following.

- Proposed Action-related trains would travel along the Columbia River and could restrict use and access to tribal fishing areas in the river. To mitigate impacts on access to tribal treaty fishing areas, the Applicant could initiate a process with CRITFC officials to discuss and identify mitigation measures prior to beginning operations.
- BNSF and other stakeholders (such as the Federal Highway Administration, Federal Railroad Administration, Washington State Department of Transportation, Washington Utilities and Transportation Commission, and local jurisdictions) could coordinate with CRITFC to identify at-grade crossings or unimproved access points that are of particular concern to the treaty tribes and prioritize those crossings for potential improvements. Improvements at these locations could include tunneling under or bridging rail crossings for vehicle or foot access to sites. Improved access points could reduce the length of delays to tribal fishers attempting to access the Columbia River.
- As part of the federal consultation process, the Corps could continue consultations with treaty tribes to identify potential impacts and resolve conflicts related to the Proposed Action.

### **3.5.8 Unavoidable and Significant Adverse Environmental Impacts**

Construction and operation of the Proposed Action could result in indirect impacts on tribal resources through Proposed Action-related activities causing physical or behavioral responses and by affecting aquatic habitat. These impacts could reduce the number of fish surviving to adulthood and returning to areas east of Bonneville Dam, which could affect the number of fish available for harvest by Native American tribes. Proposed Action-related trains would travel through areas adjacent to and within the usual and accustomed fishing areas of Native American tribes and could restrict access to tribal fishing areas in the Columbia River. Because other factors besides rail operations affect fishing opportunities, such as the number of fishers, fish distribution, timing, and duration of fish migration periods and seasons, the extent to which rail operations related to the Proposed Action would affect tribal fishing is difficult to quantify. Making a determination of significance related to treaty reserved rights is not part of this EIS.

## 3.6 Hazardous Materials

Hazardous materials are substances that could affect the safety of the natural environment. There are risks in using, storing, and transporting hazardous materials. If a hazardous material is released into the environment, it can contaminate the surrounding area and expose people and the environment to harm.

This section describes hazardous materials in the study area. Impacts related to hazardous materials that could occur as a result of construction and operation of the Proposed Action or under the No-Action Alternative are also discussed, as well as measures identified to mitigate impacts resulting from the Proposed Action.

### 3.6.1 Regulatory Setting

Laws and regulations relevant to hazardous materials are summarized in Table 3.6-1.

**Table 3.6-1. Regulations, Statutes, and Guidelines for Hazardous Materials**

Regulation, Statute, Guideline	Description
<b>Federal</b>	
Comprehensive Environmental Response, Compensation, and Liability Act (42 USC 103)	Regulates former and newly discovered uncontrolled waste disposal and spill sites identified on the National Priority List of contaminated sites and under the Superfund cleanup program.
Superfund Amendment and Reauthorization Act (40 CFR 302)	Amended CERCLA and requires reporting for emergency response, emergency release, and hazardous and toxic chemical releases.
Federal Resource Conservation and Recovery Act (42 USC 6901 et seq.)	Governs the generation, storage, and transportation of hazardous waste and waste management activities for hazardous waste treatment, storage, and disposal facilities. This is a delegated Washington State program under the Washington Hazardous Waste Management Act.
Toxic Substances Control Act (15 USC 2601–2629)	Tracks industrial chemicals in the United States and regulates intrastate and interstate commerce.
Clean Water Act (33 USC 1342, 1344; 40 CFR 230)	Regulates the placement of fill material in waters of the United States, including fill placement below ordinary high water elevation or within navigable waters or wetlands.
Department of Transportation Hazardous Materials Regulations (49 CFR 100–185)	Protect against the risks to life, property, and the environment and apply to all interstate, intrastate, and foreign transport of hazardous materials in commerce.
National Emission Standards for Hazardous Air Pollutants (40 CFR 61–71)	Set standards regulating the emission of these pollutants with EPA and the state implementing and enforcing them. Hazardous air pollutants are those pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects.
Safe Drinking Water Act (42 USC 300f et seq.)	Requires the protection of groundwater and groundwater sources used for drinking water. Requires every state to develop a wellhead protection program.

<b>Regulation, Statute, Guideline</b>	<b>Description</b>
Occupational Safety and Health Act (29 USC 651 et seq.)	Enacted to “assure safe and healthful working conditions for working men and women.” Sets standards and enforces inspections to ensure that employers are providing safe and healthful workplaces.
<b>State</b>	
Washington Water Pollution Control Permit Program	Requires that all releases to waters of the state of a reportable quantity must be reported to Ecology as soon as possible, but no later than 24 hours after discovery.
Model Toxics Control Act and its implementing regulations (RCW 70.105D and WAC 173-340)	Requires potentially liable persons to assume responsibility for cleaning up contaminated sites. Requires reporting hazardous substance releases if they constitute a threat to human health or the environment.
State Water Pollution Control Law (RCW 90.48)	Provides Ecology with the jurisdiction to control and prevent the pollution of streams, lakes, rivers, ponds, inland water, salt waters, watercourses, and other surface and groundwater in the state.
Oil and Hazardous Substance Spill Prevention and Response (RCW 90.56)	Established to prevent the release of oil and other hazardous substances to the navigable waters of the state. Intended to prevent spills and promote programs that reduce the risk of spills.
Underground Storage Tank Regulations (RCW 90.76 and WAC 173-360)	Ensure that underground storage tanks are installed, managed, and monitored in a manner that prevents releases to the environment.
Water Quality Standard for Surface Waters of the State of Washington (WAC 173-201A)	Establishes water quality standards for surface waters in Washington State. Ecology is the responsible agency.
Sediment Management Standards (WAC 173-204)	Establish numerical standards for the protection of benthic invertebrates in marine sediments.
Washington Hazardous Waste Management Act (RCW 70.105, and WAC 173-303)	State equivalent of RCRA; requires designation of dangerous and extremely hazardous waste, and proper handling, storage, transport, and disposal of such wastes. Governs and establishes regulations for hazardous waste treatment, storage, and disposal facilities.
Washington Administrative Code (WAC 173-340-300)	Requires reporting hazardous substance releases if they constitute a threat to human health or the environment.
Washington Solid Waste Handling Standards (WAC 173-350)	Set standards for the proper handling and disposal of solid waste originating from residences, commercial, agricultural, and industrial operations and other sources.
General Occupational Health Standards (WAC 296-62)	Protect the health of employees and help create a healthy work place by establishing requirements to control health hazards including chemical hazard communication and exposure programs.
Hazardous Waste Operations (WAC 296-843)	Applies to facilities that have workers handling hazardous waste at a treatment, storage, or disposal facility and are required to have a permit under RCRA.

<b>Regulation, Statute, Guideline</b>	<b>Description</b>
Safety Standards for Construction Work (WAC 296-155)	Apply to work places where construction, alteration, demolition, related inspection, and/or maintenance and repair work, including painting and decorating, is performed. Set minimum safety requirements with which all industries must comply when engaged in these types of work.
Notes: USC = United States Code; CFR = Code of Federal Regulations; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; EPA = U.S. Environmental Protection Agency; WAC = Washington Administrative Code; Ecology = Washington State Department of Ecology; RCW = Revised Code of Washington; RCRA = Resource Conservation and Recovery Act	

### 3.6.2 Study Area

The study area for direct impacts related to hazardous materials is the project area, which includes a portion of the former Reynolds Metals Company facility (Reynolds facility).

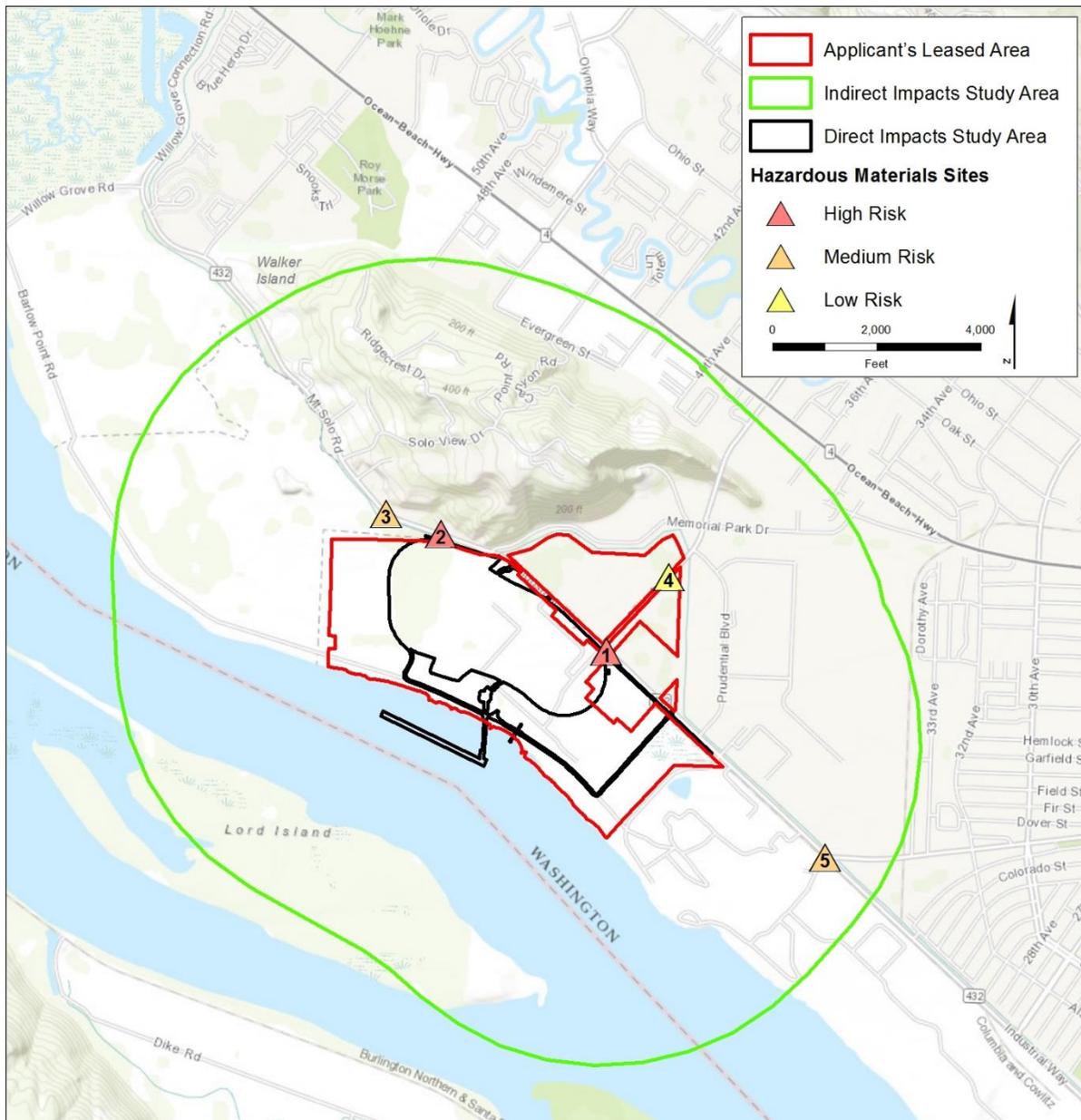
The study area for indirect impacts related to hazardous materials is the area within 1 mile of the project area. This area includes the rail line within 1 mile of the project area and the former Reynolds facility and the existing bulk product terminal in the Applicant’s leased area.

Additionally, the nearest hazardous materials sites with a high potential to cause environmental impacts, such as Superfund sites, landfills, or large-quantity generators of hazardous waste, were identified and evaluated, even if located outside the study area. The nearest federal Superfund site is the Hamilton-Labree Roads site, which is 33 miles north of the study area. Due to its distance from the study area, this site was not further evaluated and is not included in this EIS. In addition, the nearest landfill was identified as the Cowlitz County Landfill, which is approximately 4 miles east of the study area. This site was not further evaluated in this EIS due to its distance from the project area and because groundwater at this site flows away from the project area. Furthermore, a no further action (NFA) has been issued for the landfill site, further reducing its potential to affect or be affected by construction or operation of the Proposed Action.

Figure 3.6-1 shows the study areas for direct and indirect impacts, as well as the hazardous materials sites identified in the study area. Sites in the study area were ranked as being high-, medium-, or low-risk<sup>1</sup> regarding whether hazardous materials could affect or be affected by construction or operation of the Proposed Action (Section 3.6.3.3, *Data Screening*).

<sup>1</sup> *High-risk sites* include sites where both soil and groundwater have been affected by hazardous materials releases, and groundwater flow is predominantly toward the project area; the site is partially closed (e.g., soil cleanup has been completed) but has ongoing groundwater-focused remedial or monitoring activities planned; and the site is located within 500 feet of the project area. *Medium-risk sites* include sites where both soil and groundwater have been affected by hazardous materials releases and groundwater flow is predominantly toward the project area; the site is partially closed (e.g., soil cleanup has been completed) but has ongoing remedial or monitoring activities planned; and the site is located within 500 to 1,000 feet of the project area. *Low-risk sites* include sites where only soil has been affected by hazardous materials releases and groundwater has not been affected; the site has been closed by an oversight agency with a status of NFA or no further remedial action is planned; and the site is located more than 1,000 feet from the project area but within the study area.

**Figure 3.6-1. Hazardous Materials Sites and Study Area**



### 3.6.3 Methods

This section describes the sources of information and methods used to evaluate the potential impacts related to hazardous materials associated with the construction and operation of the Proposed Action and No-Action Alternative.

#### 3.6.3.1 Hazardous Materials Definition

In this EIS, *hazardous materials* refers to various types of contaminated or hazardous media, including contaminated environmental media, dangerous waste, solid waste, hazardous substances, and petroleum products.

- Contaminated environmental media includes soil, sediment, groundwater, surface water, or vadose zone air that have been contaminated by a release of a hazardous material, hazardous or dangerous waste, or hazardous substance. Sites with contaminated environmental media could be regulated under the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) or Resource Conservation and Recovery Act (RCRA), or under the state Model Toxics Control Act (MTCA).
- Dangerous waste is solid waste designated in Washington Administrative Code (WAC) 173-303-070 through 173-303-100 as dangerous, or extremely hazardous or mixed waste. Dangerous waste includes all federal hazardous waste, plus certain wastes exhibiting specific criteria based on toxicity and persistence.
- Solid waste is defined slightly differently in state and federal regulations. State regulations define solid waste as solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes, abandoned vehicles or parts thereof, and recyclable materials. Federal regulations define solid waste as any garbage, refuse, or sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material that includes solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities. Solid waste includes hazardous and problem wastes.
- Hazardous substances are defined under CERCLA Section 9601(14). A list of more than 600 CERCLA hazardous substances is provided in 40 Code of Federal Regulations (CFR) 302.4. CERCLA Section 9601(33) defines pollutants or contaminants in terms of their negative impact on people and the environment.
- Hazardous substances are also defined under the state MTCA (Revised Code of Washington [RCW] 70.105D.020 (13)) as follows.
  - (a) Any dangerous or extremely hazardous waste as defined in RCW 70.105.010 (1) and (7), or any dangerous or extremely dangerous waste designated by rule pursuant to chapter 70.105 RCW;
  - (b) Any hazardous substance as defined in RCW 70.105.010(10) or any hazardous substance as defined by rule pursuant to chapter 70.105 RCW;
  - (c) Any substance that, on March 1, 1989, is a hazardous substance under section 101(14) of the federal cleanup law, 42 U.S.C. Sec. 9601(14);
  - (d) Petroleum or petroleum products; and
  - (e) Any substance or category of substances, including solid waste decomposition products, determined by the director by rule to present a threat to human health or the environment if released into the environment.

The term hazardous substance does not include any of the following when contained in an underground storage tank from which there is not a release: Crude oil or any fraction thereof or petroleum, if the tank is in compliance with all applicable federal, state, and local law.

### 3.6.3.2 Information Sources

The following sources of information were used to identify the potential impacts of the Proposed Action and No-Action Alternative related to hazardous materials in the study area.

- *DataMap Area Study for the On-Site Alternative* (Environmental Data Resources 2014)

- *Millennium Coal Export Terminal Longview, Washington Hazardous Materials Resource Report* (URS Corporation 2014)
- *Final Remedial Investigation and Feasibility Study* (Anchor QEA 2015)
- Washington State Department of Ecology (Ecology) (2014a) regulatory files

The *DataMap Area Study for the On-Site Alternative* (Environmental Data Resources 2014) investigated all sites in the study area that use hazardous materials. The study included a search of federal, state, local, and other appropriate databases to obtain information on facilities that use, store, transport, or generate regulated and potentially hazardous substances. The database search results used in support of this analysis were reported in accordance with the ASTM Standard Practice for Environmental Site Assessments, E 1527-13. The *SEPA Hazardous Materials Technical Report* (ICF 2017a) contains a complete list of searched databases.

### 3.6.3.3 Data Screening

The *DataMap Area Study for the On-Site Alternative* (Environmental Data Resources 2014) identified 24 sites within 1 mile of the project area. Eight of these sites are associated with historical and current operations in the Applicant's leased area (i.e., the 540-acre industrial site currently leased by the Applicant). Ten orphan sites<sup>2</sup> were identified; however, nine of these ten sites were determined to be outside the study area and were eliminated from further evaluation (Environmental Data Resources 2014). The one remaining orphan site within the study area was also eliminated from further consideration because no known releases have been reported for the site.

The remaining sites located outside the Applicant's leased area but within the study area were then screened to determine if they should be eliminated or carried forward for analysis. Screening criteria are listed below.

- Sites where hazardous materials are stored and used in compliance with laws and regulations (e.g., RCRA), including large- and medium-quantity generators and underground storage tank sites, were assumed to have negligible risks of being affected by or having an impact on the Proposed Action. Thus, these types of sites were excluded from further analysis.
- Other sites were also eliminated from further analysis, including closed sites or NFA sites where remediation (e.g., contaminated soil removal or groundwater cleanup) had been completed.

Sites that were retained based on the screening criteria listed above were subsequently ranked as being high-, medium-, or low-risk with regard to whether hazardous materials could affect or be affected by construction or operation of the Proposed Action.

- **High-risk sites.** High-risk sites include sites where both soil and groundwater have been affected by hazardous materials releases and groundwater flow is predominantly toward the project area; the site is partially closed (e.g., soil cleanup has been completed) but has ongoing groundwater-focused remedial or monitoring activities planned; and the site is located within 500 feet of the project area.

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<sup>2</sup> Orphan sites are hazardous materials sites where the polluter could not be identified or held accountable, and/or the address/location information is incomplete.

- **Medium-risk sites.** Medium-risk sites include sites where both soil and groundwater have been affected by hazardous materials releases and groundwater flow is predominantly toward the project area; the site is partially closed (e.g., soil cleanup has been completed) but has ongoing remedial or monitoring activities planned; and the site is located within 500 to 1,000 feet of the project area.
- **Low-risk sites.** Low-risk sites include sites where only soil has been affected by hazardous materials releases and groundwater has not been affected; the site has been closed by an oversight agency with a status of NFA or no further remedial action is planned; and the site is located more than 1,000 feet from the project area but within the study area.

The ranking criteria considered the environmental media contaminated (soil or groundwater), the direction of groundwater flow, the status of remediation (site partially closed or closed with status of NFA), and distance between the hazardous materials site and the project areas.

Based on these criteria, five sites were identified in the study area: two sites were categorized as high risk, two as medium risk, and one as low risk. The remaining five sites in the study area are listed below.

- **Site 1.** U.S. Department of Energy, Bonneville Power Administration, Longview Substation (high risk)
- **Site 2.** McCall Trucking (high risk)
- **Site 3.** Schill Brothers Asphalt & Paving/American Asphalt (medium risk)
- **Site 4.** GT Metals and Salvage (low risk)
- **Site 5.** Weyerhaeuser Chlor-Alkali Facility (medium risk)

These five hazardous materials sites are presented in Figure 3.6-1 and described in Section 3.6.5.1, *Proposed Action*.

### 3.6.3.4 Impact Analysis

Hazardous materials in the study area were assessed to determine the potential impacts of the Proposed Action and No-Action Alternative on hazardous materials, and the potential impacts of hazardous materials on these alternatives.

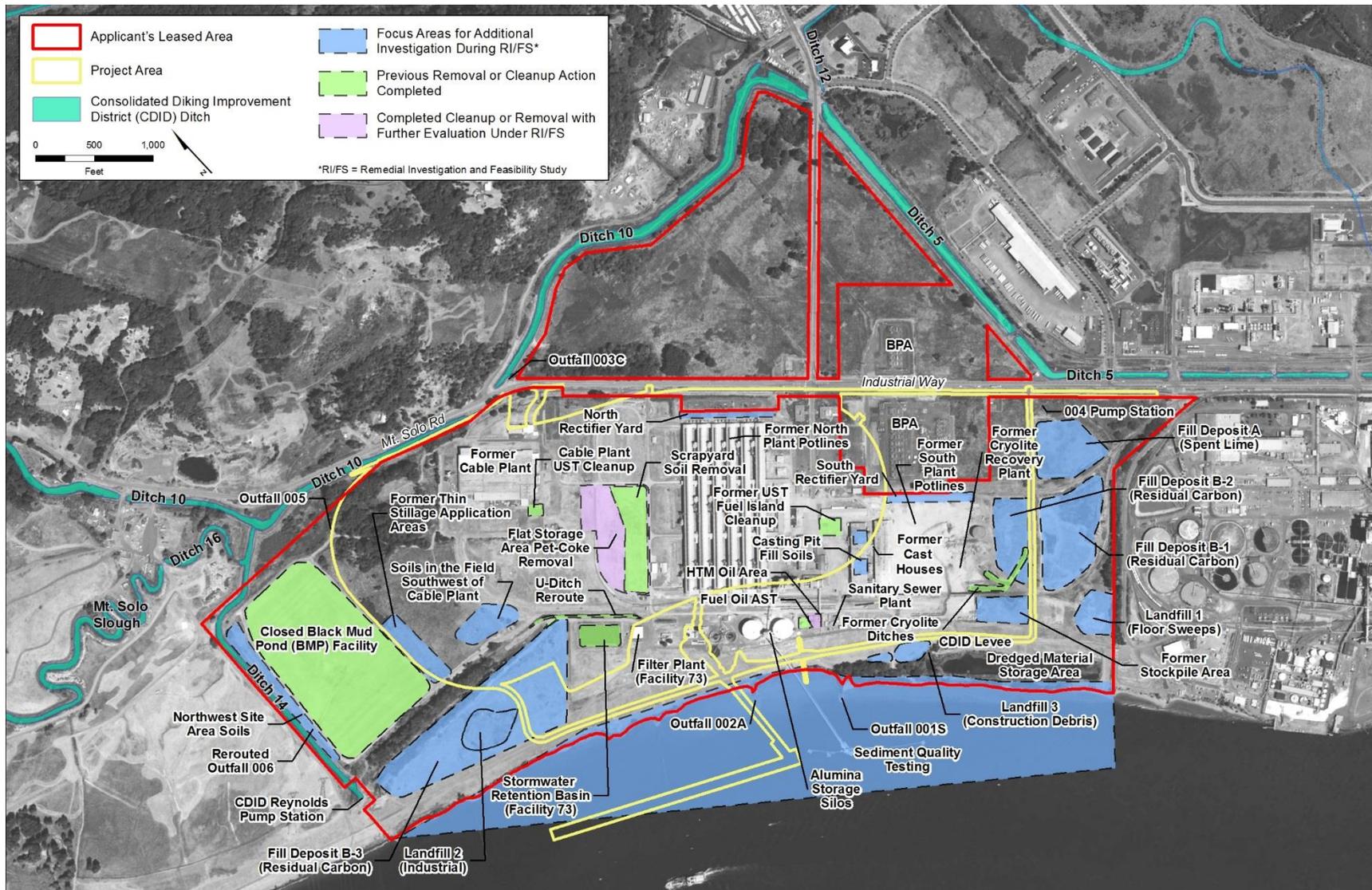
## 3.6.4 Existing Conditions

This section describes the existing conditions in the study area related to hazardous materials that could be affected by the construction and operation of the Proposed Action and the No-Action Alternative.

### 3.6.4.1 Contaminated Sites

This section summarizes the history of contamination and remedial actions in the Applicant's 540-acre leased area, which includes the 190-acre project area itself and the Applicant's leased area outside of the project area. The discussion also identifies chemicals of concern and final cleanup options or actions that would take place under a cleanup action plan unrelated to the Proposed Action. The boundary of the Applicant's leased area and the project area in relation to existing and former facilities is shown in Figure 3.6-2.

Figure 3.6-2. Previous Cleanup and Focus Areas in the Applicant's Leased Area and the Project Area



For more information relative to past activities in the project area and in the Applicant's leased area, including remedial actions and further information, refer to the *Remedial Investigation/Feasibility Study* (Anchor QEA 2015).

## **Project Area**

Contaminated sites in the project area include aluminum production facilities and former cable plant operations.

### **Aluminum Production Facilities**

Initial industrial operations at the former Reynolds facility began in 1941 when the eastern portion of the project area was developed as an aluminum reduction plant for aluminum smelting and casting operations. These operations were expanded in 1967 when the western portion of the former Reynolds facility was developed for additional aluminum production; this area was known as the North Plant.

Smelter operations required an extensive dry-materials handling system for raw materials, such as alumina ore (transported by rail or ocean-going vessel), petroleum coke, coal tar pitch, anthracite coal, cryolite, and aluminum fluoride (transported by rail and truck). Liquid coal tar was unloaded from rail cars and transferred into on-site storage tanks, which were connected to the greenmill by distribution lines. At the greenmill, pitch (which contains polycyclic aromatic hydrocarbons [PAHs]) was used as a raw material for anode and cathode fabrication. Elevated concentrations of fluoride in soils have been associated with historical smelter operations at the former Reynolds facility.

Figure 3.6-2 shows the location of the aluminum manufacturing facilities. The potline buildings and cast houses lie within the boundaries of the project area, while the alumina storage silos lie outside the project area's southern boundary.

### **Former Cable Plant Operations**

The cable plant was constructed in the late 1960s. It was located west of the aluminum production facilities and within the boundaries of the project area. The cable plant produced electrical cable products, including aluminum wire, rods, and insulated (polyethylene and polyvinyl) low- and medium-voltage cable. The cable plant received molten aluminum from the aluminum production facilities and processed it in three furnaces: a continuous ingot caster, a rolling mill, and wire drawers. Ancillary structures associated with the cable plant included office buildings, a parking lot, and an on-site sanitary wastewater treatment plant.

The cable plant ceased production in 1992 and all assets were removed from the buildings. Since the mid-1990s, the facility has been mostly inactive and used only sporadically for storage. In addition, with approval from Ecology, successfully treated soil from the fuel island cleanup area was used for fill in former equipment concrete pits in the cable plant warehouse floor (Section 3.6.4.2, *Remediation History*).

## **Applicant's Leased Area Outside of the Project Area**

Contaminated sites on the Applicant's leased area, outside of the project area, include a cryolite recovery plant, industrial landfills, the closed Black Mud Pond (BMP) facility, and potentially other remnants of historical uses of the former Reynolds facility.

### **Cryolite Recovery Plant**

The cryolite recovery plant was constructed in 1953 in the former Reynolds facility East Plant area, east of the cast houses and outside the project area boundary. It was used as a *spent potliner* (SPL) recovery and recycling facility for both the former Reynolds facility and other northwest aluminum reduction plants. SPL is a byproduct of the aluminum manufacturing process. It contains fluoride and PAH compounds and, potentially, varying levels of cyanide. The cryolite recovery plant also recovered reusable fluoride compounds, called *underflow solids*, which were generated from the air emission control systems that occurred during the aluminum manufacturing process. The underflow solids were collected in clarifiers at two locations on the former Reynolds facility.

The cryolite recovery process involved multiple steps, resulting in *black mud*, a black carbon liquid, which was disposed in several fill deposits on the former Reynolds facility. The fill deposits were closed in the 1960s and 1970s and were subsequently capped with clean soil. The cryolite recovery process also required lime to produce a sodium hydroxide solution. Circa 1980, the spent lime facility, which was constructed as part of the original cryolite recovery plant for the cryolite recovery process, was combined and managed with the residual carbon facility.

With the increase in regulatory requirements associated with SPL stockpiling and handling in the 1980s, Reynolds began to cover the stockpiled SPL. Groundwater monitoring wells were installed to assess and monitor potential impacts on groundwater.

In May 1990, the cryolite recovery plant ceased operation. The SPL generated during aluminum manufacturing was removed and shipped to permitted treatment, storage, and disposal facilities. The cryolite recovery plant facilities were removed in May 1990; the land in that area is now vacant. No deposits of SPL are known to remain within the former Reynolds facility.

Carbon was generated as a by-product of operation of the on-site cryolite recovery process. Residual carbon from this process typically includes calcium carbonate, alumina, fluoride compounds, sodium, iron, and sulfate. Test results from groundwater monitoring wells indicated that shallow groundwater at the former cryolite plant contained elevated concentrations of fluoride, with high alkalinity as a result of the cryolite plant's operations. Additional investigations, findings, and cleanup of the residual carbon deposits are discussed in Section 3.6.4.2, *Remediation History*.

### **Industrial Landfills**

Three historical landfills are located in the Applicant's leased area but outside the project area (Figure 3.6-2). These include the floor sweeps landfill (Landfill 1), east of the former cryolite recovery plant; the industrial landfill (Landfill 2) on the southwest side of the former Reynolds facility West Plant area; and the construction debris landfill (Landfill 3), between the Consolidated Diking Improvement District (CDID) #1 levee and the Columbia River.

The floor sweeps landfill (Landfill 1) received dry materials gathered from floors in the potline buildings, including alumina, bath, cryolite, and aluminum fluoride. By the mid-1970s, the floor sweeps landfill was no longer in use, and the industrial landfill (Landfill 2) began operation. The industrial landfill was used primarily for management of inert wastes, including scrap coke, ore, cryolite, aluminum fluoride, bath, brick, concrete, and debris from miscellaneous maintenance activities. The construction debris landfill (Landfill 3) contains concrete debris and other plant wastes, similar to those of the industrial landfill. Standard practices included not placing liquids in the landfills.

### **Closed Black Mud Pond (BMP) Facility**

As discussed under the former cryolite recovery plant operations, a byproduct of the cryolite recovery process was black mud, which was disposed of in several fill deposits. One such pond was located in the West Plant area near Landfill 2 (Figure 3.6-2). The 33-acre BMP impoundment, which was formally closed in 1992, has been subject to an approved ongoing maintenance and monitoring program overseen by Ecology. Since implementation, the closed BMP facility has continued to meet the requirements of the maintenance and monitoring program. Details on closure, post-closure, and maintenance and monitoring can be found in the *Millennium Coal Export Terminal Longview, Washington Hazardous Materials Resource Report* (URS Corporation 2014). No further remedial activities related to the closed BMP facility are required in the final cleanup action plan.

### **Uses after Closure of the Reynolds Facility**

Aluminum production operations at the former Reynolds facility ceased in 2001 at the time of the facility's closure. Between 2004 and 2011, Chinook Ventures, Inc. (Chinook Ventures) operated a terminal for the import, handling, and export of dry bulk materials, such as alumina, coal, green petroleum coke, cement, fly ash, slag, and other materials. During this time, Chinook Ventures decommissioned the majority of the facilities associated with aluminum manufacturing operations and recycled materials from smelters, which were being decommissioned throughout the northwest region of the United States. These activities included the removal and disposal or recycling of alumina, electrolyte bath, coal, and carbon products. In 2011, Chinook Ventures sold its assets to the Applicant. The Applicant subsequently removed most of the structures that were constructed by Chinook Ventures and continued facility decommissioning, removal, and cleanup activities.

## **3.6.4.2 Remediation History**

The remediation history for the study area is presented in Appendix H, *Hazardous Materials Remediation History*. In 2007, Northwest Alloys signed an Agreed Order (AO No. DE-8940) with Ecology to complete a remedial investigation and feasibility study (RI/FS). The purpose of the RI/FS was to investigate the nature and extent of impacts at the site and identify cleanup options. From 2011 through 2014, the Applicant tested soils and completed laboratory analyses as part of the RI/FS. In May 2014, Northwest Alloys submitted a second RI/FS, detailing over 18,000 chemical measurements of soil, surface water, groundwater and sediment along with extensive testing and engineering to support possible cleanup alternatives.

Ecology held a public comment period from June 2 through August 1, 2014, which included several public workshops and a formal hearing. Following the public comment period, Ecology prepared a Responsiveness Summary in January 2015, and has developed a draft cleanup action plan. Ecology will then select cleanup standards and points of compliance in the final cleanup action plan. A cleanup action plan is typically prepared after the RI/FS has been finalized and a preferred remedial alternative has been selected. The plan is based on information and technical analyses generated during the RI/FS and consideration of public comments and community concerns.

A draft cleanup action plan and draft consent decree was released in 2016 for a 60-day public comment period (Washington State Department of Ecology 2016). The comment period ended March 18, 2016. A responsiveness summary will be prepared to address public comments and then the reports will be finalized. Likely remedial technologies will include a combination of, but not necessarily all of, the following: removal, consolidation, capping, groundwater treatment, and monitored natural attenuation treatments. Property owner Northwest Alloys, Inc. (a subsidiary of

Alcoa, Inc.) and the Applicant are legally responsible for the cleanup, including paying for and performing the work.

Appendix H, *Hazardous Materials Remediation History*, provides an overview of the remedial action process, screening levels by media, remediation activities prior to the RI/FS, remediation of the project area, remediation of the Applicant’s leased area, chemicals of concern, and final remedial actions.

### 3.6.4.3 Hazardous Materials Sites in the Study Area

This section discusses environmental conditions related to hazardous materials sites outside of the Applicant’s leased area but in the study area for hazardous materials. Data screening identified five hazardous materials sites in the Proposed Action study area that require further evaluation (Section 3.6.3.3, *Data Screening*). These sites, shown in Figure 3.6-1, are described in Table 3.6-2.

## 3.6.5 Impacts

This section describes the potential direct and indirect impacts related to hazardous materials that would result from construction and operation of the Proposed Action and the No-Action Alternative.

### 3.6.5.1 Proposed Action

This section describes the potential impacts that could occur in the study area as a result of construction and operation of the Proposed Action. Construction-related activities for the Proposed Action would occur in two stages and include the activities identified below.

#### Construction Activities

Stage 1	Stage 2
<ul style="list-style-type: none"> <li>• Construction staging</li> <li>• Demolition of existing structures</li> <li>• Site preparation</li> <li>• Preloading</li> <li>• Rail loop construction</li> <li>• Dredging, trestle, and dock construction</li> <li>• Installation of coal export terminal equipment</li> <li>• Construction of berms</li> <li>• Construction of stackers and reclaimers</li> <li>• Construction of buildings</li> </ul>	<ul style="list-style-type: none"> <li>• Construction of any remaining rail storage tracks (for a total of eight rail storage tracks)</li> <li>• Construction of two remaining berms (for stackers and reclaimers) (for a total of five berms)</li> <li>• Construction of two additional stackers and reclaimers</li> <li>• Construction of additional conveyors, buffer bins, and transfer towers, including 26,200 linear feet of conveyors, of which 17,900 linear feet would be open conveyors and 8,300 linear feet would be enclosed</li> <li>• Construction of one shiploader on Dock 3</li> <li>• Construction of additional support structures, electrical transformers, switchgear and equipment, buildings, process control equipment</li> </ul>

**Table 3.6-2. Hazardous Materials Sites in the Study Area**

Site	Business Name	Distance from Project Area	Case Summary	Reason for Risk Class	Risk Class
1	U.S. DOE BPA Longview Substation/Longview Substation	33 feet from project area	<ul style="list-style-type: none"> <li>• Site contains registered underground storage tanks</li> <li>• Site is a registered small-quantity generator of hazardous waste.</li> <li>• A site discovery/release was first reported in 1992.</li> <li>• Groundwater is suspected to be contaminated with nonhalogenated organics and petroleum/diesel.</li> <li>• Groundwater is confirmed to have benzene and petroleum/gasoline contamination above cleanup levels.</li> <li>• Soils are suspected to be contaminated with benzene, nonhalogenated organics, and petroleum/gasoline.</li> <li>• Soils are confirmed to be below cleanup levels for petroleum/diesel.</li> <li>• A site hazard assessment was conducted in June 2013. Cleanup of leaking underground storage tanks has started, and rest of the site is awaiting cleanup.</li> </ul>	<ul style="list-style-type: none"> <li>• Located 33 feet east of the project area for the Proposed Action.</li> <li>• Groundwater contamination has been confirmed for benzene and petroleum/gasoline.</li> <li>• Soils suspected to be contaminated with benzene, nonhalogenated organics, and petroleum/gasoline.</li> <li>• Case is still active and cleanup is in process for leaking underground storage tanks.</li> <li>• Other identified contamination is awaiting cleanup.</li> </ul>	High

<b>Site</b>	<b>Business Name</b>	<b>Distance from Project Area</b>	<b>Case Summary</b>	<b>Reason for Risk Class</b>	<b>Risk Class</b>
2	McCall Trucking	127 feet from project area	<ul style="list-style-type: none"> <li>• Initial site investigation occurred in 1994.</li> <li>• Groundwater, surface water, and soils are suspected to be contaminated with halogenated organics, metals, solvents, and petroleum products.</li> <li>• Soil has been confirmed above cleanup levels for petroleum products.</li> <li>• Case is still active and site is awaiting cleanup.</li> </ul>	<ul style="list-style-type: none"> <li>• Located 127 feet northwest of the project area for the Proposed Action.</li> <li>• Groundwater, surface water, and soils are suspected to be contaminated with various contaminants.</li> <li>• Site is awaiting cleanup.</li> </ul>	High
3	Schill Brothers Asphalt & Paving/American Asphalt <sup>a</sup>	722 feet from project area	<ul style="list-style-type: none"> <li>• The site was first inspected in 1990 and then removed from the Washington HSL in 1995.</li> <li>• The site was reopened in 2008 and again in 2013.</li> <li>• Groundwater, surface water, soil, and air were all contaminated with various organic and inorganic materials, metals, petroleum products, and phenolic compounds.</li> <li>• All media has been remediated with the exception of soil, which still contains petroleum products above cleanup levels.</li> <li>• Site is still awaiting cleanup.</li> </ul>	<ul style="list-style-type: none"> <li>• Located 722 feet northwest of the project area for the Proposed Action.</li> <li>• Groundwater and soil have been impacted, requiring further cleanup.</li> </ul>	Medium

Site	Business Name	Distance from Project Area	Case Summary	Reason for Risk Class	Risk Class
4	GT Metals and Salvage (formerly Longview Auto Wrecking)	1,902 feet from project area	<ul style="list-style-type: none"> <li>An initial site assessment was performed in June 2004.</li> <li>Soils were confirmed to be above cleanup levels for petroleum products.</li> <li>Case is still active and site is awaiting cleanup.</li> </ul>	<ul style="list-style-type: none"> <li>Located 1,902 feet northeast of the project area for the Proposed Action.</li> <li>Soil has been affected.</li> </ul>	Low
5	Weyerhaeuser Chlor-Alkali Facility	2,953 feet from project area	<ul style="list-style-type: none"> <li>Stores hazardous chemicals; site being cleaned up under state regulations.</li> <li>In October 1991, Ecology issued an agreed order for remedial action at the site.</li> <li>Mercury contamination was found in soils and groundwater after demolition of an on-site facility.</li> <li>In December 1995 an RI/FS was completed for the facility.</li> <li>In August 1995 the site was listed on Washington HSL as a Rank 1 site.</li> </ul>	<ul style="list-style-type: none"> <li>Located 2,953 feet southeast of the project area for the Proposed Action.</li> <li>Both soil and groundwater have been affected.</li> <li>Cleanup activities are complete. Institutional controls are in place and long-term groundwater monitoring continues.</li> </ul>	Medium

Notes:

<sup>a</sup> The Schill Brothers Asphalt & Paving/American Asphalt 1 site is located adjacent to and partially atop the inactive Mount Solo Landfill, which was classified as a limited-purpose landfill that disposed of mainly wood-wastes and construction and demolition waste between about 1966 and 1992. The landfill was closed in 1993 under WAC 173-304 Minimum Functional Standards for Solid Waste Handling. According to information received from the Cowlitz County Health Department, Environmental Health Unit (EHU), the current environmental status of the Mount Solo Landfill is unknown. According to the EHU, the last annual report was received in 2008 and the last post closure permit was issued that same year. The landfill has not been actively monitored since then (Long pers. comm.).

Sources: Washington State Department of Ecology 2014b-2014o; ICF 2017a.

U.S. DOE = U.S. Department of Energy; BPA = Bonneville Power Administration; Ecology = Washington State Department of Ecology; HSL = Washington Hazardous Sites List; RI/FS = remedial investigation/feasibility study; WAC = Washington Administrative Code

## **Construction—Direct Impacts**

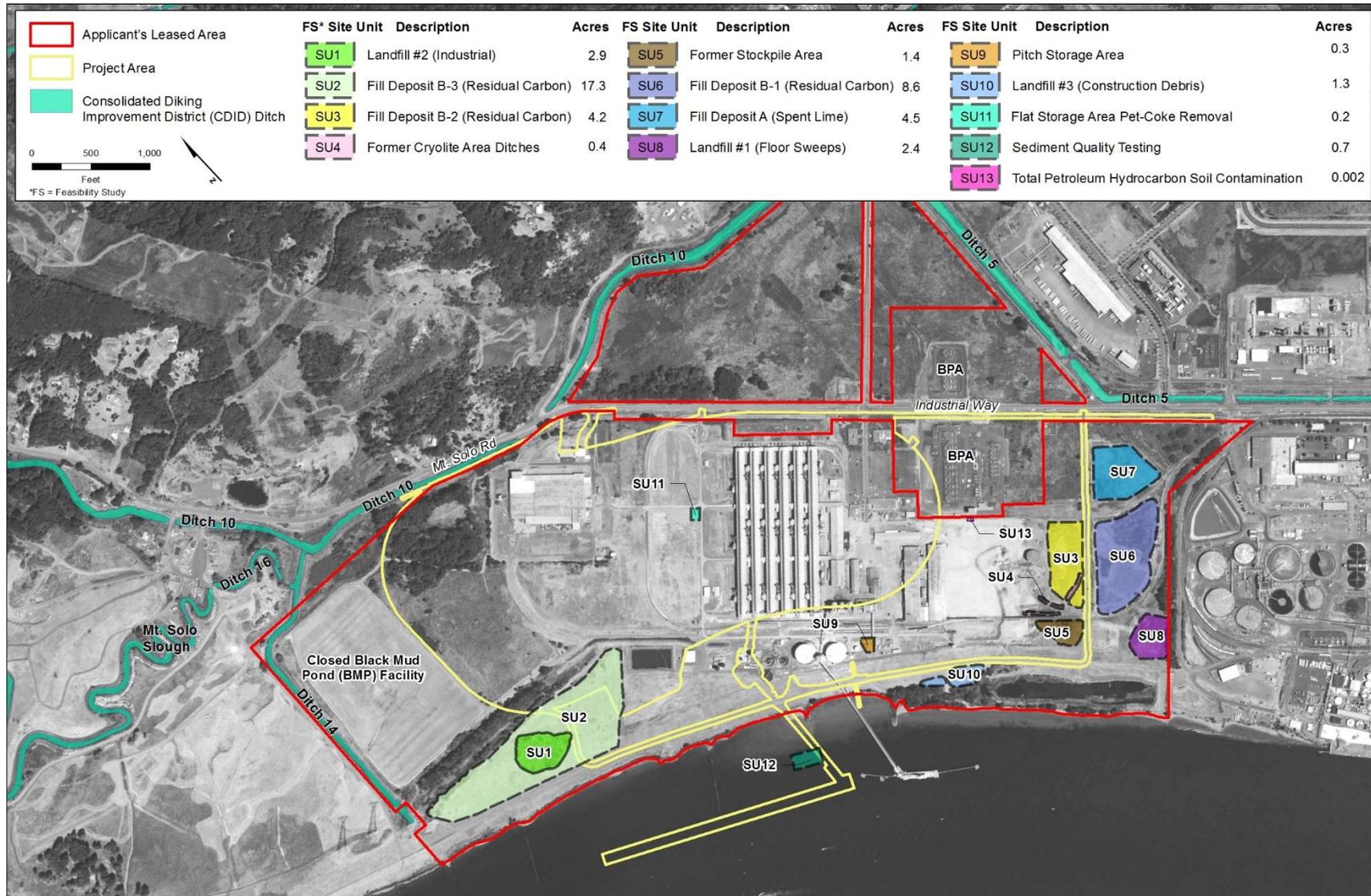
Construction-related activities associated with the Proposed Action could result in direct impacts as described below. As explained in Chapter 2, *Project Objectives, Proposed Action, and Alternatives*, construction-related activities include demolishing existing structures and preparing the site, constructing the rail loop and dock, and constructing supporting infrastructure (i.e., conveyors and transfer towers). Construction equipment would include heavy machinery to prepare foundations and footings for the new facility, associated services, and utilities. This equipment would likely include cranes, wheel loaders, dozers, dump trucks, excavators, graders, rollers, compactors, drill rigs, pile-driving equipment, portable ready-mix batch plant, ready-mix trucks, concrete pumps, elevated work platforms, forklifts, rail track laying equipment, welders, water pumps, and other similar machinery. Waste typically generated or encountered during construction activities could consist of contaminated soils; contaminated sediments; contaminated groundwater generated from excavation, drilling, and dewatering activities; and existing on-site building materials containing lead or asbestos. Demolition activities could result in exposing these substances.

### **Encounter Hazardous Materials during Construction**

Construction of the Proposed Action could encounter hazardous materials in the project area that could pose risks to human health and the environment through contact with contaminated soil, contaminated groundwater, and inhalation of toxic vapors. However, with the exception of two small areas on the eastern corner of the flat storage area and the northeastern portion of Fill Deposit B-3 (SU11 and SU2 in Figure 3.6-3), the Proposed Action would be constructed in the project area where remedial action mandated as part of the final cleanup action plan is not required, either because hazardous materials do not occur in these areas or because hazardous materials have been previously remediated. For the two areas where overlap would occur, construction of the Proposed Action and remediation of the project area would be coordinated to avoid and minimize conflicts and potential exposure to construction personnel and the environment. Furthermore, Northwest Alloys and the Applicant would be required to follow the final cleanup action plan, comply with applicable state and federal laws and regulations, and provide for compliance monitoring to ensure cleanup actions comply with the cleanup plan. Therefore, remedial actions are expected to remove or isolate all hazardous materials and ensure that any remaining hazardous materials are below thresholds established by federal, state, and local regulations, thereby avoiding the potential for construction personnel or the environment to be exposed to hazardous materials. Construction activities associated with the Proposed Action could encounter possible lead- and asbestos-containing materials, chemically treated wood, and polychlorinated biphenyls (PCBs) during demolition of existing structures. Releases of these materials could migrate to the air, soil, surface water, or groundwater and affect the health and safety of construction personnel and others. Exposure to these contaminants are described in the following sections.

Additionally, project area preparations would involve preloading and installing vertical wick drains to consolidate low-consistency silt and low-density sand. These activities could take place adjacent to areas where known groundwater contamination exists and the contaminated groundwater could potentially penetrate these areas. According to the RI/FS (Anchor QEA 2015), fluoride transport in groundwater is limited due to the solubility of fluoride.

**Figure 3.6-3. Feasibility Study Site Units in the Applicant's Leased Area and the Project Area**



Furthermore, the permeability of the earth materials used for preloading would be relatively low and would not be particularly susceptible to the infiltration of contaminated groundwater. As described in Chapter 4, Section 4.4, *Groundwater*, once preloading is complete and the vertical drains are removed, the drains would be tested and characterized for the presence of dangerous waste prior to disposal. This work would be regulated and coordinated under the project-specific National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit.

### ***Lead and Asbestos***

Buildings and structures that have lead- or asbestos-containing materials would require proper abatement procedures prior to demolition, renovation, or repair activities to reduce potential impacts. The use of asbestos in buildings and structures was common prior to 1980. The U.S. Environmental Protection Agency (EPA) issued a ban and phase-out rule for asbestos in 1989. Most of the structures in the project area were built prior to 1980 and are planned for demolition as part of the Proposed Action. Both asbestos-containing materials and materials that contain lead (such as some types of paint) must be handled carefully during demolition and must be recycled or disposed of at an approved site as required by the Washington Hazardous Waste Management Act (RCW 70.105), and the Washington Dangerous Waste Regulations, (WAC 173-303). Asbestos surveys were performed for all existing on-site buildings (PBS Engineering and Environmental 2014). A lead paint survey was performed on the south plant only; lead surveys for the remaining buildings would be conducted prior to demolition activities. Abatement and management would be conducted prior to demolition, renovation, and/or repair for lead and asbestos as required by Washington Hazardous Waste Management Act and Washington Dangerous Waste Regulations.

Buildings identified in the surveys as having asbestos-containing materials include the main office, maintenance and weld shop, cast house (expansion), North Plant compressor, cable plant, and potline building. Details regarding quantities, types of construction materials, etc. can be found in the December 2014 Subset of Previous Asbestos Survey Reports Millennium Bulk Terminals (PBS Engineering and Environmental 2014).

### ***Chemically Treated Wood***

The State of Washington has dangerous waste exclusions for treated wood; these exclusions are outlined in WAC 173-303-071(3)(g)(i) for arsenical-treated wood and in WAC 173-303-071(3)(g)(ii) for wood treated with other preservatives (most commonly pentachlorophenol and creosote). Arsenical-treated wood, and in particular copper chromate arsenic (CCA)-treated wood is most often used for (but is not limited to) outdoor building materials and is often referred to as “pressure-treated wood.” Pentachlorophenol (PCP) and creosote-treated wood is most often used for poles, pallets, marine piling and timbers, and railroad crossties. It should be noted that the dangerous waste exclusion for CCA-treated wood only applies to treated wood that fails the toxicity characteristic leaching potential for the applicable constituents.

If CCA-treated wood is encountered, and it meets the exclusion requirements described above, disposal options include the following.

- Disposal in a permitted municipal solid waste landfill (providing local regulation allows).
- Disposal/processing at a permitted treatment, storage, and disposal facility.

- Reuse by others.

If wood treated with other preservatives, as defined in WAC 173-303-071(3)(g)(ii), is encountered during demolition activities it could be disposed of as follows.

- Wood designated as “state”-only may be disposed in a municipal solid waste landfill provided the landfill is equipped with a leachate detection system.
- Wood that is designated as a “listed” waste or fails the toxicity characteristic leaching potential test may be sent to a non-permitted facility for treatment or recycling.
- Creosote-treated wood may be sent to a permitted treatment, storage, and disposal facility, i.e., burned in a regulated furnace or boiler for energy production.

### ***Caulking and Sealants***

PCBs were widely used in caulking and elastic sealant materials from the 1950s through the 1970s. These materials were primarily used in or around windows, door frames, stairways, building joints, masonry columns, and other masonry building materials. Prior to demolition, caulking would be sampled to determine if PCBs exist. If PCBs were found in on-site structures, remediation and disposal of these materials would be conducted under the Toxic Substances Control Act’s PCB regulations at 40 CFR 761 and using Ecology’s *Draft PCB Chemical Action Plan*.

Demolition of former Reynolds facility buildings and structures would require adherence to all applicable standards and regulations. The applicable agencies and regulations would provide oversight and prevention techniques. Thus, lead- and asbestos-containing material, treated wood debris, and caulking waste (containing PCBs) would be managed properly and disposed of at off-site facilities, thereby avoiding and minimizing potential impacts on human health and the environment.

### **Introduce New Sources of Hazardous Materials during Construction**

Construction of the Proposed Action would involve the routine transport, use, storage, and disposal of hazardous materials such as fuels, solvents, paints, oils, concrete-curing compounds, and grease. Hazardous materials likely to be transported, used, stored, and disposed of in the project area during construction would be materials typical of construction projects and would generally be used and handled in relatively small quantities (less than 5 gallons). Impacts from releases would likely be localized and short-term in nature although spills could reach and affect the Columbia River. Fuel spills could range from less than 50 gallons up to a worst-case maximum spill from a fuel truck of approximately 4,000 gallons.<sup>3</sup>

The transport, use, storage, and disposal of hazardous materials would be compliant with applicable federal, state and local regulations such as the RCRA, U.S. Department of Transportation Hazardous Materials Regulations, and other regulations identified above under Section 3.6.1, *Regulatory Setting*. The enforcement of construction and demolition standards, including best management practices by appropriate local and state agencies (i.e., Ecology, Longview Fire Department, Cowlitz County Public Works), would further minimize the potential for a spill, release, or explosion, and would ensure a timely cleanup response.

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<sup>3</sup> The capacity for fuel trucks used during construction and operations is discussed in Chapter 4, Section 4.9, *Energy and Natural Resources*.

The Applicant would be required to obtain and comply with the NPDES Construction Stormwater Permit, which requires controls to protect surface water and groundwater. The permit would require the preparation of a construction stormwater pollution prevention plan and implementation of best management practices to avoid and minimize the risk of pollutants entering surface waters and groundwater. Moreover, the best management practices identified under Section 3.6.6, *Required Permits*, would be implemented during construction and operation of the Proposed Action to further avoid and minimize risks of exposure on surface waters.

## **Construction—Indirect Impacts**

Construction-related activities associated with the Proposed Action could result in indirect impacts as described below. As explained in Chapter 2, *Project Objectives, Proposed Action, and Alternatives*, construction-related activities include demolishing existing structures and preparing the site, constructing the rail loop and dock, and constructing supporting infrastructure (i.e., conveyors and transfer towers).

### **Encounter Hazardous Materials during Construction**

The following sections describe impacts related to encountering hazardous materials on the Applicant's leased area and hazardous materials sites in the study area during construction of the Proposed Action.

#### ***Applicant's Leased Area***

Construction of the Proposed Action is not expected to encounter hazardous materials in the Applicant's leased area outside the limits of disturbance for the project area. The chemicals of concern occurring in the Applicant's leased area include fluoride and PAHs in soils associated with the landfills and fill deposits (Figure 3.6-3). These areas are contained by soil caps, and ongoing soil and groundwater monitoring show that fluoride has limited mobility under existing conditions and is not affecting down-gradient groundwater or surface water quality. The final cleanup action plan would include remediation of these areas along with those identified in the project area. Therefore, although groundwater and soils are contaminated in the Applicant's leased area, it is to be expected that they would be remediated during project construction and operations.

#### ***Hazardous Materials Sites in the Study Area***

Construction of the Proposed Action is not expected to encounter hazardous materials that could pose risks to human health and the environment from any of the five hazardous materials sites identified in the study area (Section 3.6.4.3, *Hazardous Materials Sites in the Study Areas*). This is because soil contaminants associated with these sites would not come into contact with construction activities, and groundwater contamination has either not been reported, or groundwater flows away from the project area.

### **Introduce New Sources of Hazardous Materials during Construction**

The following sections describe impacts related to introducing new sources of hazardous materials on the Applicant's leased area and hazardous materials sites in the study area during construction of the Proposed Action.

### ***Applicant's Leased Area***

Construction activities associated with the Proposed Action would be limited to the project area and no activities would occur in the Applicant's leased area outside the limits of disturbance for the project area; however, construction vehicles could move through the Applicant's leased area when traveling to and from the project area. When in transit, vehicles transporting hazardous materials could introduce new sources of hazardous materials to the Applicant's leased area that could pose risks to human health and the environment.

As described above for direct construction impacts, construction of the Proposed Action would involve the routine transport, use, storage, and disposal of hazardous materials such as fuels, solvents, paints, oils, concrete-curing compounds, and grease. Hazardous materials likely to be transported through the Applicant's leased area during construction would be materials typical of construction projects and would generally be used and handled in relatively small quantities (less than 5 gallons). Impacts from releases would likely be localized and short term in nature, although fuel spills could reach and affect the Columbia River. Fuel spills could range from less than 50 gallons up to a worst-case maximum spill from a fuel truck of approximately 4,000 gallons. Any spills that could occur would require the Applicant reporting and responding as required by federal, state, and local laws.

The transport of hazardous materials would be compliant with applicable federal, state and local regulations such as the RCRA, U.S. Department of Transportation Hazardous Materials Regulations, and other regulations identified above under Section 3.6.1, *Regulatory Setting*. Furthermore, best management practices enforced by appropriate local and state agencies (i.e., Ecology, Longview Fire Department, Cowlitz County Public Works), would further minimize the potential for a spill, release, or explosion, and would ensure a timely cleanup response.

### ***Hazardous Materials Sites in the Study Area***

Construction of the Proposed Action would not cause impacts on the five documented hazardous materials sites in the study area that could pose new risks to human health and the environment. Although hazardous materials sites are located in the study area, construction activities would be limited to the boundaries of the project area, and would not affect hazardous materials sites outside of the project area.

## **Operations—Direct Impacts**

Operations-related activities are described in Chapter 2, *Project Objectives, Proposed Action, and Alternatives*.

The following hazardous materials are expected to be used during normal operations of the Proposed Action and would be stored in the project area.

- Diesel fuel, gasoline, oils, greases, hydraulic fluids, antifreeze/coolants, and solvents used for equipment operation and maintenance.
- Flocculants used for water treatment. Antiscalants could also be used to manage the hardness in the process waters.
- Wastes classified as hazardous and nonhazardous waste.

These materials would be stored on site and all necessary collection and containment measures would be located in appropriate locations for immediate response to any spill.

The Proposed Action would not include refueling activities for rail or vessels, and no fuel for rail or vessels would be stored on site; therefore, there would be no increased risk of spills associated with refueling activities or storage in the project area. As described in Chapter 5, Section 5.4, *Vessel Transportation*, because no bunkering at Docks 2 and 3 would take place as part of the Proposed Action, there would be no increased risks of oil spills associated with vessel transfers associated with the Proposed Action.

Operation of the Proposed Action would result in the following direct impacts.

### **Encounter Hazardous Materials during Operations**

Operation of the Proposed Action is not expected to encounter hazardous materials in the project area that could pose risks to human health and the environment. Operation of the Proposed Action would occur concurrently with, but would be independent of, environmental remediation and monitoring as required in the final cleanup action plan for the former Reynolds facility. The remedial and monitoring activities associated with the former Reynolds facility would be carried out in accordance with all applicable regulations and would be coordinated to avoid contact and exposure to operations personnel and the environment. Furthermore, remedial and monitoring activities associated with the final cleanup action plan would result in bringing previously contaminated soils and groundwater to levels that are protective of human health and the environment, thereby reducing the potential for exposure for sensitive receptors.

### **Introduce New Sources of Hazardous Materials during Operations**

Operations of the Proposed Action could introduce new sources of hazardous materials such as fuel, oil, grease, lubricants, hydraulic fluids, solvents, and acids and would generate small quantities of hazardous waste. Locomotives (with fuel capacity of approximately 5,000 gallons) and fuel trucks (with fuel capacity of up to approximately 4,000 gallons) would travel to and from the project area and could also release fuel during operations. Some of these materials can be classified as hazardous; however, these hazardous material products would generally be stored and used in small quantities. The Applicant is responsible for reporting and responding as required by federal, state, and local laws.

As with construction, the transport, use, storage, and disposal of hazardous materials would be compliant with applicable federal, state and local regulations such as the RCRA, U.S. Department of Transportation Hazardous Materials Regulations, and other regulations identified in Section 3.6.1, *Regulatory Setting*. The Applicant would follow regulations governing the storage of hazardous materials and the separation of hazardous materials in designated storage areas. Water quality would be protected from polluted stormwater runoff as a result of the Applicant complying with the requirements of the NPDES Industrial Stormwater Permit.

### **Operations—Indirect Impacts**

Operation of the Proposed Action would result in the following indirect impacts. Operations-related activities are described in Chapter 2, *Project Objectives, Proposed Action, and Alternatives*.

As listed under *Operations—Direct Impacts*, several hazardous materials are expected to be used during normal operations of the Proposed Action. These materials would be stored on site and all necessary collection and containment measures would be located in appropriate locations for immediate response to any spill. The Proposed Action would also generate hazardous waste in small quantities.

The increase in rail traffic under the Proposed Action (16 trips per day with four locomotives per train) on the Reynolds Lead, BNSF Spur, and BNSF main line could also result in indirect impacts related to hazardous materials, which are described below. Further information on rail transportation is provided in the Chapter 5, Section 5.1, *Rail Transportation*. Indirect impacts associated with increased vessel traffic are addressed in Chapter 4, Section 4.5, *Water Quality*, and Chapter 5, Section 5.4, *Vessel Transportation*.

### **Encounter Hazardous Materials during Operations**

The following sections describe potential for impacts related to encountering hazardous materials on the Applicant's leased area and hazardous materials sites in the study area during operation of the Proposed Action.

#### ***Applicant's Leased Area***

Operation of the Proposed Action is not expected to encounter hazardous materials in the Applicant's leased area that could pose risks to human health and the environment. Operation of the Proposed Action would occur within the boundaries of the project area and would not result in impacts on the larger Applicant's leased area. Implementation of the final cleanup action plan for the former Reynolds facility would result in bringing previously contaminated soils and groundwater to levels that are protective of human health and the environment, thereby reducing the potential for exposure for sensitive receptors.

#### ***Hazardous Materials Sites in the Study Area***

Operation of the Proposed Action would occur within the boundaries of the project area and therefore is not expected to result in encountering hazardous materials from any of the five hazardous materials sites identified in the study area that could pose risks to human health and the environment (Section 3.6.4.3, *Hazardous Materials Sites in the Study Area*).

### **Introduce New Sources of Hazardous Materials during Operations**

The following sections describe impacts related to introducing new sources of hazardous materials on the Applicant's leased area and hazardous materials sites in the study area during operation of the Proposed Action.

#### ***Applicant's Leased Area***

Operational activities associated with the Proposed Action would be limited to the boundaries of the project area, and no activities would occur within the larger Applicant's leased area. However, vehicles used during operations would move through the Applicant's leased area when traveling to and from the project area. When in transit, vehicles could introduce new sources of hazardous materials to the Applicant's leased area that could pose risks to human health and the environment. Impacts would be similar to those described above for indirect

construction impacts in the Applicant's leased area and could include releases of hazardous substances or fuels. Any spills that could occur would likely be short term with the Applicant reporting and responding as required by federal, state, and local laws.

As with construction, the transport of hazardous materials would be compliant with applicable federal, state and local regulations such as the RCRA, U.S. Department of Transportation Hazardous Materials Regulations, and other regulations identified above under Section 3.6.1, *Regulatory Setting*. Furthermore, best management practices enforced by appropriate local and state agencies would further minimize the potential for a spill, release, or explosion, and would ensure a timely cleanup response.

### ***Hazardous Materials Sites in the Study Area***

Operation of the Proposed Action would not introduce new sources of hazardous materials that could pose risks to human health and the environment to the five documented hazardous materials sites in the study area. Although hazardous materials sites exist in the study area, Proposed Action operations would occur within the boundaries of the project area, and would not affect hazardous materials sites outside of the project area.

### **Release Hazardous Materials during Day-to-Day Rail Operations**

There is the potential for indirect impacts related to the release of hazardous materials during rail operations. Similar to direct impacts, day-to-day rail operations could increase the potential for hazardous materials (e.g., fuel, oil, grease, lubricants, hydraulic fluids) to be released into the environment through leaks and spills from the locomotives and rail cars along the Reynolds Lead, BNSF Spur, and BNSF main line. These materials would be used to maintain adequate operations and maintenance of the locomotives and rail cars and would not be the main cargo. Some of these materials can be classified as hazardous. Locomotives and rail cars are assumed to be maintained, and leaks would be avoided by timely repairs by the train and railroad operators, thereby avoiding and minimizing the potential for a leak. Spills of petroleum hydrocarbons or hazardous materials during day-to-day rail operations could occur, but the frequency and magnitude of spills cannot be predicted.

### **Release Hazardous Materials during Collision or Derailment**

Fuel spills could occur if any of the trains or rail cars collide or derail. Potential public safety and environmental risks of a fuel spill by collision or derailment would include fires or explosions, wildfires, water contamination, air quality impacts, impacts on tribal treaty resources, and impacts on wildlife, vegetation and fish. If a release of hazardous materials in the project area were to result from a collision or derailment, emergency response and cleanup measures would be implemented as required by the federal and state law, including Washington State regulations under RCW 90.56.

## **3.6.5.2 No-Action Alternative**

Under the No Action Alternative, the Applicant would not construct the Proposed Action and impacts related to construction and operation of the Proposed Action would not occur. The Applicant would continue with current and future increased operations in the project area. The project area could be developed for other industrial uses, including an expanded bulk product terminal or other industrial uses. The Applicant has indicated that, over the long term, it would

expand the existing bulk product terminal and develop new facilities to handle more products such as calcine petroleum coke, coal tar pitch, and cement.

Because previous Reynolds facility operations have resulted in cleanup actions throughout the Applicant's leased area, new development or expansion of existing uses could encounter similar impacts during construction and operation as those discussed for the Proposed Action. However, all potential impacts could be minimized through remedial actions carried out in the cleanup action plan and compliance with federal, state, and local regulations as well as implementation of best management practices. Therefore, impacts related to hazardous materials are expected to be similar to the Proposed Action.

### 3.6.6 Required Permits

The following permits related to hazardous materials would be required for the Proposed Action.

- **National Pollutant Discharge Elimination System Construction Stormwater Permit—Washington State Department of Ecology.** The quality of surface water and groundwater would be protected as a result of the Applicant obtaining and following the NPDES Construction Stormwater Permit issued by Ecology. The permit would require preparation of a construction stormwater pollution prevention plan and implementation of best management practices to avoid and minimize the risk of pollutants entering surface waters and groundwater.

As part of the NPDES Construction Stormwater Permit, a stormwater pollution prevention plan will be required by Ecology. A stormwater pollution prevention plan is a site-specific, written document that identifies potential sources of stormwater pollution at the construction site; describes practices to reduce pollutants in stormwater discharges from the construction site (reduction of pollutants is often achieved by controlling the volume of stormwater runoff, e.g., taking steps to allow stormwater to infiltrate into the soil); and identifies procedures the operator will implement to comply with the terms and conditions of the NPDES Construction Stormwater Permit.

The following best management practices identified by the Applicant would likely be conditions of the stormwater pollution prevention plan under this permit.

- **BMP C153.** Material delivery, storage, and containment would be used to prevent, reduce, or eliminate the discharge of pollutants to the stormwater system or watercourses from material delivery and storage.
  - Storage of hazardous materials on site would be minimized to the extent feasible.
  - Materials would be stored in a designated area, and secondary containment would be installed where needed.
  - Refueling would occur in designated areas with appropriate spill control measures.
- **BMP C154.** Concrete waste and washout waters would be either disposed of off-site or in a designated facility on site designed to contain the waste and washout water.
  - The contractor will apply typical construction best management practices for working over, in, and near water, including checking equipment for leaks and other problems that could result in discharge of petroleum-based products, hydraulic fluid, or other material to the Columbia River.

- The contractor will inspect fuel hoses, oil or fuel transfer valves, and fittings on a regular basis for drips or leaks in order to prevent spills into the surface water.
- The contractor will keep, store, handle, and use all fuel and chemicals in a fashion which avoid entry into the water.
- The contractor will have a spill containment kit, including oil-absorbent materials, on site to be used in the event of a spill or if any oil product is observed in the water.
- **National Pollutant Discharge Elimination System Industrial Stormwater Permit—Washington State Department of Ecology.** The quality of surface water and groundwater would be protected as a result of the Applicant obtaining and following the NPDES Industrial Stormwater Permit issued by Ecology. The permit would require the preparation of a stormwater pollution prevention plan and implementation of best management practices to avoid and minimize the risk of pollutants entering surface waters and groundwater.

As part of the NPDES Industrial Stormwater Permit, a stormwater pollution prevention plan will be required by Ecology. A stormwater pollution prevention plan is a site-specific, written document that identifies potential sources of stormwater pollution from operations; describes practices to reduce pollutants in stormwater discharges (reduction of pollutants is often achieved by controlling the volume of stormwater runoff, e.g., taking steps to allow stormwater to infiltrate into the soil); and identifies procedures the operator will implement to comply with the terms and conditions of an industrial stormwater permit.

The following best management practices identified by the Applicant would likely be conditions under this permit.

- **BMP C153.** Material delivery, storage, and containment would be used to prevent, reduce, or eliminate the discharge of pollutants to the stormwater system or watercourses from material delivery and storage.
  - Storage of hazardous materials on site would be minimized to the extent feasible.
  - Materials would be stored in a designated area, and secondary containment would be installed where needed.
  - Refueling would occur in designated areas with appropriate spill control measures.
- **BMP C154.** Concrete waste and washout waters would be either disposed of off -site or in a designated facility on site designed to contain the waste and washout water.
  - The operator will apply typical operational best management practices for activities which take place over, in, and near water, including checking equipment for leaks and other problems that could result in discharge of petroleum-based products, hydraulic fluid, or other material to the Columbia River.
  - The operator will inspect fuel hoses, oil or fuel transfer valves, and fittings on a regular basis for drips or leaks in order to prevent spills into the surface water.
  - The operator will keep, store, handle, and use all fuel and chemicals in a fashion which avoid entry into the water.
  - The operator will have a spill containment kit, including oil-absorbent materials, on site to be used in the event of a spill or if any oil product is observed in the water.

- **Clean Water Act, Section 401 Water Quality Certification—Washington State Department of Ecology.** The Proposed Action would result in the construction and operation of a facility that could discharge into navigable waters and would require a Clean Water Act, Section 401, water quality certification.

The following best management practice identified by the Applicant would likely be a condition under the Section 401 water quality certification.

- Construction contractors and the facility operator conducting in-water and over-water work, including demolition, will be familiar with implementation of best management practices and permit conditions typical of working in the aquatic environment.

### 3.6.7 Proposed Mitigation Measures

This section describes the proposed mitigation measure that would reduce impacts related to hazardous materials from construction and operation of the Proposed Action. This mitigation measure would be implemented in addition to project design measures, best management practices, and compliance with environmental permits, plans, and authorizations that are assumed as part of the Proposed Action.

#### 3.6.7.1 Applicant Mitigation

The Applicant will implement the following proposed measure to mitigate impacts related to hazardous materials. The following proposed mitigation measure is also presented in Section 4.5, *Water Quality*.

##### **MM WQ-1. Locate Spill Kits Near Main Construction and Operations Areas**

The Applicant will locate spill response kits throughout the project area during construction and operations. The spill response kits will contain response equipment and personal protective equipment appropriate for hazardous materials that will be stored and used during construction and operations. Site personnel will be trained in the storage, inventory, and deployment of items in the spill response kits. Spill response kits will be checked a minimum of four times per year to ensure proper-functioning condition, and will otherwise be maintained and replaced per manufacturer recommendations. Should a spill response kit be deployed, the Applicant will notify Cowlitz County and Ecology immediately. The Applicant will submit a map indicating the types and locations of spill response kits to Cowlitz County and Ecology for approval prior to beginning construction and operations.

### 3.6.8 Unavoidable and Significant Adverse Environmental Impacts

Compliance with laws and implementation of the measures and design features described above would reduce impacts related to hazardous materials. There would be no unavoidable and significant adverse environmental impacts related to hazardous materials.

