

# **MILLENNIUM BULK TERMINALS—LONGVIEW SEPA ENVIRONMENTAL IMPACT STATEMENT**

## **SEPA ENERGY AND NATURAL RESOURCES TECHNICAL REPORT**

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## Acronyms and Abbreviations

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Applicant	Millennium Bulk Terminals—Longview, LLC
aMW	average megawatt
bgs	below the ground surface
BMP	best management practice
BNSF	BNSF Railway Company
BPA	Bonneville Power Administration
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
City	City of Longview
Corps	U.S. Army Corps of Engineers
County	Cowlitz County
kV	kilovolt
kWh	kilowatt hour
MW	megawatt
MWH	megawatt hour
NEPA	National Environmental Policy Act
PUD	Public Utility District
RCW	Revised Code of Washington
Reynolds facility	Reynolds Metals Company facility
RWTP	Regional Water Treatment Plant
SEPA	Washington State Environmental Policy Act
UP	Union Pacific Railroad
USC	United States Code
WAC	Washington Administrative Code

This technical report assesses the potential energy and natural resources impacts of the proposed Millennium Bulk Terminals—Longview project (Proposed Action) and No-Action Alternative. For the purposes of this assessment, energy and natural resources refer to different energy types and sources that would be used during project construction and ongoing operations. This report describes the regulatory setting, establishes the method for assessing potential energy and natural resources impacts, presents the historical and current energy and natural resources conditions in the study area, and assesses potential impacts.

## 1.1 Project Description

Millennium Bulk Terminals—Longview, LLC (Applicant) proposes to construct and operate a coal export terminal in Cowlitz County, Washington, along the Columbia River (Figure 1). The coal export terminal would receive coal from the Powder River Basin in Montana and Wyoming and the Uinta Basin in Utah and Colorado via rail, then load and transport the coal by ocean-going ships via the Columbia River and Pacific Ocean to overseas markets in Asia. The coal export terminal would be capable of receiving, stockpiling, blending, and loading coal by conveyor onto ships for export. Construction of the coal export terminal would begin in 2018. For the purpose of this analysis, it is assumed the coal export terminal would operate at full capacity in 2028.

The following subsections present a summary of the Proposed Action and No-Action Alternative. For detailed information on these alternatives, see the Washington State Environmental Policy Act (SEPA) Alternatives Technical Report (ICF International 2016a).

### 1.1.1 Proposed Action

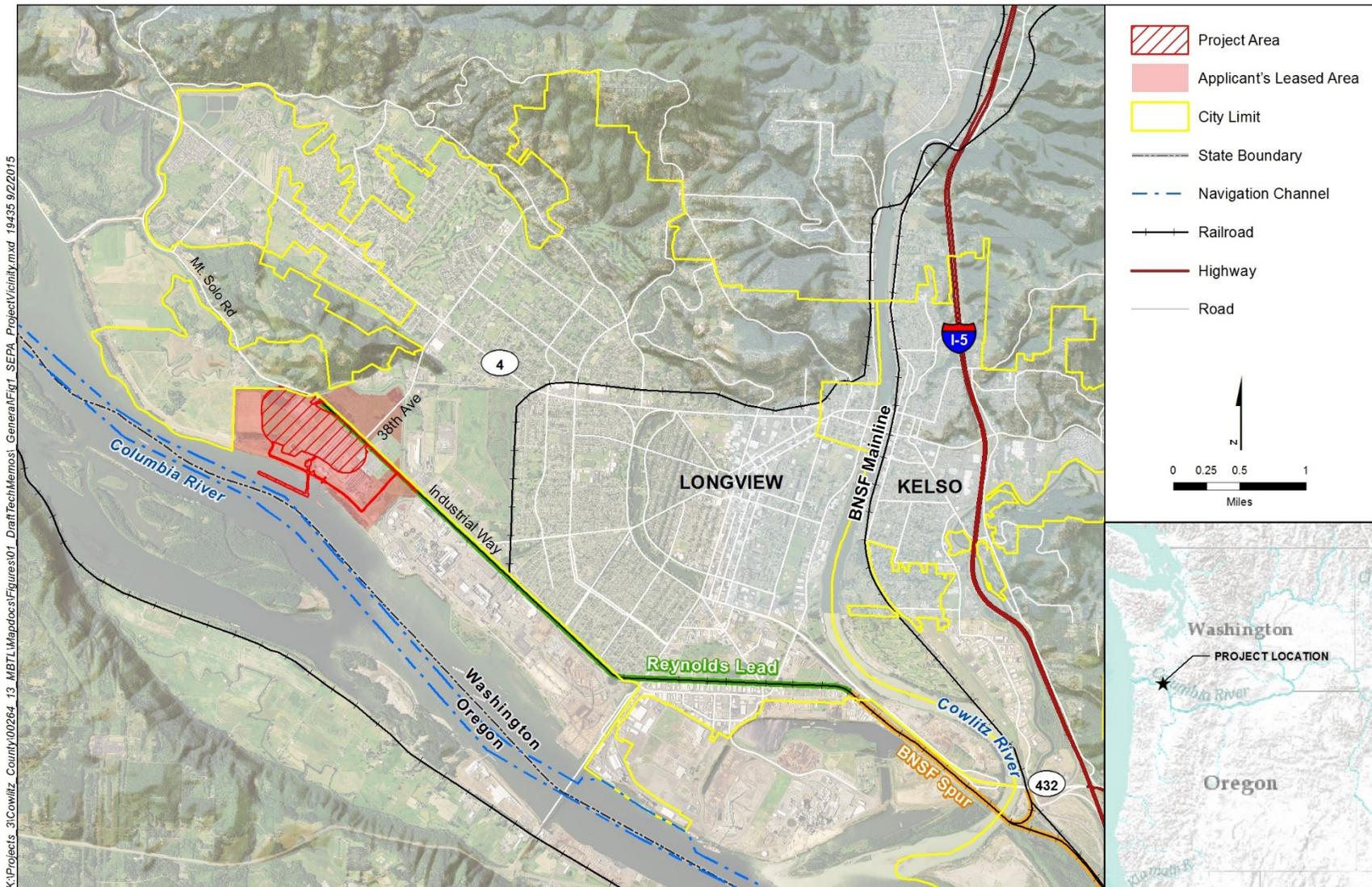
The Proposed Action would develop a coal export terminal on 190 acres (project area). The project area is located within an existing 540-acre area currently leased by the Applicant at the former Reynolds Metals Company facility (Reynolds facility), and land currently owned by Bonneville Power Administration. The project area is adjacent to the Columbia River in unincorporated Cowlitz County, Washington near Longview city limits (Figure 2).

The Applicant currently and separately operates, and would continue to separately operate, a bulk product terminal on land leased by the Applicant. Industrial Way (State Route 432) provides vehicular access to the Applicant's leased land. The Reynolds Lead and the BNSF Spur, both operated by Longview Switching Company (LVSW),<sup>1</sup> provide rail access to the Applicant's leased area from a point on the BNSF Railway Company (BNSF) main line (Longview Junction, Washington) located to the east in Kelso, Washington. Ships access the Applicant's leased area via the Columbia River and berth at an existing dock (Dock 1) operated by the Applicant in the Columbia River.

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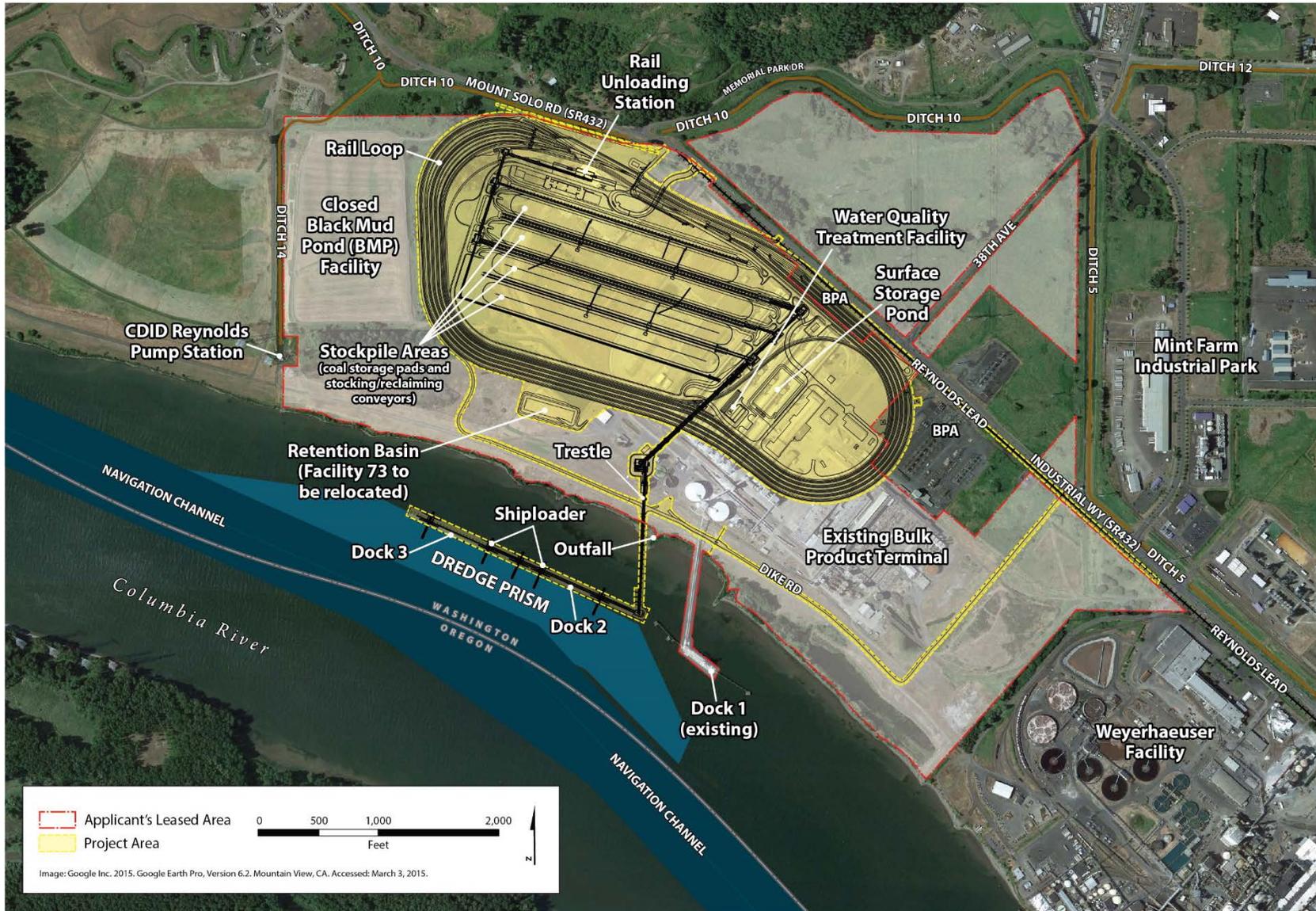
<sup>1</sup> The Longview Switching Company (LVSW) is jointly owned by BNSF Railway Company (BNSF) and Union Pacific Railroad (UP).

Figure 1. Project Vicinity



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Figure 2. Proposed Action



Under the Proposed Action, BNSF or Union Pacific Railroad (UP) trains would transport coal in rail cars 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 blended, and loaded by conveyor onto ocean-going ships at two new docks (Docks 2 and 3) on the Columbia River for export.

Once construction is complete, the Proposed Action would have an annual throughput capacity of up to 44 million metric tons.<sup>2</sup> The coal export terminal would consist of one operating rail track, eight rail tracks for the storage of rail cars, rail car unloading facilities, stockpile areas for coal storage, conveyor and reclaiming facilities, two new docks in the Columbia River (Docks 2 and 3), and ship-loading facilities on the two docks. Dredging of the Columbia River would be required to provide access to and from the Columbia River navigation channel and for berthing at the two new docks.

Vehicles would access the project area from Industrial Way (State Route 432). Ships 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. The coal export terminal would be designed for a minimum 30-year period of operation.

### **1.1.2 No-Action Alternative**

Under the No-Action Alternative, the proposed export terminal would not be constructed. Current operations of the bulk product terminal, which include the storage and transport of alumina and up to 150,000 metric tons per year of coal. Importing of alumina would continue and increase in the project area using Dock 1. The Applicant could expand the existing bulk product terminal onto the 190-acre project area, developing storage and shipment facilities to bulk product terminal operations. Coal and alumina would continue to be stored, transferred, and shipped. Additional bulk product transfers activities involving products such as calcine pet coke, coal tar pitch, cement, fly ash, and sand or gravel could also be pursued, and new or revised permits could be required. These operations would involve storage and upland transfer of bulk products, which would use existing or new buildings. Construction of new buildings could involve demolition and replacement of existing buildings and new or modified permits. Any new construction would be limited to uses allowed under existing Cowlitz County development regulations and federal and state permits.

## **1.2 Regulatory Setting**

The jurisdictional authorities and corresponding regulations, statutes, and guidance for determining potential impacts on energy and natural resources are summarized in Table 1.

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<sup>2</sup> A metric ton is the U.S. equivalent to a tonne per the International System of Units, or 1,000 kilograms or approximately 2,204.6 pounds.

**Table 1. Regulations, Statutes, and Guidelines for Energy and Natural Resources**

<b>Regulation, Statute, Guideline</b>	<b>Description</b>
<b>Federal</b>	
National Environmental Policy Act (42 USC 4321 <i>et seq.</i> )	Requires the consideration of potential environmental effects. NEPA implementation procedures are set forth in the President's Council on Environmental Quality's Regulations for Implementing NEPA (49 CFR 1105).
<b>State</b>	
Washington State Environmental Policy Act (WAC 197-11, RCW 43.21C)	Requires state and local agencies in Washington to identify potential environmental impacts that could result from governmental decisions.
<b>Local</b>	
Cowlitz County SEPA Regulations (CCC Code 19.11)	Provide for the implementation of SEPA in Cowlitz County.
Cowlitz County Comprehensive Plan	Provides a framework for the management of natural and energy resources within Cowlitz County.
Notes: USC = United States Code; NEPA = National Environmental Policy Act; CFR = Code of Federal Regulations; Corps = U.S. Army Corps of Engineers; CEQ = Council on Environmental Quality; WAC = Washington Administrative Code; RCW = Revised Code of Washington; SEPA = Washington State Environmental Policy Act; CCC = Cowlitz County Code	

## 1.2.1 Study Area

The study area for direct impacts on energy and natural resources is the project area for the Proposed Action. For indirect impacts, the study area is the area within 0.25 mile of project area boundaries. When assessing the availability of energy and natural resources, the analysis considers those resources that are available regionally, beyond the 0.25-mile study area.

This chapter explains the methods for assessing the existing conditions and determining impacts, and describes the existing conditions in the study area as they pertain to energy and natural resources.

## 2.1 Methods

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

### 2.1.1 Data Sources

The following sources of information were used to evaluate the energy and natural resources characteristics of the study area.

- Cascade Natural Gas Website  
(<http://www.cngc.com/utility-navigation/about-us>)
- City of Longview Comprehensive Plan  
(<http://wa-cowlitzcounty.civicplus.com/DocumentCenter/View/3160>)
- Cowlitz Conservation District  
(<http://scc.wa.gov/wp-content/uploads/2013/12/CowlitzLRP.pdf>)
- Cowlitz County Comprehensive Plan  
(<http://wa-cowlitzcounty.civicplus.com/DocumentCenter/View/3160>)
- Cowlitz Public Utility District Annual Reports  
([http://cowlitzpud.org/annual\\_report.php](http://cowlitzpud.org/annual_report.php))
- U.S. Energy Information Administration  
(<http://www.eia.gov/state/?sid=WA#tabs-1>)
- U.S. Mining Cowlitz County's Mines  
(<http://www.us-mining.com/washington/cowlitz-county>)

Information on existing energy sources and availability within the region was collected from documents made available by the respective energy providers. In addition, materials provided by the Applicant (URS Corporation 2014; Appendix A, *Additional Applicant-Provided Information*) were used to evaluate energy and natural resources.

### 2.1.2 Impact Analysis

The following methods were used to evaluate the potential impacts of the Proposed Action and No-Action Alternative on energy and natural resources. For the purposes of this analysis, construction

impacts are based on peak construction period and operations impacts are based on maximum throughput capacity (up to 44 million metric tons per year).

Potential impacts on energy were evaluated based on the estimated amount of energy consumed during construction and operation of the Proposed Action and No-Action Alternative. Estimated hours of operation and types of fuel consumed were used in quantifying energy consumption.

Potential impacts on depletable natural resources from the Proposed Action and No-Action Alternative are estimated based on the proposed consumption of natural resources during construction.

For this analysis, a number of assumptions related to construction materials and transportation were made.

- Heavy construction materials, such as gravel, sand, concrete, and timber would be sourced locally to the extent possible.
- Quantities adequate to support the needs of the Proposed Action and No-Action Alternative are readily available in Cowlitz County.
- Long-distance transport of these materials would be undesirable due to associated transportation costs.
- Steel used in construction would be available from a combination of local (Cowlitz County) and regional (Washington and Oregon) sources.

Because there are no established federal, state, or local thresholds for the evaluation of energy-related impacts from construction or operations activities, the following methods were used to assess impacts of the Proposed Action and No-Action Alternative on energy and natural resources.

The following methods were used to evaluate construction impacts.

- Identified the energy types and natural resources that would be needed for construction.
- Analyzed the effect of the Proposed Action and No-Action Alternative on local fuel and natural resource availability during construction.
- Estimated the amount and source of materials and energy needed for project construction.

The following methods were used to evaluate operations impacts.

- Estimated energy use for the Proposed Action and No-Action Alternative.
- Analyzed the effect of energy consumed by the Proposed Action and No-Action Alternative on regional energy production and consumption.
- Identified energy and natural resources needed for operations.

## 2.2 Existing Conditions

The existing environmental conditions related to energy and natural resources in the study area are described below.

### 2.2.1.1 Energy

Local energy sources are described below, followed by a discussion of current energy usage in the project area.

#### Local Energy Sources

The following describes local energy sources.

#### Electricity

Existing electricity energy sources in Cowlitz County include electricity provided by the Cowlitz Public Utility District (PUD) and high voltage transmission lines owned and operated by BPA.

Cowlitz PUD buys over 90% of its wholesale power from BPA. The majority of the BPA power comes from the Columbia River system hydroelectric projects. BPA also sells the output of the Columbia Generating System (nuclear plant) near Richland, Washington, and makes miscellaneous energy purchases on the open market. The remaining PUD power comes from its own 68.8 megawatt (MW) No. 2 Hydroelectric Project on the Lewis River near Cougar, Washington (Cowlitz Public Utility District 2015a).

According to the 2014 Cowlitz PUD Annual Report, the electric system provides service throughout Cowlitz County, which encompasses 1,144 square miles and approximately 49,000 customers. Cowlitz PUD is among the largest public utility districts in the state of Washington with total 2012 power sales of 5.14 million megawatt hours (MWH). Extreme weather and economic conditions are the primary influences on electricity sales (Cowlitz Public Utility District 2015a).

According to the 2014 Cowlitz PUD Integrated Resource Plan, it was estimated that, in 2015, Cowlitz PUD customers used 609 average MW (aMW) and 821 peak MW. By 2040, a Cowlitz PUD customer will use an estimated 677 aMW and 934 peak MW (Cowlitz Public Utility District 2015b).

As depicted in Table 2, approximately 14% of Cowlitz PUD's power is sold to residential users. Residential usage was approximately 703 million kilowatt hours (kWh) in 2014. Approximately 8% of the power is sold to industrial users (22 companies or industries), using approximately 385 million kWh in 2014. Major Industrial users consume approximately 71% of the power, using approximately 3.6 billion kWh (Cowlitz Public Utility District 2015b).

**Table 2. Cowlitz PUD Average Electrical Usage for 2014**

Customer Type	Number of Customers	kWh	Percent of kWh
Residential	43,296	703,389,286	13.9
Sm. General Service	5,598	184,922,989	3.6
General Service	285	190,797,188	3.8
Large Industrial	22	385,324,314	7.6
Major Industrial/Direct Access	3	3,609,197,028	71.1
Street/Area Lighting and Other	12	3,279,000	0.1
<b>Total</b>	<b>49,216</b>	<b>5,076,909,805</b>	<b>100.00</b>

Source: Cowlitz Public Utility District 2015b  
kWh = kilowatt hours

## Natural Gas

Natural gas is not considered a utility that is essential to urban development but is an important alternative energy source that helps to reduce reliance on electricity. Cascade Natural Gas is the local provider of natural gas and serves more than 260,000 customers in 96 communities, 68 of which are in Washington and 28 in Oregon. The Cascade Natural Gas service area is concentrated in western and central Washington, and central and eastern Oregon. Interstate pipelines transmit Cascade's natural gas from production areas in the Rocky Mountains and western Canada (Cascade Natural Gas Company 2014).

## Diesel Fuel

Local suppliers provide diesel fuel in the Longview-Kelso area. In Washington, approximately 88.36 million gallons of diesel fuel were sold annually to railroad-related uses in 2012 (U.S. Energy Information Administration 2014). This represents approximately 9% of total diesel sales for all uses in the state. The largest consumers were on-highway users, or motor vehicles, accounting for 62% of diesel sales, or approximately 618 million gallons, in Washington in 2012.

Tank vessels primarily use diesel or residual fuel oil. The fuel oil used by vessels is required to meet emission standards for nitrogen oxides, sulfur oxides and particulate matter while in the North American Emissions Control Area. Diesel fuel sales for vessel uses in Washington (excluding the military) totaled 80.5 million gallons in 2012, which accounted for 8.2% of the total diesel sales in the state (U.S. Energy Information Administration 2014). In 2013, the total prime supplier sales volume of fuel oil was 469.86 million gallons for Washington (U.S. Energy Information Administration 2014).

## Project Area Energy Usage

Routine maintenance and site cleanup activities associated with the project area require the use of electricity, diesel fuel, and gasoline (URS Corporation 2014). The project area does not have solar or wind energy infrastructure to create solar or wind energy at the project area.

Cowlitz PUD provides electricity to the project area via overhead 230 kilovolt (kV) and 115 kV power lines along Industrial Way. Other power lines run perpendicular to the north end of the project area, where they converge with a BPA substation. The existing power configuration is sufficient for the current operations at the project area (URS Corporation 2014). The existing annual electricity use for the existing bulk product terminal area (outside the project area but within the Applicant's leased area) averages 20 MW based on the average electrical usages for 2014 (Appendix A, *Additional Applicant-Provided Information*).

Administrative buildings are the only existing facilities currently in use in the project area. The buildings use electricity provided by Cowlitz PUD. Other structures in the project area are associated with the former Reynolds facility. These structures and warehouses currently are not in use. Some electricity supplied by Cowlitz PUD is used for lighting, welding equipment, and computers and other office equipment, but a majority of the energy used is from diesel- or gasoline-powered generators. Diesel fuel and gasoline are used in construction equipment. Gasoline and diesel used in the project area are provided by local fuel suppliers (Appendix A, *Additional Applicant-Provided Information*).

### 2.2.1.2 Natural Resources

Local natural resources are described below, followed by a discussion of the natural resources available in the project area.

#### Local Natural Resources

Renewable natural resources generally include water, solar, wind, open space (i.e., wildlife habitats, natural features, and recreation areas), sustenance fishing and harvesting, and wood-derived products from timberlands. Nonrenewable natural resources generally include materials mined from quarries such as sand, gravel, and soil; metals such as steel, aluminum, and iron; lime used to mix with sand and gravel for concrete; silica for glass; fossil fuels such as coal, petroleum, and natural gas; and unique natural features (URS Corporation 2014).

As late as 1998, forestlands covered 85% of Cowlitz County, and the economy in the early 1990s was centered on forestry and timber products (Cowlitz Conservation District 2008). Weyerhaeuser manufactures wood and paper products at a facility near the project area along the Columbia River. Many other wood supply companies are located in nearby Longview.

Groundwater resources in the area are an upper alluvium aquifer (i.e., shallow groundwater), and the deeper confined aquifer from which industries, small farms, and domestic well users withdraw groundwater. The shallow aquifer is at depths of 30 to 50 feet below the ground surface (bgs). The deeper aquifer is at depths of 240 to 400 feet bgs. The new Mint Farm Regional Water Treatment Plant (RWTP) operated by the Beacon Hill Water and Sewer District and located less than 1 mile north of the project area, began withdrawing groundwater from the deep confined aquifer in January 2013 (URS Corporation 2014).

Numerous quarries and mines are located within Cowlitz County that provide crushed stone, sand, and gravel (U.S. Mining 2014). Mount Coffin, on the site of the Weyerhaeuser mill upstream from the project area, was dynamited for gravel and building stone (History Link 2014).

#### Project Area Natural Resources

The project area is zoned Heavy Manufacturing by Cowlitz County. No forest products are located within the 190-acre project area.

The Applicant currently holds several water rights to extract groundwater from the deep aquifer within the Applicant's leased area and in the project area (Kennedy/Jenks Consultants 2012). It is estimated that the Applicant has an existing demand of 1.53 million gallons per day or 1,994 acre-feet per year (Chaney pers. comm.), which is well within water right limits for groundwater pumping. For more information on local groundwater see the SEPA Groundwater Technical Report (ICF International 2016b).

Based on lithologic logs for borings completed under the environmental characterization effort, the materials beneath the project area are composed of discontinuous and interbedded layers of sand, silt, and clay (Anchor QEA 2015).

This chapter describes the impacts on energy and natural resources that would result from construction and operation of the Proposed Action or the ongoing conditions under the No-Action Alternative.

## 3.1 Impacts

This section describes the impacts on energy and natural resources that could result from the Proposed Action and No-Action Alternative. Impacts related to other resources are addressed in other technical reports:

- SEPA Air Quality Technical Report (ICF International 2016c): Impacts on air quality.
- SEPA Geology and Soils (ICF International 2016d): Impacts on geology and soils.
- SEPA Greenhouse Gas Technical Report (ICF International 2016e): Impacts from greenhouse gas emissions (including rail and vessel transportation).
- SEPA Groundwater Technical Report (ICF International 2016b): Impacts on groundwater.
- SEPA Surface Water and Floodplains Technical Report (ICF International 2016f): Impacts on surface water and floodplains.
- SEPA Vegetation Technical Report (ICF International 2016g): Impacts on vegetation.
- SEPA Water Quality Technical Report (ICF International 2016h): Impacts on water quality and hydrology.

### 3.1.1 Proposed Action

Potential impacts on energy and natural resources from the Proposed Action are described below.

#### 3.1.1.1 Construction: Direct Impacts

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

##### **Increase Energy Use**

Construction-related energy uses would include the use of electricity, diesel fuel, gasoline, oil, and natural gas.

Electricity use for construction of the Proposed Action would come from the Cowlitz County PUD Mint Farm substation. Minor electricity use would be required for equipment such as lighting and welding, and computers and other office equipment in a portable construction trailer. Because the majority of energy use for construction would likely be from diesel- or gasoline-powered generators, direct construction-related impacts on electricity would be short-term (URS Corporation 2014).

Heavy machinery would be operated to prepare foundations and footings for the construction of the coal export terminal, associated services, and utilities. Diesel fuel and gasoline would be used in most construction equipment 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, water pumps, and other similar machinery (URS Corporation 2014). Construction equipment would be refueled on site in a designated spill containment area.<sup>3</sup> A fuel truck would visit the project area as required. The frequency during construction would vary based on usage and activities and could range from a high of once or twice per day to a low of once or twice per week. Fuel trucks that would be used during construction would have a 3,000-gallon to 4,000-gallon capacity (Appendix A, *Additional Applicant-Provided Information*). A temporary increase in fuel usage would result from the need to transport employees and materials to the project area and to operate construction equipment.

Construction is anticipated to require on average approximately the following amounts of fuel (Appendix A, *Additional Applicant-Provided Information*).

- 500 gallons per month of gasoline.
- 50 gallons per month of oil.
- 5,000 gallons per week and 20,000 gallons per month of diesel.

The Proposed Action's demand for gasoline, oil, and diesel fuel would be a minor amount compared to the current regional demand for these fuels. Local fuel suppliers currently supply diesel to Weyerhaeuser, the logging industry, and several other local industrial users (Appendix A, *Additional Applicant-Provided Information*). Diesel fuel needs for construction of the Proposed Action would represent a minor amount of the total regional demand. This demand could be met by local suppliers.

Natural gas is piped to the project area. Natural gas would be used for minor purposes, including to heat water for showers and other sanitary uses, but not for industrial uses. To avoid disruption of natural gas supply, pipes would be located, properly marked, and avoided during construction (URS Corporation 2014). The demand for natural gas would be negligible compared to the regional natural gas demand, and no construction-related impacts are anticipated.

### **Increase the Use of Natural Resources**

Natural resources that would be used on site for construction of the Proposed Action include water, gravel, fill dirt, steel, and wood. Groundwater available on site would be used during upland construction as necessary for dust suppression, requiring less than 40,000 gallons per day (URS Corporation 2014).

Approximately 2.1 million cubic yards of fill material would be imported to the project area to be used as preload material, and approximately 2.5 million cubic yards of material would be moved around the site during preload activities (URS Corporation 2014). Dredging would occur as part of the construction of the two docks (Docks 2 and 3), which would include removal of approximately

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<sup>3</sup> The Applicant identified a list of best management practices (BMPs) from the *Ecology Stormwater Management Manual for Western Washington* (Washington State Department of Ecology 2012) that would be implemented during construction, including BMP C153, which addresses material delivery, storage, and containment. For more information, see the Water Quality Technical Report (ICF International 2016i).

500,000 cubic yards of fill material. All regularly used roads accessing the buildings and facilities within the project area would be sealed with asphalt pavement, and other roads would be gravel (URS Corporation 2014). Any new impervious surface area would generate stormwater, but all stormwater would be collected and treated to meet state and federal water quality requirements prior to discharge to the Columbia River.

Rail loop construction would require importing and placing approximately 130,000 cubic yards of ballast rock for the rail foundations; placing railroad ties; laying steel rail lines; and installing signaling, switching equipment, and track lighting (URS Corporation 2014). The demand for cubic yards of gravel and fill dirt, steel needed for rail lines, and any wood resource needs during construction would not likely cause a noticeable impact on supplies in the area, which has many natural resource industries and associated suppliers.

### **3.1.1.2 Construction: Indirect Impacts**

Construction of the Proposed Action would not result in indirect impacts on energy or natural resources.

### **3.1.1.3 Operations: Direct Impacts**

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

#### **Increase Energy Use**

Electricity, gasoline, oil, propane, and diesel fuel would be the primary energy types consumed in the project area. Electricity would be used to power the automated system used to unload coal, store coal, reclaim the coal from storage, and load the vessels. Specific types of equipment used for these processes include rail car unloading facilities, stacking conveyers, bucket wheel reclaimers, the belt conveyor system, and shiploaders (URS Corporation 2014).

Operations electricity usage is estimated at approximately 6,624,000 kWh per year (Appendix A, *Additional Applicant-Provided Information*). Operations electricity requirements are estimated at 20 to 25 MW per year (Appendix A). According to the Cowlitz PUD's Integrated Resource Plan, it is forecasted that in 2015, Cowlitz PUD's regional supply would use approximately 609 aMW and 821 peak MW. At full operation, energy use for the Proposed Action would represent an average of approximately 4% of the total electricity supplied to users in the Cowlitz PUD service area, and is anticipated to be met by existing regional supply because Cowlitz PUD currently has the capacity to meet the electricity demand from the Proposed Action.

Gasoline, propane, and diesel would be used to power vehicles and equipment used on site for standard operations and routine maintenance. Equipment would include wheel loaders, cranes, forklifts, trucks, welders, pumps, and other similar equipment (URS Corporation 2014).

Operations are anticipated to require on average approximately the following amounts of fuel (Appendix A, *Additional Applicant-Provided Information*).

- 100 gallons per month of gasoline.
- 75 gallons per month of oil.
- 200 gallons per week of diesel.

Operations fuel needs would be minor relative to the regional fuel demand and supply.

There are no specific plans to use biodiesel for maintenance vehicles; however, actual usage in the future would depend on local availability and compatibility with needed equipment (Appendix A, *Additional Applicant-Provided Information*).

### **Increase the Use of Natural Resources**

Natural resources that would be used on site for operation of the Proposed Action would include water, gravel, fill dirt, and wood.

A water treatment facility would be designed to treat all surface runoff and process water with capacity to store the water for reuse. The use of stormwater in combination with a storage reservoir and on-site groundwater would be used for processing water and fire protection. All of the stormwater would be processed through the on-site water treatment facility prior to reuse. The proposed processed water uses include dust control, stockpile sprays, wash down, and clean-up (URS Corporation 2014).

Water would be used to control dust from operating conveyors, transfer points, rail car unloaders, stockpiling, and ship loading. Approximately 120 million gallons per year would be reused from on-site runoff during operations. Combined with the groundwater demand from existing activities in the project area (approximately 1,994 acre-feet per year), the total demand on groundwater supplies during operation of the Proposed Action would be approximately 3,019 acre-feet per year.<sup>4</sup> Water would be sourced from existing production wells within the existing water rights, and there would be no need for new wells. Water would be reused on site. The demand on other natural resources would not likely affect the local supplies.

Specific quantities and uses of gravel, fill dirt, and wood during operation of the Proposed Action are not known at this time. However, any increase in demand is not anticipated to be large enough to cause a noticeable impact on supplies in the area.

#### **3.1.1.4 Operations: Indirect Impacts**

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

##### **Increase Energy Use**

The Proposed Action would result in approximately 240 unit trains arriving and 240 unit trains departing each month. These rail traffic operations would increase rail locomotive fuel consumption in the study area compared to existing conditions and the No-Action Alternative.

The Proposed Action would result in approximately 840 vessel transits per year, compared to the No-Action Alternative, which would include 26 vessel transits per year (including existing, planned, and potential future activities). These vessel traffic operations would increase vessel fuel consumption in the study area compared to existing conditions and the No-Action Alternative.

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<sup>4</sup> This estimate does not account for any future projects that the Applicant could construct within the project area that could require groundwater pumping; however, since the Proposed Action combined with the existing demand would account for less than 10% of the maximum pumping limits, operation of the Proposed Action would have a negligible impact on groundwater supply.

The Proposed Action would require approximately 135 employees to operate the coal export terminal, which would generate approximately 270 trips per day, assuming two employee trips per day. These vehicle traffic operations would increase vehicle fuel consumption in the study area compared to existing conditions and the No-Action Alternative.

During operations, a fuel truck would come to the project area as needed and would likely have a 3,000-gallon to 4,000-gallon capacity. Deliveries would be less frequent than in the construction phase. The frequency would vary based on usage and activities and could range from a high of once or twice per day to a low of once or twice per week (Appendix A, *Additional Applicant-Provided Information*).

Trains and vessels would not be fueled in the study area. Fuel consumption from employee and fuel truck trips would be a minor amount compared to the current demand for fuel in the study area, and could be met by the existing local and regional supply.

The design for the Proposed Action would not interfere with the potential for adjacent properties to implement solar and/or wind power because the design would not substantially shade adjacent properties or interfere with local wind patterns.

### 3.1.2 No-Action Alternative

Under the No-Action Alternative, the Applicant would not construct the coal export terminal, and the existing use of energy and natural resources would continue. However, the Applicant could expand the existing bulk product terminal onto the project area. Any new construction would be limited to uses allowed under existing Cowlitz County development regulations and federal and state permits. Potential impacts of the No-Action Alternative are described below.

#### **Increase Energy Use**

Any expansion of the existing bulk product terminal would increase the demand for energy (natural gas, electricity, diesel fuel, and gasoline). Cowlitz PUD and Cascade Natural Gas have the capacity to meet the anticipated demand and local suppliers would be able to accommodate diesel and gasoline demand.

#### **Increase the Use of Natural Resources**

Any expansion of the existing bulk product terminal would increase the demand for natural resources. Use of natural resources would not cause a noticeable impact on supplies in the area, and demand for natural resources would not adversely affect the supply from local and regional service providers.

## 3.2 Potential Mitigation Measures

Based on the findings in this technical report, the Co-Lead Agencies (Cowlitz County and Washington State Department of Ecology) determined mitigation measures are not required.

## Chapter 4 Required Permits

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The following permits would be required for the Proposed Action in relation to energy and natural resources.

The Proposed Action would require building and site development permits from the Cowlitz County Department of Building and Planning in relation to the use of energy and natural resources (such as electrical and mechanical permits).

## 5.1 Written References

- Anchor QEA. 2015. *Former Reynolds Metals Reduction Plant—Longview, Final Remedial Investigation and Feasibility Study*. Submitted by Anchor QEA on behalf of Northwest Alloys, Inc., and Millennium Bulk Terminals—Longview, LLC. January.
- Cascade Natural Gas Company. 2014. *About Us*. Available: <http://www.cngc.com/utility-navigation/about-us>. Accessed: January 9, 2015.
- Cowlitz Conservation District. 2008. *5-Year Plan (2007 to 2012)*. Available: <http://scc.wa.gov/wp-content/uploads/2013/12/CowlitzLRP.pdf>. Accessed: January 10, 2015.
- Cowlitz Public Utility District. 2015a. *Facts and Figures*. Available: [http://cowlitzpud.org/annual\\_report.php](http://cowlitzpud.org/annual_report.php). Accessed: September 21, 2015.
- Cowlitz Public Utility District. 2015b. *2014 Integrated Resource Plan*. Available: <http://cowlitzpud.org/pdf/Cowlitz%20PUD%202014%20IRP,%20FINAL%20Aug26,2014.pdf>. Accessed: April 7, 2015.
- History Link. 2014. *Cowlitz County – Thumbnail History*. Available: [http://www.historylink.org/index.cfm?DisplayPage=output.cfm&file\\_id=7482](http://www.historylink.org/index.cfm?DisplayPage=output.cfm&file_id=7482). Accessed: February 2, 2015.
- ICF International. 2016a. *Millennium Bulk Terminals—Longview SEPA Environmental Impact Statement. SEPA Alternatives Technical Report*. April. Seattle, WA. Prepared for Cowlitz County, Kelso, WA, in cooperation with Washington State Department of Ecology, Southwest Region.
- ICF International. 2016b. *Millennium Bulk Terminals—Longview SEPA Environmental Impact Statement. SEPA Groundwater Technical Report*. April. Seattle, WA. Prepared for Cowlitz County, Kelso, WA, in cooperation with Washington State Department of Ecology, Southwest Region.
- ICF International. 2016c. *Millennium Bulk Terminals—Longview SEPA Environmental Impact Statement. SEPA Air Quality Technical Report*. April. Seattle, WA. Prepared for Cowlitz County, Kelso, WA, in cooperation with Washington State Department of Ecology, Southwest Region.
- ICF International. 2016d. *Millennium Bulk Terminals—Longview SEPA Environmental Impact Statement. SEPA Soils and Geology Technical Report*. April. Seattle, WA. Prepared for Cowlitz County, Kelso, WA, in cooperation with Washington State Department of Ecology, Southwest Region.
- ICF International. 2016e. *Millennium Bulk Terminals—Longview SEPA Environmental Impact Statement. SEPA Greenhouse Gas Emissions Technical Report*. April. Seattle, WA. Prepared for Cowlitz County, Kelso, WA, in cooperation with Washington State Department of Ecology, Southwest Region.

- ICF International. 2016f. *Millennium Bulk Terminals—Longview SEPA Environmental Impact Statement. SEPA Surface Water and Floodplain Technical Report*. April. Seattle, WA. Prepared for Cowlitz County, Kelso, WA, in cooperation with Washington State Department of Ecology, Southwest Region.
- ICF International. 2016g. *Millennium Bulk Terminals—Longview SEPA Environmental Impact Statement. SEPA Vegetation Technical Report*. April. Seattle, WA. Prepared for Cowlitz County, Kelso, WA, in cooperation with Washington State Department of Ecology, Southwest Region.
- ICF International. 2016h. *Millennium Bulk Terminals—Longview SEPA Environmental Impact Statement. SEPA Water Quality Technical Report*. April. Seattle, WA. Prepared for Cowlitz County, Kelso, WA, in cooperation with Washington State Department of Ecology, Southwest Region.
- Kennedy/Jenks Consultants. 2012. *Source Water – Wellhead Protection Program*. Section 5 of 2012 Water System Plan Updated (draft). K/J Project No. 1197009\*00. February 1.
- Natural Resource Conservation Service. 2013. Web Soil Survey. Available: <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>. Accessed: January 2, 2015.
- Washington State Department of Ecology. 2012. *Stormwater Management Manual for Western Washington*. Publication No. 14-10-055. Olympia, WA.
- URS Corporation. 2014. *Millennium Coal Export Terminal—Longview, WA; Energy and Natural Resources Report*. August. Seattle, WA.
- U.S. Energy Information Administration. 2014. *Washington State Profile and Energy Estimates*. Available: <http://www.eia.gov/state/?sid=WA#tabs-1>. Accessed: February 3, 2015.
- U.S. Mining. 2014. *Cowlitz County, WA Mines*. Available: <http://www.us-mining.com/washington/cowlitz-county>. Accessed: January 10, 2015.

## 5.2 Personal Communications

- Chaney, Katy. *AECOM*, Seattle, WA. January 9, 2015—Email to Chris Soncarty, ICF International, regarding existing water demand.

Appendix A

**Additional Applicant-Provided Information**

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## Appendix A

## Additional Applicant-Provided Information

In addition to the Applicant-prepared reports,<sup>1</sup> the following information from the Applicant was used to document the energy and natural resource affected environment and assess potential energy and natural resource impacts of the alternatives.

Topic	Applicant-Provided Information
Diesel fuel usage during construction and operation	Diesel fuel needs for construction activities would average 5,000 gallons per week, with a minimum weekly usage of approximately 1,000 gallons and a maximum weekly usage of approximately 10,000 gallons. Local fuel suppliers currently supply diesel to Weyerhaeuser, Kapstone, the logging industry, Foster Farms, and other local industrial users. The Applicant's construction diesel fuel needs would be a minor amount relative to the total regional demand and supply.
Approximate gas, diesel, and oil required for construction and operations	Construction: <ul style="list-style-type: none"> <li>• Gas: 500 gallons per month</li> <li>• Diesel: Average 5,000 gallons per week; 20,000 gallons per month</li> <li>• Oil: 50 gallons per month</li> </ul> Operations: <ul style="list-style-type: none"> <li>• Gas: 100 gallons per month</li> <li>• Diesel : 200 gallons per month</li> <li>• Oil: 75 gallons per month</li> </ul>
Capacity of fuel trucks and refueling period	Construction equipment would be refueled on site in a designated area. A fuel truck would visit the site as required, and deliveries would be less frequent during operations than construction. The frequency would vary based on usage and activities and could range from a high of once or twice per day to a low of once or twice per week. Existing fuel trucks have a 3,600-gallon capacity. Future trucks would likely have a 3,000–4,000 gallon capacity.
Annual electricity requirements	The existing annual electricity use for the bulk product terminal averages 20 megawatts (based on the average electrical usages for 2014). Stage 1 power requirements are estimated at 10 to 15 megawatts; Stage 2 operation requirements are estimated at 20 to 25 megawatts.
Estimated annual electricity usage	Approximately 6,624,000 kilowatt hours per year for full operations

<sup>1</sup> Two reports prepared for the Applicant: (1) URS Corporation. 2014. *Millennium Coal Export Terminal—Longview, WA; Energy and Natural Resources Report*. August. Seattle, WA; and (2) URS Corporation. 2014. *Millennium Coal Export Terminal—Longview, WA; Off-Site Alternative – Barlow Point Appendix D, Energy and Natural Resources Report*. October. Seattle, WA.

Topic	Applicant-Provided Information
Construction energy conservation measures	<p>Prior to the start of construction, a Waste Management Plan (WMP) will be prepared in coordination with Cowlitz County's Solid Waste Management Plan (Cowlitz County 2007). The WMP will include measures to avoid and minimize the generation of wastes and promote waste re-use and recycling, including:</p> <ul style="list-style-type: none"> <li>• Waste avoidance – practices will be developed that reduce the amount of waste on-site, via selective purchasing procedures and the use of bulk purchasing, where practicable</li> <li>• Material reuse – reuse of recyclable or reusable materials where practicable</li> <li>• Recycling – materials such as metals, oil, timber, plastics, glass and paper will be recycled where practicable</li> <li>• Energy Reduction – where feasible, construction vehicles will be turned off rather than left idling</li> </ul>
Operation energy conservation measures	<ul style="list-style-type: none"> <li>• Energy Efficient lighting</li> <li>• Lighting in unoccupied areas to be switched on only when needed and turned off by automatically</li> <li>• Energy efficiency in plant and equipment specification and selection, such as electric motors to have high power factors; conveyor drives to be “quiet drives,” which require less power to operate; life cycle costs advantage of energy efficient components</li> <li>• Power factor correction equipment in substations</li> <li>• Conveyor idlers to specify rim drag to reduce conveyor start up power</li> <li>• Office equipment to revert to standby mode or switched off when not in use</li> <li>• Vehicle size to be matched to need of the task</li> <li>• Fuel efficiency to be a criteria in vehicle selection</li> <li>• Control and temperature settings on switch room and office air conditioning</li> <li>• Automatic shutdown of idle plant and equipment</li> <li>• Submetering of offices, workshops, conveyors stackers, reclaimers, and ship loaders to manage energy load.</li> <li>• Soft start of electric motors to minimize peak power demand</li> </ul>
Maintenance vehicles that would use biodiesel	<p>At this point, there are no specific plans to use biodiesel for maintenance vehicles. However, actual usage in the future would depend on local availability and compatibility with needed equipment.</p>