

MILLENNIUM BULK TERMINALS—LONGVIEW NEPA ENVIRONMENTAL IMPACT STATEMENT

NEPA ENERGY TECHNICAL REPORT

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Acronyms and Abbreviations

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 impacts of the proposed Millennium Bulk Terminals—Longview project (On-Site Alternative), Off-Site Alternative, and No-Action Alternative. For the purposes of this assessment, energy refers 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 impacts, presents the historical and current energy conditions in the study area, and assesses potential impacts.

1.1 Project Description

Millennium Bulk Terminals—Longview, LLC (Applicant) proposes to construct and operate an export terminal in Cowlitz County, Washington, along the Columbia River (Figure 1). The export terminal would receive coal from the Powder River Basin in Montana and Wyoming and the Uinta Basin in Utah and Colorado via rail shipment, then load and transport the coal by ocean-going ships via the Columbia River and Pacific Ocean to overseas markets in Asia. The export terminal would be capable of receiving, stockpiling, blending, and loading coal by conveyor onto ships for export. Construction of the export terminal would begin in 2018. For the purpose of this analysis, it is assumed the export terminal would operate at full capacity by 2028. The following subsections present a summary of the On-Site Alternative, Off-Site Alternative, and No-Action Alternative.

1.1.1 On-Site Alternative

Under the On-Site Alternative, the Applicant would develop an 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 at the Reynolds facility, 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 rail lines, both operated by Longview Switching Company (LVSW),¹ provide rail access to the Applicant's leased area from the BNSF Railway Company (BNSF) main line (Longview Junction) located to the east in Kelso, Washington. Ships access the Applicant's leased area including the bulk product terminal via the Columbia River and berth at an existing dock (Dock 1) operated by the Applicant in the Columbia River.

Under the On-Site Alternative, BNSF or Union Pacific Railroad (UP) trains would transport coal in rail cars from the BNSF main line at Longview Junction 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 to Asia.

¹ LVSW is jointly owned by BNSF Railway Company (BNSF) and Union Pacific Railroad (UP).

Figure 1. Project Vicinity

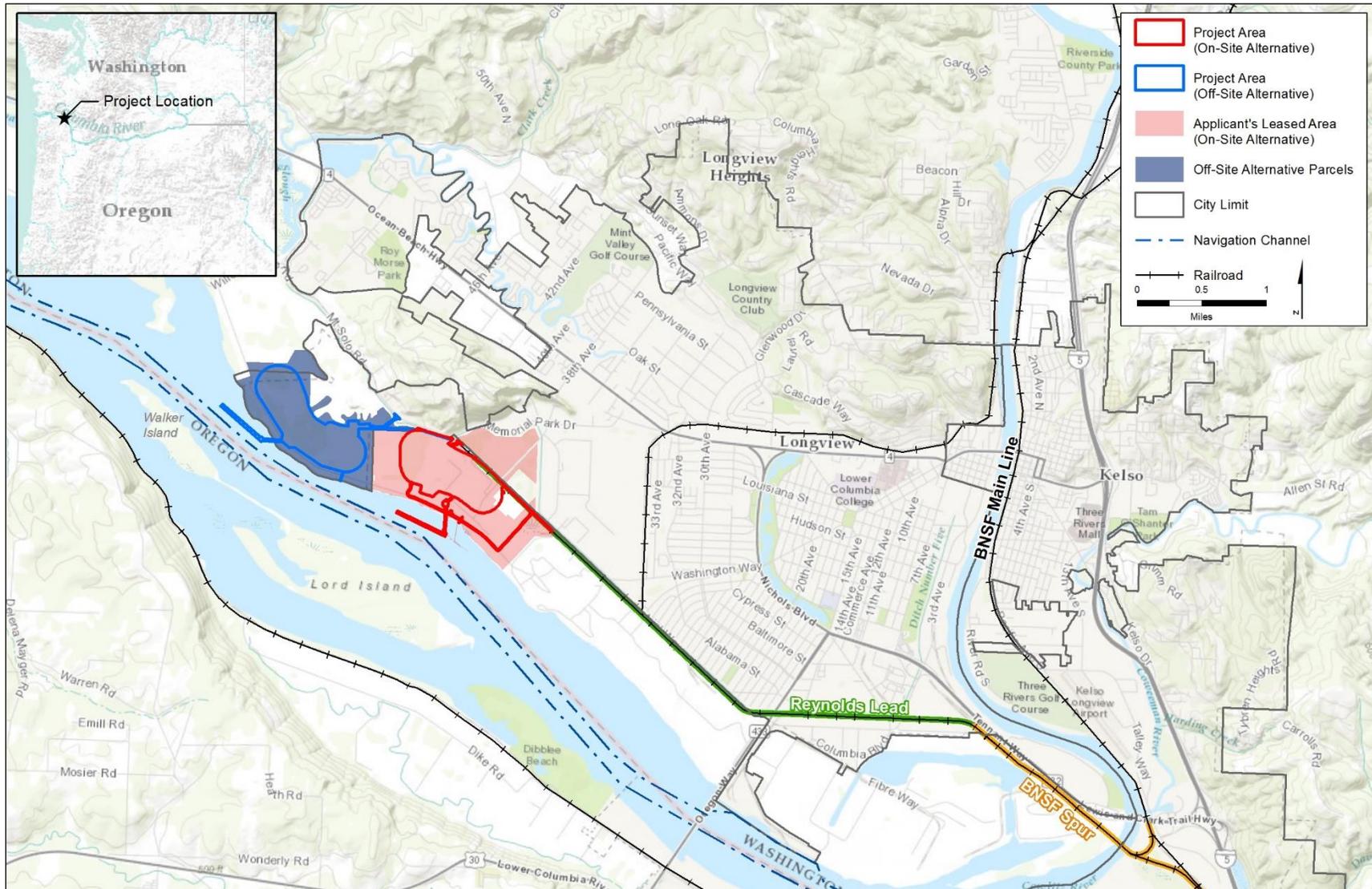
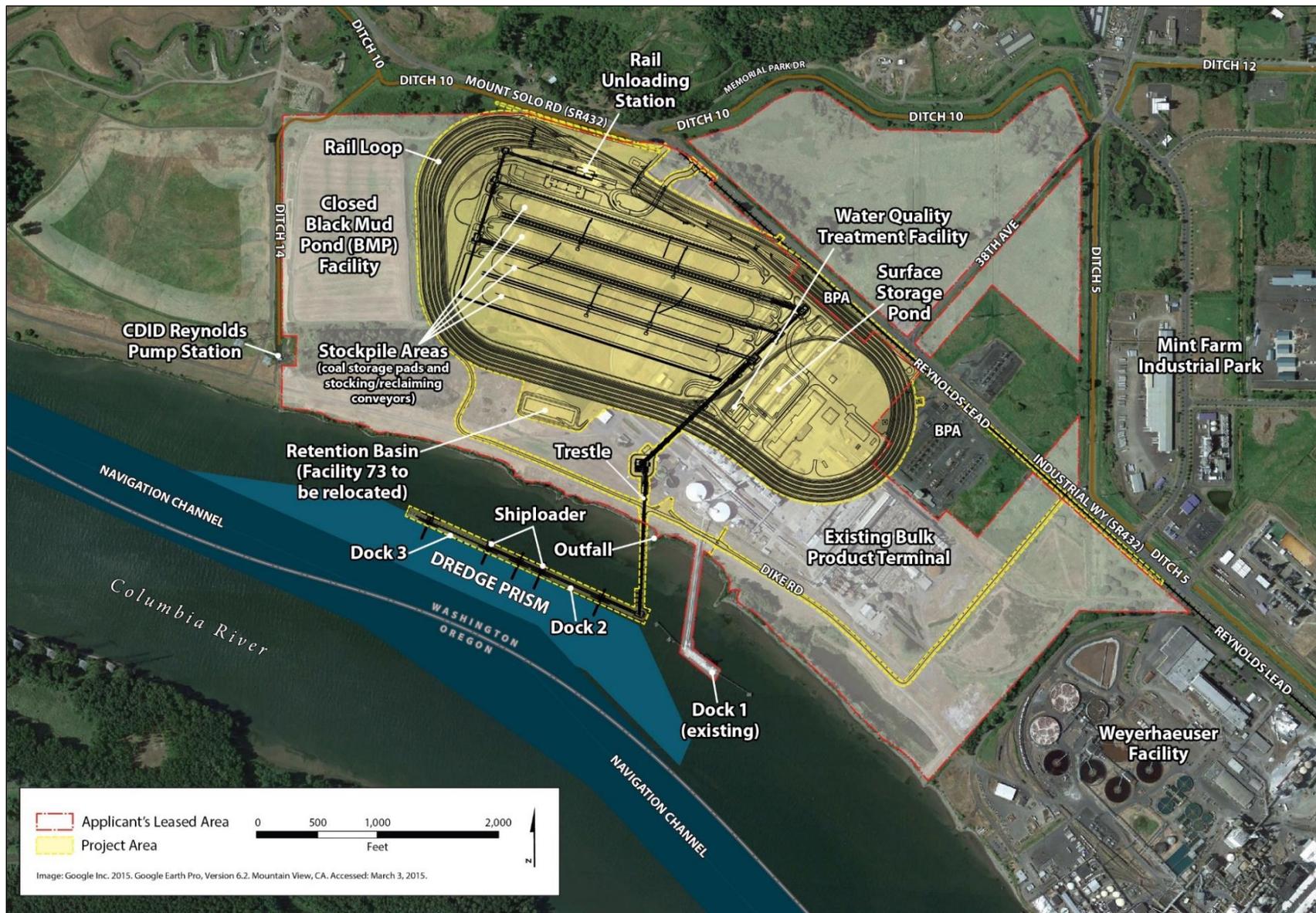


Figure 2. On-Site Alternative



Once construction is complete, the export terminal would have an annual throughput capacity of up to 44 million metric tons of coal.² The 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. Trains would access the export terminal via the BNSF Spur and the Reynolds Lead. Terminal operations would occur 24 hours per day, 7 days per week. The export terminal would be designed for a minimum 30-year period of operation.

1.1.2 Off-Site Alternative

Under the Off-Site Alternative, the export terminal would be developed on an approximately 220-acre site adjacent to the Columbia River, located in both Longview, Washington, and unincorporated Cowlitz County, Washington, in an area commonly referred to as Barlow Point (Figure 3). The project area for the Off-Site Alternative is west and downstream of the project area for the On-Site Alternative. Most of the project area for the Off-Site Alternative is located within Longview city limits and owned by the Port of Longview. The remainder of the project area is within unincorporated Cowlitz County and privately owned.

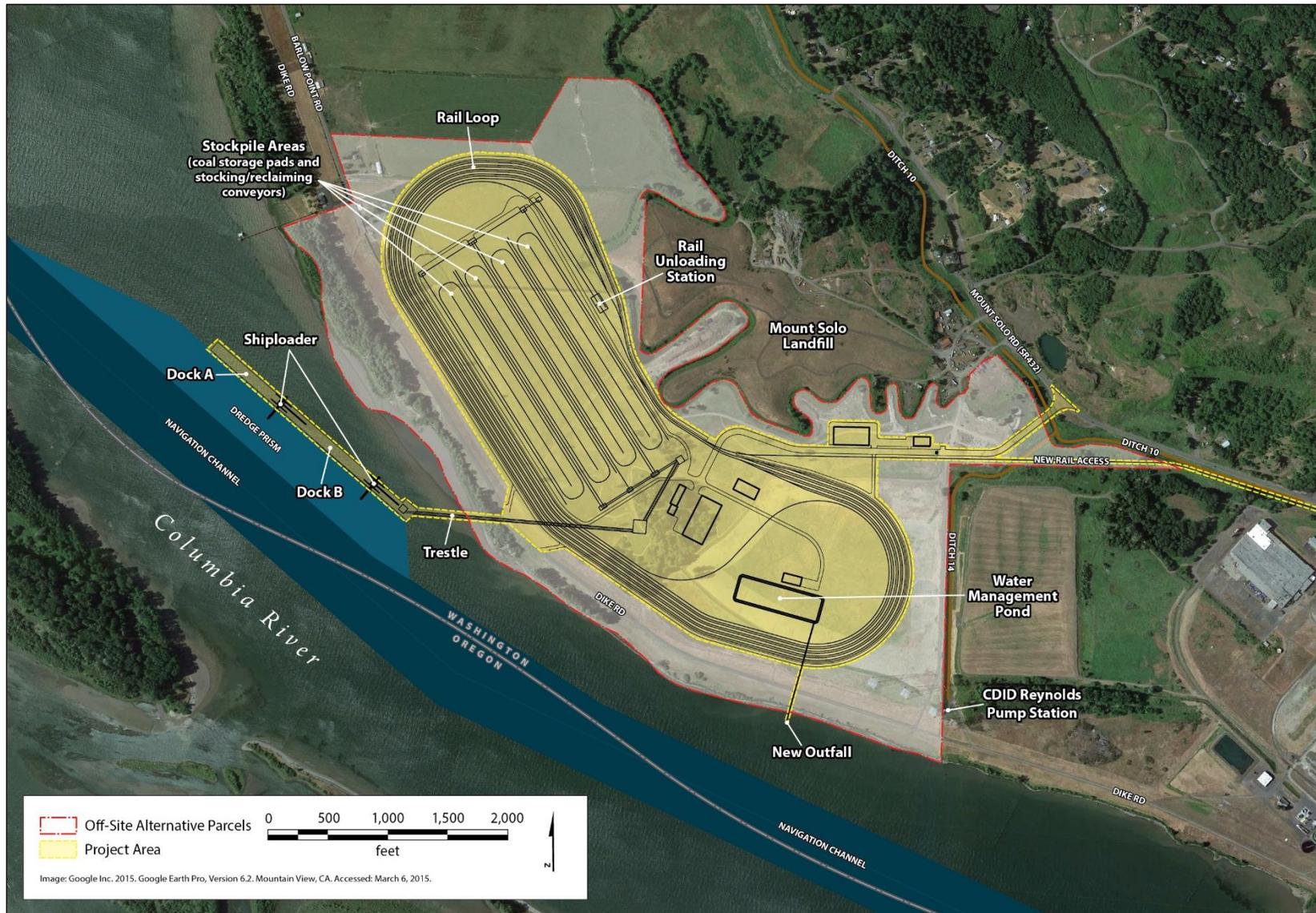
Under the Off-Site Alternative, BNSF or UP trains would transport coal from the BNSF main line at Longview Junction over the BNSF Spur and the Reynolds Lead, which would be extended approximately 2,500 feet to the west. Coal would be unloaded from rail cars, stockpiled and blended, and loaded by conveyor onto ocean-going ships at two new docks (Docks A and B) on the Columbia River. The Off-Site Alternative would serve the same purpose as the On-Site Alternative.

Once construction is complete, the Off-Site Alternative would have an annual throughput capacity of up to 44 million metric tons of coal. The export terminal would consist of the same elements as the On-Site Alternative: one operating rail track, eight rail tracks for the storage of rail cars, rail car unloading facilities, stockpile areas for coal storage, conveyor and reclaiming facilities, two new docks in the Columbia River (Docks A and B), and 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 via a new access road extending from Mount Solo Road (State Route 432) to the project area. Trains would access the terminal via the BNSF Spur and the extended Reynolds Lead. 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 export terminal would be designed for a minimum 30-year period of operation.

² 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.

Figure 3. Off-Site Alternative



1.1.3 No-Action Alternative

Under the No-Action Alternative, the U.S. Army Corps of Engineers would not issue the requested Department of the Army permit under the Clean Water Act Section 404 and the Rivers and Harbors Act Section 10. This permit is necessary to allow the Applicant to construct and operate the proposed export terminal.

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

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

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.

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

Regulation, Statute, Guideline	Description
Federal	
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).
U.S. Army Corps of Engineers NEPA Environmental Regulations (33 CFR 230)	Provides guidance for implementing the procedural provisions of NEPA for the Corps. It supplements CEQ regulations 40 CFR 1500–1508.
State	
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.

Regulation, Statute, Guideline	Description
Local	
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.
City of Longview Comprehensive Plan (Off-Site Alternative)	Provides a framework for the management of natural and energy resources within the City of Longview.
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 areas for the On-Site Alternative and Off-Site Alternative are described below.

1.2.1.1 On-Site Alternative

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

1.2.1.2 Off-Site Alternative

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

This chapter explains the methods for assessing the affected environment and determining impacts, and describes the affected environment in the study area as they pertain to energy.

2.1 Methods

This section describes the sources of information and methods used to characterize the affected environment and assess the potential impacts of the On-Site Alternative, Off-Site Alternative, and No-Action Alternative on energy.

2.1.1 Data Sources

The following sources of information were used to evaluate the energy 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)
- 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.

2.1.2 Impact Analysis

The following methods were used to evaluate the potential impacts of the On-Site Alternative, Off-Site Alternative, and No-Action Alternative on energy. 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 On-Site Alternative, Off-Site Alternative, and No-Action Alternative. Estimated hours of operation and types of fuel consumed were used in quantifying energy consumption.

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 On-Site Alternative, Off-Site Alternative, and No-Action Alternative on energy.

The following methods were used to evaluate construction impacts.

- Identified the energy types that would be needed for construction.
- Analyzed the effect of the On-Site Alternative, Off-Site Alternative, and No-Action Alternative on local fuel availability during construction.
- Estimated the amount and source of energy needed for project construction.

The following methods were used to evaluate operations impacts.

- Estimated energy use for the On-Site Alternative, Off-Site Alternative, and No-Action Alternative.
- Analyzed the effect of energy consumed by the On-Site Alternative, Off-Site Alternative, and No-Action Alternative on regional energy production and consumption.
- Identified energy needed for operations.

2.2 Affected Environment

The existing environmental conditions related to energy in the study area are described below for the On-Site Alternative and Off-Site Alternative.

2.2.1 On-Site Alternative

Existing conditions for energy associated with the On-Site Alternative are described in the following sections. Local energy sources are described below, followed by a discussion of current energy usage in the project area.

2.2.1.1 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
Total	49,216	5,076,909,805	100.00

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).

2.2.1.2 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*).

2.2.2 Off-Site Alternative

Existing conditions for energy associated with the project area of the Off-Site Alternative are described below. The local energy sources are the same as described for the On-Site Alternative.

The Off-Site Alternative is located on Barlow Point, which is undeveloped; therefore, energy is currently not provided to the site. Construction and operation of the Off-Site Alternative would require energy from Cowlitz PUD and Cascade Natural Gas. The project area does not have solar or wind energy infrastructure to create solar or wind energy.

Similar to the On-Site Alternative, Cowlitz PUD provides electricity in the area. Overhead power lines and an associated easement diagonally run overhead at the southeast end of the project area, south to north, and then converge with other power lines north of State Route 432 parallel to the project area. The nearest BPA substation, Mint Farm substation, is located east of the project area at State Route 432 and 38th Avenue.

This chapter describes the impacts on energy that would result from construction and operation of the On-Site Alternative and Off-Site Alternative, and the ongoing conditions under the No-Action Alternative.

3.1 On-Site Alternative

Potential impacts on energy and natural resources from the On-Site Alternative are described below.

3.1.1 Construction: Direct Impacts

Construction of the On-Site Alternative 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 On-Site Alternative 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 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.³ 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.

³ 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 2016a).

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 On-Site Alternative'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 On-Site Alternative 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.

3.1.2 Construction: Indirect Impacts

Construction of the On-Site Alternative would result in the following indirect impacts.

Increase Energy Use

A temporary increase in fuel consumption would result from the transport of employees and materials to the project area during construction. This fuel consumption would be a minor amount compared to the current demand for these fuels in the study area, and could be met by the existing local and regional supply.

3.1.3 Operations: Direct Impacts

Operation of the On-Site Alternative 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 conveyer 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 On-Site Alternative 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 On-Site Alternative.

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*).

3.1.4 Operations: Indirect Impacts

Operation of the On-Site Alternative would result in the following indirect impacts.

Increase Energy Use

The On-Site Alternative 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 On-Site Alternative 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.

The On-Site Alternative would require approximately 135 employees to operate the 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 On-Site Alternative 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.

3.2 Off-Site Alternative

Potential impacts on energy and natural resources from the Off-Site Alternative are described below.

3.2.1 Construction: Direct Impacts

Construction of the Off-Site Alternative would result in the following direct impacts.

Increase Energy Use

Because the project area for the Off-Site Alternative is undeveloped, energy resources are not currently provided to the site. It is assumed that the project area would require a level of preloading similar to the On-Site Alternative. The primary differences between constructing the Off-Site Alternative and constructing the On-Site Alternative would be the need to construct an access road to the project area and install a rail line extension. Some dredging would need to be conducted as well to accommodate the new docks (Docks 1 and 2).

Impacts related to the use of electricity, diesel fuel, gasoline, oil, and natural gas during construction of the Off-Site Alternative would be similar to construction-related impacts for the On-Site Alternative. The Off-Site Alternative could be powered via power lines from the Mint Farm substation located 0.5-mile east on State Route 432. Any disruptions in surrounding service associated with construction of the Off-Site Alternative would be temporary.

3.2.2 Construction: Indirect Impacts

Construction of the Off-Site Alternative would have the same indirect impacts as the On-Site Alternative.

3.2.3 Operations: Direct Impacts

Operation of the Off-Site Alternative would result in the following direct impacts.

Increase Energy Use

Electricity, gasoline, propane, oil, and diesel fuel would be the primary energy types consumed on site. Impacts related to the use of these energy sources during operation of the Off-Site Alternative would be similar to operation-related impacts for the On-Site Alternative.

Coordination with the Cowlitz PUD for new electricity demand would be required to supply electricity and natural gas for the Off-Site Alternative. The project area would likely be served via power lines from the Mint Farm substation located 0.5-mile east on State Route 432 (URS Corporation 2014b).

3.2.4 Operations: Indirect Impacts

Operation of the Off-Site Alternative would have the same indirect impacts as the On-Site Alternative.

3.3 No-Action Alternative

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.

Chapter 4 Required Permits

The following permits would be required for the On-Site Alternative and Off-Site Alternative in relation to energy.

4.1 On-Site Alternative

The On-Site Alternative would require building and site development permits from the Cowlitz County Department of Building and Planning in relation to the use of energy (such as electrical and mechanical permits).

4.2 Off-Site Alternative

The Off-Site Alternative would require building and site development permits from the Cowlitz County Department of Building and Planning and the City of Longview Community Development Department in relation to the use of energy (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.
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- ICF International. 2016a. *Millennium Bulk Terminals—Longview, NEPA Environmental Impact Statement, NEPA Water Quality Technical Report*. September. Seattle, WA. Prepared for U.S. Army Corps of Engineers, Seattle District.
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- 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

Appendix A

Additional Applicant-Provided Information

In addition to the Applicant-prepared reports,¹ 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	<p>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.</p> <p>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.</p>
Approximate gas, diesel, and oil required for construction and operations	<p>Construction:</p> <ul style="list-style-type: none"> • Gas: 500 gallons per month • Diesel: Average 5,000 gallons per week; 20,000 gallons per month • Oil: 50 gallons per month <p>Operations:</p> <ul style="list-style-type: none"> • Gas: 100 gallons per month • Diesel : 200 gallons per month • Oil: 75 gallons per month
Capacity of fuel trucks and refueling period	<p>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.</p>
Annual electricity requirements	<p>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.</p>
Estimated annual electricity usage	<p>Approximately 6,624,000 kilowatt hours per year for full operations</p>

¹ 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"> • 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 • Material reuse – reuse of recyclable or reusable materials where practicable • Recycling – materials such as metals, oil, timber, plastics, glass and paper will be recycled where practicable • Energy Reduction – where feasible, construction vehicles will be turned off rather than left idling
Operation energy conservation measures	<ul style="list-style-type: none"> • Energy Efficient lighting • Lighting in unoccupied areas to be switched on only when needed and turned off by automatically • 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 • Power factor correction equipment in substations • Conveyor idlers to specify rim drag to reduce conveyor start up power • Office equipment to revert to standby mode or switched off when not in use • Vehicle size to be matched to need of the task • Fuel efficiency to be a criteria in vehicle selection • Control and temperature settings on switch room and office air conditioning • Automatic shutdown of idle plant and equipment • Submetering of offices, workshops, conveyors stackers, reclaimers, and ship loaders to manage energy load. • Soft start of electric motors to minimize peak power demand
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>