

Chapter 4

Natural Environment: Existing Conditions, Project Impacts, and Potential Mitigation Measures

4.0 Introduction

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

Information contained in this Draft EIS was extracted from environmental technical reports found in Volume III of this Draft EIS and incorporated by reference. The technical reports include more detailed discussion on the determination of study areas, analysis methods, potential impacts, and mitigation.

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

4.0.1 Natural Environment Resource Areas

Chapter 4, *Natural Environment: Existing Conditions, Project Impacts, and Potential Mitigation Measures*, evaluates the natural habitat and biological communities near the Proposed Action. The resource areas reviewed as part of the natural environment analysis include geology and soils; surface water and floodplains; wetlands; groundwater; water quality; vegetation; fish; wildlife; and energy and natural resources (Table 4.0-1). Additional detailed information about these resources can also be found in their corresponding technical reports in Volume III of this Draft 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 4.0-1. Resource Areas and Corresponding Draft EIS Chapters

Chapter	Section Number	Environmental Resource Area
Chapter 3, Built Environment	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	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	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

4.0.2 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 operations¹ occurring by 2028. Throughout the discussions, the 190-acre coal export terminal site is referred to as the project area.

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 Draft EIS provides a description of the Proposed Action and No-Action Alternative.

4.0.3 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

¹ 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*.

area and an indirect impacts study area. Table 4.0-2 explains the differences between these two study areas. In some cases, both study areas are the same.

Table 4.0-2. Types of Impacts and Corresponding Study Area

Type of Impact	Description	Description of Impacts 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"> • Construction: Temporary operational 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. • Operation: Impacts occurring in the project area resulting from rail unloading, coal storage, machinery operations, equipment, vessel loading, etc.
Indirect	An impact resulting from either construction or operation of the Proposed Action that occurs beyond the project area.	<ul style="list-style-type: none"> • Construction: Impacts from activities beyond the project area during construction, such as vehicle and rail traffic. • Operation: Impacts from activities beyond the project area during operations, such as rail, vehicle, and vessel traffic.

Table 4.0-3 provides a summary of the direct and indirect impacts study areas by Chapter 4 resource.

Table 4.0-3. Direct Impacts Study Areas and Indirect Impacts Study Areas by Resource

Resource	Direct Impacts Study Area	Indirect Impacts Study Area	
		Cowlitz County	Washington State (beyond Cowlitz County)
4.1, Geology and Soils	Project area	Project area and the broader area surrounding that could influence the project area	No additional study area ^a
4.2, Surface Water and Floodplains	<ul style="list-style-type: none"> • Surface Water: Columbia River and stormwater drainage ditches in the project area • Floodplains: Project area 	<ul style="list-style-type: none"> • Surface Water: Stormwater system drainage ditches adjacent to the project area and the Columbia River 1 mile downstream from the project area. • Floodplains: Project area and surrounding 500-year floodplain on the north side of the Columbia River in the vicinity of the project area 	No additional study area ^a
4.3, Wetlands	Applicant's leased area	Applicant's leased area	No additional study area
4.4, Groundwater	Project area	Applicant's leased area	No additional study area ^a
4.5, Water Quality	Project area and the area extending 300 feet from the project area into the Columbia River, and potential in-river dredged material disposal sites	Project area, stormwater system drainage ditches adjacent to the project area, the Columbia River 1 mile downstream from the project area, and potential dredged material disposal sites	No additional study area
4.6, Vegetation	Applicant's leased area	Area immediately adjacent to the Applicant's leased area and contiguous forestland and other intact vegetation communities, and vegetation within 1 mile of the project area.	Rail routes for Proposed Action-related trains ^{a,b}
4.7, Fish	Main channel of the Columbia River 3.92 miles upstream and downstream of the project area	Columbia River	Rail routes for Proposed Action-related trains ^{a,b}

Resource	Direct Impacts Study Area	Indirect Impacts Study Area	
		Cowlitz County	Washington State (beyond Cowlitz County)
4.8, Wildlife	<ul style="list-style-type: none"> • Terrestrial Species and Habitats: Project area and 0.5 mile from project area • Aquatic Species and Habitats: Main channel of the Columbia River to 5.1 miles upstream and 2.1 miles downstream of the project area 	<ul style="list-style-type: none"> • Rail routes for Proposed Action-related trains • Columbia River 	<ul style="list-style-type: none"> • Rail routes for Proposed Action-related trains^a • Columbia River
4.9, Energy and Natural Resources	Project area	Area within 0.25 mile of project area	Not in the study area

Notes:

^a 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).

^b Study area for potential impacts related to coal spills only.

4.0.4 Mitigation Measures Development Approach

Applicable regulations, specific permit conditions, and required planning documents were evaluated to determine if they would address potentially significant adverse environmental impacts identified in this Draft EIS. When applicable, each section describes specific measures identified by the Applicant to be implemented during construction and operations. When potential significant adverse environmental impacts remained, other potential mitigation measures were identified that could reduce the identified impact (Applicant Mitigation). These potential 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 potential mitigation measures were determined by the co-lead agencies (Cowlitz County and the Washington State Department of Ecology). Additionally, when applicable, each section identifies recommended mitigation measures that could be implemented 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.