

Chapter 4

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

4.0 Introduction

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

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

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

4.0.1 Natural Environment Resource Areas

Chapter 4, *Natural Environment: Existing Conditions, Project Impacts, and Proposed 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 Final EIS.

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

Table 4.0-1. Resource Areas and Corresponding Final EIS Chapters

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

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 this chapter, the 190-acre coal export terminal site is referred to as the *project area*. The impacts identified for 2028 would occur for the lifetime of the Proposed Action. Proposed mitigation measures are intended to apply for the lifetime of the Proposed Action.

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

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*.

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 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

Type of Impact ^a	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 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.

Notes:
^a Washington Administrative Code (WAC) 197-11-192.

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

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

Section and 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 geologic environment in the surrounding area 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	Project area	Project area and the immediate vicinity, where wetlands might be affected by construction or operation of the coal export terminal	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 plus the area extending 300 feet downstream of each disposal site	Project area, stormwater system drainage ditches adjacent to the project area, the Columbia River up to 1 mile downstream of the project area, and potential in-river dredged material disposal sites plus the area extending 300 feet downstream of each disposal site	No additional study area

Section and Resource	Direct Impacts Study Area	Indirect Impacts Study Area	
		Cowlitz County	Washington State (beyond Cowlitz County)
4.6, Vegetation	Project area plus additional elements (e.g., access roads, docks, and rail line)	The area within 1 mile of the project area for potential impacts from coal dust deposition from operations in the project area; the lower Columbia River for Proposed Action-related vessels; rail routes for Proposed Action-related trains	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 downstream from the project area to the mouth of the Columbia River for Proposed Action-related vessels; rail routes along the Columbia River for Proposed Action-related trains	Rail routes for Proposed Action-related trains ^{a,b}
4.8, Wildlife	<ul style="list-style-type: none"> • Terrestrial Species and Habitats: Project area and up to 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 proposed docks for potential underwater noise impacts; surface and stormwater ditches, ponds, and wetlands in the project area 	<ul style="list-style-type: none"> • Terrestrial Species: Rail routes for Proposed Action-related trains for potential coal spill and wildlife strike impacts • Aquatic Species: Columbia River downstream from the project area to the mouth of the river for potential impacts on marine mammals 	<ul style="list-style-type: none"> • Terrestrial Species: Rail routes for Proposed Action-related trains^a
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, potential permit conditions, and required planning documents were evaluated to determine if they would address potentially significant adverse environmental impacts identified in this Final EIS. When applicable, each section describes specific measures identified by the Applicant to be implemented during construction and operations. When potential significant adverse environmental impacts remained, other proposed mitigation measures were identified that would reduce the identified impact (Applicant Mitigation). Mitigation measures included in permit conditions would become legal requirements of the Applicant. In addition to the proposed mitigation measures identified in each section of this chapter, the following measure is proposed.

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

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

The thresholds of significance and proposed mitigation measures were determined by the co-lead agencies (Cowlitz County and the Washington State Department of Ecology). Additionally, when applicable, each section identifies 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.