

Chapter 5

Natural Environment: Affected Environment and Project Impacts

5.0 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 (Chapters 4, 5, and 6, respectively). The purpose of this chapter is to discuss the natural environment resource areas assessed for the Millennium Bulk Terminals—Longview project (proposed export terminal).

Information contained in this Draft EIS was drawn 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, and potential impacts of the proposed export terminal.

5.0.1 Natural Environment Resource Areas

Chapter 5, *Natural Environment: Affected Environment and Project Impacts*, evaluates potential impacts on water resources, natural habitat, and biological communities near the On-Site Alternative and Off-Site Alternative locations. The resource areas in this analysis include geology and soils, surface water and floodplains, wetlands, groundwater, water quality, vegetation, fish, and wildlife (Table 5.0-1). Additional detailed information about these resources can also be found in the corresponding technical reports in Volume III of this Draft EIS.

Chapter 8, *Minimization and Mitigation*, presents measures to mitigate potential impacts of the proposed export terminal identified in this chapter.

Table 5.0-1. Natural Environment Resource Areas and Corresponding Draft EIS Sections

Chapter	Section Number	Environmental Resource Area
Chapter 5, Natural Environment: Affected Environment and Project Impacts	5.1	Geology and Soils
	5.2	Surface Water and Floodplains
	5.3	Wetlands
	5.4	Groundwater
	5.5	Water Quality
	5.6	Vegetation
	5.7	Fish
	5.8	Wildlife

5.0.2 Alternatives and Timeframe for Analysis

This chapter analyzes impacts that would likely occur as a result of construction and operation of the proposed export terminal. The analysis assumes construction beginning in 2018 and full operations¹ occurring by 2028. Throughout this chapter, the site of the proposed export terminal for both the On-Site Alternative and Off-Site Alternative is referred to as the *project area*.

This chapter also analyzes impacts that could occur under the No-Action Alternative. Chapter 3, *Alternatives*, of this Draft EIS provides a description of the On-Site Alternative, Off-Site Alternative, and No-Action Alternative.

5.0.3 Study Areas and Type of Impacts Analyzed

As discussed in Chapter 1, *Introduction*, the NEPA scope of analysis includes the activities requiring a Department of the Army permit from the Corps, plus those activities outside the permit area over which the Corps has sufficient control and responsibility. Therefore, the Corps' scope of analysis for this Draft EIS includes the project area, the area that would be dredged, any dredged material disposal sites, any off-site area that might be used for compensatory mitigation, and any other area in or adjacent to the Columbia River that would be affected by, and integral to, the proposed export terminal.

Within the overall NEPA scope of analysis, study areas have been defined for each resource. The size and location of each study area depends, in part, on physical and/or biological characteristics of the resource, logistics, nature and extent of potential impacts, and how the resource is regulated. Separate study areas are normally identified for direct impacts and indirect impacts. Table 5.0-2 explains the general differences between the direct and indirect impacts study areas.

Table 5.0-2. Types of Impacts and Impact Examples

Type of Impact	Description	Example of Impacts
Direct	An impact resulting from construction or operation of the proposed export terminal at the On-Site Alternative or Off-Site Alternative location. Direct impacts are caused by the action and occur at the same time and place (40 CFR 1508.8).	<ul style="list-style-type: none"> • Construction: Temporary impacts within the project area that are resolved or mitigated by the end of construction, or permanent changes to the project area due to construction of the proposed export terminal. • Operation: Impacts occurring in the project area resulting from rail unloading, coal storage, machinery operations, equipment, vessel loading, etc.

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 3, *Alternatives*.

Type of Impact	Description	Example of Impacts
Indirect	An impact resulting from construction or operation of the proposed export terminal that occurs outside the project area or later in time. Indirect impacts are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable (40 CFR 1508.8).	<ul style="list-style-type: none"> • Construction: Impacts that occur outside the project area, such as vehicle and rail traffic that support construction activities. • Operation: Impacts that occur outside the project area, such as rail, vehicle, and vessel traffic that support operational activities, or that occur within the project area later in time.

Table 5.0-3 provides a summary of the direct and indirect impacts study areas for natural environment resources. These study areas were developed based on the U.S. Army Corps of Engineers' Memorandum for Record (MFR) entitled *Scope of Analysis and Extent of Impact Evaluation for National Environmental Policy Act Environmental Impact Statement* (2014). The study areas contained in this Draft EIS typically conform with the MFR. In some cases, study areas were adjusted to reflect the characteristics and specific elements for each resource area.

Table 5.0-3. Direct Impacts Study Areas and Indirect Impacts Study Areas by Resource

Resource	Direct Impacts Study Area	Indirect Impacts Study Area
5.1, Geology and Soils	Project area for the On-Site Alternative and Off-Site Alternative.	Project area and the broader geologic environment that can influence the project area.
5.2, Surface Water and Floodplains	Surface Water: Columbia River and stormwater drainage ditches in and adjacent to the project areas for the On-Site Alternative and Off-Site Alternative. Floodplains: Project areas.	Surface Water: Stormwater system drainage ditches adjacent to the project areas and the Columbia River 1 mile downstream from the project areas. Floodplains: Project area and surrounding 500-year floodplain on the north side of the Columbia River in the vicinity of the project areas.
5.3, Wetlands	Project areas for the On-Site Alternative and Off-Site Alternative.	Project areas and the immediate vicinity, where wetlands might be affected by construction or operation of the proposed export terminal.
5.4, Groundwater	Project area for the On-Site Alternative and Off-Site Alternative.	City of Longview-Frontal Columbia River watershed (Hydrologic Unit Code [HUC]-12: 170800030602).
5.5, Water Quality	Project areas, the area extending 300 feet from the project areas into the Columbia River, potential in-river dredged material disposal sites, and an area extending 300 feet downstream of each disposal site.	Project areas, stormwater system drainage ditches adjacent to the project areas, the Columbia River from the project area downriver 1 mile downstream from the project areas, and potential dredged material disposal sites plus an area extending 300 feet downstream of each disposal site.

Resource	Direct Impacts Study Area	Indirect Impacts Study Area
5.6, Vegetation	Project areas for the On-Site Alternative and Off-Site Alternative.	Project areas, surrounding areas up to 1 mile from the project area, and the Columbia River from the project areas to the mouth of the river.
5.7, Fish	Columbia River 3.92 miles upstream and downstream of the project areas.	Direct impacts study area plus Columbia River from project area to the mouth of the river.
5.8, Wildlife	<p>Terrestrial Species and Habitats: Project areas and 0.5 mile from project areas.</p> <p>Aquatic Species and Habitats (On-Site Alternative): Main channel of the Columbia River to 5.1 miles upstream and 2.1 miles downstream of the project areas.</p> <p>Aquatic Species and Habitats (Off-Site Alternative): Main channel of the Columbia River to 7.1 miles upstream and 6.8 miles downstream of the project areas.</p>	Project areas, lands in the vicinity where project-related disturbance to wildlife and habitat could occur, and the Columbia River from the project areas to the mouth of the river.