# 6.1 Rail Transportation

Railroads provide transportation for passengers and a wide range of commercial goods, and support regional economic activity. Similar to other forms of transportation, rail traffic is subject to various regulatory requirements, including requirements for tracks, rail cars and locomotives, crew, operations, inspection and maintenance, tariffs, and methods and types of goods and services that can be transported.

This section assesses the potential rail transportation impacts of the proposed export terminal. For this assessment, rail transportation refers to unit trains[1] servicing the proposed export terminal (project-related trains), as well as the type and volume of other rail traffic using the same rail lines. At full operations, the export terminal would bring approximately 8 incoming unit trains[2] carrying coal, and send out approximately 8 empty unit trains each day. No rail construction outside of the project areas for the On-Site Alternative or Off-Site Alternative is proposed by the Applicant.

This section describes the regulatory setting, presents the historical and current rail transportation conditions in the study area, establishes the methods for assessing potential rail transportation impacts, and assesses potential impacts.

## 6.1.1 Regulatory Setting

Laws and regulations relevant to rail transportation are summarized in Table 6.1-1.

**Table 6.1-1. Regulations, Statutes, and Guidelines for Rail Transportation**

| Regulation, Statute, Guideline | Description |
|---|---|
| **Federal** | |
| Federal Railroad Safety Act of 1970 | Gives FRA rulemaking authority over all areas of rail line safety. FRA has designated state and local law enforcement agencies have jurisdiction over most aspects of highway/rail grade crossings, including warning devices and traffic law enforcement. |
| Highway Safety Act and the Federal Railroad Safety Act | Gives FHWA and FRA regulatory jurisdiction over safety at federal highway/rail grade crossings. |
| Federal Railroad Administration general regulations (49 CFR Parts 200–299) | Establishes railroad regulations, including safety requirements related to tracks, operations, and cars. |
| Interstate Commerce Commission Termination Act of 1995 (49 USC 101) | Establishes the Surface Transportation Board and upholds the common carrier obligations of railroads; requires railroads to provide service upon reasonable request. |

[1] A unit train is a train in which all cars carry the same commodity and are shipped from the same origin to the same destination.

[2] A "train" is defined in this section as a one-way train trip.

| Regulation, Statute, Guideline | Description |
|---|---|
| **State** | |
| Washington Utilities and Transportation Commission | Inspects and issues violations for hazardous materials, tracks, signal and train control, and rail operations. WUTC regulates the construction, closure, or modification of public railroad crossings. In addition, WUTC inspects and issues defect notices if a crossing does not meet minimum standards. |
| WSDOT Local Agency Guidelines M 36-63.28, June 2015, Chapter 32, Railroad/Highway Crossing Program | Focuses on adding protection to improve safety and efficiency of railroad/highway crossings. Provides a process for investigating alternatives for improving grade-crossing safety, such as closure, consolidation, and installation of warning devices. |
| WSDOT Design Manual M 22.01.10, November 2015, Chapter 1350, Railroad Grade Crossings | Provides specific guidance for the design of at-grade railroad crossings. |
| Rail Companies—Operation (WAC 480-62) | Establishes operating procedures for railroad companies operating in Washington State. |
| **Local** | |
| Longview Municipal Code 11.40.080 (Railroad Trains Not to Block Streets) | Prohibits trains from using any street or highway for a period of time longer than five minutes, except trains or cars in motion other than those engaged in switching activities. |

Notes:
FRA = Federal Railroad Administration; FHWA = Federal Highway Administration; CFR = Code of Federal Regulations; USC = United States Code; WUTC = Washington Utilities and Transportation Commission; WSDOT = Washington State Department of Transportation; WAC = Washington Administrative Code

The Surface Transportation Board (STB) oversees the nation's freight rail system. STB has regulatory jurisdiction over the reasonableness of rates railroads charge shippers, mergers, line acquisitions, new rail-line construction,[3] and abandonments of existing rail lines. Because the proposed export terminal would not construct new rail lines or meet the criteria of STB's other jurisdiction, it is not subject to STB review.

## 6.1.2 Study Area

The study area for direct impacts is the project area for both the On-Site Alternative and Off-Site Alternative. For indirect impacts, the study area includes the project area and the rail corridor of the Longview industrial area, which is defined as the rail corridor (Reynolds Lead and BNSF Spur) between the project area and the junction with the BNSF main line (Longview Junction). These study areas are based on the Corps' NEPA scope of analysis Memorandum For Record (February 14, 2014) and then adjusted to reflect the rail transportation network near the project areas.

[3] The Surface Transportation Board (STB) grants the authority to construct and operate proposed rail lines and associated facilities under 49 United States Code (USC) § 10901.

# 6.1.3 Methods

This section describes the sources of information and methods used to evaluate the potential impacts on rail transportation associated with the construction and operation of the proposed export terminal.

## 6.1.3.1 Information Sources

The following information sources were used for project-related rail operations.

- **Existing, projected, and No-Action Alternative rail traffic.** Existing and projected 2028 rail traffic for the Reynolds Lead and BNSF Spur were based on information from the Longview Switching Company (LVSW) as operator of the Reynolds Lead and BNSF Spur, information provided by the Port of Longview, and field observations.
- **Train parameters.** Train parameters including the number of rail cars per unit train and number of locomotives were based on information provided by the Applicant, input from BNSF, and existing BNSF coal train operations (BNSF Railway Company 2016).
- **Reynolds Lead, BNSF Spur, and project area operations**. Rail operations of the Reynolds Lead and BNSF Spur were based on information provided by LVSW. Rail operations in the project areas were based on information provided by the Applicant.

## 6.1.3.2 Impact Analysis

The following methods were used to identify the potential impacts of the proposed export terminal relevant to rail transportation in the study areas. For this analysis, potential impacts resulting from operations impacts are based on the Applicant's planned throughput capacity of up to 44 million metric tons of coal per year.

- **Train parameters.** For this analysis, all project-related trains were assumed to have the parameters shown in Table 6.1-2.
- **Rail line capacity.** The theoretical capacity[4] for the Reynolds Lead and BNSF Spur was calculated generally based on the number of main tracks, train parameters, speed, and distance.
- **Train speed and travel time.** The current maximum speed for the Reynolds Lead is 10 miles per hour (mph). The maximum speed over the Reynolds Lead could increase from 10 mph to up to 25 mph if track improvements are made by LVSW.[5] This improvement would reduce the train travel time from Longview Junction to the project areas for the On-Site Alternative and Off-Site Alternative. Because these improvements are not certain, the impact analysis includes train speeds and transit time over each road crossing with and without planned improvements to the Reynolds Lead and BNSF Spur.

[4] Theoretical capacity is the number of trains that could run over a route in a mathematically generated environment at minimum spacing between trains.

[5] As described in Section 6.1.5, *Impacts,* the Longview Switching Company (LVSW) would likely upgrade the Reynolds Lead and BNSF Spur as needed to meet additional future volume increases.

**Table 6.1-2. Parameters for Project-Related Trains**

| | |
|---|---|
| **Rail Cars** | |
| Gross rail load (tons) | 143 |
| Empty weight (tons) | 21 |
| Weight of coal (tons) | 122 |
| Coupled Length (feet) | 53 |
| **Locomotives** | |
| Length (feet) | 73 |
| Number in train[a] | 3 |
| **Total Train** | |
| Cars per train | 125 |
| Total train length (feet) | 6,844 |

Notes:

[a] Locomotives are distributed through trains (distributed power) in various configurations. Project-related trains would likely have two locomotives at the head and one at the rear of the train (Wolter pers. comm.).

## 6.1.4 Affected Environment

This section describes the environment in the study areas related to rail transportation potentially affected by construction and operation of the proposed export terminal.

### 6.1.4.1 Project Areas

As described in Chapter 3, *Alternatives*, the project area for the On-Site Alternative is located on 190 acres, primarily within the 540-acre Applicant's leased area. The project area includes a portion of a rail loop that transitions from the Reynolds Lead onto the project area and extends from the project area to the Applicant's leased area. Rail traffic within the project area serves the existing bulk product terminal adjacent to the project area and within the Applicant's leased area as described in Chapter 3, *Alternatives*.

The project area for the Off-Site Alternative is located on an approximate 220-acre site west and downstream of the project area for the On-Site Alternative. Most of the project area for the Off-Site Alternative is 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. There are no existing rail facilities in the project area for the Off-Site Alternative.

### 6.1.4.2 BNSF Spur and Reynolds Lead

The project area for the On-Site Alternative is located at the end of the Reynolds Lead, an existing rail line serving the Port of Longview and several industries, and connects via the BNSF Spur to the BNSF main line. The junction of the BNSF Spur and BNSF main line is called Longview Junction (Figure 6.1-1). The speed limit on the Reynolds Lead and BNSF Spur is 10 mph. At an average speed of 9 mph, the existing travel time from Longview Junction to the project area for the On-Site Alternative is approximately 49 minutes.

The traffic control system used on the Reynolds Lead and BNSF Spur is Traffic Warrant Control (TWC). Under this control system, train crews obtain authority to occupy and move on a main track from the dispatcher in the form of a completed track warrant form. Usually the track warrant

information is transmitted to the train crew by phone, radio, or electronic transmission to the locomotive.

Between Longview Junction and the project area for the On-Site Alternative there are five public and three private at-grade road crossings (Figure 6.1-1). These road crossings are affected by current rail traffic operating to and from the Port of Longview and/or from industrial switching activities at locations along the Reynolds Lead.

## BNSF Spur

The BNSF Spur runs from the BNSF Seattle Subdivision main line switch at Longview Junction, across the Cowlitz River Bridge to the LVSW yard and is approximately 2.1 miles long (Figure 6.1-1). Dike Road is the only public at-grade road crossing on the BNSF Spur. There is one main track with TWC traffic control. The Cowlitz River Bridge is a manually operated drawbridge controlled by LVSW. The bridge opens once every 4 to 5 years to allow passage of river-dredging vessels. The speed limit on the BNSF Spur is 10 mph because of speed restrictions on the bridge.

Average existing traffic is approximately 7 trains per day. Capacity is approximately 24 trains per day (12 trains in each direction), which supports the current volume. The 7 trains average 78 rail cars per train and 4,920 feet in length.

Existing trains consist of an average of 4 grain trains per day (2 loaded and 2 empty) to and from the EGT grain terminal at the Port of Longview, 2 to 3 manifest trains[6] per day from the BNSF main line to the LVSW yard, and an occasional unit train of clay, soda ash, or other trains destined to or from the Port of Longview. The Port Industrial Rail Corridor connects with the BNSF Spur just east of the LVSW yard. The switch is a remotely controlled switch operated by the BNSF dispatcher. Trains to or from Port of Longview facilities leave or enter the BNSF Spur at the switch. Other trains originate or terminate in the LVSW yard.

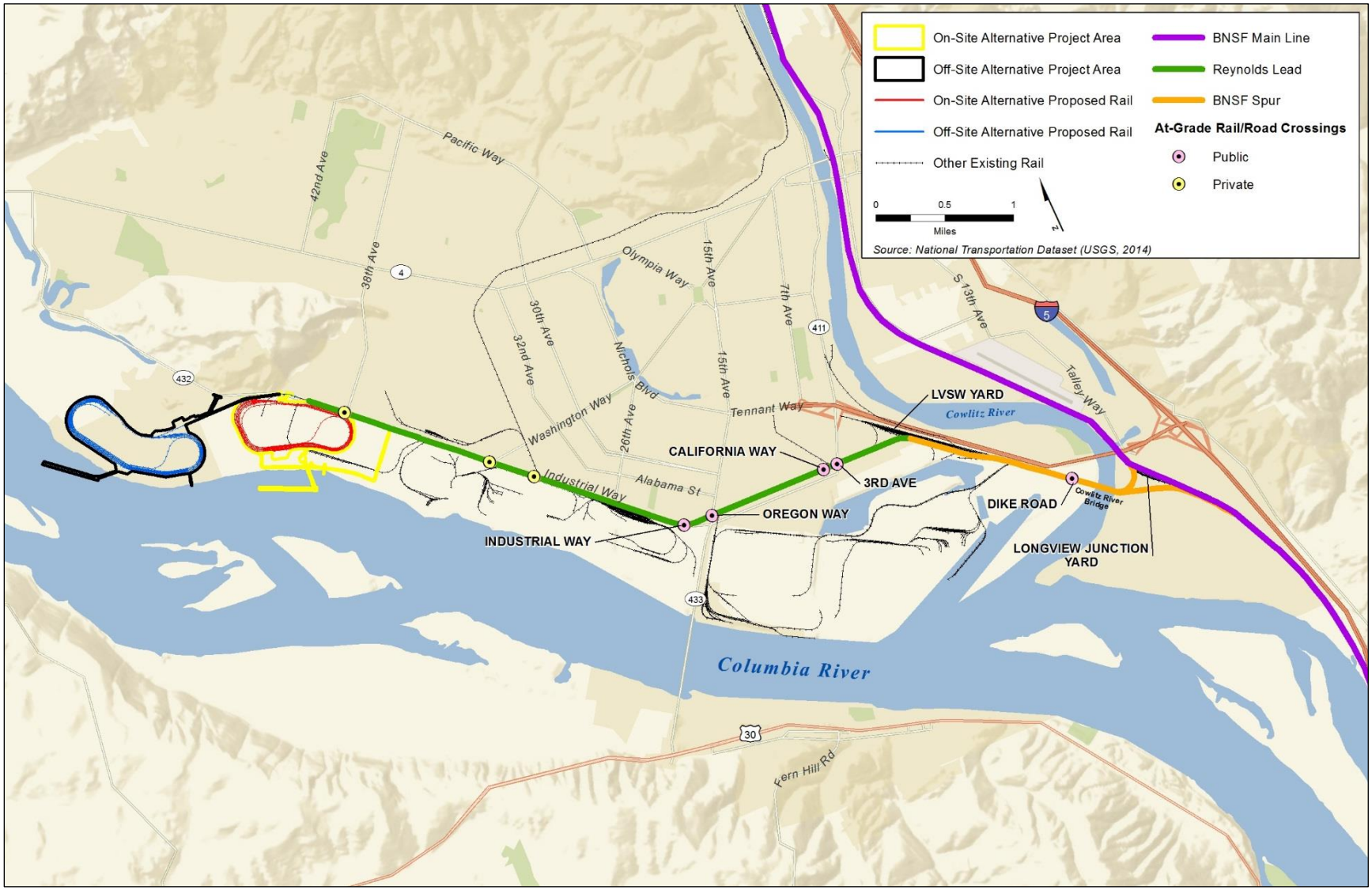
## Reynolds Lead

The Reynolds Lead runs from the west end of the LVSW yard to the project area for the On-Site Alternative and is approximately 5 miles long (Figure 6.1-1). There is one main track with TWC traffic control. The speed limit is 10 mph, and capacity is approximately 24 trains per day (12 trains in each direction). Average existing traffic is approximately 2.3 trains per day. Each train averages 21 rail cars per train with an average train length of approximately 1,450 feet. There are four public at-grade road crossings on the Reynolds Lead between the LVSW yard and the project area: 3rd Avenue (State Route 432), California Way, Oregon Way (State Route 433), and Industrial Way (State Route 432) (Figure 6.1-1).

Existing trains operating on the Reynolds Lead include an LVSW local crew. The crew place and pull cars at industrial facilities along the Reynolds Lead 3 days per week, and a local crew delivers and picks up cars interchanged to and from the Columbia & Cowlitz Railway at two sidings just west of California Way. The Columbia & Cowlitz Railway also operates on the Reynolds Lead between the Weyerhaeuser plant near Industrial Way and these sidings to deliver and pick up interchange cars to or from the LVSW rail line.

[6] Unlike unit trains, manifest trains are composed of rail cars with different commodities originating in different locations and delivered to different locations.

**Figure 6.1-1. Reynolds Lead and BNSF Spur**



# 6.1.5 Impacts

This section describes the potential direct and indirect impacts related to rail transportation from construction and operation of the proposed export terminal.

## 6.1.5.1 On-Site Alternative

This section describes the potential impacts in the study area as a result of construction and operation of the terminal at the On-Site Alternative location.

### Construction—Direct Impacts

The Reynolds Lead would be modified within the project area to accommodate unit train access to and from the export terminal. Because the project area is at the terminus of the Reynolds Lead, this construction would not affect existing rail traffic on the Reynolds Lead. Chapter 3, *Alternatives*, describes construction-related activities and scenarios to transport materials to the project area. Under the rail scenario, trains transporting construction materials would travel to and from the project area. The unloading and maneuvering of these trains during construction in the project area would not affect the operations of existing rail traffic on the Reynolds Lead.

### Construction—Indirect Impacts

Construction of the On-Site Alternative would result in the following indirect impact on rail transportation if construction materials are delivered by rail.

**Construction Rail Traffic on the Reynolds Lead and BNSF Spur**

The Applicant estimates 2.1 million yards of suitable material would be needed for construction. This material would be transported to the project area by truck or rail, as described in Chapter 3, *Alternatives*. The Applicant estimates approximately two-thirds of the volume (1.4 million yards) would move during the first year of construction, assumed to be 2018. The Applicant has proposed moving materials by rail, which would require an estimated 350 loaded trains of 100 cars each, equivalent to 700 trains (loaded and empty) over the entire construction period. During the first year of construction, when two–thirds of the volume would be transported, this would amount to approximately 467 trains, or an average of 1.3 trains per day in 2018.

The baseline rail traffic on the BNSF Spur in 2018 is an average of 7 trains per day. Baseline rail traffic and project-related construction trains would not exceed the capacity of the Reynolds Lead and BNSF Spur.

### Operations—Direct Impacts

During operations, 8 loaded trains would travel to the project area daily, and 8 empty trains would travel outbound from the project area daily. These trains would maneuver along the rail loop in the project area and would not affect rail traffic operations on the Reynolds Lead.

## Operations—Indirect Impacts

Operation of the On-Site Alternative would result in the following indirect impact on rail transportation.

### Rail Traffic on the BNSF Spur and Reynolds Lead

Project-related loaded trains would move from Longview Junction to the project area, and the reverse, moving empty trains from the project area to Longview Junction. This movement would add rail traffic to the BNSF Spur and Reynolds Lead. The export terminal at full throughput in 2028, would receive an average of 8 loaded trains and return an average of 8 empty trains per day. Therefore, 16 project-related trains per day would operate on the Reynolds Lead and BNSF Spur.

Capacity of the Reynolds Lead and BNSF Spur is approximately 24 trains per day. The baseline volume is an average of 7 trains per day on the BNSF Spur and 4 trains per day on the Reynolds Lead. Project-related trains would add 16 trains per day (8 loaded and 8 empty) on each of these segments for a total of 23 trains on the BNSF Spur and 20 trains on the Reynolds Lead. The Reynolds Lead and BNSF Spur have the capacity to handle current baseline rail traffic plus future project-related rail traffic.

LVSW has indicated it would expand system capacity as needed to meet additional future volume increases. LVSW would likely upgrade the traffic control technology on both the BNSF Spur and the Reynolds Lead from TWC to a Centralized Traffic Control (CTC) system.[7] However, this improvement is not currently funded or authorized.

In addition to converting to the CTC system, LVSW indicated it would upgrade the track on the Reynolds Lead and BNSF Spur by adding ballast, replacing ties, and upgrading the rails. These improvements would provide safer operation and increase maximum speed from 10 mph to 25 mph on the Reynolds Lead. The speed limit on the BNSF Spur is limited by the Cowlitz River Bridge, and so would remain at 10 mph. LVSW would also install a remotely operated electric switch connecting the BNSF Spur to the Reynolds Lead to allow continuous movement and more consistent operation. The electronic switch would eliminate the need for project-related trains to stop while a train crew member operates the switch. While LVSW has developed upgrade plans, it has not begun work or applied for permits. LVSW would start the permit and project funding processes once future volume increases become reasonably certain.

Table 6.1-3 provides additional information on anticipated operations over the Reynolds Lead and BNSF Spur, including the average time for project-related trains to cross each of the at-grade road/rail crossings with the existing track infrastructure and with the planned infrastructure improvements.

[7] With Centralized Traffic Control (CTC), electrical circuits monitor the location of trains, allowing dispatchers to control train movements from a remote location, usually a central dispatching office. The signal system prevents trains from being authorized to enter sections of track occupied by other trains moving in the opposite direction.

**Table 6.1-3. BNSF Spur and Reynolds Lead At-Grade Crossing Detail for Project-Related Trains**

| | Dike Road | 3rd Avenue | California Way | Oregon Way | Industrial Way |
|---|---|---|---|---|---|
| **Current Track Infrastructure** | | | | | |
| Estimated speed | 10 mph | 8 mph | 8 mph | 10 mph | 10 mph |
| Estimated passing time | 8 minutes | 10 minutes | 10 minutes | 8 minutes | 8 minutes |
| **Planned Track Infrastructure** | | | | | |
| Estimated speed | 10 mph | 15 mph | 15 mph | 20 mph | 20 mph |
| Estimated passing time | 8 minutes | 5 minutes | 5 minutes | 4 minutes | 4 minutes |

Notes:
Source: ICF International and Hellerworx 2016
mph = miles per hour

### 6.1.5.2 Off-Site Alternative

This section describes the potential impacts that could occur in the study areas as a result of construction and operation of the proposed export terminal at the Off-Site Alternative location. Construction and operational activities would be the same or similar to those described above for the On-Site Alternative.

#### Construction—Direct Impacts

The Off-Site Alternative would require construction of about 2,500 feet of additional track in the project area of the Off-Site Alternative to extend the Reynolds Lead to the project area. Because the project area is at the terminus of the Reynolds Lead, this construction would not affect existing rail traffic on the Reynolds Lead. Chapter 3, *Alternatives*, describes construction-related activities and scenarios to transport materials to the project area. Under the rail scenario, trains transporting construction materials would travel to and from the project area. The unloading and maneuvering of these trains during construction in the project area would not affect the operations of existing rail traffic on the Reynolds Lead.

#### Construction—Indirect Impacts

Construction of the export terminal at the Off-Site Alternative location would result in the following indirect impact on rail transportation if construction materials are delivered by rail.

**Construction Rail Traffic on the Reynolds Lead and BNSF Spur**

This impact would be the same as the On-Site Alternative.

#### Operations—Direct Impacts

During operations, 8 loaded trains would travel to the project area daily, and 8 empty trains would travel outbound from the project area daily. These trains would maneuver along the rail loop in the project area. Rail traffic operations in the project area would not affect rail traffic on the Reynolds Lead because rail operations would be limited to the project area.

### Operations—Indirect Impacts

Operation of the export terminal at the Off-Site Alternative location would result in the following indirect impacts on rail transportation.

#### Rail Traffic on the BNSF Spur and Reynolds Lead

This impact would be the same as the On-Site Alternative.

## 6.1.5.3 No-Action Alternative

Under the No-Action Alternative, the Corps would not issue a Department of the Army permit authorizing construction and operation of the proposed export terminal. As a result, impacts resulting from constructing and operating the export terminal would not occur. In addition, not constructing the export terminal would likely lead to expansion of the adjacent bulk product business onto the On-Site Alternative project area. A limited-scale future expansion scenario proposed by the Applicant was evaluated, as described in Chapter 3, *Alternatives*. Under this scenario, approximately 2 trains per day would use the Reynolds Lead and BNSF Spur. The existing infrastructure on the Reynolds Lead and BNSF Spur have capacity for 2 additional trains.

# 6.1.6 Required Permits

No permits or approvals related to rail transportation from federal, state, or local agencies would be required for the proposed export terminal.