

## 6.2 Rail Safety

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 to protect public safety. This section describes the regulatory setting, rail safety conditions in the study area, and potential rail safety impacts from constructing and operating the proposed export terminal.

### 6.2.1 Regulatory Setting

Laws and regulations relevant to rail safety are summarized in Table 6.2-1. Regulations pertaining to at-grade rail crossings are presented in Section 6.3, *Vehicle Transportation*.

**Table 6.2-1. Regulations, Statutes, and Guidelines for Rail Safety**

| Regulation, Statute, Guideline  | Description  |
|---|--|
| <b>Federal</b>  |  |
| 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 with jurisdiction over most aspects of highway/rail 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 200–299)  | Establishes railroad regulations, including safety requirements related to track, operations, and cars.  |
| <b>State</b>  |  |
| Title 81, Transportation—Railroads, Employee Requirements and Regulations (RCW 81.40)   | Establishes general requirements for railroad employee environment and working conditions, the minimum crew size for passenger trains, and requirements for flaggers.  |
| Rail Companies—Clearances (WAC 480-60)  | Establishes operating procedures for railroad companies in Washington State. Includes rules of practice and procedure, walkway clearances, side clearances, track clearances, and rules for operation of excess dimension loads.                     |
| Rail Companies—Operation (WAC 480-62)   | Establishes railroad operating procedures in Washington State.   |
| <b>Local</b>  |  |
| No local regulation, statutes, or guidelines apply to rail safety.  |  |
| Notes:<br>FRA = Federal Railroad Administration; FHWA = Federal Highway Administration; CFR = Code of Federal Regulations; RCW = Revised Code of Washington; WAC = Washington Administrative Code |  |

## 6.2.2 Study Area

The study areas are the same for both the On-Site Alternative and Off-Site Alternative. For direct impacts on rail safety, the study area is the project area. For indirect impacts, the study area is the project area plus the rail corridor of the Longview industrial area. For the purpose of this analysis, the rail corridor of the Longview industrial area is defined as the Reynolds Lead and BNSF Spur.

## 6.2.3 Methods

This section describes the sources of information and methods used to evaluate the potential impacts on rail safety associated with construction and operation of the proposed export terminal. The analysis used the following definition of an accident from the Federal Railroad Administration (FRA).<sup>1</sup>

Collisions, derailments, fires, explosions, acts of God, or other events involving the operation of railroad on-track equipment (standing or moving) and causing reportable damages greater than the reporting threshold for the year in which the accident/incident occurred.

The FRA reporting threshold was \$10,500 in 2015. Therefore, accidents include a variety of incidents and are not limited to collisions or derailments.

### 6.2.3.1 Information Sources

- **Rail accident data.** Rail accident data from FRA were used as the basis for the analysis. While the Washington Utilities and Transportation Commission (WUTC) gathers information on accidents in Washington State, WUTC does not gather data on train miles traveled within the state for determining accidents per million train miles traveled.
- **Existing and project rail traffic.** Existing (2015) and projected (2028) rail traffic on the Reynolds Lead and BNSF Spur are based on field observations and estimates from the Longview Switching Company (LVSU).
- **Project-related train operations.** Future project-related rail traffic and typical unit train parameters are based on information provided by the Applicant.
- **Accident rates.** Accident rates were compiled from FRA data for the years 2012 through 2014.<sup>2</sup> The analysis also used published literature to identify derailment rates by track class.<sup>3</sup>

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<sup>1</sup> The Federal Railroad Administration (FRA) was created by the U.S. Department of Transportation Act of 1966. It is one of ten agencies within the U.S. Department of Transportation concerned with intermodal transportation. FRA's mission is to enable the safe, reliable, and efficient movement of people and goods. FRA has established federal regulations pertaining to the safety of interstate commerce. These regulations set standards for all railroads dealing with the interchange of railroad cars and equipment.

<sup>2</sup> 2014 data were the most recent available data when this analysis was conducted.

<sup>3</sup> FRA categorizes all tracks into track classes, segregated by maximum speed limits for freight and passenger trains. FRA maintenance and inspection requirements vary by track class.

### 6.2.3.2 Impact Analysis

The following methods were used to evaluate the potential rail safety impacts of the proposed export terminal.

Accident rates for BNSF freight trains, Union Pacific Railroad (UP) freight trains, and all railroads (freight and passenger trains combined) were calculated using FRA data for the three most recent years of available data (Table 6.2-2). LVSW did not have any reported train accidents in the FRA database because no accidents occurred on the Reynolds Lead or BNSF Spur during these years.

**Table 6.2-2. Nationwide Train Accident Rates**

| Year | Accident Rate per Million Train Miles           |                          |                        |
|------|---|--------------------------|------------------------|
|      | All Railroads<br>(Passenger and Freight Trains) | BNSF<br>(Freight Trains) | UP<br>(Freight Trains) |
| 2012 | 2.41  | 2.20                     | 3.04                   |
| 2013 | 2.43  | 2.11                     | 3.02                   |
| 2014 | 2.27  | 1.89                     | 2.82                   |

Notes:

Source: Federal Railroad Administration (2015)

BNSF = BNSF Railway Company; UP = Union Pacific Railroad

Historically, accident rates (accidents per million train miles) do not change dramatically from year to year, but generally trend downward over time because of improved control systems, communications, and inspection practices. Given the rail transportation associated with the proposed export terminal within Washington State would be primarily BNSF trains, a rate of two accidents per million train miles, based on the data in Table 6.2-2, was used for the analysis.

FRA track safety standards establish nine specific classes of track (Class 1 to Class 9). Class of track is based on standards for track structure, geometry, and inspection frequency. Each class of track has a maximum allowable operating speed for both freight and passenger trains. The higher the class of track, the greater the allowable track speed and the more stringent the applicable track safety standard. Accident rates have been shown to vary considerably by track class, with higher accident rates occurring on lower track classes. However, lower track classes have lower maximum operating speeds, which can reduce the consequences of more frequent accidents.

Data on accident rates by track class were used to generate a baseline accident rate on the Reynolds Lead and BNSF Spur, which are currently maintained in accordance with the Track Class 1 standard. In the future, LVSW plans to upgrade the Reynolds Lead and BNSF Spur to a Track Class 2 designation.

The predicted number of accidents per year was calculated by multiplying segment length by the number of trains per year and applicable accident rate. The result was then adjusted for track classification based on published accident data research by track class. More information on these methods is provided in the *NEPA Rail Safety Technical Report* (ICF International 2016).

## 6.2.4 Affected Environment

Section 6.1, *Rail Transportation*, describes the affected environment. LVSU did not have any reported train accident data in the FRA database because there were no train accidents on the Reynolds Lead or BNSF Spur from 2012 to 2014.

## 6.2.5 Impacts

This section describes the potential direct and indirect impacts related to rail safety (in terms of predicted train accidents) from construction and operation of the proposed export terminal.

### 6.2.5.1 On-Site Alternative

This section describes the potential impacts on rail safety in the study area as a result of construction and operation of the proposed export terminal. Chapter 3, *Alternatives*, describes construction-related activities and scenarios for transporting materials to the project area.

#### Construction—Direct Impacts

Any accidents in the project area would be related to construction in the project area and would not affect rail safety on the Reynolds Lead.

#### Construction—Indirect Impacts

Construction-related activities associated with the On-Site Alternative could result in indirect impacts on rail safety as described below.

##### Potential for Train Accidents

According to the Applicant, construction materials could be delivered by rail. This would require an estimated 350 loaded trains of 100 cars each, and 350 empty trains of 100 cars each. It is anticipated two-thirds of the construction material would be transported during the first year of construction in 2018 (approximately 467 trains, an average of 1.3 trains per day). Construction trains would use the Reynolds Lead and BNSF Spur.

The predicted accident frequencies during the peak year of construction are shown in Table 6.2-3. The predicted project-related train accidents is 0.02 accident on the BNSF Spur and 0.06 accident on the Reynolds Lead in 2018.

**Table 6.2-3. 2018 Predicted Train Accidents per Year during Peak Year of Construction**

| Segment       | Length (miles) | Predicted Project-Related Train Accidents |
|---------------|----------------|---|
| BNSF Spur     | 2.1            | 0.02                                      |
| Reynolds Lead | 5.0            | 0.06                                      |

## Operations—Direct Impacts

At full terminal capacity, 8 loaded trains would travel to the project area and 8 empty trains would travel from the project area daily. These trains would maneuver along the rail loop in the project area. The accident rates described previously are not applicable to the project area. Any accidents in the project area would be related to operations in the project area and would not affect rail safety on the Reynolds Lead.

## Operations—Indirect Impacts

Operation of the export terminal would increase the potential for train accidents along the BNSF Spur and Reynolds Lead. The predicted accident frequencies in 2028 are shown in Table 6.2-4.

**Table 6.2-4. 2028 Predicted Train Accidents per Year<sup>a</sup>**

| Segment       | Length (miles) | 2028 Project-Related Trains | 2028 Baseline Conditions |
|---------------|----------------|-----------------------------|--------------------------|
| BNSF Spur     | 2.1            | 0.14                        | 0.12                     |
| Reynolds Lead | 5.0            | 0.36                        | 0.08                     |

Notes:

<sup>a</sup> Assumes the Reynolds Lead and BNSF Spur would be improved to Class 2 standards by LVSW. If the Reynolds Lead and BNSF Spur are not improved to Class 2 standards, the predicted train accidents per year would be approximately 1.5 to 3 times higher than the Class 2 accident rate.

The following summarizes the predicted accident frequencies.

- **With track improvements to the Reynolds Lead and BNSF Spur (Track Class 2).** The predicted number of accidents is 0.50 per year (or, one accident every 2 years) for project-related trains.
- **Without track improvements to the Reynolds Lead and BNSF Spur (Track Class 1).** Accident rates for Track Class 1 are more uncertain given the small percentage of train miles on Track Class 1. Therefore, it is difficult to predict accident rates for Track Class 1. However, data indicate the 2028 project-related predicted train accidents per year in Table 6.2-4 would be approximately 1.5 to 3 times higher without planned improvements to the Reynolds Lead and BNSF Spur.

Not every accident of a loaded project-related train would result in a coal spill, and spills that do occur could vary in size. Coal spills on the Reynolds Lead or BNSF Spur would be expected to be less frequent and smaller than on a main line track due to lower train speeds. Impacts from coal spills on the natural environment are addressed in Chapter 5, Sections 5.5, *Water Quality*, 5.6, *Vegetation*, 5.7, *Fish*, and 5.8, *Wildlife*.

### 6.2.5.2 Off-Site Alternative

Potential direct and indirect impacts on rail safety for an export terminal constructed at the Off-Site Alternative location would be the same as those described for the On-Site Alternative. However, the predicted number of accidents for project-related trains on the Reynolds Lead would be slightly higher for the Off-Site Alternative because trains would travel approximately 0.5 mile further on the Reynolds Lead to the Off-Site Alternative project area. During operations in 2028, the predicted

number of accidents for project-related trains on the Reynolds Lead would be 0.38 accident per year.

### **6.2.5.3 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 terminal would not occur. In addition, not constructing the 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 (mixed-load trains). The potential for a mixed-load train accident on the Reynolds Lead and BNSF Spur would presumably be lower than for a unit train because mixed-load trains tend to not have as many rail cars as a unit train.

### **6.2.6 Required Permits**

No permits related to rail safety would be required for the proposed export terminal.