# FINAL ENVIRONMENTAL ASSESSMENT
## *BNSF Sandpoint Junction Connector Project*
## Bonner County, Idaho

U.S. Coast Guard
District Thirteen
Seattle, Washington

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## TABLE OF CONTENTS

## LIST OF FIGURES



## LIST OF TABLES

## LIST OF APPENDICES

## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| ACHP | Advisory Council on Historic Preservation |
| APE | Area of Potential Effects |
| BA | Biological Assessment |
| BFE | Base Flood Elevation |
| BO | Biological Opinion |
| BMP | best management practice |
| BNSF | BNSF Railway Company |
| CAA | Clean Air Act |
| CFR | Code of Federal Regulations |
| City | City of Sandpoint |
| County | Bonner County |
| CWA | Clean Water Act |
| dB | decibel |
| dBA | A-weighted decibel |
| EA | Environmental Assessment |
| EIS | Environmental Impact Statement |
| ESA | Endangered Species Act |
| FEMA | Federal Emergency Management Agency |
| FHWA | Federal Highway Administration |
| FMO | foraging, migrating, and overwintering |
| FRA | Federal Railroad Administration |
| FTA | Federal Transit Administration |
| GIS | geographic information system |
| GRP | Geographic Response Plan |
| IDEQ | Idaho Department of Environmental Quality |
| IDFG | Idaho Department of Fish and Game |
| IDL | Idaho Department of Lands |
| IDP | Inadvertent Discovery Plan |
| IPaC | Information for Planning and Consultation |
| ISDA | Idaho State Department of Agriculture |
| ITD | Idaho Transportation Department |
| Jacobs | Jacobs Engineering Group Inc. |
| $L_{dn}$ | day-night noise level |
| $L_{eq}$ | equivalent noise level |
| $L_n$ | percentile noise level |
| LEDPA | least environmentally damaging practicable alternative |
| LMP | Limited Maintenance Plan |

| | |
|---|---|
| LPO | Lake Pend Oreille |
| MBTA | Migratory Bird Treaty Act |
| MP | milepost (as used by BNSF to identify track locations) |
| mph | miles per hour |
| MRL | Montana Rail Link |
| NAAQS | U.S. National Ambient Air Quality Standards |
| NCP | National Contingency Plan |
| NEPA | National Environmental Policy Act |
| NFA | No Further Action |
| NHPA | National Historic Preservation Act |
| NOAA | National Oceanic and Atmospheric Administration |
| NOC | Network Operations Center |
| NPDES | National Pollutant Discharge Elimination System |
| NRHP | National Register of Historic Places |
| NWAC | Northwest Area Committee |
| NWACP | Northwest Area Contingency Plan |
| NWCAA | Northwest Clean Air Agency |
| OEM | Office of Emergency Management |
| OHWM | ordinary high water mark |
| OSHA | Occupational Safety and Health Act |
| OSRO | oil spill response organization |
| PAH | polycyclic aromatic hydrocarbon |
| PM | particulate matter |
| $PM_{10}$ | particulate matter 10 micrometers or smaller |
| PPV | peak particle velocity |
| Project | BNSF Sandpoint Junction Connector Project |
| PTC | Positive Train Control |
| RFFA | reasonably foreseeable future action |
| RHA | Rivers and Harbors Act |
| RMS | root mean square |
| ROW | right-of-way |
| RRT | Regional Response Team |
| SEL | sound exposure level |
| SHPO | State Historic Preservation Office |
| SIP | State Implementation Plan |
| SPCC | Spill Prevention, Control, and Countermeasure |
| SWPPP | Stormwater Pollution Prevention Plan |
| THPO | Tribal Historic Preservation Officer |

| | |
|---|---|
| TMDL | total maximum daily load |
| UPRR | Union Pacific Railroad |
| USACE | U.S. Army Corps of Engineers |
| U.S.C. | U.S. Code |
| USCG | U.S. Coast Guard |
| USDOT | U.S. Department of Transportation |
| USEPA | U.S. Environmental Protection Agency |
| USFWS | U.S. Fish and Wildlife Service |
| UST | underground storage tank |
| VdB | vibration decibel |
| VOC | volatile organic compound |
| WDOE | Washington State Department of Ecology |
| WQC | Water Quality Certification |
| WSDOT | Washington State Department of Transportation |
| WTP | water treatment plant |

## EXECUTIVE SUMMARY

The BNSF Railway Company (BNSF) has proposed to build new railroad bridges across Lake Pend Oreille (LPO) and Sand Creek in Bonner County, Idaho, as part of a project called the Sandpoint Junction Connector (Project). The intent of the Project is to reduce railroad delays that occur in the vicinity of Sandpoint due to the convergence of three rail lines that utilize existing, single-track bridges across these waters. Among the several federal agencies exercising authorities that bear upon BNSF's proposed Project, the U.S. Coast Guard (USCG) is serving as the lead federal agency for the evaluation of its potential environmental impacts. In coordination with BNSF and its consultant, Jacobs Engineering Group Inc., the USCG has prepared this document, an Environmental Assessment (EA), pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code § 4321 et seq.). This EA examines the potential environmental effects of the Project, which consists of the construction of a second main line track connection between BNSF's Algoma main line track and the Sandpoint Junction, where BNSF and the Montana Rail Link main line tracks converge.

The USCG approves the location and plans for bridges across the navigable waters of the U.S., which include LPO and Sand Creek. The primary role of the USCG in this capacity is defined in 33 CFR § 114.10, which states, "The decision as to whether a bridge permit or a drawbridge operation regulation will be issued or promulgated must rest primarily upon the effect of the proposed action on navigation to assure that the action provides for the reasonable needs of navigation after full consideration of the effect of the proposed action on the human environment." Because the intent of the bridge statutes is to ensure that navigation is not unduly obstructed, the permit authority of the USCG is limited to the bridge and its essential components including approaches and abutments. Consequently, the USCG does not have the authority to approve or disapprove broader aspects of a project beyond the bridges themselves. For example, if a sponsor proposes to build a new roadway or rail line and the project includes a bridge, the USCG's permit authority is limited to the bridge and its effect upon navigation.

A Draft EA was made available for public, agency, and tribal review and comment from February 6 to May 1, 2019. Section 5.5 of the Final EA describes the Draft EA public involvement and review process. Substantive comments were received relative to numerous general topics. Several sections of this Final EA contain additional information and analysis to address the substantive comments that were received during the public involvement process. **Table ES-1** identifies the Final EA sections that have changed in response to the comments received. These changes are summarized by general topic in **Appendix A**.

**Table ES-1: Changes to EA in Response to Public Comments**

| Topic | EA Section |
|---|---|
| Air Quality | 3.1 |
| Train Capacity | Executive Summary, 1.2, and various other locations |
| Climate Change | 3.1 |
| Fugitive Coal Dust | 3.1 and 6.0 |
| Construction-Related Effects | 2.3 and 3.15 |
| Cumulative Effects | 3.17 |
| Endangered Species/Bull Trout | 3.8 |
| Roadway Vehicle Traffic | 3.15 |

**Table ES-1: Changes to EA in Response to Public Comments (continued)**

| Topic | EA Section |
|---|---|
| Migratory Birds | 3.7 |
| Navigation | 3.2 |
| Noise | 3.13 |
| Vibration | 3.13 |
| Sediment Contamination | 3.2, 3.3, and 3.14 |
| Socioeconomics | 3.10 |
| Spills, Spill Response, and Derailments | 1.0 and 3.14 |
| Roadway Traffic Wait Times and At-grade Crossings | 3.15 and throughout the EA |
| Tribal and Historic Issues | 5.1 |
| Water Quality | 3.3 and 6.0 |

**Purpose and Need**

The purpose of the Project is to reduce the delay of freight and passenger rail traffic on the BNSF freight rail system between its Algoma main line track south of Sandpoint (BNSF milepost [MP] 5.1) and the Sandpoint Junction (MP 2.9), where BNSF and the Montana Rail Link main line tracks converge just north of the Sandpoint Amtrak Station.

The Project need is based on the inefficiency of the existing infrastructure to handle the continued growth of freight rail service demands in the BNSF northern tier, a high-volume traffic corridor between the Midwest (Chicago Terminus) and the West Coast. The capacity of a rail line is the maximum number of trains that can safely operate on the rail line per day. Train traffic volume is the actual number of trains that operate on the rail line per day.

The capacity of the rail line through Sandpoint and across LPO is approximately 79 trains per day while the current average rail traffic volume on that line segment is approximately 60 trains per day. The volume of train traffic on a given rail line segment is driven not only by the overall capacity of the rail line, but the number of passengers and amount of freight moved by train from origin and destination points along the rail network. While Amtrak's Empire Builder provides daily passenger service between Chicago and Seattle, crossing LPO and passing through Sandpoint, the vast majority of train traffic over LPO and through Sandpoint is comprised of freight trains. The amount of freight moved by rail is driven by two main factors: (1) market conditions, such as interest rates and the supply and demand for products and employment, and (2) the number and type of freight origins and destinations along the rail line. BNSF is a federally designated common carrier and by law (49 U.S. Code § 11101) is required to provide transportation service for all goods upon reasonable request.

Rail traffic volumes have risen steadily for the past three decades in this portion of the interstate main line as a result of market conditions changing in response to population growth in the United States and the corresponding increase in the demand for freight, a general trend that will likely continue over time. Unlike publicly funded projects, which are often planned well in advance and become commitments to voters, private railroad projects are based on business decisions of the railroads in reaction to market forces. As such, priorities and funding among railroad projects change frequently, often on time frames that are substantially more rapid than public planning and funding cycles, making predictions of project implementation uncertain.

While primarily driven by market conditions and the number and type of passenger and freight origins and destinations along a rail line, train traffic cannot increase unfettered. Demand and resulting train traffic volume is limited by the capacity of the rail line. Rail line capacity is a complicated dynamic calculation involving many physical factors, such as track geometry and condition, and operational factors, such as operating speeds, equipment mixes, and inspection and maintenance requirements, specific to the line itself. As train traffic volumes begin to approach capacity, operational efficiency and fluidity of train movement begin to decline.

The 2.2-mile segment of single main line track between BNSF MP 2.9 and MP 5.1 has additional capacity to accommodate more trains should market conditions or new freight origins or destinations generate additional demand for train traffic but has reached an average train traffic volume that has become a constraint to fluid and efficient rail movement across LPO. The existing single-track configuration causes trains to back up on the main line, on existing sidings, and in rail yards and communities while waiting for an opening to cross the bottleneck. Trains waiting for a crossing opportunity can cause increases in vehicular wait times at public and private at-grade rail crossings. The delay in train and truck traffic results in a delay of the local and regional transport of people, goods, and services.

Based upon the Project needs, BNSF developed the following Project goals to balance social, economic, and environmental factors during the alternatives screening process:

1. Meet BNSF operational needs.
2. Be economically feasible for BNSF to design, construct, operate, and maintain.
3. Be technically feasible for BNSF to design, construct, operate, and maintain.
4. Minimize adverse impacts to the human and natural environment.

**Alternatives**

Several alternatives were considered and determined unfeasible from further consideration in this EA, including constructing a second main line track east of the existing main line track, developing alternate regional routes or shifting traffic to other railroads, and constructing grade-separated crossings (see Section 2.1). Compared to a new track west of the existing main line track, a new track east of the existing main line track would result in greater aquatic impacts, more disruption to the community and recreational users during construction, and higher construction costs due to increased fill and staging area needs. Developing alternate routes or shifting traffic to other railroads is not viable because BNSF is not guaranteed sufficient rail capacity on other railroads and off-site options would require acquisition of substantial private property. Converting public at-grade crossings to grade-separated crossings throughout North Idaho could reduce vehicular delay but would not reduce the delay of rail traffic because trains already have the right-of-way through those crossings. As a result, this EA evaluates a No Action Alternative and a Proposed Action Alternative located within the existing BNSF right-of-way. The No Action Alternative does not fulfill the Project purpose and need but provides a baseline for comparison purposes against the Proposed Action Alternative.

The Proposed Action Alternative meets the Project purpose and need through the provision of a second main line track west of the existing track to connect the 2.2-mile segment of single main line track between MP 2.9 and MP 5.1. Improvements associated with the second track include track, switch, and signal upgrades; a new bridge adjacent to, and immediately west of, the existing rail bridge over LPO (Bridge 3.9); a new bridge adjacent to, and immediately west of, the existing rail bridge over Sand Creek (Bridge 3.1); and a new bridge adjacent to, and immediately west of,

the existing rail bridge over Bridge Street (Bridge 3.0). These improvements are expected to relieve system congestion of rail traffic and reduce hold times on sidings and wait times at grade crossings.

**Environmental Effects and Mitigation**

Chapter 3.0 of this EA analyzes the potential environmental effects of the No Action Alternative and the Proposed Action Alternative by discipline. A brief summary of environmental effects is provided below, with supporting information and references to technical studies performed by subject matter experts and agencies included in relevant sections of Chapters 3.0 and 4.0.

The Proposed Action Alternative is expected to result in short-term impacts to the human and natural environment during the 3- to 5-year construction period, as described in Section 2.3.1. Implementation of standard best management practices through a Stormwater Pollution Prevention Plan; a Temporary Erosion and Sediment Control Plan; a Spill Prevention, Control, and Countermeasure Plan; and a Construction Noise Logistics Plan are proposed to reduce these construction-related impacts.

Although construction activities may adversely impact individual adult and sub-adult bull trout, the Proposed Action Alternative is unlikely to temporarily or permanently affect bull trout subpopulation indicators or critical habitat either at the watershed or Columbia River Headwaters Recovery Unit scales (See Section 3.8).

Construction of the bridges over LPO and Sand Creek would result in 0.88 acre of nearshore fill and 0.28 acre of wetland fill (see Section 3.4). Nearshore and wetland impacts would be mitigated through the use of an agency-approved mitigation bank, the Valencia Wetland Mitigation Bank/Valencia Wetlands Trust (bank) located in Priest River, Idaho.

In the long term, the Proposed Action Alternative would result in a net improvement in local ambient air quality (see Section 3.1), compared to the No Action Alternative, by providing substantial relief to existing train traffic congestion. This congestion relief would provide an overall reduction in fuel consumption and reduce particulate matter (PM) emissions associated with periods of idling and related “powering up” to resume travel. The Proposed Action Alternative would likely also result in an improvement in emergency response times (see Section 3.16) due to the likely indirect benefit of reduced congestion and wait times at at-grade crossings (see Section 3.15) associated with regional rail traffic staging on approach to the study area. The new main line track may be operated at increased speeds of 35 miles per hour (mph) for freight trains and 40 mph for passenger trains. This would be a potential 10 mph increase in speed for freight trains, the bulk of existing rail traffic, and a potential 5 mph increase in the speed for passenger rail traffic, which currently consists of two trains per day. These potential speed increases could increase noise levels by up to 2 decibels, which is considered barely perceptible to the human ear (see Section 3.13).

During preparation of the Draft EA and environmental permit applications, questions and concerns were raised by agencies and members of the public regarding the potential for the Project to increase train traffic, hazardous materials or coal spill risk, and generate fugitive coal dust. Additional information on these topics is provided below.

Train Traffic. As previously stated, the capacity of the rail line is the maximum number of trains that can safely operate on the line per day, while train traffic volume is the actual number of trains that operate on the line per day. The capacity of the rail line through Sandpoint and across LPO

is approximately 79 trains per day while the current average rail traffic volume on that line segment is approximately 60 trains per day. This Project does not add any origin or destination facilities; therefore, it would not drive increases or decreases in rail traffic volumes, but instead is designed to increase efficiency of movement by rail. The factors driving a continued increase in train traffic in the study area will exist with or without construction of a second main line track and associated bridges. Adding a second main line track along this segment would not increase capacity of the rail line because there are other constraints outside of LPO. An additional 19 trains per day could travel through the Project area, up to the maximum capacity of 79 trains per day. This could occur with or without construction of a second main line track and associated bridges.

While demand for rail transport may increase or decrease depending on market conditions, this Project is expected to improve the fluidity of movement through the study area for both trains and vehicles. With this Project, trains would be able to pass through the study area more efficiently by traveling on either the existing bridges or the new bridges, and drivers would likely see more rapid clearing of at-grade crossings, reduced congestion, and an overall improvement in access to the Sandpoint area and rural Bonner County. In addition, because each train passing through the study area would travel on either the existing bridges or the new bridges, travel distances would not increase with the construction of a second main line track.

Spill Risk. Train-related accident risk is a function of ton-miles of freight moved, calculated from the amount of freight moved and the number of rail miles travelled. As discussed under Train Traffic above, the Project would not increase the amount of freight moved or rail miles travelled. The Project is expected to improve the fluidity of freight movement through the study area for both trains and vehicles, reducing the potential for conflicts associated with stopped or idling trains. Therefore, the Proposed Action Alternative would not increase the risk of spills or accidents compared to the No Action Alternative. BNSF is currently coordinating with federal, state, and local entities in the ongoing review, update, and implementation of the LPO Geographic Response Plan (see Section 3.14), which guides early actions if a hazardous materials spill were to happen in the region. In the event of an accident or spill under the No Action Alternative or the Proposed Action Alternative, BNSF would respond in accordance with the LPO Geographic Response Plan. Temporary spill risk associated with construction equipment working over the water (see Section 3.14) would be minimized through implementation of construction best management practices (see Section 4.0).

Fugitive Coal Dust. Train-related fugitive coal dust and the escape of particles larger than $PM_{10}$ is primarily associated with coal loading and unloading operations. The Proposed Action Alternative would not change loading procedures, change the way coal is transported, or change the volume of coal that is transported by rail. BNSF coal trains on this route are subject to loading requirements at Wyoming or Montana mine origins to address and reduce coal dust emissions, including shaping the coal profile and the application of a dust suppressant with a minimum 85 percent dust reduction rate in fugitive coal dust (see Section 3.1). Based on analyses included in this EA, fugitive coal dust emissions associated with the Proposed Action Alternative will not pose a significant impact to the human environment.

Potential direct and indirect effects to all disciplines are not anticipated to reach a level of significant impact. Neither alternative would contribute significantly to cumulative impacts.

**Next Steps**

The NEPA process must be complete prior to the issuance of federal permits for the Project (see Section 5.2). Based on the information received to date, the USCG has determined that an EA is the appropriate level of environmental documentation for this Project.

## 1.0 INTRODUCTION

The U.S. Coast Guard (USCG) as the lead federal agency, in coordination with BNSF Railway Company (BNSF) and their consultant Jacobs Engineering Group Inc. (Jacobs), has prepared this environmental document pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code [U.S.C.] § 4321 et seq.). This Environmental Assessment (EA) examines the potential environmental effects of the BNSF Sandpoint Junction Connector Project (Project) in accordance with the USCG policy and procedures for implementing NEPA. This document discusses practical measures to avoid, minimize, or mitigate the identified potential adverse impacts.

NEPA applies to the Project because the Project constitutes a "major federal action" as defined by the Council on Environmental Quality's NEPA regulations (see Sections 1508.18(a) and (b)(4) in Title 40 of the Code of Federal Regulations [40 CFR 1508.18(a) and (b)(4)]), and the Project requires federal permits, including a bridge permit from the USCG under Section 9 of the Rivers and Harbors Act (RHA) of 1899. In addition to the USCG bridge permit, the Project involves the following federal and state permits:

- An individual permit from the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA; 33 U.S.C. § 1344) to permanently discharge 11,220 cubic yards of rock into 1.16 acres of water and wetlands and temporarily discharge 3,680 cubic yards of rock into 0.38 acre of water, all associated with construction of the proposed bridges. USACE issued a public notice dated February 26, 2018, announcing that BNSF had applied for a Section 404 permit in response to which approximately 5,000 public comments were received expressing both support and opposition to the proposed Project. Final permit action is pending.
- An Encroachment Permit from Idaho Department of Lands (IDL) in accordance with the Idaho Lake Protection Act. BNSF submitted an application for the Encroachment Permit to IDL in December 2017. IDL subsequently convened two public hearings in Sandpoint, Idaho, on May 23, 2018, to solicit oral and written comment from members of the public. A Final Order approving the application for Encroachment Permit No. L-96-S-0096E was signed June 21, 2018.
- A Section 401 Water Quality Certification (WQC), which was issued by the Idaho Department of Environmental Quality (IDEQ) on September 21, 2018, in accordance with the provisions of Section 401(a)(1) of the Federal Water Pollution Control Act (CWA). The draft certification was circulated for a 45-day public comment period from April 13, 2018, to May 29, 2018, during which time ten comments were received that were incorporated into the final certification.

When a federal agency is uncertain if a proposed project will significantly affect the environment so as to require an Environmental Impact Statement (EIS), the Council on Environmental Quality regulations call for the agency to prepare an EA, which is a preliminary consideration of potential environmental effects that should provide sufficient evidence and analysis to determine whether an EIS is necessary. As part of this evaluation process, the USCG has solicited and received comments from state and federal agencies with expertise in particular resources that may be impacted by the Project. Agencies participating in the environmental review of the proposed Project include the USACE, the U.S. Fish and Wildlife Service (USFWS), the U.S. Environmental Protection Agency (USEPA), the IDL, and the IDEQ. Additionally, the USCG has considered the

public comments received as part of the IDL Encroachment Permit process and public comments on the Draft EA received during an extended public review period. Section 5.5 describes the Draft EA public involvement and review process.

The USCG's principal role regarding BNSF's proposed railroad bridges across Lake Pend Oreille (LPO) and Sand Creek is to ensure the structures do not unreasonably obstruct navigation. USCG regulations in 33 CFR § 114.10 state, "[t]he several bridge laws referenced in the Authority for part 114, are intended to prevent any interference with navigable waters of the United States whether by bridges, dams, dikes or other obstructions to navigation except by express permission of the United States. The decision as to whether a bridge permit or a drawbridge operation regulation will be issued or promulgated must rest primarily upon the effect of the proposed action on navigation to assure that the action provides for the reasonable needs of navigation after full consideration of the effect of the proposed action on the human environment."

Because the intent of the bridge statutes is to ensure that navigation is not unduly obstructed, the USCG's permit authority is limited to the bridge and its essential components including approaches and abutments. Consequently, the USCG does not have the authority to approve or disapprove broader aspects of a project beyond the bridges themselves. For example, if a sponsor proposes to build a new roadway or rail line and the project includes a bridge, the USCG's permit authority is limited to the bridge and its effect upon navigation. As discussed above, the USCG must also comply with NEPA to evaluate the environmental effects of the issuance of the bridge permit.

## 1.1 Site Location and Existing Structure

### 1.1.1 Site Location

The Project area is located within the existing BNSF right-of-way (ROW) from approximately milepost (MP) 2.9 to MP 5.1, on Line Segment 45 within the Montana Division, Kootenai River Subdivision (**Figure 1**). The Project is within the incorporated limits of the City of Sandpoint (City) and unincorporated Bonner County (County), Idaho, and encompasses portions of Sections 15, 22, 23, 25, 26, and 36; Township 57 North; Range 2 West, Boise Meridian. Latitudinal and longitudinal coordinates for the approximate Project center are 48°15'54.81"N, 116°32'13.05"W. The U.S. Geological Survey Hydrologic Unit Code is 17010214 within the Idaho Panhandle Basin, LPO Subbasin. The Project passes through urban developed areas, rural developed areas, LPO, and over roads and recreational pathways but is confined to the BNSF ROW. Unless otherwise noted, the study area for this EA is the BNSF ROW from MP 2.9 to MP 5.1 and varies between 100 and 400 feet wide, extending from 50 to 200 feet on either side of the track centerline.

**Figure 1: Project Location and Vicinity**

### 1.1.2 Existing Conditions and Structures

The current track configuration involves a Montana Rail Link (MRL) siding and two main line tracks, BNSF and MRL, meeting at the Sandpoint Junction (BNSF MP 2.9) just north of the Sandpoint Amtrak Station, becoming a single main line track through Sandpoint and over Sand Creek and LPO to the BNSF Algoma (East) main line track (BNSF MP 5.1) where the single main line switches to two main lines. Key features of the study area are described below:

- The north end of the Project (BNSF MP 2.9) is within the City and is designated as an Urban Transportation Corridor (Bonner County, n.d.).
- The existing BNSF main line track from BNSF MP 2.9+/- to 3.9+/- is surrounded on the west by the BNSF maintenance road, the Sandpoint Amtrak Depot, U.S. Highway 95 (US 95), and Sandpoint Marina and on the east by Sandpoint Avenue, Seasons of Sandpoint Condominiums, Best Western Edgewater Resort, Sandpoint Edgewater RV Park, and a portion of the Sandpoint City Beach Marina.
- BNSF Bridge 3.0 spans Bridge Street in Sandpoint.
- BNSF Bridge 3.1 spans Sand Creek in Sandpoint. The main channel navigational span at Bridge 3.1 has a horizontal clearance of 42 feet and a vertical clearance of 16.2 feet (Jacobs 2018d).
- BNSF Bridge 3.9 spans the open water of LPO from MP 3.9–4.9. The navigational spans at Bridge 3.9 have vertical clearances ranging from 12.5 feet to 16.5 feet and horizontal clearances ranging from 7 feet to 89.6 feet (Jacobs 2018a).
- The south end of the Project (BNSF MP 5.1) is designated as a Rural-Residential Transportation Corridor (Bonner County, n.d.).

The existing BNSF Bridge 3.1 is a fixed, single-track bridge measuring 155 feet long and 19 feet wide with four concrete piers, two of which are abutments. It was originally constructed in 1902 but was modified in 1990 with replacement of the superstructure, concrete pier caps, deck, and walk.

The existing BNSF Bridge 3.9 is a fixed bridge that has both open- and ballast-deck spans measuring 4,769 feet long with 88 piers. Thirty-two of the original over 100-year-old, single-column concrete piers on wood pilings (16 on the north end and 16 on the south end of the bridge) were replaced between 2006 to 2009 with steel bents, each composed of 6 closed-end steel pipe piles. The existing bridge also has a nonoperable swing span over the two, published 76.6-foot-wide navigation channels.

**Appendix B** includes a set of permit drawings showing the primary components of the existing bridges and trackwork along the Project area.

## 1.2 Purpose and Need

### 1.2.1 Background

The BNSF/MRL northern tier is a high-volume traffic corridor that connects both the Midwest Chicago Terminus and Canada to the West Coast ports of Seattle, Tacoma, and Portland (**Figure 2**), making it a critical transportation link in the national transport and international delivery of products. The capacity of a rail line is the maximum number of trains that can safely operate on that line per day. Train traffic volume is the actual number of trains that operate on the rail line per day.

The capacity of the rail line through Sandpoint and across LPO is approximately 79 trains per day while the current average rail traffic volume on that line segment is approximately 60 trains per day. The volume of train traffic on a given rail line segment is driven not only by the overall capacity of the rail line, but by the number of passengers and amount of freight moved by train from points of origin and destination on either side of a given point along that segment. Demand and resulting train traffic volume is limited by the capacity of the rail line. Rail line capacity is a complicated and dynamic calculation involving many physical factors, such as track geometry and condition, and operational factors, such as operating speeds, equipment mixes, and inspection and maintenance requirements, specific to the line itself. As train traffic volumes begin to approach capacity, operational efficiency and fluidity of train movement begin to decline.

Amtrak's Empire Builder offers the only passenger service route across the northern United States by travelling through the Project area twice a day. The Empire Builder passenger service connects Chicago and Seattle, passing through Sandpoint twice a day—making its only stop in Idaho at Sandpoint—but the vast majority of train traffic over LPO and through Sandpoint is comprised of freight trains. The amount of freight moved by train is driven by two main factors: (1) market conditions, such as interest rates, and the supply and demand for products and employment and (2) the number and type of freight origins and destinations along the rail line. As a federally designated common carrier, BNSF has a legal obligation to provide transportation services for all regulated goods upon reasonable request. This rail corridor moves all types of traffic, including consumer goods, grain, lumber, and energy products such as crude oil, wind turbines, and coal. In 2017, 70 percent of the BNSF trains that moved through Sandpoint carried agricultural goods, consumer goods, or mixed freight.

The Project need is based on the inefficiency of the existing infrastructure to handle rail traffic volumes that have risen steadily for the past three decades on this portion of the interstate main line, a general trend that will likely continue over time that increases the economic significance of the rail corridor. While the number of trains that cross LPO on a daily basis can vary widely, approximately 60 trains per day cross LPO. The 2013 Idaho Statewide Rail Plan identifies an anticipated 143 percent increase in train traffic volumes on Idaho's railroad network by 2040 (Idaho Transportation Department [ITD] 2013). The maximum capacity of the existing line between Sandpoint and Spokane is approximately 79 trains per day, potentially accommodating an additional 19 trains per day, which is a 32 percent increase over the current train volume and less than the projected increase in the state rail plan.

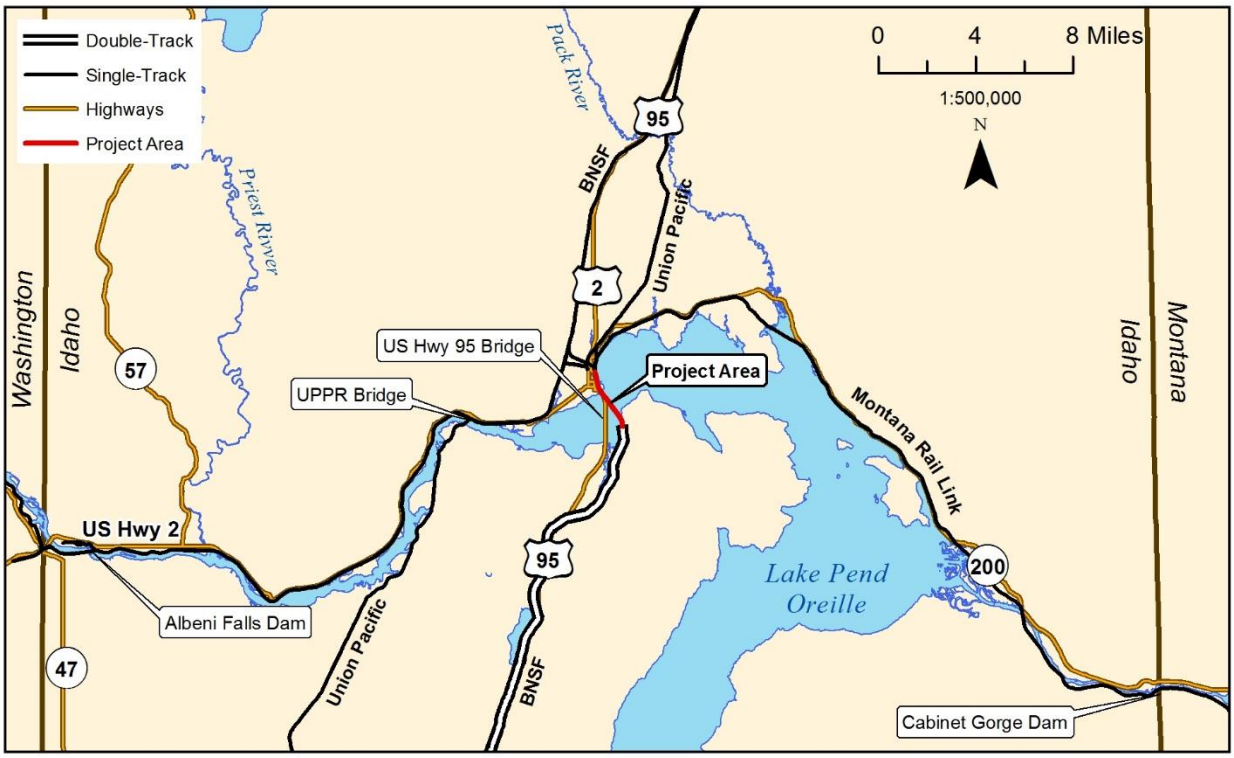
**Figure 2: BNSF/MRL Northern Tier Corridor**


### 1.2.2 Problem Definition

Two single main line tracks converge north of the Sandpoint Amtrak Station at Sandpoint Junction (BNSF MP 2.9; **Figure 3**). One main line track is BNSF's Kootenai River Sub main line, which runs east to Whitefish, Montana, and ultimately onward to the Midwest. The BNSF alignment between Sandpoint and Whitefish is primarily single main line track with sidings. The other main line track is MRL's main line, which runs east to the Billings, Montana, area where it connects again with BNSF infrastructure. The MRL alignment between Sandpoint and Billings is primarily single main line track with sidings. After the BNSF and MRL main lines converge at Sandpoint Junction, there is an approximately 2.2-mile-long section of single main line track running through the Sandpoint area and over LPO. South of LPO, the existing single main line track becomes two main lines at East Algoma (MP 5.1) and runs westward toward the Spokane, Washington, area. Between Sandpoint and Spokane, the BNSF alignment is primarily double track with portions of single main line track. The Union Pacific Railroad (UPRR) operates within its own ROW and also crosses the BNSF main line track just west of Highway 2 near the Sandpoint Airport.

An important aspect of BNSF's business is the capacity of its rail lines and efficiency of the service they provide. This 2.2-mile-long section of single main line track running through the Sandpoint area and over LPO is not operating at capacity, but it has become a constraint to efficient rail movement due to its configuration and location at the convergence of multiple common carrier rail lines (**Figure 3**). Each railroad controls its own train operations through its own dispatch and operations control system. These operations must be coordinated where different railroads converge, such as at Sandpoint Junction where the MRL and BNSF tracks converge. The existing train traffic volume through Sandpoint currently averages approximately 60 trains per day, including Amtrak, MRL, and BNSF trains. BNSF states that the maximum capacity of this rail line between Sandpoint and Spokane is approximately 79 trains per day. The existing single-track configuration causes trains to back up on the main lines, on existing sidings, and in rail yards waiting for an opening to cross the Project area. Other, similar constraints on this rail line outside of Sandpoint and LPO limit the maximum capacity of the rail line to approximately 79 trains per day. BNSF and MRL freight trains are required to give priority to Amtrak passenger rail trains, which further delays freight delivery. A delay in freight trains can cause delayed or missed connections at origin or destination facilities such as ports, freight yards, and intermodal terminals, which can compromise the successful delivery of goods and services for purposes of interstate commerce.

**Figure 3: Regional Rail Network Showing the Sandpoint "Funnel"**




While waiting for an opportunity to cross Sand Creek and LPO through the Project area, trains can cause increases in vehicular wait times at public and private at-grade rail crossings. Increased vehicle wait times at regional crossings can occur at approximately 24 public, at-grade crossings located on the BNSF main line within 20 miles of Sandpoint Junction. More at-grade crossings are located on the MRL and UPRR railroad lines. This can result in congestion in the Sandpoint area and the surrounding communities, which can cause delays of the local and regional transport of people, goods, and services from eastern Washington across northern Idaho to northwest Montana.

This section of track can accommodate increased rail traffic (approximately 19 trains per day) across LPO before reaching capacity; however, if train traffic volumes continue to increase in response to market conditions without addressing the constriction at this location, the congestion and wait times would be expected to increase. This would result in a lower level of service for both rail and vehicle traffic, further constraining the movement of passengers, goods, and services. This Project does not add any origin or destination facilities; therefore, it would not drive increases or decreases in rail traffic, but instead is designed to increase efficiency of movement by rail. The factors driving a continued increase in train traffic in the study area will exist with or without construction of a second main line track and associated bridges. Adding a second main line track along this segment would not increase capacity of the rail line because there are other constraints on the BNSF and MRL main line tracks east of LPO.

As an example, the 7-mile-long Flathead Tunnel, located approximately 30 miles west of Whitefish, is currently a single main line tunnel with single main line track with sidings located on either side of the tunnel. Similarly, there are other constraints located to the east of Spokane, where the BNSF railroad once again becomes single main line tracks with sidings. There are

currently no scheduled or funded projects to address these constraints, as indicated in Section 3.17. The only passenger terminal between the Sandpoint and other rail line constraints on either side of LPO is the Sandpoint Amtrak Station. While it is conceivable that passenger train volumes could increase if demand for rail travel increases, only two passenger trains per day currently travel on the BNSF main line through the Sandpoint area.

### 1.2.3 Project Purpose

The purpose of the Project is to reduce the delay of freight and passenger rail traffic on the BNSF freight rail system between its Algoma main line track south of Sandpoint (BNSF MP 5.1) and the Sandpoint Junction (MP 2.9), where BNSF and the MRL main line tracks converge just north of the Sandpoint Amtrak Station. Based upon the needs identified above, BNSF developed the following goals and supporting objectives for the Project to balance social, economic, and environmental factors.

**Goal 1. Meet BNSF operational needs.**

- Objective 1-1: Reduce the delay of freight and passenger rail traffic.
- Objective 1-2: Accommodate increased demand of 79 trains for rail services.

**Goal 2. Be economically feasible for BNSF to design, construct, operate, and maintain.**

- Objective 2-1: Deliver the Project at a reasonable cost to BNSF and its customers.
- Objective 2-2: Be a viable business option by utilizing infrastructure on property and facilities owned by BNSF.

**Goal 3. Be technically feasible for BNSF to design, construct, operate, and maintain.**

- Objective 3-1: Accommodate construction within existing BNSF ROW.
- Objective 3-2: Minimize construction complexity.

**Goal 4. Minimize adverse impacts to the human and natural environment.**

- Objective 4-1: Minimize impacts to waters of the U.S.
- Objective 4-2: Reduce vehicular delay at at-grade crossings.
- Objective 4-3: Reduce passenger rail delay.
- Objective 4-4: Avoid acquisition of permanent ROW.
- Objective 4-5: Minimize disturbance to the local community and environment during construction.

Alternatives that propose construction of a bridge over navigable waters such as Sand Creek or LPO will require a bridge permit from the USCG under Section 9 of the RHA. Alternatives that propose discharge into waters of the U.S. or construction of a structure or other work in navigable waters will require a permit from the USACE under Section 404 of the CWA and/or Section 10 of the RHA.

## 2.0 ALTERNATIVES

As described in the purpose and need for the Project (Section 1.2), the amount of freight moved by train is largely driven by market conditions. As a common carrier, BNSF has an obligation to provide transportation services for all regulated goods upon reasonable request. Transport by rail may increase or decrease depending on market conditions. Train traffic in the study area has increased over the past 30 years, and it is reasonable to expect that it will continue to do so as market conditions change in response to population growth and demand for movement of freight and passenger rail service increases. The factors driving a continued increase in train traffic in the study area will exist with or without construction of new rail infrastructure. As such, the Project team focused on the development of alternatives that meet the purpose of the Project—to reduce the delay of freight and passenger rail traffic in the study area.

The use of traffic management measures was not considered during alternatives development because it would not meet the purpose of the Project. Freight movement is driven by market conditions and the timing of customer-based needs (e.g., scheduling of loading and unloading). Scheduling the passage of trains through the study area or implementation of other traffic management measures would require coordination with other common carrier railroads and is not feasible in this type of market-driven industry. While conceivable that traffic management measures may reduce the amount of time that trains are stopped waiting to travel through the study area, they would not reduce the overall delay in train movement through the study area. Therefore, traffic management measures are not an effective way to reduce delays in rail traffic and are not further addressed in this EA.

The following reasonable alternatives to address the purpose and need for the Project were considered by the Project team:

- Maintain single main line track (No Action – Analyzed Alternative 1)
- New track east of the existing main line track (Proposed Action – Analyzed Alternative 2)
- New track east of the existing main line track (Eliminated Alternative)
- Off-site/outside existing BNSF ROW (Eliminated Alternative)
- Grade-separated crossings (Eliminated Alternative)

BNSF coordinated with the USCG and the USACE to identify these alternatives and evaluated them using goals and objectives identified in Section 1.2.3.

During the CWA Section 404 permit evaluation, the USACE must identify the least environmentally damaging practicable alternative (LEDPA), in compliance with Section 404(b)(1) of the CWA. The basic premise of the 404 program is that no discharge of dredged or fill material may be permitted if (1) a practicable alternative exists that is less damaging to the aquatic environment or (2) the nation's waters would be considerably degraded. This premise is reflected in the 404(b)(1) guidelines in 40 CFR 230, which states that discharges of dredged or fill material into waters of the U.S., including wetlands, should not occur unless it can be demonstrated that such discharges, either individually or cumulatively, will not result in unacceptable adverse effects on the aquatic ecosystem. In addition, 40 CFR 230.10(a) specifically states, "No discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences."

An alternative is practicable if it is available and capable of being conducted after considering cost, existing technology, and logistics in light of overall Project purposes. The identification of the LEDPA is based on the alternatives analysis (Jacobs 2018c) submitted to the USACE as part of the CWA Section 404 permit application, in addition to the alternatives analysis conducted during EA preparation.

Alternatives considered and eliminated from further consideration are discussed in Section 2.1. Alternatives carried forward for further analysis in this EA are discussed in Sections 2.2 and 2.3.

## 2.1 Alternatives Eliminated from Further Consideration

The following alternatives were considered but eliminated because they do not meet the goals and objectives identified in Section 1.2.3:

- New track east of the existing main line track
- Off-site/outside existing BNSF ROW
- Grade-separated crossings

The rationale for elimination of each alternative is summarized in the following subsections. **Table 1** provides a comparison of the eliminated alternatives to the No Action Alternative and the Proposed Action Alternative.

**Table 1: Alternatives Comparison Summary**

| Goal | Objective | Analyzed Alternatives | | Eliminated Alternatives | | |
|---|---|---|---|---|---|---|
| | | No Action | New Track West of Existing Main Line (Proposed) | New Track East of Existing Main Line | Off-Site/ Outside Existing Right-of-Way | Grade-Separated Crossings |
| 1. Meet Operational Needs | 1-1. Reduces freight rail delay (Y/N) | No | Yes | Yes | Yes | No |
| | 1-2. Accommodate increased demand of 79 trains for rail services (Y/N) | Yes | Yes | Yes | Yes | No |
| 2. Economic Feasibility | 2-1. Construction cost (millions of dollars)[1] | $0 | $100[2] | $120[2] | >$192[3] | $132[4] |
| | 2-2. Utilizes infrastructure on property and facilities owned by BNSF (Y/N) | Yes | Yes | Yes | No | Yes |
| 3. Technical Feasibility | 3-1. Construction would occur within existing BNSF ROW (Y/N) | Yes | Yes | No | No | No |
| | 3-2. Construction complexity (High/Moderate/Low) | Low | Moderate | High | High | Moderate |
| 4. Minimize Adverse Impacts to the Human and Natural Environment | 4-1. Impact to waters of the U.S. (acres)[5] | 0 acre | 1.54 acres[6] | 5.36 to 7.36 acres | 13 to 18 acres | Unknown |
| | 4-2. Reduces vehicular delay at at-grade crossings (Y/N) | No | Yes | Yes | Yes | Yes |
| | 4-3. Reduces passenger rail delay (Y/N) | No | Yes | Yes | Yes | No |
| | 4-4. Permanent ROW acquisition (acres) | 0 | 0 | 0 | 770 | Unknown |
| | 4-5. Construction disturbance to local community (high/moderate/low) | Low | Moderate | High | High | Low |

Notes:
[1]Excludes maintenance activities, right-of-way (ROW) acquisition, mitigation, and costs external to BNSF.
[2]Approximate cost based on conceptual engineering for a new track west of the existing main line. Additional costs associated with a new track east of the existing main line are included to account for additional in-water fill/slope armoring, rock blasting, retaining walls, and impacts to utilities and properties.
[3]Estimated cost assuming construction of approximately 32 miles of new double main line track along existing Union Pacific Railroad's alignment at $6 million per mile on average.
[4]Estimated cost assuming construction of 24 grade-separated crossings within 20 miles of Sandpoint Junction at $5.5 million per crossing.
[5]Data sources: Jacobs 2018b; U.S. Fish and Wildlife Service 2018b; U.S. Department of Transportation 2018.
[6]A design option that extends the north end of Bridge 3.9 by 350 linear feet to eliminate nearshore fills to that area was considered by the Project team but rejected due to cost and safety and security concerns (Jacobs 2018c).

### 2.1.1 New Track East of the Existing Main Line Track

This alternative would have essentially all the same work elements described under the Proposed Action Alternative (Section 2.3) but places the new tracks on the east side of the existing main line. Track, switch, and signal upgrades would remain generally the same as the Proposed Action Alternative. A new track east of the existing main line track does not meet the goals and objectives identified in Section 1.2.3 for the following reasons:

- **Technical Feasibility**. Construction of a new main line track east of the existing BNSF main line track would be highly complex. There are no feasible access points from public roads or BNSF maintenance roads to access the area on the north side of LPO east of the existing rail bridge (Bridge 3.9). Cranes necessary to construct the bridge foundations would need to be brought in by barge from LPO and require a large fill area for barge landing, crane assembly, and staging. Pilings and bridge decks would also need to be barged to the site and require landing and staging areas. Other large equipment would need to access the site from Bridge Street.
- **Impacts to the Human and Natural Environment**. Constructing a new bridge over LPO east of the existing rail bridge (Bridge 3.9) would require substantially more nearshore fills than what is required for the Proposed Action Alternative. Approximately 0.5 mile of rail grade was already constructed at the time of the US 95 Sandpoint Bypass Project on the west side of the existing tracks. Providing an equivalent area on the east side of the existing tracks would require approximately 2.9 acres of nearshore fill from Bridge 3.1 (Sand Creek) to Bridge 3.9 (LPO). An estimated 1.2 acres of additional nearshore fill would also be needed for an adequate staging area. A large barge landing area for staging access, would result in both lake-bottom dredging and adjacent fill of up to 2 acres.

  A new bridge over Sand Creek east of the existing rail bridge (Bridge 3.1) would have approximately the same nearshore fills as the Proposed Action Alternative and 0.28-acre less fill to the wetlands just southwest of the bridge. Additional staging for a new bridge over Sand Creek would be required where the Sandpoint Marina encroaches on BNSF ROW, with a subsequent loss of boat slips and access.

  No private land is available to lease or purchase for the staging, assembly, and landing areas. All Project elements would need to be built in regulated areas adjacent to a high-use, public, recreational boating corridor where Sand Creek enters LPO. Large equipment accessing the site from Bridge Street would likely have a measurable increase in traffic congestion in the Bridge Street corridor.

  A new bridge over Bridge Street would be approximately the same as described with the Proposed Action Alternative. However, a track east of the existing main line may not be feasible without compromising access and parking to public and private properties east of existing Bridge 3.0.

A new track east of the existing main line track would cost $20 million more to construct than the Proposed Action Alternative due to the need for substantial rock blasting, increased fill in LPO, retaining wall requirements, and staging area needs. It would substantially increase temporary and permanent impacts to waters of the U.S. and would result in greater social impact due to increased disruption to the community and recreational users. Therefore, this alternative was eliminated from further consideration in this EA.

### 2.1.2 Off-Site/Outside Existing BNSF Right-of-Way

This alternative includes developing alternate routes or shifting BNSF traffic to tracks owned by other railroads. Shifting large rail traffic volume to another railroad assumes that another local competing railroad, in particular UPRR, is interested in allowing BNSF trains to utilize its corridor. To preserve UPRR's current and future operations, a new main line track would be needed adjacent to the existing UPRR main line. This may require construction of approximately 32 miles of new main line track along the existing UPRR main line, between a point north of Sandpoint, where the BNSF and UPRR main lines run closely together, to a close running point near Athol, Idaho, where another separate connection between the two competing railroads could be created. This option does not meet the goals and objectives identified in Section 1.2.3 for the following reasons:

- **Economic Feasibility**. When possible, BNSF chooses those options that utilize infrastructure on property and facilities owned by BNSF. BNSF is not guaranteed sufficient rail capacity on the UPRR line. At an estimated average cost of $6 million per rail mile, the cost of constructing 32 miles of new main line track adjacent to the UPRR main line would be nearly twice the cost of constructing a new main line track adjacent to the existing BNSF main line. After factoring in the additional cost of purchasing real estate and negotiating an agreement with another railroad, the total cost becomes economically impractical and would impose an unreasonable cost on rail customers. For these reasons, shifting rail traffic to another railroad is not a viable business option and is considered economically infeasible.
- **Impacts to the Human and Natural Environment**. Developing up to 32 miles of new main line track along the existing UPRR main line would require a substantial amount of property (as much as 770 acres), resulting in social and environmental impacts that far exceed those of the Proposed Action Alternative. Based upon a 100-foot ROW containing 53 acres of jurisdictional waters, aquatic impacts are estimated between 13 and 18 acres (representing 25 to 33 percent of waters of the U.S. within the ROW).

Developing an alternate route would consist of property acquisition to accommodate a new 100-foot ROW to meet up with the existing track configuration. Although this option meets operational needs, it does not meet the goals and objectives identified in Section 1.2.3 for the following reasons:

- **Economic Feasibility**. The cost to construct an entirely new route would far exceed the cost of an alternative that utilizes an existing rail corridor and is considered economically infeasible.
- **Technical Feasibility**. Large tracts of property to build new tracks outside the BNSF transportation corridor are not available. Available property is further constrained by track grade requirements, which cannot exceed 1 percent.
- **Impacts to the Human and Natural Environment**. Developing a new ROW for an alternate route would require acquisition of a substantial amount of private property. A crossing of the Pend Oreille River and several other waterways would be required and would be outside an existing transportation corridor, presumably resulting in even more than the 13 to 18 acres of aquatic impacts estimated above for shifting traffic to the UPRR main line.

For these reasons, an alternative off-site/outside of existing BNSF ROW is considered impractical and was eliminated from further consideration in this EA.

### 2.1.3 Grade-Separated Crossings

In response to public input, BNSF considered an alternative for additional grade-separated crossings in North Idaho in lieu of constructing additional bridges and main line track. The determination to grade separate a crossing is made by the appropriate road authority using their own calculations or other driving factors. BNSF participates in the process by conducting reviews of construction plans that would impact BNSF's ROW. Under federal law (23 CFR 646.212), there is a formula for cost-sharing between a community and the railroad for providing a grade-separated crossing when the grade separation results in the elimination of an at-grade crossing. BNSF regularly participates in such projects across its system. As such, the viability of this alternative depends on multiple road authorities in North Idaho (approximately 24 public at-grade crossings are located within 20 miles of the Sandpoint Junction) determining that grade-separated crossings would provide a transportation benefit to their community, relative to the cost.

- **Operational Needs**. This alternative was eliminated from further consideration because it does not meet BNSF's operational needs (Goal 1, see Section 1.2.3). Trains currently have the ROW through existing at-grade crossings, which can result in vehicle delay for local traffic. Converting public at-grade crossings to grade-separated crossings would reduce vehicle delay but would not reduce the delay of freight and passenger rail traffic, which is the primary purpose of the Project.

Therefore, this alternative is not considered further in this EA. Because this alternative does not meet the primary purpose of the Project, it was not analyzed in the same level of detail as other alternatives during the screening process, as noted in **Table 1**. A footprint for this alternative was not estimated, and therefore potential impacts to waters of the U.S. and potential ROW needs were not quantified.

## 2.2 Analyzed Alternative 1 – No Action Alternative

Under the No Action Alternative, the current track configuration would stay the same (two main line tracks that switch to a single main line track through Sandpoint and over the Sand Creek and LPO bridges). This includes continued, ongoing inspection and maintenance of the single track, bridges, and associated infrastructure in compliance with the 1995 Interstate Commerce Commission Termination Act and the 1970 Federal Railroad Safety Act.

The No Action Alternative is projected to result in continued and increased levels of trains waiting on the main line, on existing sidings, and in rail yards, with associated continued and increased idling emissions and noise at locations where trains wait for clearance as well as increased time to clear trains from local and regional at-grade crossings. Rail traffic in this corridor has increased as a result of population growth, changing market conditions, and the corresponding increase in the demand for freight, a general trend that will likely continue over time.

The No Action Alternative does not meet the purpose or need of the Project and does not address specific conditions that currently result in delays to passenger and freight service or delays of traffic at local and regional road crossings. However, the No Action Alternative will be carried forward for analysis as a comparison tool.

## 2.3 Analyzed Alternative 2 – Proposed Action Alternative

The Proposed Action Alternative involves the construction of an approximately 2.2-mile-long second main line track west of the existing BNSF main line to connect the Algoma main line track (MP 5.1) south of Sandpoint, to the Sandpoint Junction switch (MP 2.9), where the BNSF and the MRL main lines converge in Sandpoint. This action consists of the following:

- A new main line track west of the existing BNSF main line track
- A new bridge over LPO (Bridge. 3.9) adjacent to (west of) the existing rail bridge (**Figure 4**)
- A new bridge over Sand Creek (Bridge 3.1) adjacent to (west of) the existing rail bridge (**Figures 5** and **6**)
- A new bridge over Bridge Street (Bridge 3.0) adjacent to (west of) the existing rail bridge (**Figure 7**)
- Track, switch, and signal upgrades
- Temporary construction bridges over LPO and Sand Creek
- Development of construction material/equipment work staging areas
- 0.88 acre of permanent and 0.38 acre of temporary nearshore fill below the jurisdictional ordinary high water mark (OHWM) elevation of 2,062.50 feet, associated with bridge abutments and the south switch
- 0.28 acre of wetland fill in one location between the rail grade and the multiuse public pathway south of Bridge 3.1

Similar to the No Action Alternative, the Proposed Action Alternative includes continued, ongoing inspection and maintenance of the main line track, bridges, and associated infrastructure in compliance with federal railroad regulations.

The Proposed Action Alternative meets all the goals and objectives for the Project (**Table 1**). As indicated at the beginning of Section 2.0, the amount of freight moved by train is driven by market conditions and the number and type of freight origins and destinations along a rail line. The Proposed Action Alternative does not add any origin or destination facilities; therefore, it cannot predict increases or decreases in rail traffic, but instead is designed to increase efficiency of movement by rail. Transport by rail may increase or decrease depending on market conditions; however, the Proposed Action Alternative is expected to improve the fluidity of movement through the study area for both trains and vehicles. Trains would be able to pass through the study area more efficiently by traveling on either the existing bridges or the new bridges and drivers would likely see more rapid clearing of at-grade crossings, reduced congestion, and an overall improvement in access to the Sandpoint area. In addition, because each train passing through the study area would travel on either the existing bridges or the new bridges, travel distances would not increase with the construction of a second main line track.

**Appendix B** includes a set of permit drawings with design details of the Proposed Action Alternative. The existing BNSF bridges over LPO, Sand Creek, and Bridge Street would remain unchanged, except for routine maintenance and repair activities.

**Figure 4: Simulation of New Bridge 3.9 from the North Shoreline of the Pend Oreille River**

**Figure 5: Simulation of New Bridge 3.1 over Sand Creek between US 95 and Existing Bridge 3.1**

**Figure 6: Simulation of New Bridge 3.1 over Sand Creek**

**Figure 7: Simulation of New Bridge 3.0 from Bridge Street**

### 2.3.1 Construction Process

The construction process includes all assumed Project activities: mobilizing equipment and materials needed for construction, reestablishing and improving existing access roads at the north and south ends of the Project area, improving staging areas within the existing BNSF ROW, constructing temporary work bridges, constructing new permanent bridges, removing temporary work bridges, restoring site conditions, and demobilizing equipment. Potential construction staging areas and access points are shown on **Figure 8**. The anticipated construction process is summarized as follows:

1. Mobilization. Equipment and materials mobilization to staging areas would be an ongoing process during construction. All staging areas are within BNSF ROW.
2. Site Preparation. Site preparation includes clearing and grubbing activities, removing existing fencing, installing temporary construction fencing, and installing temporary erosion control measures. Site preparation also includes improving existing access roads and staging areas in the existing BNSF ROW. The improvements may include repaving, such work necessary to improve safety (e.g., line of sight clearing), and environmental protection measures such as sediment tracking and containment. For the most part, these areas have already been cleared and overlaid with compacted gravels. Site access would be from US 95 and Bridge Street at the north end of the Project and from Bottle Bay Road at the south end.
3. Construct temporary work bridges over LPO and Sand Creek (**Table 2**). It is assumed for purposes of this analysis that two temporary work bridges would be used to facilitate construction of the new permanent bridges, resulting in 0.38 acre of temporary nearshore fill placement. However, the construction contractor may select different means and methods to construct the new permanent bridges that are less impactful than what is described in this EA.
    a. Temporary work bridge over LPO. A temporary timber deck construction bridge would be built adjacent to and west of the new LPO bridge location. The temporary work bridge over LPO would measure approximately 4,800 feet long and 32 feet wide, with one hundred and one approximately 48-foot-long spans and one 24-foot-long span at the north end. Additionally, eight 64-foot-wide staging setouts would be installed at approximately 500-foot intervals along the bridge for safety and material staging and to provide continuous through-access for the length of the temporary work bridge. The temporary work bridge would support large cranes that would construct the new permanent LPO bridge. The bridge would maintain a 42-foot horizontal and 15-foot vertical clearance at the location of the lighted navigation channel under the existing bridge.

       The temporary work bridge piles would be vibrated to refusal, meaning that the pile is no longer penetrating substrates with vibratory pile-driving methods. Then one pile per pier would be proofed with an impact hammer at an estimated 20 to 50 strikes for a short duration. In water deeper than 2 feet, bubble curtains will be utilized during impact pile driving to attenuate in-water sound. The work bridge would require seven hundred 24-inch-diameter steel pipe piles, with 600 of those being installed in water.

**Figure 8: Construction Staging Areas and Access Points**

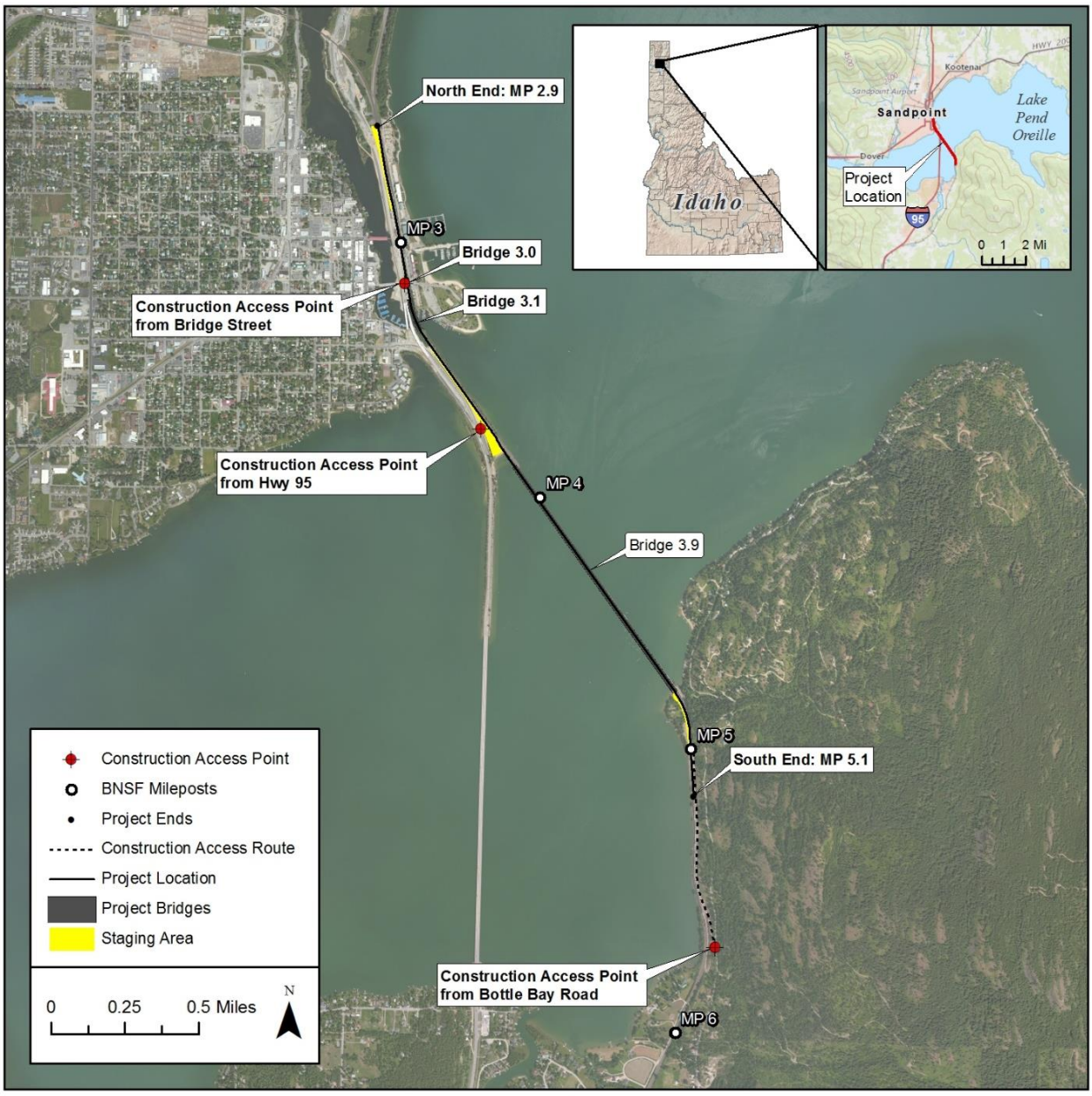


**Table 2: Number of Piles and Installation Detail**

| Action | Support Type | Installation Method | Total Quantity | In-Water Quantity |
|---|---|---|---|---|
| **Temporary Work Bridges** | | | | |
| **Sand Creek** Install and remove temporary work bridge piles. | 24-inch Steel Pipe Pile | Install: Vibratory to refusal and impact hammer for proofing, estimated 20 to 50 strikes per pile. Removal would be vibratory extraction. | 48 | Up to 40 |
| **LPO** Install and remove temporary work bridge piles. | 24-inch Steel Pipe Pile | Install: Vibratory to refusal and impact hammer for proofing, estimated 20 to 50 strikes per pile. Removal would be vibratory extraction. | 700 | 600 |
| Install and remove temporary platforms on west side of bridges (staging setouts). | 24-inch Steel Pipe Pile | Install: Vibratory to refusal and impact hammer for proofing, estimated 20 to 50 strikes per pile. Removal would be vibratory extraction. | Included in overall temporary bridge pile quantities | Included in overall temporary bridge pile quantities |
| **New Bridges** | | | | |
| **Bridge 3.1** Install bridge piles. | 24-inch Steel Pipe Pile | Install: Vibratory to resistance and finish with an impact hammer, estimated 1,200 strikes per pile. | 64 | 22 |
| **Bridge 3.9** Install bridge piles. | 36-inch Steel Pipe Pile | Install: Vibratory to resistance and finish with an impact hammer, estimated 1,600 strikes per pile. | 288 | 288 |
| **TOTAL** | | | **1,100** | **950** |

Notes:
Vibratory to refusal means the pile is no longer penetrating substrates with vibratory pile-driving methods.
Vibratory to resistance means the pile has hit restrictive forces and continued penetration is very slow.

Impact and vibratory pile driving would occur during daylight working hours. Assuming two temporary work bridge piles can be driven per day, pile driving is expected to occur for an estimated one calendar year for the temporary work bridge over LPO, dependent on weather or other interruptions.

The vertical clearance of the temporary work bridge over LPO would gradually rise from the abutments. Spans 1 through 16 at the north end of the bridge would have less than 10 feet of vertical clearance, with the low chord gradually rising from 10 to 15 feet for Spans 17 through 67. Spans 68 through 71 would provide 15 feet of vertical clearance, with the low chord gradually lowering back down from 15 feet to 10 feet at the south end for Spans 72 through 101.

The temporary work bridge over LPO would be constructed first and would remain in place until the new permanent bridge is placed into service. The temporary work bridge went through many design iterations to identify the least impacts to navigation while providing a safe working platform for the large, heavy equipment required to construct the new LPO railroad bridge. Most of the work bridge would retain an equivalent vertical and horizontal clearance as the existing railroad bridge during construction (see existing clearances in Section 1.1.2). The proposed navigational clearances will be reviewed by the USCG as part of the USCG bridge permit process.

All marine traffic that now passes below the existing bridge would be able to pass under the temporary work bridge throughout construction. Signage, lighting, and other notices would be in place to direct marine traffic on LPO away from restrictive spans to the safe, nonrestrictive boating passage spans.

b. Temporary work bridge over Sand Creek. A temporary timber deck construction bridge would be built adjacent to and west of the new Sand Creek bridge location.

The temporary work bridge over Sand Creek would measure approximately 528 feet long and 32 feet wide with eleven 48-foot-long spans. The temporary work bridge over Sand Creek would be supported by 10 piers partially or fully below the OHWM. Eight piers would consist of four 24-inch-diameter, open-ended steel pipe piles, and two piers would consist of eight 24-inch-diameter, open-ended steel pipe piles. In total, 30 to 40 piles would be below the OHWM to account for minor adjustments in span support needs and site conditions. The temporary work bridge would support large cranes that would be working to construct the new permanent Sand Creek bridge.

The temporary work bridge piles would be vibrated to refusal, and one pile per pier would be proofed with an impact hammer at an estimated 20 to 50 strikes for a short duration. In water deeper than 2 feet, bubble curtains will be utilized during impact pile driving to attenuate in-water sound. Impact and vibratory pile driving would occur during daylight working hours. Assuming that two temporary work bridge piles can be driven per day, pile driving is expected to occur for about a month for the temporary work bridge over Sand Creek, depending on weather or other interruptions.

The temporary work bridge span over the Sand Creek marked and lighted navigation channel would be limited to the period when no navigational access up Sand Creek is available, from approximately October 15 to April 15, depending on Albeni Falls Dam fall drawdown and spring fill. The temporary work bridge span over the marked and lighted navigation channel for Sand Creek would be removed between April 15 and October 15. As a result, the temporary work bridge would not impact navigation for marine traffic in Sand Creek as it would not be an obstruction when navigational access up Sand Creek is available.

4. Construct new permanent bridges over LPO and Sand Creek (**Table 2**). Construction of the new permanent bridges may occur concurrently with the construction of the temporary work bridges. This work includes pile driving; setting concrete pier caps and abutments, including excavation for foundations at each abutment; setting the new bridge girders; installing decking, drainage, and handrails; and final grading.

The new permanent LPO bridge would be constructed approximately 50 feet west of the existing rail bridge in existing BNSF ROW and measure approximately 4,874 feet long by 18 feet wide. The new bridge would have 49 spans at the following lengths: forty-two at 104 feet long, six at 75 feet 11 inches long, and one at 47 feet 10 inches long.

Each pier bent would consist of six 36-inch-diameter steel pipe piles for a total of 288 piles below the regulated summer pool elevation of 2,062.5 feet that makes up the jurisdictional OHWM of the lake. The new piers would align approximately with every other pier of the existing bridge.

The vertical clearances of the new permanent LPO bridge would match the 12.5-foot vertical clearance for most of the existing bridge spans. The maximum vertical clearance (low chord) of the new bridge would be 15 feet above the regulated summer pool elevation of 2,062.5 feet. Six spans of the new bridge (Spans 32-34 and 39-41) would provide a 15-

foot vertical clearance. Spans 35 through 38 would have a vertical clearance of 14 feet. The new bridge provides twice the horizontal clearances of the existing Bridge 3.9 for most of the new structure. The navigational span would generally match the horizontal clearance of the existing bridge spans. The vertical and horizontal clearances of the new permanent LPO bridge will be reviewed by the USCG as part of the USCG bridge permit process.

The new permanent LPO bridge would require vibrating 288 piles to resistance into the lake bed, meaning the pile has hit restrictive forces, and continued penetration is very slow. Then the pile will be finished with an impact hammer with an average of 1,600 strikes per pile. All piles would be installed in-water. Pile driving would occur during daylight working hours. Although up to four piles would likely be driven per day, for scheduling purposes it is assumed that up to two piles would be driven per day for an estimated six months, dependent on weather-related or other interruptions.

Air bubble curtains would be used during impact pile driving, per USFWS direction, to attenuate in-water sound pressure levels (when water is more than 2 feet deep) per USFWS protocol (2019). A turbidity curtain would surround the area where bubble curtains would be utilized (USFWS 2019).

The new permanent Sand Creek bridge would be constructed approximately 35 feet west of the existing rail bridge in existing BNSF ROW and would measure approximately 505 feet long by 21 feet wide. The new bridge would be supported by 11 piers, each consisting of open-ended, 24-inch-diameter steel pipe piles. Two piers within the OHWM of the creek channel would consist of eight piles each, seven piers (one partially or wholly within the OHWM and six fully upland) would consist of six piles each, and two piers upland of the OHWM would consist of three piles each. A total of 64 piles would be placed—22 below the OHWM. Piles within the main channel of Sand Creek would be driven during low-water conditions/winter pool elevation.

Two piers would be fully within the Sand Creek navigational channel. The new bridge navigational horizontal clearance is 74 feet; the existing bridge has an approximately 45-foot horizontal clearance. Vertical clearance of the new bridge would match the vertical clearance of the existing bridge, which is 17 feet above the 2,062.5-foot OHWM elevation. USCG will review the vertical and horizontal clearances of the new permanent Sand Creek bridge as part of the USCG bridge permit process. The new permanent Sand Creek bridge piles would be vibrated to resistance into the creek bed and finished with an impact hammer with an average of 1,200 strikes per pile. Pile driving would occur during daylight working hours. Although up to four piles would likely be driven per day, for scheduling purposes it is assumed that two piles would be driven per day for about one month, dependent on weather-related or other interruptions.

5. Construct Bridge 3.0. Construction would generally follow typical upland assembly. The track grade would be built to the abutment locations and then concrete abutments, per the plan, would be formed/poured in place. Pre-cast bridge components would be placed/set. If temporary closures of Bridge Street are required, a traffic control plan would be utilized as described in Section 3.15.2.

6. Construct new second main line track on new permanent bridges. Once the new permanent LPO and Sand Creek bridges are completed, BNSF employees, with contractor support, would construct the new second main line track on the new permanent bridges. The temporary work bridges would be used to facilitate placement of ties and track.

7. Dismantle and remove temporary work bridges and temporary nearshore fills. The temporary work bridges would be removed in sections, stockpiled in upland staging areas as needed, and ultimately removed from the site. The temporary work bridge piles would be removed with a vibratory hammer as needed. The temporary nearshore fills would be removed once temporary work bridge removal allows.
8. Final grading, cleanup, and stabilization. While the temporary work bridges are being dismantled and removed from site, all remaining final grading and track construction would occur in upland areas within the Project area. Disturbed areas within the Project area would be stabilized using erosion and sediment control best management practices (BMPs; e.g., mulch, seed, sediment fences) to control stormwater discharges as required by the CWA Section 402 National Pollutant Discharge Elimination System (NPDES) permit and CWA Section 401 WQC. Permanent fencing, where appropriate to promote safety, would be constructed within BNSF ROW, and temporary construction fencing and erosion control measures would be removed and stabilized. Final inspection punch-list items would be addressed at this time.
9. Demobilize. All construction supplies and equipment would be removed from the staging areas; Project completed. Staging areas would be restored to BNSF standards.

### 2.3.2 Temporary Work Bridge Demolition

The temporary work bridges would not be demolished until the new bridge(s) are in place and completed work includes new track installation and the bridge being ready for service. At that time, bridge components would be partially disassembled, breaking the spans down to manageable pieces that can be safely removed from the temporary work bridges. A crane would be used to hoist sections of the bridge to either a flatbed or dump truck. These parts would either be removed entirely from the study area and/or stockpiled at the staging areas to be further dismantled or removed after construction has been completed.

**Appendix C** includes site photographs of existing conditions that depict the bridge locations and conceptual renderings of the relationship between the proposed new bridges and the existing bridges. BMPs would be implemented during the temporary work bridge demolition to prevent temporary work bridge materials from entering Sand Creek or LPO. BNSF will coordinate with IDEQ to select specific BMPs and appropriate containment measures that meet state water quality standards and permit conditions.

Demolition includes temporary work bridge removal, including staging setouts or work platforms. This work would occur in sequential order and generally proceed toward the abutments. All temporary piles would be removed with a vibratory extractor.

### 2.3.3 Site Rehabilitation

Site rehabilitation includes final grading along the new rail grade and around upland areas associated with the new bridge abutments, removing temporary fills associated with the access roads, adding temporary at-grade crossings, and seeding/mulching open disturbed areas. Where there is sufficient soil, shoreline planting of riparian trees and shrubs and removing temporary construction materials such as fencing, signage, and erosion control products will take place. These are the final construction-related actions associated with this Project.

### 2.3.4 Construction Equipment

The Project would require the use of a wide array of construction equipment. **Table 3** includes a list of all Project equipment expected to be used on-site, as well as the expected use and the typical maximum noise level(s) for each piece of equipment as measured from 50 feet away (Washington State Department of Transportation [WSDOT] 2019). If other types of equipment are needed during this Project, specifications, size, and noise levels would fall within the parameters of the equipment in **Table 3**.

**Table 3: Construction Equipment List, Use, and Reference Maximum In-Air Noise Levels**

| Equipment | Expected Use | $L_{max}$ (dBA) |
|---|---|---|
| Backhoe | Access road and abutment construction | 78 |
| Chainsaw | Clear work area and construction pad | 84 |
| Compactor | Compact fill material for ramps, access roads, and staging areas | 83 |
| Compressor | Bubble curtain and hand tools | 78 |
| Concrete Mixer Truck | New abutments, piles, and decking | 79 |
| Concrete Pump Truck | New abutments, piles, and decking | 81 |
| Crane | Bridge construction, work bridges, piles, etc. | 81 |
| Drill Rig Truck | Geotechnical or subsurface investigation | 79 |
| Drum Mixer | Mix concrete or fill material | 80 |
| Dump Truck | Deliver supplies and remove rock and soil | 76 |
| Excavator | Access road and abutment work | 81 |
| Flat Bed Truck | Move supplies and bridge components | 74 |
| Front End Loader | Move supplies and bridge components | 79 |
| Generator | Power for hand tools and small equipment | 81 |
| Generator (<2kVA) | Power roadway signage | 73 |
| Vibratory Pile Driver | Installation and removal of in-water piles | 101 |
| Impact Pile Driver | Installation of upland and in-water piles | 110 |
| Lift | Access | 75 |
| Pickup Trucks | Construction worker site access | 75 |
| Pneumatic Tools | Power hand tools | 85 |
| Rock Drill | Rock removal | 81 |
| Roller | Compact fill for access roads | 80 |
| Welder/Torch | Welding of steel bridge components | 74 |

Notes:
dBA – A-weighted decibel
$L_{max}$ = highest time-weighted sound level measured

All construction materials would need to be delivered to the site by truck, rail, or a combination of both, at the discretion of BNSF and the construction contractor. Truck trips for delivery and removal of construction materials would be relatively consistent throughout Project construction. Railroad rails, ties, and ballast would likely be delivered by rail, while all other construction material would be delivered by truck. It is possible that some items could be delivered by rail to a railyard or siding location and loaded onto trucks for final delivery to the construction site. All construction materials and equipment would be stored on existing BNSF ROW. Construction vehicles that are refueled on-site would do so in compliance with environmental permit conditions and appropriate BMPs to minimize the risk of spills and contamination.

Estimated construction material quantities and vehicles to be used over the course of construction are noted in **Table 4**.

**Table 4: Construction Materials**

| Track and Civil Materials | Material Quantities | |
|---|---|---|
| Clear and Grub | 6.1 | acres |
| Import Granular Embankment | 36,600 | cubic yards |
| Excavation to Waste/Disposal | 15,200 | cubic yards |
| Subballast | 8,000 | cubic yards |
| BNSF R/W Fencing | 8,000 | linear feet |
| Roadway Pavement for Highway and Bike Trail | 620 | tons |
| Block Wall (Backfill, Pipe, Fence, and Bedding are Incidental) | 12,750 | square feet |
| Edge Drain with 8-inch Perforated Pipe and Coarse Agg. Rock | 670 | linear feet |
| Scour Protection (2- x 4-inch Quarry Spalls) | 900 | cubic yards |
| Wick Drains | 211,600 | linear feet |
| Roadway Top Course for Grade Crossings | 210 | cubic yards |
| Roadway Base Course for Grade Crossings, Highway, and Trail | 3,850 | tons |
| Tubular Walkway Handrail Attached to Soldier-Pile Wall | 850 | linear feet |
| Install New Railroad Track (rail ties and ballast) | 11,950 | linear feet |
| **Bridge Materials** | **Material Quantities** | |
| Structure Excavation | 170 | cubic yards |
| Structure Backfill | 370 | tons |
| Steel Bearing Piles | 60,580 | linear feet |
| Structural Steel | 1,120,800 | pounds |
| Reinforcing Steel | 552,150 | pounds |
| Cast-in-place Concrete | 2,609 | cubic yards |
| Precast Slab Beam | 4 | units |
| Precast Double Voided Box Beams | 22 | units |
| Restressed I-Girders | 234 | units |
| Precast Abutment/Pier Caps | 63 | units |
| Precast Bearing Blocks | 11 | units |
| Precast Wingwalls | 10 | units |

A number of small work boats would be used to aid construction and a limited number of barges no larger than roughly the size of the largest vessels already on LPO may also be used but no additional nearshore fill or dredging would occur to facilitate the use of barges. The origin and total number of these boats and barges would depend on the construction contractor selected. Work boats and barges would be launched at existing boat ramps on LPO or directly placed in the water by crane within the Project area.

An estimated 25 to 50 construction workers would be on-site at any given time during construction. Parking for private construction worker vehicles will also be accommodated on existing BNSF ROW.

### 2.3.5 Construction Schedule and Design Year

LPO has no in-water work window for avoiding impacts to aquatic resources, such as listed endangered species or designated critical habitat. However, since LPO water levels are controlled by the downstream Albeni Falls Dam, nearshore fills and pile driving at Bridge 3.1 would be completed during low- or no-water times in the winter months. Other in-water work may occur year-round to minimize the overall construction duration. **Table 5** summarizes the general work activities sequencing and a 3- to 4-year construction timeline, although construction may take up to 5 years. Construction is anticipated to start upon completion of the NEPA and permitting processes.

**Table 5: General Work Activities Sequencing and Timeline**

| | |
|---|---|
| **Year 1** | Develop/improve existing access and upland staging areas<br>Wetland and nearshore structural fills<br>Begin temporary work bridges |
| **Year 2** | Finish structural fills<br>Finish temporary work bridge(s) construction<br>Begin permanent bridge(s) pile driving |
| **Year 2–Year 3** | Finish permanent bridge(s) pile driving<br>Install permanent bridge spans<br>Track and infrastructure construction<br>Remove temporary work bridge (3.1) before summer pool |
| **Year 3** | Finish track and infrastructure construction<br>Remove temporary work bridge (3.9)<br>Remove temporary fill, stabilize, and restore<br>Demobilize construction equipment and materials |

Year-round construction is optimal for the purposes of shortening the overall duration of the project, which will subsequently minimize any construction-related disruption to the community. Winter weather conditions in the Project area are anticipated to present challenges to this type of construction that would likely slow progress through the winter months. Combined with the loss of the summer months, winter weather-related construction challenges would likely cause the overall duration of Project construction to take much longer if construction were seasonally restricted to non-summer months.

Although construction on Bridge 3.9 would occur year-round, the construction-related work on Bridge 3.1 over Sand Creek and the nearshore fill placement at both bridges would occur during winter low pool conditions (mid-October to mid-April of each calendar year), which are controlled by operations at the Albeni Falls Dam. Additionally, most construction activities would occur during daylight hours, as indicated in Section 4.1.6. In ongoing coordination with the City, BNSF has agreed to limit construction within Sandpoint to the months of October through April of any calendar year and only work between the hours of 6:30 a.m. to 8:00 p.m., except for work required to set the new bridge girders at Bridge 3.0, which would occur during overnight hours, between 8:00 p.m. and 6:30 a.m. unless otherwise approved by the City. All pile driving activities within the City, at Bridge 3.0 and Bridge 3.1, would occur between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday. All construction activities, including pile driving, at Bridge 3.9 would occur between 7:00 a.m. and 7:00 p.m. All construction activities and sequencing at Bridge 3.0 will be conducted in close coordination with the City to maintain access to the properties on the east side of BNSF ROW and ensure coordination with other local activities during construction.

# 3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the affected environment and potential environmental effects of the No Action Alternative and Proposed Action Alternative by resource area. The Project passes through urban developed areas, rural developed areas, LPO, and over roads and recreational pathways but is confined to the BNSF ROW. Unless otherwise noted by resource, the study area for this EA is the BNSF ROW from MP 2.9 to MP 5.1 and varies between 100 and 400 feet wide, extending from 50 to 200 feet on either side of the track centerline.

Each resource section describes the existing affected environment (existing condition of each resource) and evaluates potential environmental effects on those resources for each alternative. Although only relevant resource areas are evaluated for impacts, the USCG considered all resources in the study area and determined which could be eliminated from further review based on minimal or no effect:

- **Prime and Unique Farmland**. No farmland, or potential farmland exists in the Project study area; therefore, the Project would have no effect on these resources and they are not discussed further in this EA.
- **Section 4(f) Property**. Railroad operations are exempt from Section 4(f) review per Section 11502 of the FAST Act; therefore, Section 4(f) properties are not discussed further in this EA.
- **Public Services and Utilities**. No major public services or utilities have been identified within the study area. If minor utility relocations are required, they would be coordinated with local utility providers and agencies as necessary. Therefore, this resource is not addressed in detail in this EA.

## 3.1 Air Quality

The Clean Air Act (CAA) established a comprehensive program for improving and maintaining air quality throughout the United States. The focus of the CAA is to reduce ambient concentrations of air pollutants and toxins that degrade air quality; the reduction of air pollution, in turn, improves the human and biologic environment. The intent of the CAA is achieved through permitting of stationary sources, restriction of toxic substance emissions from stationary and mobile sources, and the establishment of National Ambient Air Quality Standards (NAAQS) as set by the USEPA. The CAA prohibits federal agencies from funding, authorizing, or approving plans, programs, or projects that do not meet or conform to the NAAQS requirements. The IDEQ is responsible for ensuring compliance with federal, state, and local air quality regulations in the state of Idaho.

### 3.1.1 Affected Environment

The USEPA sets the national air quality standards for six common pollutants (referred to as “criteria” pollutants) emitted by any stationary and mobile (marine and/or terrestrially based) source. These standards consist of threshold levels for carbon monoxide, lead, nitrogen oxides, ozone, particulate matter (PM), and sulfur dioxide. The CAA requires the USEPA to designate each area of Idaho in one of three ways: attainment (meeting a standard), nonattainment (failing to meet a standard), and unclassifiable (not enough information to classify). Areas in maintenance or nonattainment of the NAAQS are required to develop a State Implementation Plan (SIP) detailing commitments by which the state will attain the NAAQS for each violating pollutant.

The Sandpoint area was designated nonattainment for PM smaller than 10 micrometers ($PM_{10}$) in 1997. An emissions inventory identified the primary $PM_{10}$ source as residential wood burning. Fugitive road dust and some industrial sources were also considered contributors.

In December 2011, IDEQ submitted a $PM_{10}$ Limited Maintenance Plan (LMP) and Re-Designation Request to the USEPA to redesignate the area to attainment status. The plan focused on a comprehensive residential wood combustion program, controls on fugitive road dust, and emission limitations on industrial sources. In April 2013, the USEPA redesignated the Sandpoint area to attainment for $PM_{10}$ (USEPA, n.d.-a). Sandpoint is currently considered a maintenance area for the 1987 $PM_{10}$ standard (USEPA, n.d.-b) and is under an LMP. Emissions budgets in LMP areas may be treated as essentially not constraining for the length of the maintenance period because it is unreasonable to expect that an area satisfying the LMP criteria will experience so much growth during that period of time such that a violation of the $PM_{10}$ NAAQS would result (EPA 2001); therefore, an air quality conformity applicability study of pollutant emissions resulting from construction of the proposed BNSF Project would not be required. The Sandpoint area is in attainment for all other criteria pollutants.

### *Operational Emissions*

Although the existing regional corridor has capacity to move more trains, additional train volumes would increase localized congestion and delays throughout the corridor. The need to construct a second main line track and new bridges is to reduce existing railroad delays that occur in the vicinity of Sandpoint due to the convergence of three rail lines that utilize existing, single-track bridges across these waters. Train traffic in the study area has increased over the past 30 years, and it is reasonable to expect that it will continue to do so as market conditions change in response to population growth and demand for movement of freight and passenger rail service increases.

Currently trains must stop and wait, as another oncoming train crosses, and clear the existing bridges due to high traffic volume, resulting in long periods of locomotives idling and an interrelated, higher rate of fuel consumption and emissions associated with trains powering up from idle holding. During both idle and drive-through states, trains can generate various emissions including fugitive dust ($PM_{2.5}$, $PM_{10,}$ and total suspended particulates) and combustion (carbon monoxide, nitrogen oxides, sulfur dioxide, $PM_{2.5,}$ $PM_{10}$, total suspended particulates, volatile organic compounds [VOCs], hazardous air pollutants, and diesel PM) (Washington State Department of Ecology [WDOE] and Cowlitz County 2017). Relative to idling, drive-through trains have relatively low PM emissions while optimizing fuel efficiency. The scenario where the locomotives are idling for extended periods of time due to oncoming train traffic will result in the highest amount of emissions, due to a lower fuel efficiency and the duration they are present. A drive-through scenario, where the locomotives are spending a shorter amount of time traveling through the area at a higher speed, will result in lower emissions. The amount of smoke opacity is relatively similar between idle and various throttle positions but varies depending on the test unit used (EPA 1998).

### *Fugitive Coal Dust*

The potential for coal dust emissions and/or particles falling off railcars onto the track is greatest at the points of loading and unloading due to coal transfer at these locations. An extensive overview of studies regarding coal emissions via train transport is provided in the Millennium Bulk Terminals – Longview EIS, which proposed increasing coal transport, as well as coal stockpiling and transfer. The NEPA and SEPA EISs prepared for the Millennium Bulk Terminals – Longview project evaluated indirect impacts associated with coal emissions for the BNSF main line. The NEPA Draft EIS, which was issued by USACE, and the SEPA Final EIS, which was issued by

WDOE and Cowlitz County, estimated the coal dust emissions from a moving train with adjustments in the emissions rates based on air quality monitoring studies conducted in various locations (including Australia, Canada, and the United States), a study conducted along the BNSF main line track in Cowlitz County, Washington, and another conducted along the BNSF main line track in Whatcom County, Washington.

The Cowlitz County study monitored air quality associated with coal trains travelling at approximately 40–45 miles per hour (mph). This can be compared to coal trains currently travelling through Sandpoint at up to 25 mph and potentially up to 35 mph under the Proposed Action Alternative. The Whatcom County study assessed air quality associated with trains travelling at slower speeds carrying unloaded coal cars as compared to loaded coal cars, which would be similar to conditions where empty coal cars would be travelling through Sandpoint, returning to mines in Montana and Wyoming. The Millennium Bulk Terminals – Longview EIS considered data from a subset of the faster-moving trains monitored in the Whatcom County study. Those trains travelled an average of 28 mph. The Millennium Bulk Terminals – Longview EIS concluded that $PM_{2.5}$ and $PM_{10}$ emissions at 100 feet from the tracks would be below applicable federal standards (USACE 2016; WDOE and Cowlitz County 2017).

In addition, the Draft EIS issued by the Surface Transportation Board (STB) for the Tongue River project, which proposed adding 42 miles of new rail lines for coal transport, modelled the dispersion of coal dust from moving trains to assess the potential human health impacts from potential coal dust inhalation and ecological harm from trace elements found in coal. The Tongue River Draft EIS concluded that coal dust from trains on the proposed rail line would not harm human health or the environment stating, “concentrations of coal dust constituents . . . in soil, dust, water, and fish would be below screening levels for human exposure for all evaluated pathways” (STB 2015). The study also analyzed the chemical constituents in the dust suppression surfactants applied to loaded coal cars and found these constituents to be generally nontoxic and emitted in quantities too low to cause environmental harm (STB 2015).

Monitoring by the Northwest Clean Air Agency found no evidence of harmful air pollution levels in more than a year’s worth of air sampling data that the agency collected between February 2012 and September 2013 in Bellingham at a rail crossing (Washington Research Council 2014, Northwest Clean Air Agency 2019a, 2019b). Trains passing through the study area carry coal sourced from the Powder River Basin in Montana and Wyoming and travel through Idaho and into Washington. The Missoula City-County Health Department conducted an analysis of PM along the rail line in 2012, and results showed no substantial findings of coal dust (McCrone Associates 2012).

Although the fugitive coal dust emissions anticipated to result from additional train traffic generated by the Millennium Bulk Terminals – Longview coal export facility were not expected to be substantial, the Final EIS identified the following mitigation to reduce potential coal dust emissions during rail transport:

> To address coal dust emissions, the Applicant will not receive coal trains unless surfactant has been applied at the BNSF surfactant facility in Pasco, Washington for BNSF trains traveling through Pasco. While other measures to control emissions are allowed by BNSF, those measures were not analyzed in this EIS and would require additional environmental review. For trains that will not have surfactant applied at the BNSF surfactant facility in Pasco, before beginning operations, the Applicant will work with rail companies to implement advanced technology for application of surfactants along the rail routes for Proposed Action-related trains.

BNSF coal shippers must already comply with BNSF's Coal Loading Rule, set forth in Item 100 Coal Dust Mitigation Requirements of BNSF Price List 6041-B, which includes minimization measures to help ensure fugitive coal dust or coal particles are not lost in transit. The Coal Loading Rule requires all shippers loading coal at any Montana or Wyoming mine to load cars in such a way that ensures coal dust emissions in transit are reduced by at least 85 percent compared to cars where no remedial measures have been taken (BNSF 2017). The respray center, described in the Millennium Bulk Terminals – Longview EIS, is located at BNSF's Pasco Rail Yard in Pasco, approximately 215 miles southwest of Sandpoint and further from coal-loading facilities located at the Montana and Wyoming mines (USACE 2016; WDOE and Cowlitz County 2017). Due to its location, trains loaded with coal in Montana or Wyoming would not pass through Pasco prior to passing through Sandpoint.

The Cowlitz County coal study discussed in the Millennium Bulk Terminals – Longview EIS was conducted prior to the Pasco respray facility becoming operational. Therefore, coal trains monitored during that study had travelled over 1,300 miles from mines in Montana and Wyoming to Cowlitz County, with only dust suppression surfactant being applied during coal loading at the mines, and yet the study found the PM emissions associated with passing coal trains to be below the NAAQS at 100 feet from the track (USACE 2016; WDOE and Cowlitz County 2017).

Testing has shown that coal loaded in a railcar with an aerodynamic bread loaf shape and treated with an approved in-transit dust suppressant reduces coal dust emissions in transit by at least 85 percent compared to cars where no remedial measures have been taken (BNSF 2010). The Coal Loading Rule contains a load profile template detailing the approved aerodynamic bread loaf shape and a list of the eight approved in-transit dust suppressants. Load profiling is performed during loading utilizing the mine's coal loading chute. The dust suppressant is applied after the coal is loaded into the railcar utilizing the mine's suppressant spraying equipment. Shippers may choose to use any of the approved in-transit dust suppressants. The STB has reviewed BNSF's Coal Loading Rule contained in Item 100, Coal Dust Mitigation Requirements of BNSF Price List 6041-B and the results of the BNSF/UPRR Coal Supertrial, which was a field study to collect data on the effectiveness of coal load profiling and dust suppressants, and agreed that minimization measures required by the Coal Loading Rule substantially reduce the emission of coal dust (STB 2013).

The Tongue River Draft EIS recognized the existing requirement to comply with BNSF's Coal Loading Rule during operation of the proposed rail line and considered its implementation part of standard operation of the proposed project, not as mitigation. Based on the findings of the coal dust evaluation presented in the EIS, the EIS explicitly states that no coal dust mitigation measures are recommended.

A consent decree was finalized on March 3, 2017, between BNSF and the Sierra Club and other environmental groups to settle a lawsuit over alleged coal dust and petroleum coke (petcoke) emissions from railcars operating on rail routes in Washington State. As part of the settlement agreement, BNSF agreed to conduct a study on the feasibility of physical covers for coal cars. The complexity of loading and unloading facilities and the variability among such facilities create challenges for designing a workable cover for the rail transportation of coal. Railcars are loaded with coal from the top using a movable chute while the train slowly travels through the loading track and generally does not stop during loading. This loading process would require covers that can automatically open and close without stopping the train and that do not obstruct the chute or other equipment at the loading facility. For unloading purposes, railcars carrying coal are designed as either bottom dump or rotary dump cars, both of which are unloaded while the train slowly travels through the unloading track and generally does not stop. Rotary dump cars are picked up

by clamps and turned upside down to unload. Unloading rotary dump cars would require covers that can automatically open and close and do not obstruct the coal, the rotary clamps, or other equipment at the unloading facility. There are currently no commercially available railcar covers designed to work with existing coal loading and unloading facilities; therefore, no study of coal car covers has been undertaken and no reports on the findings of any such study are available.

The current use of load profiling and dust suppressants has been shown to achieve at least an 85 percent reduction in fugitive coal and allow only trace amounts to be lost during transit, which are amounts that are well below levels that could be harmful to human or ecological health as described above.

### 3.1.2 Environmental Consequences

#### *No Action Alternative*

BNSF is entering a third year of bridge structural maintenance and repairs on existing Bridge 3.9 over LPO, which is over 100 years old. These types of repairs are expected to continue and increase to maintain service and safety on the bridge under the No Action Alternative. Thus, when performing this maintenance, an ongoing level of equipment emissions would occur each year from diesel- and gasoline-powered equipment. This may result in temporary and localized increases in some criteria pollutants.

The amount of freight moved by train is driven by market conditions and the number and type of freight origins and destinations along the rail line. As a federally designated common carrier, BNSF has a legal obligation to provide transportation services for all regulated goods upon reasonable request. Transport by rail may increase or decrease depending on market conditions. Train traffic within the study area has increased over the past 30 years and it is reasonable to expect that it will continue to do so as market conditions change in response to population growth and demand for movement of freight and passenger rail service increases. The No Action Alternative would result in a continued and increased need for train idling on the main line or in regional sidings and associated power-up starts from those holds. This would likely exacerbate vehicular idling on the local roadway system as vehicles queue waiting for a train to clear, leading to potential decreased air quality as compared to the Proposed Action Alternative.

#### *Proposed Action Alternative*

Temporary Construction

The Proposed Action Alternative is expected to result in a short-term and localized emission increase from the operation of diesel- and gasoline-powered equipment during construction, as well as the potential for temporary localized increase in dust under dry soil conditions. This would be expected to represent a slight increase over background air quality levels for the duration of construction activities. Although not required under the LMP as described in Section 3.1.1, an air quality conformity applicability study was conducted to assess emissions during Project construction due to the length of the construction period and concerns raised during the comment period on the Draft EA. The study found the total annual emissions of $PM_{10}$ associated with Project construction would be below allowable *de minimis* thresholds (**Appendix D**). Therefore, the Proposed Action Alternative would not cause new violations of the $PM_{10}$ NAAQS and is presumed to conform to all regional air quality attainment goals and commitments expressed in the controlling Idaho SIP. BMPs, such as maintained emission control devices on equipment and proper dust and erosion control, may be utilized as practicable during construction to limit temporary airborne PM and fugitive dust.

Operational Emissions

The Proposed Action Alternative would be a net improvement to ambient air quality by providing substantial relief to existing train traffic congestion. Enabling trains to drive through the study area, versus idling until clear tracks are available, would increase fuel efficiency and decrease total pollutants emitted (EPA 1998). Overall, having trains in the study area for shorter durations and reducing idling times would result in a net improvement in local ambient air quality. The Proposed Action Alternative would also contribute to mitigating climate change as reduced bridge congestion and improved travel times would reduce total fuel consumption and thereby result in a corresponding decrease in all greenhouse gas emissions.

Additionally, as described in Section 2.3, the Project is expected to improve the fluidity of movement through the study area for roadway vehicles. Trains would be able to pass through the study area more efficiently by traveling on either the existing bridges or the new bridges, and drivers would likely see more rapid clearing of at-grade crossings and reduced congestion in the Sandpoint area. As such, the Project is anticipated to indirectly result in an overall reduction in idle-state tailpipe emissions from roadway vehicles in the study area, which would improve the ambient air quality at roadway intersections with at-grade rail crossings.

Fugitive Coal Dust

Since the Project does not propose to transfer, load, unload, dig, pile, or handle coal, no direct coal-related impacts associated with these activities are anticipated. The Project also does not to proposed to increase the number of coal trains passing through the study area. Research, conducted in consultation with USEPA and WDOE, shows that BNSF drive-through trains are not associated with substantial levels of fugitive coal dust (McCrone Associates 2012; Washington Research Council 2014; WDOE and Cowlitz County 2017). Therefore, the Project would not generate harmful levels of coal through fugitive dust and no mitigation is proposed.

Since air quality impacts beyond baseline conditions are not anticipated to result from the proposed Project, and there is likely to be an improvement in air quality related to reduced wait times and traffic queues at at-grade crossings, no mitigation for air quality impacts is proposed.

## 3.2 Geology, Soils, and Topography

### 3.2.1 Affected Environment

The geology, soils, and topography of the study area are directly related to its geomorphology. Major geologic events that have influenced existing geomorphology in the Project vicinity include prehistoric volcanic eruptions, uplift processes, epic floods, and massive landslides. There are no documented unique geologic features or faults in the study area. The nearest faults are the Hope Fault and the Purcell Fault, located approximately 9 and 25 miles away from the Project, respectively (McMillen Jacobs 2019). Three small earthquakes occurred near the convergence of these faults on April 24, 2015, approximately 14 miles southeast of Sandpoint (McMillen Jacobs 2019).

Two levels of information were used to define the soils in the study area: preliminary research using the published data in the Bonner County Soil Survey (including information obtained from the Natural Resources Conservation Service Web Soil Survey and site-specific soil evaluations at wetland field data points. The Soil Survey Report of Bonner County Area, Idaho (USDA 1982), defines two main soil series in the study area: (31) Mission silt loam, 0 to 2 percent slopes and (35) Pend Oreille silt loam, 5 to 45 percent slopes.

The northern portion of the study area is mapped as (31) Mission silt loam, 0 to 2 percent slopes. The Mission series consists of somewhat poorly drained soils on terraces and terrace escarpments that formed in glaciolacustrine sediments with a mantle of volcanic ash and loess. Permeability is very slow, and slopes range from 0 to 30 percent. This soil is not on the Bonner County Hydric Soil List. The southern portion of the study area near MP 5.1 is mapped as (35) Pend Oreille silt loam, 5 to 45 percent slopes. The Pend Oreille series consists of very deep, well drained soils on mountain slopes, foothills, outwash terraces, and lateral moraines, formed in glacial till with a thick mantle of volcanic ash. Permeability is moderate in the upper part and moderately rapid below.

Overall, throughout the study area, native soils have been buried or replaced with fills consisting of compactable soils and structural rock since the railroad construction in the late nineteenth century. Anthropogenic constituents within the soils are discussed in Sections, 3.1.1, 3.3.1, and 3.14.1. The overall topography within the BNSF ROW is by design generally flat or has grades less than 1 percent. Although the slopes adjacent to the main line may be considered steep (45 to 65 percent) they are designed cut-and-fill slopes associated with the structural fills on which the railroad is built. At the south end of the Project, bedrock outcrops are present on the west side of the tracks.

### 3.2.2 Environmental Consequences

#### *No Action Alternative*

The No Action Alternative would not alter any geologic, soil, or topographic features.

#### *Proposed Action Alternative*

The Proposed Action Alternative does not substantially affect or alter geology, soils, or topography within the study area and there are no geologic features in the area that pose a risk to the Project (McMillen Jacobs 2019). The proposed work is limited to constructing a parallel grade immediately west of the existing main line grade within the BNSF ROW. Essentially all areas proposed for construction are already altered through past construction and maintenance activities. Some small areas of existing bedrock outcrop on the west side of the tracks may be cut and excavated for improving the existing access road and at-grade crossing for safety. However, expansive cuts or alterations to these outcrops have been avoided by the Project design. While the earthwork associated with the Proposed Action Alternative is greater than that of the No Action Alternative, it would not result in a significant impact on local geology or soils. The Project would not affect the topography except for the minor lakeshore fills located adjacent to the existing rail grade for the construction of the proposed second track. The existing track/grade elevation would remain the same and the new rail grade embankment slope would remain at a 2:1 slope per standard rail specifications. As discussed in Section 3.14, BNSF bridges are designed to meet current seismic standards.

The Proposed Action Alternative would require development of access roads, staging areas, and general construction access, which would result in an overall construction footprint of approximately 50 acres. Generally, most of the area proposed for use for construction purposes was previously cleared and is currently of predominately compacted gravels used for BNSF maintenance vehicles.

Construction of bridge abutments for the new bridges would require removal of approximately 2,500 square feet of uplands. However, these areas currently have minimal vegetation, so clearing/grubbing/excavation activities would be minimal. Section 3.6 contains detailed discussion

on vegetation disturbance. Approximately 100 cubic yards of soil would be excavated from the area where a bridge abutment would be built. Excavated soil would be disposed of at an approved facility or upland location away from wetlands and waters of the U.S. and outside the floodplain.

Prior to leaving BNSF property, soil excavated from the ROW must be tested for hazardous materials; contaminated soil would be handled appropriately and disposed of at an approved disposal location.

The installation of in-water support piles for the temporary work bridges would displace approximately 2,000 square feet of substrate. However, the substrate would revert to its natural condition once the piles have been removed after construction. The potential effects of pile driving are an increase in turbidity or possible mobilization of contaminated sediments, if present. There is no indication that contaminated sediments are present within the Project area, as discussed further in Section 3.14.1. Pile installation, both vibratory or impact methods, is not expected to mobilize sediment beyond the localized area of the pile, within several meters of construction activities (Jacobs 2018e). In addition, a turbidity curtain will be utilized to ensure sediments are contained until they resettle.

The extent of a turbidity plume is dependent on bathymetry, currents, total suspended solid background levels, and type of substrates. Increases in turbidity within LPO are anticipated to be more confined due to slower water velocity. The area of effect would be localized, short term, and relatively small compared to the area within LPO free of disturbance. In accordance with the Biological Opinion (BO) for the Project issued by USFWS (**Appendix E**), turbidity curtains would be used in water deeper than 2 feet during pile installation and removal to limit the extent of sedimentation and allow the suspended sediment to resettle on the lakebed, close to where it was mobilized from (USFWS 2019). In shallow water, with a depth of 2 feet or less, turbidity curtains are not viable. Few piles will be driven in water 2 feet or less. These shallow conditions may occur within Sand Creek and/or immediately adjacent to abutments. Turbidity plumes are naturally restricted in shallow water. A turbidity curtain can reduce turbidity levels by 80 or 90 percent in low energy environments (Dredge Operations and Environmental Research 2005). In accordance with the CWA Section 401 WQC issued for the Project by IDEQ, turbidity monitoring would be required at a distance of 50 feet down current of activity causing a visible turbidity plume at Bridge 3.1, along LPO shoreline where no turbidity curtains are employed, or immediately outside the turbidity curtain, where employed, to ensure water quality standards are maintained (IDEQ 2019).

Turbidity curtains were employed by BNSF during construction of the Bridge 3.9 North/South Pier Replacement projects in 2007 and 2008. These projects were permitted under a 401 WQC dated May 11, 2007, for the nationwide permits program and required monitoring to evaluate BMP effectiveness. The monitoring type (visual or instrumental) and locations were not specified. In addition, notification to IDEQ was not required if water quality standards were exceeded. BNSF monitored water quality at random times before, during, and after pile driving for the north pier replacement project using an Analite 160 turbidimeter and NEP160 display unit, manufactured by McVan Instruments. Monitoring locations were established within the study area and sequenced with construction. Those samples were compared to samples taken outside of the study area. Weather and aquatic flow events were also sampled. No exceedances were detected in samples collected over 13 days of sampling on the north side of Bridge 3.9.

To better understand sediment transport dynamics, pre-project and potential post-project velocities were examined. The piers from the proposed bridges and the temporary work bridges will have a negligible impact on water levels and flow velocities in the vicinity of the piers. The

existing water velocities in the vicinity of Bridge 3.9 and Bridge 3.1 are relatively low. The velocity peaks at 1.71 feet per second (1.01 knots) at Bridge 3.9 and 2.51 feet per second (1.48 knots) at Bridge 3.1. Hydraulic modeling of the proposed Bridge 3.9 over LPO examined 29 locations along the lake at seventeen different flow events ranging from 10,000 to 159,000 cubic feet per second, resulting in 493 location/flow combinations (Hanson 2019a). Water levels are predicted to be unchanged at every location/flow combination modelled, while water velocity is predicted to be reduced by a maximum of 0.01 feet per second at 7 of the 493 location/flow combinations. Given the broad span and the lack of impact of the proposed bridge, the temporary bridge over LPO is also unlikely to have a noticeable impact to water level or velocity.

Similarly, proposed Bridge 3.1 over Sand Creek was assessed at seventeen locations, four different flow events (10 year, 50 year, 100 year and 500 year), and three different lake levels with no predicted change in water level and with a maximum reduction in flow velocity of 0.01 feet per second at 4 of the resulting 204 location/flow/lake-level combinations (Hanson 2019b). The temporary bridge over the navigation span at Sand Creek will only be in place when navigational access up Sand Creek is unavailable due to winter low pool conditions correlated with operations at the Albeni Falls Dam, further reducing the potential impact of the temporary bridge on navigation on Sand Creek.

Existing water velocities at both bridge locations are sufficient to mobilize fine lake bottom sediments. The negligible reduction in water velocities predicted by the model as a result of the Proposed Action Alternative is not likely to have a noticeable effect on overall sediment movement under the bridges or result in sediment buildup. There may be small, localized effects to the lake bottom in the immediate vicinity of each pile, but these effects will not substantially change existing sediment transport dynamics.

## 3.3 Water Resources and Water Quality

The CWA governs the release of pollutants into waterways. Wetlands and floodplains are discussed under Sections 3.4 and 3.5 respectively. Four sections of the CWA potentially apply to the Project: Sections 401, 402, 404, and 303(d):

- Section 401 requires WQC from the state when a 404 permit or USCG bridge permit is triggered. Typically, this certification is granted by the state to which the USEPA has delegated authority to certify that the discharge would not violate the state's water quality standards. USEPA retains jurisdiction in limited cases. In Idaho, IDEQ regulates permit reviews and issuance under Section 401.
- Section 402 authorizes the USEPA, or states to which the USEPA has delegated authority, to permit the discharge of pollutants under the NPDES program. Construction projects that disturb one or more acres of ground and discharge to surface waters are required to obtain an NPDES Stormwater Construction General Permit. In Idaho, USEPA or IDEQ regulates permit reviews and issuance under Section 402.
- Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the U.S., including wetlands. Section 404 requires a permit from the USACE before dredged or fill material may be discharged into waters of the U.S. The basic premise of the 404 program is that no discharge of dredged or fill material may be permitted if (1) a practicable alternative exists that is less damaging to the aquatic environment or (2) the nation's waters would be considerably degraded. See Section 2.0 for a more detailed discussion of the alternatives analysis under Section 404(b)(1) of the CWA and the determination of a LEDPA.

- Section 303(d) of the CWA establishes that states are to list waters that do not meet applicable water quality standards. The list includes priority rankings set by the states for the listed waters. Once the impaired waters are identified, Section 303(d) requires that the states establish total maximum daily loads (TMDLs) that would meet water quality standards for each listed waterbody. In Idaho, IDEQ is responsible for implementing the requirements of Section 303(d).

The Safe Drinking Water Act is the main federal law that ensures the quality of Americans' drinking water. Under the act, the USEPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. The best way to maintain high-quality drinking water is to prevent contaminants from reaching drinking water sources. The Safe Drinking Water Act was amended in 1986 to require states to develop Wellhead Protection Programs.

### 3.3.1 Affected Environment

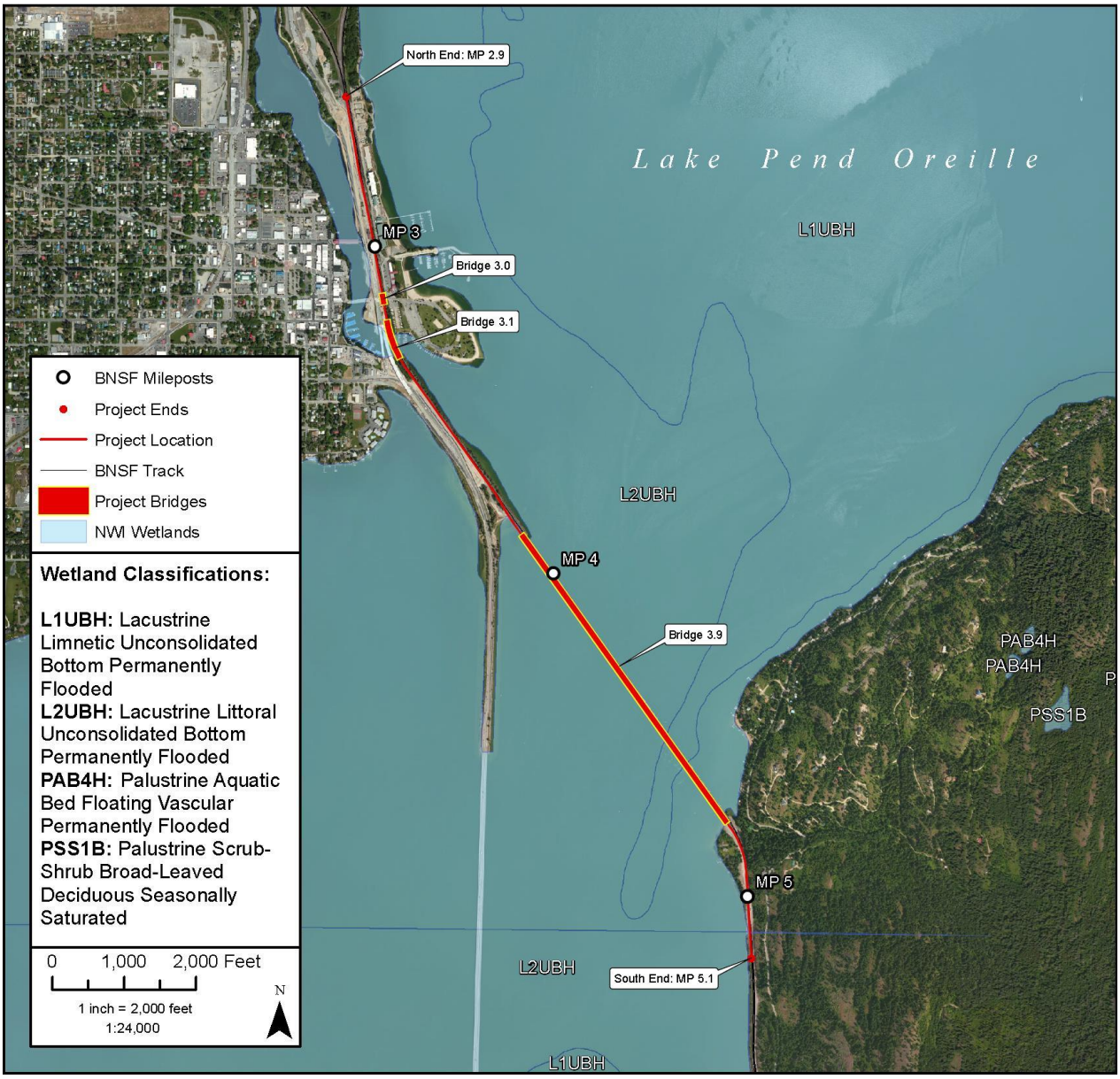
The proposed Project is located adjacent to and over LPO and Sand Creek, as shown in **Figure 9**. Although it is locally known as Sand Creek and is considered Sand Creek by the IDL (2017), IDEQ and federal agencies consider the lower portion of Sand Creek, from LPO upstream to State Highway 200, as an inlet of LPO (USFWS 2018a; IDEQ 2019). Regulated waters of the U.S. within the study area are documented in the Wetlands and Waters of the U.S. Delineation Report (**Appendix F**; Jacobs 2018b).

LPO is a natural, temperate, oligotrophic lake. It is the largest natural lake in Idaho and the fifth deepest lake in the United States, with a mean depth of 538 feet, a maximum depth of 1,152 feet at its southern end, and a surface area of 94,720 acres. It is fed by over 20 streams originating in the Selkirk Mountains to the northwest, the Cabinet Mountains to the northeast, and the Coeur d'Alene Mountains to the east. The shoreline is composed mostly of largely undeveloped, steep, rocky terrain. The remaining littoral zone at the lake's northern end and bays consists of gradual or moderately sloping bottom, surrounded by level to gently sloping uplands and floodplain.

The Clark Fork River, originating in western Montana, is the largest tributary into the lake, providing 92 percent of the lake's inflow at the river's mouth near the City of Clark Fork, east of Sandpoint. The Pend Oreille River is the lake's only surface water outlet west of Sandpoint near the City of Dover. The river flows approximately 27 miles from LPO in Idaho into eastern Washington and then north into Canada where it joins the Upper Columbia River. The Pend Oreille River (along with LPO) is impounded by the Albeni Falls hydroelectric dam, constructed in 1955 near the Idaho/Washington border, which regulates the lake's surface elevation/pool at 2,062.5 feet from approximately mid-June through September and at 2,051 to 2,056 feet from October through May.

The Sand Creek watershed covers 38 square miles, or 24,209 acres, and includes Jack Creek, Little Sand Creek, Swede Creek, and Schweitzer Creek northeast of Sandpoint. Sand Creek generally flows from north to south for approximately 16 miles and discharges into LPO within the City, where it is subject to the regulated levels of LPO. The average gradient of Sand Creek in the Project vicinity is 1 percent, and the primary channel substrate is sand.

**Figure 9: National Wetland Inventory Wetlands and Surface Water**



LPO and Sand Creek within the Project study area are listed for water quality impairments that have been addressed by established loading targets (TMDLs). These include Sand Creek TMDLs for temperature and sediment approved by USEPA in 2007, and an LPO nearshore TMDL for total phosphorus approved by USEPA in 2002. LPO and Sand Creek within the study area are also currently listed as impaired by mercury; development of a TMDL is a medium priority for 2018. Additionally, the Pend Oreille River (including the outlet arm of LPO within the study area) is currently in need of TMDLs (medium priority for 2019) for temperature and dissolved gas supersaturation impairments (IDEQ 2014, 2017).

The average annual precipitation is about 33 inches, and average annual air temperature is about 45 degrees Fahrenheit with a typical Inland Northwest climate of cold, snowy winters and dry summers with large diurnal temperature swings from hot in the day to very cool at night. Most precipitation occurs as winter snowfall and spring rain. High-volume runoff occurs during spring snowmelt and major rain-on-snow events (IDL 2003).

Drinking water for surrounding residents and businesses outside of the City is supplied by private wells. The City supplies drinking water from its Little Sand Creek and LPO water treatment plants (WTPs). During the fall, winter and spring, approximately 50 percent of the City's drinking water supply comes from the Little Sand Creek WTP, and 50 percent from the LPO WTP. During the summer, the Little Sand Creek WTP provides approximately 25 percent of the water supply and the LPO WTP provides approximately 75 percent of the supply (Jacobs 2018f). The Little Sand Creek WTP inlet is over 5 miles upstream of the study area (Jacobs 2018f) and the LPO WTP inlet is located approximately 0.67-mile north of the Project site (IDEQ 2019). The City met and/or exceeded all standards for drinking water quality reported from 2005 through 2017 (City of Sandpoint 2005–2017).

The Spokane Valley-Rathdrum Prairie Aquifer stretches southwest from the southernmost tip of LPO in Bayview, Idaho, to downtown Spokane, where it turns north–northwest to discharge groundwater into the Little Spokane and Spokane Rivers. The aquifer covers approximately 250 square miles in Idaho and 120 square miles in Washington. Designated by USEPA as a sole-source aquifer in February 1978, it supplies drinking water to over 500,000 people in Kootenai County, Idaho, and Spokane County, Washington. Although the Project site is located approximately 22 miles north of the aquifer and the Kootenai County Aquifer Protection District boundaries (IDEQ 2018b), the south end of LPO contributes 43 million gallons per day of water to the aquifer or just over 4 percent of the aquifer's daily 985 million gallons per day recharge/inflow (Boese et al. 2015).

Wellhead protection areas are established to protect geographic areas that infiltrate to groundwater such that, if exposed to pollutants, could allow contamination of groundwater drinking water sources. No wellhead protection areas are located within the immediate Project vicinity (Idaho Department of Water Resources 2018).

### 3.3.2 Environmental Consequences

#### *No Action Alternative*

Under the No Action Alternative, no new construction would occur. However, ongoing maintenance and repair of the existing railroad tracks and bridges would continue as needed. These maintenance actions would require the use of construction equipment that contains petroleum products. Spills associated with the use of petroleum products during these actions could impact water quality in LPO and Sand Creek. BNSF would maintain water quality standards

during maintenance activities through implementation of BMPs defined in a Spill Prevention, Control, and Countermeasure (SPCC) plan, to ensure that pollutants and products would be controlled and contained.

BNSF implements safety practices as part of regular operations to minimize accident risks and maintains response plans for addressing potential incidents as described in Section 3.14. Accident risk is a function of ton-miles of freight moved and number of rail miles travelled. Train traffic has increased over the past 30 years, and it is reasonable to expect that it will continue to do so as population increases, market conditions change, and the demand for the movement of freight and passenger rail service increases. While accident risk can be minimized, it cannot be eliminated. In the event of a spill, BNSF would implement the LPO Geographic Response Plan (GRP) to efficiently and safely respond to spills in the response area (which encompasses the Cabinet Gorge Dam and all of LPO and its tributaries located on the Clark Fork River down to Albeni Falls Dam, which is located on the Pend Oreille River), recover spills, and restore damaged resources. Section 3.14 provides additional information regarding response strategies and equipment available to BNSF as part of the LPO GRP, including boat access points.

As described in Section 3.3.1, while there is a connection between LPO and the Spokane Valley-Rathdrum Prairie Aquifer, LPO's contribution to the aquifer is small (4 percent) relative to its total recharge contribution from other sources. The implementation of BMPs and safety practices to avoid and minimize contamination of LPO and the implementation of the GRP to respond to a potential spill in LPO would protect water quality in LPO and, consequently, the aquifer.

***Proposed Action Alternative***

In addition to the construction of new track and bridges, ongoing maintenance and repair of the existing railroad tracks and bridges would continue as needed under the Proposed Action Alternative. As discussed under the No Action Alternative, these maintenance actions would require the use of construction equipment that contains petroleum products. Spills associated with the use of petroleum products during these actions could impact water quality in LPO and Sand Creek. BNSF would maintain water quality standards during maintenance activities through implementation of BMPs defined in an SPCC plan to ensure that pollutants and products would be controlled and contained.

The primary water quality impacts associated with the Proposed Action Alternative are temporary and related to construction, including potential sedimentation, potential petroleum spills from construction equipment operations, and potential spills from concrete work above the OHWM of LPO. Suspension of sediments (increased turbidity) may temporarily occur during pile-driving activities within LPO but would be limited by a turbidity curtain as discussed in Section 3.2.2 (Jacobs 2018e). As discussed in Section 3.1.1, coal dust has not been identified at levels above federal standards for PM within 100 feet of the tracks or at levels in soil, dust, water, or fish above screening levels for human exposure during environmental review of other projects involving the WDOE and USEPA. Therefore, coal dust is not expected to be present in deposited sediment in sufficient concentration to impact water resources during construction despite increases in turbidity near pile driving.

The primary pollutants of concern for this Project are sediment and phosphorus (IDEQ 2019). Elevated phosphorus levels in waterbodies can lead to increased algal growth and subsequent die off that can reduce dissolved oxygen levels as decomposition of the dead algae occurs. Sediment entering a waterbody from upland erosion can contain substantial amounts of phosphorus. Appropriate erosion control BMPs such as silt fences, silt curtains, and straw wattles

will be implemented to minimize the amount of sediment and phosphorus entering waterbodies including LPO and in-water turbidity (IDEQ 2019). As the water intake for the City's LPO WTP is located 0.67-mile north of the Project site, the Little Sand Creek WTP is over 5 miles upstream of the Project site, and the general flow pattern of water near the intake is south toward the proposed Project construction, IDEQ has reasonable assurance that water quality standards for this domestic water supply use would be met (IDEQ 2019). Water quality impacts associated with suspended sediments are further discussed in Section 3.2.

While fill placed in waters of the U.S. are regulated by USACE under Section 404 of CWA, projects that require work in or above water must meet water quality standards in compliance with Section 401 of the CWA. An Individual 401 WQC has been issued for the Proposed Action Alternative. Construction projects that disturb more than one acre of upland areas must obtain an NPDES permit from IDEQ in compliance with Section 402 of the CWA. The Proposed Action Alternative would result in approximately 20 acres of ground-disturbing activities and would require an NPDES permit. A Stormwater Pollution Prevention Plan (SWPPP), including a Temporary Erosion and Sediment Control Plan and a SPCC plan would be prepared in accordance with the requirements of the NPDES permit.

Implementation of BMPs defined within the 401 WQC and the SWPPP as well as ongoing adaptive management adjustments throughout construction would be the means to maintain water quality standards during construction (see Section 4.0). Specifically, to minimize sediment impacts, a turbidity curtain would be used during in-water ground disturbance activities in water deeper than 2 feet as described in Section 3.2. To prevent and minimize spill impacts, fully stocked petroleum containment spill kits would be located at power equipment work sites and construction staging areas during construction. Potential temporary impacts to water quality during construction are considered less than significant.

In the long term, the Proposed Action Alternative would not result in increased impacts to water quality from operations. As indicated for the No Action Alternative, train-related accident risk is a function of ton-miles of freight moved, calculated from the amount of freight moved and the number of rail miles travelled. The construction of a second main line track and associated bridges alone would not increase the amount of freight moved as compared to the No Action Alternative, as described in Section 2.3. Some of the trains travelling through the study area would travel on new, modern, more reliable infrastructure requiring less maintenance reducing the chance for spills associated with maintenance activities. BNSF has safety practices and response plans in place to minimize risk and address potential results. In the event of an accident or spill, BNSF would respond in accordance with the LPO GRP (see Section 3.14), just as under the No Action Alternative.

As under the No Action Alternative, while there is a connection between LPO and the Spokane Valley-Rathdrum Prairie Aquifer, LPO's relatively small recharge contribution, implementation of BMPs and safety practices to avoid and minimize contamination of LPO, and the implementation of the GRP to respond to a potential spill would protect water quality in LPO and, consequently, the aquifer. Section 3.14 discusses the potential for Project construction to mobilize contaminated sediments. Sediments are physically filtered as surface water infiltrates into an aquifer; therefore, potentially contaminated sediments would not enter the aquifer.

The construction of a second main line track would impact 1.54 acres of waters of the U.S., including wetlands, as described below and illustrated in **Appendix G**:

- 0.88 acre related to permanent nearshore fill below the LPO OHWM elevation of 2,062.5 feet above mean sea level for Bridge 3.1, Bridge 3.9, and a south switch area
- 0.28 acre of permanent wetland fill at the south end of Bridge 3.1
- 0.38 acre of temporary nearshore impacts below the OHWM in LPO for construction access at various locations throughout the study area

The wetland and in-water fill required for construction of the new, second main line track and bridges is further discussed in Section 3.4. This work triggers the need for a CWA Section 404 and/or Section 10 permit from the USACE. The wetland impacts would be fully mitigated in compliance with the CWA through the use of a mitigation bank. The impacts associated with nearshore fill would also be mitigated through the Valencia Wetland Mitigation Bank, as discussed in Section 4.0. IDEQ has reviewed the Project for compliance with CWA Section 401 and issued an Individual WQC.

## 3.4 Wetlands

Executive Order 11990 – Protection of Wetlands requires federal agencies to act to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. Wetlands adjacent to navigable waters, tributaries of navigable waters, or with a major nexus to interstate commerce are regulated pursuant to the CWA. Section 404 of the CWA defines wetlands as areas that are “inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions.” Wetlands generally include swamps, marshes, bogs, and similar areas.

### 3.4.1 Affected Environment

The National Wetland Inventory mapping did not identify any wetlands in the Project study area but mapped LPO as L2UBH (lacustrine, littoral, unconsolidated bottom, permanently flooded) (**Figure 9**). During the Project plan development, one jurisdictional wetland (Wetland A) was identified, delineated, and mapped at the south end of Bridge 3.1 between the rail grade and US 95 multiuse public pathway. Its functions and values were evaluated using the MDT Montana Wetland Assessment Form. The results of the delineation and functional assessment are documented in the Wetlands and Waters of the U.S. Delineation Report (**Appendix F**; Jacobs 2018b). This wetland, at 0.28 acre, is connected to, and appears to be associated with, the high water inundation of the lake and may be a direct result of the construction of the Albeni Falls Dam in the 1950s. It fulfills the jurisdictional criteria of hydrology, hydric soils, and hydrophytic vegetation presence.

LPO is regulated for flood control and power production so the water depth varies seasonally in connection with operations at the Albeni Falls Dam. The OHWM of LPO is 2,062.5 feet. LPO below this elevation is considered “Deep Water Aquatic Habitat” per the 1987 wetland delineation manual. By definition, “Deepwater aquatic habitats are areas that are permanently inundated at mean annual water depths >6.6 feet or permanently inundated areas ≤6.6 feet in depth that do not support rooted-emergent or woody plant species” (Environmental Laboratory 1987).

### 3.4.2 Environmental Consequences

***No Action Alternative***

The No Action Alternative would not require ground disturbance and, therefore, would not result in any wetland impacts.

***Proposed Action Alternative***

As stated in Section 3.3.2, the Proposed Action Alternative would result in the unavoidable temporary and permanent filling of 1.54 acres of jurisdictional waters of the U.S., as shown in **Appendix G**.

Temporary impacts would consist of the placement of 0.38 acre of temporary nearshore fill and the installation of up to 600 temporary 24-inch-diameter piles in LPO and 40 temporary 24-inch-diameter piles in Sand Creek, for a total of approximately 2,010 square feet. The fill material and temporary piles would be required to support temporary work bridges during the construction of Bridge 3.1 and Bridge 3.9. This fill material and temporary piles would be removed upon completion of the new permanent structures. The Proposed Action Alternative would not have temporary effects to wetlands.

Permanent impacts would consist of the placement of 0.88 acre of nearshore fill and the installation of 288 permanent 36-inch-diameter piles below the OHWM of LPO and 22 permanent 24-inch-diameter piles below the OHWM of Sand Creek to support new Bridge 3.1 and Bridge 3.9. The permanent piles would occupy approximately 2,104 square feet below the OHWM. The entire 0.28 acre of Wetland A would also be permanently filled. Permanent impacts to Wetland A are illustrated in **Appendix G**.

Permanent impacts associated with fill in Wetland A would be fully mitigated through an agency-approved mitigation bank, the Valencia Wetland Mitigation Bank/Valencia Wetlands Trust (bank) located in Priest River, Idaho. As discussed in Section 4.2, 0.95 bank credits would be purchased to compensate for the 0.28 acre of wetland fill. As Wetland A impacts would be fully mitigated, the Proposed Action Alternative would meet requirements under the CWA associated with mitigation of impacts to wetlands.

As discussed in Section 4.2, proposed mitigation for 0.88-acre of permanent nearshore fills have been discussed with LPO and Sand Creek stakeholders through a collaborative consensus-based process. Participating stakeholders since May 2018 include the USFWS, the Idaho Department of Fish and Game (IDFG), IDEQ, Tribes, and other representatives from the Avista Clark Fork

Project and the Panhandle Chapter of Trout Unlimited. A suitable mitigation site was not identified; therefore, the Valencia Mitigation Bank will be utilized to compensate for impacts to affected nearshore areas and aquatic resources.

## 3.5 Floodplains

Executive Order 11988, Floodplain Management requires federal agencies to consider how their actions may encourage future development in floodplains and to minimize such development. U.S. Department of Transportation (USDOT) Order 5650.2, Floodplain Management and Protection, prescribes policies and procedures for ensuring that federal agencies consider the avoidance and mitigation of adverse floodplain impacts in its actions. USDOT Order 5650.2 requires agencies to determine whether an encroachment into a floodplain is considered significant, which is defined as an encroachment resulting in one or more of the following construction or flood-related impacts:

1. A considerable probability of loss of human life.
2. Likely future damage associated with the encroachment that could be substantial in cost or extent, including interruption of service on or loss of a vital transportation facility.
3. A notable adverse impact on "natural and beneficial floodplain values," which include the natural moderation of floods, water quality maintenance, groundwater recharge, fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, and forestry.

### 3.5.1 Affected Environment

LPO and Sand Creek are both mapped as Zone AE on the Federal Emergency Management Agency's (FEMA's) effective Flood Insurance Rate Map for this area (Panel 16017C0718E), as shown in **Figure 10**. The effective 100-year Base Flood Elevation (BFE) is mapped at 2,074 feet (North American Vertical Datum 1988). Sand Creek has a mapped regulatory floodway in this area that extends up to the eastern edge of existing Bridge 3.1. USACE also has a flood flowage easement up to 2,067.5 feet in elevation to regulate emergency conditions at and downstream of the Albeni Falls Dam.

### 3.5.2 Environmental Consequences

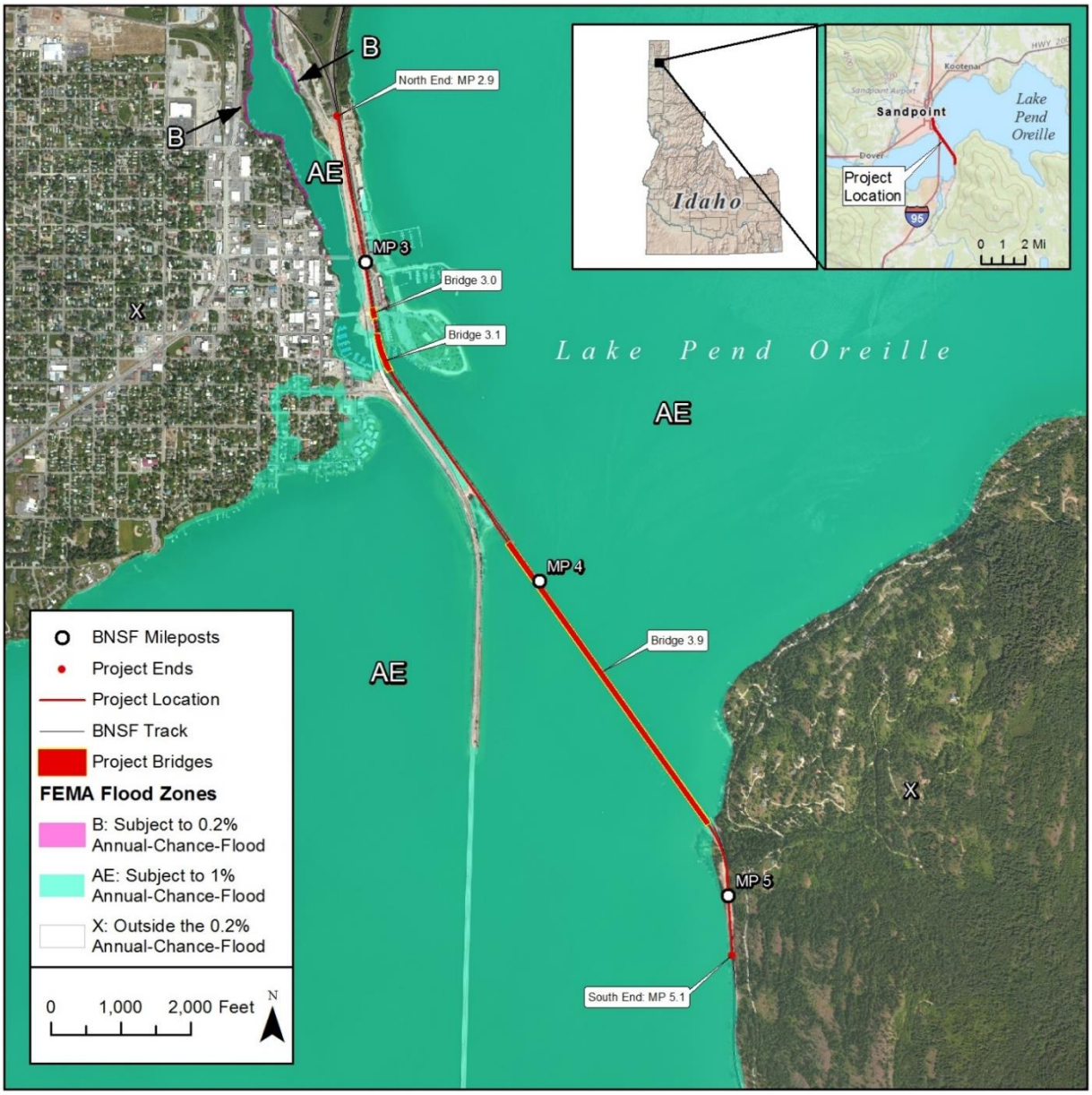
#### *No Action Alternative*

The No Action Alternative would not require additional fill or excavation on the Project site, nor would it encourage future development in floodplains. There would be no encroachment on floodplains associated with the No Action Alternative.

#### *Proposed Action Alternative*

**Table 6** shows the amount of temporary and permanent fill that would be placed within the floodplain of Sand Creek and LPO under this alternative. This encroachment is required to construct the new bridges and south switch area and provide support for the new rail grade. These fills constitute a small percentage of the total area of LPO and USACE flood flowage easement and are not expected to increase the danger of flooding in the study area. A hydraulic analysis was conducted that has indicated the Project would result in no net rise of the floodplain (**Appendix H**).

**Figure 10: Floodplains**



The proposed temporary and permanent bridges require installation of 950 steel pipe piles in Sand Creek and LPO. However, as shown in the permit drawings in **Appendix B**, the low chord of the new permanent bridge decks would be constructed above the 100-year BFE, minimizing the risk associated with the encroachment.

**Table 6: Temporary and Permanent Floodplain Fill Volumes**

| Source of Fill | | Sand Creek | Lake Pend Oreille | Total |
|---|---|---|---|---|
| Permanent Fill (cubic yards) | Earth | 15 | 1,485 | 1,500 |
| | Bridge Piles | 13 | 1,783 | 1,796 |
| | Total Permanent | 28 | 3,268 | 3,296 |
| Temporary Fill (cubic yards) | Earth | 0 | 800 | 800 |
| | Bridge Piles | 56 | 1,359 | 1,415 |
| | Total Temporary | 56 | 2,159 | 2,215 |

Note:
Since issuance of the U.S. Army Corps of Engineers public notice for the Section 404 Clean Water Act permit in February 2018, in-water fill volumes have decreased due to design progression and implementation of avoidance and minimization measures.

Local floodplain development permits are required to comply with FEMA National Flood Insurance Program standards. Applications for these permits typically include statements and supporting technical analyses showing that the Project meets the intent of a “no-rise” in 100-year BFEs. This technical analysis takes the form of a hydraulic analysis, which was completed for the Project utilizing a HEC-RAS modeling program (**Appendix H**). The analysis utilized publicly available data from FEMA, topographic data from the USACE, bathymetric data, record drawings of the existing railroad and US 95 bridges, and the proposed design for Bridges 3.1 and 3.9. The analyses indicated that the proposed bridge crossings over Sand Creek and LPO would result in no net rise in the 100-year BFE, meeting the intent of a FEMA “no-rise” certification. BNSF is working with County and the City to obtain floodplain development permits utilizing the results of the hydraulic analysis.

In addition to considering the role of floodplains in the natural moderation of floods, FEMA also regulates floodplain impacts as they relate to water quality maintenance, groundwater recharge, fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, and forestry, which are considered “natural and beneficial floodplain values.” There is no known agriculture, aquaculture, forestry, or scientific study occurring on floodplains within the study area. There would be no substantial impacts to water quality maintenance and groundwater recharge, fish, wildlife, plants, open space, natural beauty, or outdoor recreation as discussed in Sections 3.3, 3.7, 3.12, and 3.11.

The Proposed Action Alternative would not increase or change rail traffic volumes on BNSF’s northern tier and is not expected to facilitate future increases in floodplain development. The construction of a second main line track and associated bridges alone would not increase the amount of freight moved as compared to the No Action Alternative, as described in Section 3.1.2. The Project is not tied to public or private development and is not associated with land use, regional plans for growth or commercial and residential development. Federal Transit Administration (FTA) guidance states: “Expansion of a facility already located within a floodplain usually would not be considered a significant encroachment” (FTA 2018). The Proposed Action Alternative would not result in a significant encroachment into the floodplain or significantly impact the 100-year BFE.

## 3.6 Vegetation

Vegetation stabilizes soils, controls erosion, and reduces sedimentation. Vegetation also provides habitat and forage for wildlife. Executive Order 13112 established the National Invasive Species Council to deal with invasive species. The Idaho Invasive Species Council is a multiagency organization that provides direction and planning for combatting invasive species' introduction and spread. The Director of the Idaho State Department of Agriculture (ISDA) chairs the council (State of Idaho 2017). This order provides guidance on public, private, commercial, and agency protocol to avoid the introduction and spread of aquatic invasive species. Idaho has 67 weed species and 4 genera designated noxious by state law; 51 of these species are terrestrial and the remainder are aquatic species (ISDA 2018a).

### 3.6.1 Affected Environment

Disturbed upland grasses in the study area include species such as cheat grass (*Bromus tectorum*), common mullein (*Verbascum thapsus*), common timothy (*Phleum pretense*), orange hawkweed (*Hieracium aurantiacum*), panic grass (*Panicum sonorum*), perennial rye grass (*Lolium perenne*), rush skeleton weed *(Chondrilla juncea*), spotted knapweed (*Centaurea maculosa*), and western wheatgrass (*Pascopyrum smithii*).

The riparian vegetation of Sand Creek and LPO includes emergent species such as reed canarygrass (*Phalaris arundinaceae*), stinging nettle (*Urtica dioica*), and common sedges (*Carex sp.*) and scrub-shrub and forest species such as black cottonwood (*Populus trichocarpa*), red alder (*Alnus rubra*), blue elderberry (*Sambucus cerulean*), Rocky Mountain maple (*Acer glabrum*), Scouler's willow (*Salix scouleriana*), red-osier dogwood (*Cornus sericea*), Nootka rose (*Rosa nutkana*), Pacific ninebark (*Physocarpus capitatus*), trailing blackberry (*Rubus ursinus*), and Douglas spirea (*Spiraea douglasii*).

Wetland vegetation in the one wetland identified in the study area includes species such as common cattail (*Typha latifolia*), common duck weed (*Lemna minor*), and panicled bulrush (*Scirpus microcarpus*), in addition to the riparian vegetation described above. LPO contains Eurasian watermilfoil (ISDA 2018b).

The upland forested vegetation in the study area includes species such as Douglas fir (*Pseudotsuga menziesii*), lodgepole pine (*Pinus contorta*), Ponderosa pine (*Pinus ponderosa*), western hemlock (*Tsuga heterophylla*), and Western red cedar (*Thuja plicata*), and is often mixed with an understory of American trailplant (*Adenocaulon bicolor*), common snowberry (*Symphoricarpos albus*), myrtle pachystima (*Pachystima myrsinites*), Nootka rose (*Rosa nutkana*), and various native and non-native grasses.

### 3.6.2 Environmental Consequences

#### *No Action Alternative*

Other than the removal of the cottonwood trees that presently threaten the integrity of the track structure along the west side of the main line associated with ongoing maintenance, no other vegetation impacts are anticipated to occur under this alternative. Potential impacts to upland vegetation would not be extensive with total vegetation disturbance of approximately 0.5 acre.

***Proposed Action Alternative***

The Proposed Action Alternative is within the BNSF ROW, and 90 percent of the work is within areas already filled or highly altered and compacted, requiring minimal vegetation impacts. The Sand Creek Bridge (3.1) and the LPO Bridge (3.9) would both result in losses of the cottonwood trees that are growing out of the existing rail grade base. These trees are already scheduled for removal because they pose a danger to trains if they fell on the tracks and to the stability of the rail grade if they were to blow over and pull out the structural support base with their root mass.

Approximately 3 acres of vegetation disturbance would occur under the Proposed Action Alternative. This includes the removal of approximately 0.75 acre of upland trees, 1 acre of upland grasses, approximately 1 acre of riparian vegetation, and 0.2 acre of wetland vegetation. This equates to approximately 6 percent of the upland tree acreage, 20 percent of the upland grass acreage, 16 percent of the riparian vegetation, and 100 percent of the wetland acreage within the Project study area.

Invasive plant species are a common concern during construction activities due to the clearing and grading activities potentially leaving open soil susceptible to weed seeds pioneering the area. BMPs, such as limiting clearing to those areas necessary for safe equipment operations and temporarily seeding or mulching areas during construction, would avoid and minimize available areas for weed seed infestation or spread. Additionally, prior to machinery arriving on-site, inspecting and cleaning would be performed to minimize the potential for bringing new invasive seeds or vegetation pieces onto the sites.

Aquatic invasive species are a concern when working above, in, or near water. Invasive plants can be spread by equipment and result in indirect impacts. To help prevent the spread of invasive species, equipment would be cleaned to the greatest extent practicable prior to arrival and immediately after leaving the Project site. Cleaning could include scraping/sweeping off any debris or soil and pressure washing at an off-site location before transportation to the work site.

To prevent the introduction or spread of invasive aquatic species for this proposal, Project-specific watercraft inspection criteria and operating protocol have been developed (see impact minimization measures in Section 4.1).

Boats, barges, and overwater machinery must obtain an aquatic invasive species sticker from the Bonner Soil & Water Conservation District, on behalf of ISDA, which would require thorough inspection for invasive species and cleaning as needed prior to accessing LPO or Sand Creek (ISDA 2014). This protocol would be in effect during the entire Project, with enforcement conducted by the County Sheriff's Office and the Bonner Soil & Water Conservation District.

All wetland vegetation would be removed in the 0.28-acre wetland fill south of Bridge 3.1. Due to the limited disturbance area, implementation of mitigation measures and BMPs, and lack of sensitive or endangered plant species identified within the study areas, the Proposed Action Alternative would not have significant vegetation impacts.

## 3.7 Fish and Wildlife

The Migratory Bird Treaty Act (MBTA) provides protection for migratory birds, making it unlawful to capture, kill, or sell birds, parts, nests, eggs, or products. Under the MBTA, the term “migratory birds” includes all bird species native to the United States, and the Act pertains to any time of the year, not just during migration. The Bald and Golden Eagle Protection Act provides for the protection of bald and golden eagles by prohibiting the taking, possession, and commerce of such birds, except under certain specified conditions.

As discussed under Section 3.6, an interagency organization and Executive Order 13112 serve to prevent and reduce the spread of invasive species, which applies to both vegetation and wildlife. Compliance with invasive species control is also addressed in this section.

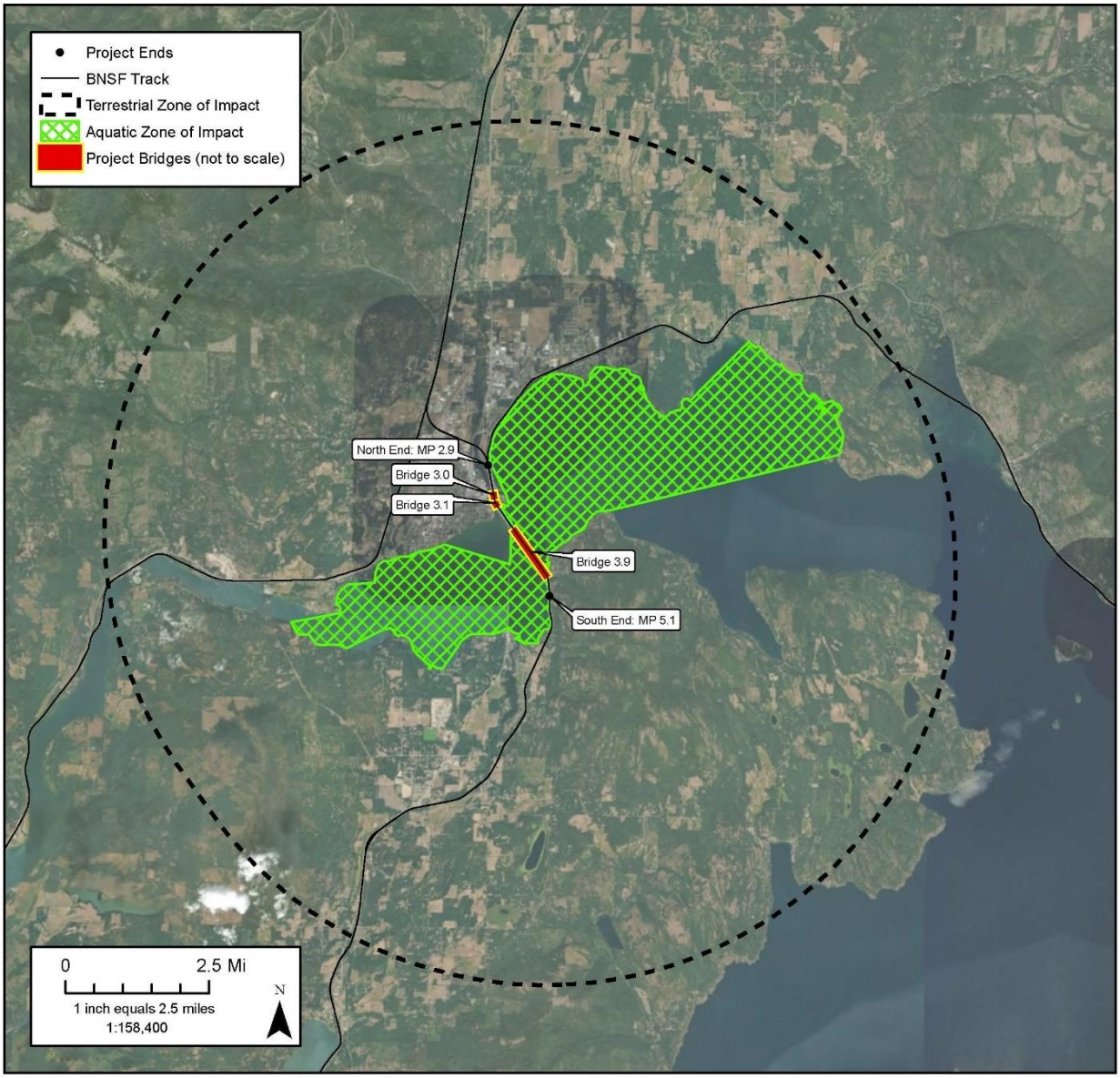
### 3.7.1 Affected Environment

The study area for fish and wildlife is consistent with the study area described in Section 3.0, with the exception of the study area evaluated for noise impacts. The study area used to evaluate noise impacts to fish and wildlife is the “action area,” the term used to define the study area in Section 7 of the Endangered Species Act (ESA), per the Project Biological Assessment (BA; **Appendix E**). The action area is identified in **Figure 11**.

Idaho has an array of native birds, fish, and invertebrates as described below. Idaho also has invasive invertebrates, insects, mollusks, nematodes, fish, amphibians, birds, mammals, and reptiles (ISDA 2018a).

Numerous species of fish and wildlife use the study area as either foraging habitat, refuge, or for nesting or spawning. Some species that inhabit the area near the bridge are anticipated to be tolerant of moderate disturbances typical of railways. Other species may be less tolerant, depending on the level and duration of disturbance.

**Figure 11: Sandpoint Junction Connector Action Area**



### *Birds*

LPO and surrounding environments provide suitable foraging, nesting, and dispersal habitat for numerous species of avifauna. Numerous species utilize LPO, its tributaries and backwaters, and the surrounding uplands during various times of the year for various life stages. Many waterfowl species utilize the area for nesting and for overwintering or as a stopover during periods of migration. **Table 7** lists observed birds in the County documented by IDFG (2018).

**Table 7: Birds of Bonner County**

| Species | Species | Species |
|---|---|---|
| American Coot (*Fulica americana*) | ring-necked duck (*Aythya collaris*) | lesser yellowlegs (*Tringa flavipes*) |
| American crow (*Corvus brachyrhynchos*) | hooded merganser (*Lophodytes cucullatus*) | Lewis's woodpecker (*Melanerpes lewis*) |
| American dipper (*Cinclus mexicanus*) | lesser scaup (*Aythya affinis*) | Lincoln's sparrow (*Melospiza lincolnii*) |
| American goldfinch (*Spinus tristis*) | horned grebe (*Podiceps auritus*) | peregrine falcon (*Falco peregrinus*) |
| American kestrel (*Falco sparverius*) | least sandpiper (*Calidris minutilla*) | pied-billed grebe (*Podilymbus podiceps*) |
| American robin (*Turdus migratorius*) | house finch (*Haemorhous mexicanus*) | turkey vulture (*Cathartes aura*) |
| American wigeon (*Anas americana*) | house sparrow (*Passer domesticus*) | pileated woodpecker (*Dryocopus pileatus*) |
| Anna's hummingbird (*Calypte anna*) | house wren (*Troglodytes aedon*) | pine siskin (*Spinus pinus*) |
| bald eagle (*Haliaeetus leucocephalus*) | indigo bunting (*Passerina cyanea*) | pygmy nuthatch (*Sitta pygmaea*) |
| barn swallow (*Hirundo rustica*) | killdeer (*Charadrius vociferus*) | red-breasted nuthatch (*Sitta canadensis*) |
| Barrow's goldeneye (*Bucephala islandica*) | king eider (*Somateria spectabilis*) | red-breasted merganser (*Mergus serrator*) |
| belted kingfisher (*Megaceryle alcyon*) | lark sparrow (*Chondestes grammacus*) | red-breasted sapsucker (*Sphyrapicus ruber*) |
| black-capped chickadee (*Poecile atricapillus*) | red-tailed hawk (*Buteo jamaicensis*) | ruby-crowned kinglet (*Regulus calendula*) |
| black-headed grosbeak (*Pheucticus melanocephalus*) | red-winged blackbird (*Agelaius phoeniceus*) | savannah sparrow (*Passerculus sandwichensis*) |
| Bonaparte's gull (*Chroicocephalus philadelphia*) | ring-billed gull (*Larus delawarensis*) | Say's phoebe (*Sayornis saya*) |
| Brewer's blackbird (*Euphagus cyanocephalus*) | MacGillivray's warbler (*Geothlypis tolmiei*) | short-eared owl (*Asio flammeus*) |
| brown-headed cowbird (*Molothrus ater*) | mallard (*Anas platyrhynchos*) | hermit thrush (*Catharus guttatus*) |
| bufflehead (*Bucephala albeola*) | long-billed curlew (*Numenius americanus*) | song sparrow (*Melospiza melodia*) |
| Bullock's oriole (*Icterus bullockii*) | marsh wren (*Cistothorus palustris*) | Harris's sparrow (*Zonotrichia querula*) |

**Table 7: Birds of Bonner County (continued)**

| Species | Species | Species |
|---|---|---|
| northern flicker (*Colaptes auratus*) | merlin (*Falco columbarius*) | spotted towhee (*Pipilo maculatus*) |
| California gull (*Larus californicus*) | mew gull (*Larus canus*) | Stellar's jay (*Cyanocitta stelleri*) |
| California quail (*Callipepla californica*) | mountain bluebird (*Sialia currucoides*) | Swainson's thrush (*Catharus ustulatus*) |
| Canada goose (*Branta canadensis*) | mountain chickadee (*Poecile gambeli*) | tree swallow (*Tachycineta bicolor*) |
| canvasback (*Aythya valisineria*) | mourning dove (*Zenaida macroura*) | trumpeter swan (*Cygnus buccinator*) |
| Caspian tern (*Hydroprogne caspia*) | Nashville warbler (*Oreothlypis ruficapilla*) | tundra swan (*Cygnus columbianus*) |
| chestnut-backed chickadee (*Poecile rufescens*) | Western Grebe (*Aechmophorus occidentalis*) | yellow-breasted chat (*Icteria virens*) |
| common goldeneye (*Bucephala clangula*) | northern pintail (*Anas acuta*) | varied thrush (*Ixoreus naevius*) |
| common loon (*Gavia immer*) | northern rough-winged swallow (*Stelgidopteryx serripennis*) | violet-green swallow (*Tachycineta thalassina*) |
| common merganser (*Mergus merganser*) | northern shoveler (*Anas clypeata*) | warbling vireo (*Vireo gilvus*) |
| northern harrier (*Circus cyaneus*) | northern shrike (*Lanius excubitor*) | western meadowlark (*Sturnella neglecta*) |
| common yellowthroat (*Geothlypis trichas*) | downy woodpecker (*Picoides pubescens*) | white-crowned sparrow (*Zonotrichia leucophrys*) |
| dark-eyed junco (*Junco hyemalis*) | western wood-pewee (*Contopus sordidulus*) | western tanager (*Piranga ludoviciana*) |
| double-crested cormorant (*Phalacrocorax auritus*) | yellow-rumped warbler (*Setophaga coronata*) | wild turkey (*Meleagris gallopavo*) |
| eared grebe (*Podiceps nigricollis*) | Emden-style goose (*Anser domesticus*) | willow flycatcher (*Empidonax traillii*) |
| fox sparrow (*Passerella iliaca*) | olive-sided flycatcher (*Contopus cooperi*) | Wilson's warbler (*Cardellina pusilla*) |
| golden-crowned sparrow (*Zonotrichia atricapilla*) | orange-crowned warbler (*Oreothlypis celata*) | wood duck (*Aix sponsa*) |
| great blue heron (*Ardea herodias*) | osprey (*Pandion haliaetus*) | yellow warbler (*Dendroica petechia*) |
| green heron (*Butorides virescens*) | Pacific loon (*Gavia pacifica*) | harlequin duck (*Histrionicus*) |
| Pacific wren (*Troglodytes pacificus*) | -- | -- |

Numerous other species are likely to utilize the study area and the surrounding uplands during various times of the year for various purposes.

Bird nests were not identified within the study area during site assessments by Jacobs' biologists. An uninhabited osprey pole installed in 2014 is located within BNSF ROW on the south side of existing Bridge 3.9. This EA presents two lists of birds potentially present within the study area; one list is **Table 7,** which is from IDFQ and the other list is from the USFWS through its

Information, Planning, and Consultation (IPaC) System, as described in Section 3.7.1. The IPaC report, which includes bald eagle, Cassin's finch, golden eagle, olive-sided flycatcher, and rufous hummingbird. The IPaC report is specific to the Project site. The IPaC data focuses on birds of conservation concern, which is a list of species that "without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act" as specified in the 1988 amendment of the Fish and Wildlife Conservation Act. The list of birds provided in **Table 7** occur anywhere within the County and are not necessarily specific to the study area. **Table 7** also includes birds that are not of conservation concern.

The rufous hummingbird prefers mountain meadows during migration and nests approximately 30 feet high in coniferous or deciduous trees. The olive-sided flycatcher breeds and winters at forest edges where tall trees or snags are present. Cassin's finch prefers coniferous forest. Migrating and wintering waterfowl are found within the greater LPO area. There are protected state and federal lands outside of the study area which provide habitat. Commonly seen species can include tundra swans, Canada geese, American widgeon, redheads, mallards, common mergansers, common goldeneye, bufflehead, and ring-necked ducks. Preferred habitats for these species within LPO include the Denton Slough located approximately 12 miles east of the study area and the Clark Fork River Delta located approximately 15 miles east of the Project site.

An IPaC and IDFG (IDFG 2017b, 2018) database search and field review were conducted to determine whether bald and golden eagle nests and/or communal roosts occur in the study area. In addition, site visits occurred throughout 2016 and 2018. Nesting surveys were conducted by foot using typical methodologies. Biologists also reviewed Idaho Fish and Game sighting data (IDFG 2017b), and the wintering bald eagle count trends (Wade et al. 2015). Site visits and data review by Jacobs' biologists indicate the closest bald eagle nest is at Springy Point on the Pend Oreille River, located over 2 miles west of the Project. The review concluded that no nests and/or communal roosts are located in the study area.

### *Terrestrial Mammals*

Due to the relatively high level of human-related activity associated with the rail line and US 95, generally only disturbance-tolerant terrestrial mammals are expected to occur within or around the study area. White-tailed deer (Odocoileus virginianus), coyotes (Canis latrans), skunks (Mephitis mephitis), raccoons (Procyon lotor), muskrat (Ondatra zibethicus), and various rodents are known to occur in the vicinity of the study area. Typically, transportation corridors are purposely managed to be unattractive to larger terrestrial mammals to reduce wildlife/vehicle collisions. The study area is predominantly disturbed open ground with sparse vegetation surrounded by marginal to medium value upland habitat for terrestrial mammals.

### *Fish*

Bullheads, crappies, perch, largemouth bass, smallmouth bass, and various trout species are found in nearshore sloughs, backwaters, and deep-water bays of LPO. The lake and tributaries provide habitat for kokanee, Gerrard rainbows, bull trout, and lake trout. Fish species found in Sand Creek include brook trout, sculpin, and sunfish (TerraGraphics 2006), as well as various other warm water species. Non-native fish species within LPO include rainbow trout, lake trout, brown trout, smallmouth bass, walleye, yellow perch, black crappie, and others (Philips 2016). The fish species outlined in **Table 8** are based on the fish species observed by IDFG (2017a) and presented in 2017 data.

**Table 8: Fishes of Lake Pend Oreille**

| Species | Species |
|---|---|
| bluegill/pumpkinseed/sunfish (*Lepomis spp*) | largemouth bass (*M. salmoides*) |
| brown trout (*Salmo trutta*) | northern pike (*Esox lucius*) |
| bull trout (*Salvelinus confluentus)* | walleye (*Sander vitreus*) |
| mountain whitefish (*Prosopium williamsoni*) | cutthroat trout (*Oncorhyncus clarki)* |
| bullhead catfish (*Ameiurus spp.)* | kokanee *(Oncorhynchus nerka)* |
| cutthroat trout (*Oncorhynchus clarki*) | lake trout (*Salvelinus namaycushi)* |
| crappie (*Pomoxis spp.)* | smallmouth bass (*Micropterus dolomieu)* |
| rainbow trout (*Oncorhynchus mykiss*) | yellow perch *(Perca flavescens)* |
| westslope cutthroat trout *(Oncorhynchus clarki lewis)* | longnose sucker (*Catostomus catastomus)* |
| peamouth (*Mylocheilus caurinus)* | Gerrard-strain rainbow trout (*Kamloops)* |
| pygmy whitefish (*Prosopium coulterii)* | largescale sucker (*Castomus clupeaformis)* |

### *Terrestrial Noise within the Action Area*

Ambient noise levels in the action area are influenced by the local population level, traffic volumes on US 95, rail traffic, and commercial enterprises. The local population center is the City. US 95 is located generally adjacent to the north end of the Project and diverges from the rail line near the north end of BNSF Bridge 3.9 to about 2,500 feet west of the south end of Bridge 3.9. The ambient noise level projected at 55 A-weighted decibels (dBA) is expected based on the local population. Peak rail noise levels are the whistles at 140 decibels (dB).

## 3.7.2 Environmental Consequences

### *No Action Alternative*

Although substantially lower than the Proposed Action Alternative, impacts to wildlife and fish would continue to occur under the No Action Alternative due to the continued operation of the rail line and need for repair and maintenance activities on the existing bridges.

### *Proposed Action Alternative*

Construction activities associated with this alternative would be expected to cause avoidance of the area by terrestrial species, both birds and mammals, for the duration of Project construction. However, the study area is already within a high traffic transportation corridor, much of it disturbed and rock covered. Thus, Project construction is not expected to create a major impact to or displacement of birds or mammals.

Birds

During portions of construction, such as pile driving, birds may alter flight patterns, or temporarily change foraging and habitat use within the study area to avoid elevated noise levels. Long-term operation of the Proposed Action Alternative is not expected to alter flight patterns, foraging or habitat use, except in areas directly impacted by structures or vegetation removal. Since impacts to habitat preferred by IPaC species have not been identified, breeding and nesting impacts are not anticipated despite the species recorded present within the study area via the IPaC report.

Habitat conditions within and immediately adjacent to the BNSF ROW within the study area are degraded and are not considered high quality habitat, due to existing levels of development and associated transportation use. While the Project would require the removal of some large trees, bird nests have not been documented in the trees or vegetation that are scheduled for removal, and no direct impacts to nests or nesting migratory birds are anticipated.

The Proposed Action Alternative would have no impact on the osprey pole located within BNSF ROW on the south side of existing Bridge 3.9. To ensure direct impacts are avoided, a migratory bird nesting survey would be conducted at the beginning of the season, within the study area, prior to ground-disturbing activities. If a nest is identified, a plan for impact minimization would be established with the necessary agencies. In addition, it is not expected that construction or operational activities in the study area associated with the new bridge would rise to the level of prohibited conduct under the MBTA because no nests and/or communal roosts have been documented in the study area, surveys would occur prior to construction to verify and mitigate any potential impacts, and unlawful actions as defined in MBTA would not occur.

Terrestrial Mammals

Terrestrial mammals present within the study area are primarily disturbance-tolerant. The Project does not require any new mammal crossing in upland areas. As discussed in Section 3.1.2, the construction of a second main line track and associated bridges alone would not increase the amount of freight moved over the amount that would be moved under the No Action Alternative. Therefore, the Project is not anticipated to result in increased mammal fatalities over the No Action Alternative. Due to the degraded condition of the transportation corridor, mammals are not expected to forage or inhabit the proposed study area in large numbers; therefore, substantial terrestrial mammal impacts are not anticipated.

Fish

Pile driving will generate the highest sound above ambient noise levels. The pile driving proposed for the bridges has the potential for temporary impacts to all species, but in particular to fish species that may be present in the study area. Aquatic species response would be in part dependent on proximity to the piles being installed, individual's size (juvenile, subadult, adult), presence of a swim bladder, and activity (foraging, migrating, and overwintering [FMO]). The expected response for most fish species present in the work area would be avoidance of the general area. The availability of extensive alternate habitat in the Pend Oreille River and LPO would allow fish to widely disperse away from the aquatic impact zone. Injury or behavioral impacts, such as disruption of localized feeding opportunities or short-term migration, could occur to species that remain in the impact zone.

Most species of fish are susceptible to pile-driving impacts associated with underwater sound pressure waves, depending on the level. Underwater sound pressure waves can injure or even kill fish if they are close to the source due to barotrauma. Even in the absence of mortality, elevated noise levels can cause sublethal injuries. Fish suffering damage to hearing organs may suffer equilibrium problems and may have a reduced ability to detect predators and prey (Turnpenny et al. 1994; Hastings et al. 1996). Minimization measures such as initiating limited low impact strikes at the beginning of each work period to encourage fish dispersal, or the use of bubble curtains to attenuate sound, are common approaches that minimize the potential of fish injury and mortality. The ESA BO includes minimization measures which would be required during Project construction. More detailed discussion related specifically to threatened bull trout is contained in Section 3.8 and in the Project BO (**Appendix E**).

As described in Section 4.0, coordination with the USFWS and IDFG is ongoing. These efforts will result in the adoption of BMPs to avoid, minimize, and mitigate impacts to fish and wildlife during construction, such as the impact minimization measures described in Section 4.1, and the BMPs associated with the Project's SPCC plan and SWPPP described in Section 3.3.2. Additionally, adherence to conditions imposed in IDEQ's Section 401 WQC for the Project (IDEQ 2019) would further avoid and minimize impacts to the aquatic environment.

Upon completion of construction, the Project would disturb approximately 3 acres of upland, riparian, and wetland vegetation and would result in a 2,036-square- foot pile/pier footprint in-water, which is a relatively small operational footprint within the existing transportation corridor associated with the BNSF ROW.

Noise Impacts within the Action Area

The action area includes terrestrial and aquatic zones of impact where wildlife species may be directly or indirectly affected by the proposed Project (**Figure 11**). In the way of distance, underwater noise is the farthest-reaching category of impact associated with the Project; therefore, the aquatic zone of impact was determined through the noise analysis presented in the Project BO (**Appendix E**).

Audible disturbances from construction activities will exceed ambient noise. As shown in **Table 3**, a projected maximum in-air noise level is associated with the impact hammer at 110 dB. The impact hammer produces noise levels at 110 dBA at 50 feet from the source. If two simultaneous pile drivers are utilized, 3 dBA has been added to the 110 dBA value resulting in 113 dBA as the highest noise level proposed during Project construction. These noise projection methods utilize WSDOT BA guidance (WSDOT 2019). Ambient noise within the study area includes vehicle traffic from US 95 and train traffic with peak noise levels of 140 dB, which represents a locomotive horn/whistle. Therefore, construction noise would not surpass noise levels which are regularly experienced in the area. Since construction noise (use of the impact hammer) would result in a more frequent noise elevation than train whistles, a terrestrial noise assessment has been conducted and is summarized in Section 3.13.2.

Based on the data (WSDOT 2019), construction noise would reach ambient noise levels over open or hard terrain between 4.8 and 9.5 miles from the Project site. This is often referred to as the action area for in-air noise effects. The actual distance traveled by noise generated during construction before reaching ambient levels would be influenced by other variables not factored into the attenuation calculation, such as landforms, other roads, buildings, vegetation, and weather (wind/rain).

Turbidity within the Study Area

Temporary increases in turbidity during Bridge 3.9 construction would be controlled with a turbidity curtain. Shallow conditions may occur within Sand Creek and/or immediately adjacent to abutments, where turbidity curtains are not viable. Turbidity plumes are naturally restricted in shallow waters. Since turbidity impacts would be localized and contained to pile-driving activities, no substantial ecological impacts are expected (Section 3.3.2).

Due to the limited duration and spatial extent of construction activities, the Proposed Action Alternative is not expected to significantly impact fish and wildlife. ESA-listed species determinations are provided in Section 3.8 and the Project BO and BA (**Appendix E**).

Invasive Species

Numerous invasive species exist in the County, as discussed under Section 3.7. Aquatic invasive species are a concern when working above, in, or near water. Invasive invertebrates can be spread by equipment. While no specific permit is required by a Project proponent or citizen related to actions undertaken in Idaho waterways, watercraft used during activities in Idaho waters must be licensed and permitted prior to launching (IDFG 2018; ISDA 2018). Only inflatable, nonmotorized vessels less than 10 feet long are exempt. All other watercraft must obtain the annual Invasive Species Boat stickers, in addition to other annual required boat registration fees.

To prevent the introduction or spread of invasive aquatic species, Project-specific watercraft inspection criteria and operating protocol have been developed (see impact minimization measures in Section 4.1). Boats, barges, and overwater machinery would be thoroughly inspected for invasive species and cleaned as required by the IDFG sticker program. The inspection and cleaning protocols will be implemented prior to any launch or access into LPO or Sand Creek (ISDA 2014). In addition, per the IDEQ WQC, the Project will be required to implement general condition 39: "Equipment and machinery used in or over water shall be stream cleaned of oils, grease and invasive species in an upland location or staging area with appropriate wastewater controls and treatment prior to entering on or over a water of the state. Any wastewater or wash water must not be allowed to enter a water of the state. Cleaning shall be adequate enough to remove all life states of aquatic invasive species." This protocol would be in effect during the entire Project. Through the use of BMPs, the Project is not anticipated to contribute to the introduction and spread of invasive species in the ecosystem.

## 3.8 Endangered Species Act-Listed Species and Critical Habitat

The primary federal law protecting threatened and endangered species is the ESA, 16 U.S.C. § 1531 et seq., and 50 CFR 402. The ESA and its subsequent amendments provide for the conservation and recovery of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of the ESA, federal agencies are required to consult with USFWS and/or National Oceanic and Atmospheric Administration (NOAA) Fisheries to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat.

Critical habitat is defined as geographic locations essential for the conservation of threatened or endangered species. The outcome of consultation under Section 7 may include a BO or a Letter of Concurrence. Section 3 of the ESA defines "take" as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

### 3.8.1 Affected Environment

The study area for ESA-listed species and critical habitat is the "action area," the term used to define the study area under Section 7 of the ESA, per the Project BO and BA (**Appendix E**). The action area is illustrated in **Figure 11**. The Project alternatives reviewed are located across and along the northwestern edge of LPO and immediately east of, or near, US 95 and Sandpoint. Uplands in the action area are developed and consist of railroad tracks, gravel and paved parking areas, urban and urban fringe development, and highway/roadways. Other than for bull trout, the specific habitat conditions required for the federally listed ESA species noted in **Table 9**, as listed by USFWS in August of 2018, do not exist in the action area (Jacobs 2018e).

**Table 9: USFWS Listed and Proposed Species and Critical Habitat in Bonner County**

| Common Name | Scientific Name | Federal (USFWS Status) | Critical Habitat Designated | Potential to Occur in Action Area |
|---|---|---|---|---|
| Canada lynx | *Lynx canadensis* | Threatened | No | No |
| grizzly bear | *Ursus arctos horribilis* | Threatened | Not Applicable | No |
| North American wolverine | *Gulo gulo luteus* | Proposed Threatened | No | No |
| woodland caribou | *Rangifer tarandus caribou* | Endangered | No | No |
| **bull trout** | ***Salvelinus confluentus*** | **Threatened** | **Yes** | **Yes** |

Note**:**
USFWS = U.S. Fish and Wildlife Service

Bull Trout

Information in this section is summarized from the Project BA (**Appendix E**). Section 2.4.4 of the BO (**Appendix E**) also provides a robust description of bull trout within the study area. The coterminous United States population of bull trout (Salvelinus confluentus) was listed by the USFWS as threatened in November 1999 (64 Federal Register 58910). Bull trout presently occur in approximately 45 percent of their estimated historical range within the Columbia River Basin and were listed due to declining trends in distribution and abundance caused by the combined effects of habitat degradation and fragmentation, blockage of migratory corridors, poor water quality, angler harvest and poaching, entrainment into diversion channels and dams, and introduced non-native fish species.

A 2007–2008 study noted that an estimated population of 12,513 bull trout in LPO was similar to that estimated one decade earlier in 1997–1998, indicating a stable population. It is suggested that a minimum of 10 local populations are required for a bull trout core area (metapopulation) to function effectively, and core areas with more than 10 interconnected local populations are at diminished risk of extirpation; the LPO core area has at least 20 local populations. It is also estimated that approximately 1,000 spawning adults within any bull trout population are necessary to ensure persistence of the population by maintaining genetic variation, and IDFG has determined that approximately 4,000 adult spawning bull trout occupy LPO at any given time.

Most bull trout are migratory and rear 1 to 4 years in natal tributaries before moving to larger rivers (fluvial) or lakes (adfluvial). Bull trout normally reach sexual maturity in 4 to 7 years and live up to 12 years. They spawn more than once in a lifetime, with both repeat- and alternate-year spawning reported. Therefore, bull trout require two-way passage upstream and downstream for repeat spawning and foraging. In Idaho, bull trout generally spawn in September and October. Fry normally emerge from early April through May depending upon water temperatures and increasing stream flows. Most downstream migrations for all size-classes of bull trout throughout the year are almost exclusively at night.

Adfluvial bull trout comprise the predominant life history form present in the LPO basin and are the predominant large-bodied native predator in the lake. Both the USFWS and the IDFG have confirmed that there is no documented presence of bull trout in Sand Creek, and data is minimal

on bull trout use of LPO within the action area. Bull trout most likely use the action area during migrating between spawning and rearing habitat and FMO habitat. Several radio-tagged bull trout have been documented at or near Bridge 3.9 throughout the winter.

There are two migratory periods for adult bull trout: migration out of LPO to upstream tributary spawning and rearing habitat in the spring and return to downstream LPO FMO habitat late in the fall after spawning. There is also a unique fall upstream migration of bull trout into LPO from the East River basin (a tributary to Priest River, which is a tributary to Pend Oreille River), presumably to allow bull trout to avoid swimming upstream into the lake against the Pend Oreille River current during spring high flows. Subadult bull trout do not migrate out of LPO until they reach sexual maturity, and therefore reside in LPO year-round.

There are no in-water work windows designated by the USFWS for LPO. In September 2010, the USFWS designated critical habitat for bull trout throughout their range that contains features considered essential for conservation of the species. Thirty-two Critical Habitat Units were designated, including Habitat Unit 31-Clark Fork River Basin that includes the open water and shorelines of LPO (including the LPO inlet/lower Sand Creek) and the Pend Oreille River within the action area. The Unit 31 critical habitat map is provided as **Figure 12** (75 Federal Register 64067 [October 18, 2010]).

LPO is a complex core area within the Lower Clark Fork Geographic Region that is among the more secure and stable bull trout populations across the range of the species. It provides important bull trout FMO habitat for populations in local LPO, Pend Oreille River and Clark Fork River tributaries, as well as an essential migratory corridor for bull trout from LPO to access upstream productive tributary watersheds. Because of its systematic and jurisdictional complexity, the LPO core area is further divided into three parts:

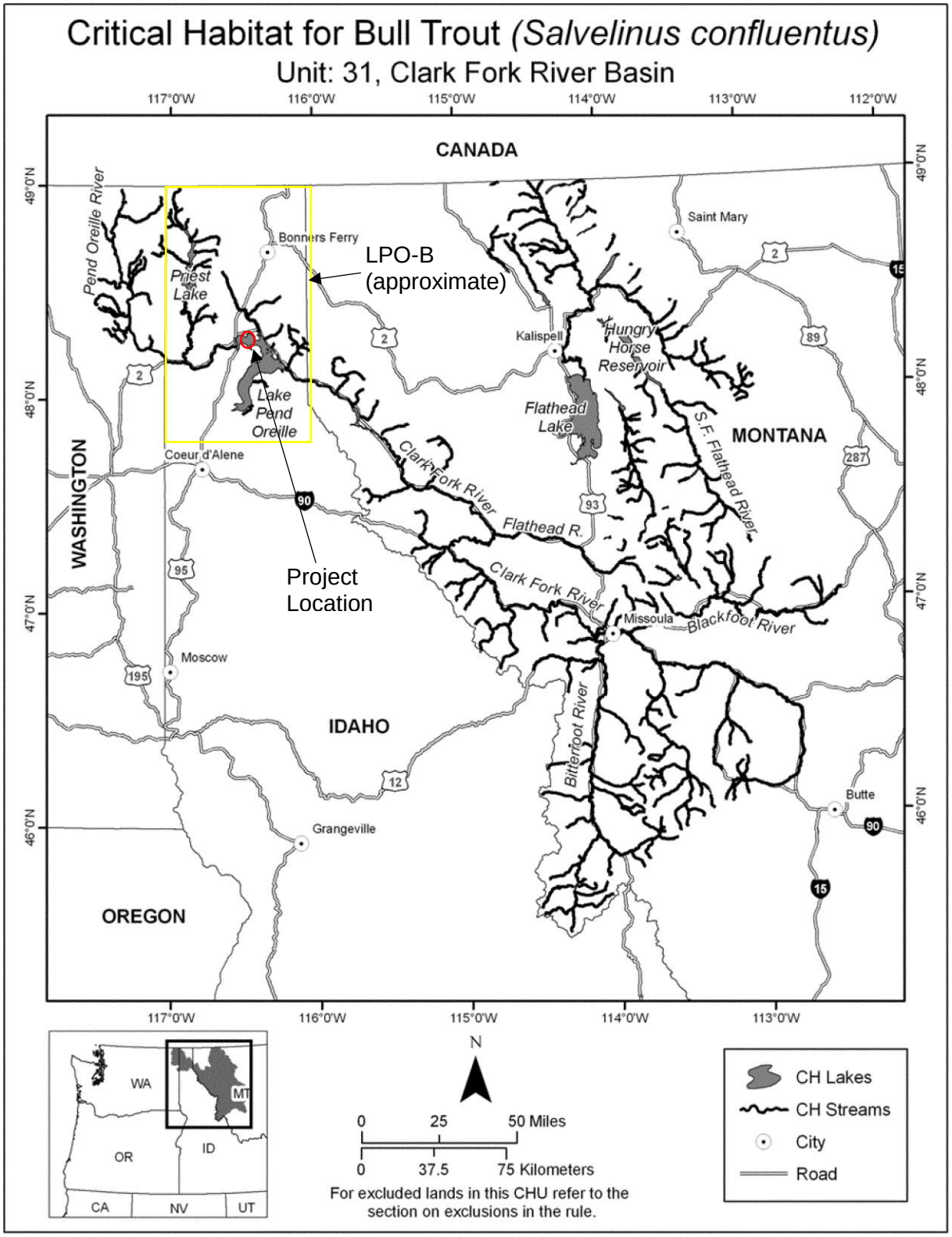
- (LPO-A) Clark Fork River mainstem upstream of Cabinet Gorge Dam on the Idaho/Montana border, almost entirely in Montana
- (LPO-B) LPO basin proper and its tributaries, extending from Cabinet Gorge Dam on the Clark Fork River downstream to LPO to Albeni Falls Dam on the Pend Oreille River, entirely in Idaho
- (LPO-C) the lower basin (lower Pend Oreille River) downstream of Albeni Falls Dam through the Box Canyon Dam to the Boundary Dam one mile upstream of the Canadian border, including portions of Idaho, Washington, and the Kalispel Indian Reservation

The Project lies wholly within LPO-B. LPO-B represents 15 percent of the LPO complex core area, covering 670,000 acres containing 1,250 miles of mapped streams.

### *ESA Consultation History*

The USCG is the lead federal agency associated with this action and undertook formal consultation with the USFWS regarding potential effects to federally listed species and critical habitat. A draft BA was sent to USFWS for review on August 29, 2018. Previous coordination with USFWS to review impacts, methodology, and mitigation opportunities occurred in August, September, October, and November 2017 and June 2018, with meetings in March, May, and July 2018. The USFWS issued a BO for the Project on May 3, 2019 (**Appendix E**).

**Figure 12: Critical Habitat for Bull Trout**



### 3.8.2 Environmental Consequences

***No Action Alternative***

Implementation of maintenance actions on the existing Bridge 3.9 associated with the No Action Alternative could result in limited in-water work and, therefore, could result in impacts to listed species, but these impacts would likely be minor and are expected to be less than those described below for the Proposed Action Alternative. Without construction of a new bridge, ongoing maintenance actions on the current bridge would likely be necessary due to its age. Potential repair may require additional USFWS consultations. If future repair needs necessitate pile removal or driving, or other repair work that requires a Bridge Permit, the USCG would consult with USFWS as necessary.

***Proposed Action Alternative***

Information in this section is summarized from the Project BO and BA (**Appendix E**). Bull trout would be the only ESA-listed species exposed to effects from the Proposed Action Alternative. Direct effects are those that occur at the time of the action and would be primarily associated with in-water noise from pile installation and potential localized increases in turbidity during pile installation and/or removal. Indirect effects are those that occur later in time and include changes to ecological systems resulting in long-term habitat alteration, changes in predator/prey relationships, or changes in land use.

Direct Effects

Permanent piles for the new bridges would be vibrated to resistance and finished with an impact hammer. Pile driving would occur during daylight working hours for an estimated 12 months for Bridge 3.9 and for approximately one month for Bridge 3.1, dependent on weather-related or other interruptions.

Vibratory hammers vibrate the pile into the sediment by use of an oscillating hammer placed on top of the pile. Vibratory driving sound pressure levels are generally 10 to 20 dB lower than impact hammer driving, with a much slower rise time. Due to reduced noise levels, vibratory driving of piles is generally considered less harmful to aquatic organisms and is the preferred method if geologic conditions allow.

However, piles must be seated to load-bearing capacity with the use of an impact hammer. This is referred to as proofing. This may take just a few strikes or many strikes depending on site-specific characteristics. In areas where geologic conditions preclude the driving of piles primarily with a vibratory hammer, piles would be driven with an impact hammer. Risk of injury or mortality to aquatic species resulting from in-water impact pile driving is related to the effects of rapid pressure changes, especially on gas-filled spaces in the fish's body (such as swim bladder, lungs, sinus cavities, etc.).

Noise generated by impact pile driving is impulsive, consisting of a broad range of frequencies over a short duration. Based on bull trout hearing ranges, threshold distances and noise levels (dB) that could result in injury or behavioral effects have been established by the USFWS and are used to calculate the spatial extent of potential impacts and to determine effects.

Noise levels are analyzed based on peak dB, which describes the instantaneous peak sound pressure level and is used to evaluate potential injury to fish; root-mean-square, which describes the pressure level during the impulse and is used to describe disturbance-related effects (i.e., harassment and behavioral changes); and sound exposure level (SEL), which is used as an indication of the energy dose that can accumulate and result in injury.

NOAA Fisheries pile driving impact calculator was used to determine the distance that underwater sound would extend for the permanent bridges over LPO and Sand Creek, based on the type and largest size of piles to be driven with an impact hammer. The calculator utilizes the bull trout threshold distances and noise levels established by the USFWS.

In-water noise effects can be limited in spatial extent by sinuosity of the waterbody and once underwater sound reaches land. Effects can also be attenuated by using air bubble curtains during pile driving in water more than 2 feet deep. Because bubble curtains are not effective in shallow water, they would only be used in water 2 feet deep or deeper.

Impact proofing steel piles in the construction of the new bridges would elevate sound pressure levels and potentially expose adult and subadult bull trout to harm, harassment, or behavioral changes. The furthest extent of the potential injury zone is approximately 0.46 mile from construction activity. This zone in total represents less than 1 percent of the available area within LPO and lower Sand Creek.

Because the construction contractor would have the option of installing piles simultaneously at each end of the bridge, bull trout may be exposed to increased cumulative energy where the individual pile-driving noise zones overlap. When impact driving would occur simultaneously at two locations on the bridge alignment, there would be a moderate increase in the cumulative SEL to bull trout.

Pile driving in Sand Creek (Bridge 3.1) would occur in low-water conditions during LPO winter drawdown. Water depths would be approximately 0 to 2 feet during work, with most piles driven outside of the winter-wetted channel of the creek. Most sound energy is not propagated in water depths of 1.3 feet or less, and energy propagation is substantially reduced in shallow water. Additionally, subadult or adult bull trout do not inhabit Sand Creek/LPO inlet and would not be present in shallow water when pile driving would take place. However, the action area for work within Sand Creek does extend into LPO, and any bull trout present in the lake may be exposed to slightly elevated sound pressure levels during impact pile driving.

The Proposed Action Alternative may result in short-term, temporary adverse impacts to individual subadult and adult bull trout that are exposed to elevated sound pressure levels from impact pile driving. (This only applies to bull trout that weigh two grams or greater since smaller bull trout remain in spawning and rearing tributaries and do not occupy LPO.) Using a bubble curtain to attenuate sound during pile driving in water 2 feet deep or deeper substantially minimizes the potential for bull trout exposure during pile driving. Additionally, reduction in the extent of effects during Bridge 3.1 pile driving into shallow water would be expected.

Though individual subadult and adult bull trout may be impacted by elevated sound pressure levels during construction, the relatively small area where fish may be susceptible to injury (less than 1 percent of LPO as a whole) when compared to available areas within the lake that are free of disturbance minimizes the potential for exposure. The bull trout population is relatively robust in the LPO area (approximately 12,000 fish) despite loss of connectivity to large areas of upstream and downstream spawning and rearing habitat.

Sediment on the bottom of LPO may be mobilized during Bridge 3.9 pile installation and temporary bridge pile removal, as discussed in Section 3.2.2. The potential effects of this turbidity increase is expected to be localized and controlled effectively using a turbidity curtain for most piles.

Other direct effects, such as potential water contamination from construction equipment fluids, would be temporary in nature and would be insignificant relative to the overall area of bull trout dispersal in the lake and the extent of available habitat. The impacts would be minimized using construction BMPs identified in the SPCC plan and SWPPP (Section 4.0) and permit conditions identified in the 401 WQC.

Indirect Effects

Permanent indirect effects may occur to subadult bull trout after Bridge 3.9 construction due to the potential for increased predation associated with shading and additional underwater structures (piers) that provide predator hiding habitat. However, the area that would be shaded by the proposed Bridge 3.9 over LPO is small compared to the total surface area of the lake (approximately 2 acres out of a total of 94,720 acres of LPO surface area). Additionally, the new bridge would be elevated to nearly match the height of the existing bridge, allowing sunlight to penetrate for most of the day under both the existing and proposed bridges over LPO, and bull trout would be expected to inhabit the coldest and deepest part of LPO when shading would occur, and would forage the shoreline and shallow depths at night. Because bull trout do not occupy Sand Creek due to degraded habitat conditions, no permanent indirect effects from increased predation due to shading or underwater structures would be expected. Therefore, significant alterations to predator/prey relationships associated with shading impacts are not anticipated, but alteration of these relationships may occur due to the increased number of underwater structures.

Other indirect effects, such as permanent alteration of nearshore habitat, are considered insignificant relative to the overall area of bull trout dispersal in the lake and the amount of available suitable habitat along the lake's 175 miles of shoreline. Nearshore fill would permanently alter 0.88 acres of habitat below the OHWM. However, due to the fluctuations in water levels, the nearshore study area is low-quality habitat available for approximately 5 months. In addition, the new piles would permanently remove 2,036 square feet of lake bottom, and potentially displace benthic invertebrates as a prey item for bull trout. The study area is in the shallowest portion of LPO where waters are likely the warmest. The aquatic behavioral impact zone encompasses less than 8 percent of the total surface area of LPO. The Project also provides habitat improvement elements to offset impacts, which are discussed in Section 4.0.

The Project is not expected to contribute to or exacerbate the defined existing threats to the bull trout population in the LPO-B core area: (1) historic fragmentation due to dams on the lower Clark Fork River; (2) overfishing of bull trout and the presence of voracious non-native species, specifically lake trout; and (3) legacy impacts from upland/riparian land management practices.

Construction of the new bridges would require 288 permanent piles comprising 48 piers below the OHWM in LPO, and 22 permanent piles comprising 3 piers below the OHWM in Sand Creek. These piers would not significantly impact bull trout movements or migration in LPO, as piers would be approximately 65 to 93 feet apart, and the new bridge would be constructed immediately adjacent to the existing rail bridge. There would be fewer piers supporting the new Bridge 3.9 compared to the existing bridge, and the new bridge piers would align approximately with every other pier of the existing bridge.

Consultation with the USFWS regarding the Proposed Action Alternative, construction methods, Project timing, and impact minimization measures has been completed. Compensatory mitigation, provided in compliance with the CWA, for the 0.88-acre of nearshore/bull trout critical habitat fill will be provided through the Valencia Mitigation Bank. This CWA mitigation, further discussed in Section 4.0, would benefit bull trout habitat.

Based on bull trout utilization and suitable habitat within the action area, the BO and BA determined that Project activities are likely to adversely affect individual adult and subadult threatened bull trout primarily due to pile driving during construction for the new Bridge 3.1 in Sand Creek and the new Bridge 3.9 in LPO. The BO and BA determines that Project activities are likely to adversely affect bull trout-designated critical habitat in LPO and Sand Creek because of elevated sound pressure levels during construction. However, completion of the Proposed Action Alternative is unlikely to affect bull trout subpopulation indicators or critical habitat at the watershed or Columbia River Headwaters Recovery Unit scales, either temporarily or permanently. The BO determined that the Project would not jeopardize the survival and recovery of bull trout or adversely modify its designated critical habitat. As part of the ESA Section 7 consultation that has been completed as part of the action, the USFWS has provided terms and conditions that are specific Project requirements to minimize effects to bull trout and bull trout critical habitat. These conditions would be implemented as part of the USCG Bridge Permit, and BMPs would be specified in the construction contract requirements.

## 3.9 Archaeological and Historic Resources

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places (NRHP).

Section 106 of NHPA requires federal agencies to consider the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP. As part of the Section 106 process, federal agencies must consult with the State Historic Preservation Office (SHPO) to assure that cultural resources are identified and to obtain the formal opinion of the SHPO on each site's significance and the impact of its action upon the site.

### 3.9.1 Affected Environment

The study area for archaeological and historic resources is also called the Area of Potential Effects (APE), the term used to define the study area in Section 106 of the NHPA and is consistent with the study area described in Section 3.0. The study area and surrounding vicinity were utilized by local Native American populations for hunting, fishing, and plant gathering, but the APE has been drastically altered by railroad and highway development. Previous development included placement of thick fill deposits to support the existing railroad and bridge abutments; therefore, the APE contains reworked beach sands and disturbed fill sediments. Due to previous ground disturbance and fill used to construct berms on either approach to the bridge, the potential for intact archaeological deposits to exist within the APE is considered remote.

An evaluation of the archaeological and cultural resources was completed in the APE to identify resources and provide management recommendations regarding NHPA compliance (Jacobs 2018g). Current and previous field assessments indicate that the APE does not contain any intact archaeological deposits near surface sediments. Previous cultural resource studies conducted within the APE are summarized in the Cultural Resources Technical Report (Jacobs 2018g) and include two on the north end of Bridge 3.9 (one for a BNSF bridge pier replacement project and one for the US 95 Byway) and two on the south end of Bridge 3.9 (both for BNSF projects).

As a result of those efforts, two archaeological sites (10BR38 and 10BR1026) were reassessed, one new archaeological site (temporarily named Rock Wall 1) was recorded, four previously recorded historic built resources (Northern Pacific Depot, Northern Pacific Railroad, Bridge 3.0, and Bridge 3.9) were revisited, and one additional potential historic built resource (Bridge 3.1) was identified. None of the field assessments indicate that the APE contains any intact archaeological deposits near surface sediments.

Two previously recorded archaeological sites exist within the APE. Site 10BR38 is a prehistoric campsite and associated rail line. Site 10BR1026 is a prehistoric campsite and historic scatter. Both sites are identified as contributing properties to the Upper Pend Oreille River Archaeological District, which has been determined eligible for the NRHP. During the 2018 assessment, it was determined that none of the previously recorded historic resources within the APE have changed substantially since recordation, and all continue to be recommended eligible for listing in the NRHP. In addition, there are the two newly recorded historic resources within the APE, BNSF Bridge 3.1 and Rock Wall 1. Both have been recommended not eligible for listing in the NRHP.

### 3.9.2 Environmental Consequences

#### *No Action Alternative*

The No Action Alternative would result in no ground disturbance activities, but maintenance activities would continue. Maintenance would consist of periodic inspections and ROW maintenance, with possible replacement of individual bridge components when maintenance is necessary. A minimal amount of excavation is anticipated with these future maintenance actions; therefore, cultural resources would not likely be altered. If necessary, an Inadvertent Discovery Plan (IDP) would be followed during ground-disturbing activities associated with maintenance actions to minimize potential impacts to archaeological deposits encountered during construction.

Due to previous ground disturbance and fill used to construct berms on either approach to the bridge that was noted during the 2018 assessment, the potential for intact archaeological deposits to exist within the APE is considered remote; therefore, the No Action Alternative is unlikely to impact archaeological resources. Maintenance actions are not anticipated to require substantial alteration of historic resources; therefore, the No Action Alternative is unlikely to impact historic resources.

#### *Proposed Action Alternative*

To create the new bridge, the Proposed Action Alternative would add fill and drive permanent and temporary piles. The Proposed Action Alternative is a federal undertaking because the Project would require a USCG bridge permit and a USACE CWA Section 404 permit and is therefore subject to Section 106 of the NHPA presented in 36 CFR 800. Section 106 of the NHPA requires that, before beginning any undertaking, a federal agency must consider the effects of the undertaking on historic properties and afford the ACHP an opportunity to comment on these actions.

The Section 106 process includes the following steps:

a. Initiate the process
   - Establish undertaking
   - Identify other consulting parties and tribes
   - Coordinate with other reviews
   - Notify SHPO/Tribal Historic Preservation Officer (THPO)
b. Identify historic properties
   - Determine APE
   - Identify historic properties
   - Consult with SHPO/THPO, tribes and other consulting parties
c. Assess adverse effects
   - Apply criteria of adverse effects
   - Consult with SHPO/THPO, tribes and other consulting parties
d. Resolve adverse effects
   - Notify ACHP
   - Avoid, minimize or mitigate adverse effects
   - Consult with SHPO/THPO, tribes and other consulting parties

A summary of consultation and coordination completed with SHPO and Native American Tribes is provided in Section 5.1. The USCG initiated government-to-government Section 106 consultation with Native American Tribes on January 25, 2018, and will be ongoing throughout the EA process. Consultation with SHPO has been completed. SHPO concurrence with the "no effect" and "no adverse effect" findings and recommendations discussed below was provided on August 8, 2018 (**Appendix I**). Public involvement for the Proposed Action Alternative is being coordinated in compliance with environmental permitting and NEPA requirements.

Archaeological Resources

It is highly unlikely that the Proposed Action Alternative would disturb intact archaeological resources that are listed or recommended to be eligible for NRHP due to a lack of intact archaeological resources near surface sediments within the APE. Intact deposits may be present outside the APE beyond the proposed impact of current construction plans.

For the Proposed Action Alternative, the Cultural Resources Technical Report provides a no effect recommendation for Site 10BR1026, where, aside from a single disturbed flake, historic artifacts were not identified within the APE. The report provides a no adverse effect recommendation for Site 10BR38, where materials are either buried under several feet of fill or no longer retain archaeological integrity. In addition, the portion of Site 10BR38 within the APE is not individually eligible for NRHP listing. Consequently, the Proposed Action Alternative will have no adverse effect to the Upper Pend Oreille River Archaeological District.

The identification of archaeological remains typically results in the halt of excavations. A Project-specific IDP would be utilized in the event that archaeological materials are discovered. The IDP would be prepared and provided to consulting parties and interested Tribes prior to construction. The IDP would identify the appropriate parties to be contacted and protocols to follow if cultural materials are exposed during construction.

The Cultural Resources Technical Report does not recommend additional archaeological evaluation or monitoring for the Proposed Action Alternative since no adverse effect and no effect determinations were recommended and concurred upon by the SHPO.

Historic Built Resources

For the Proposed Action Alternative, the Cultural Resources Technical Report provides a no adverse effect recommendation for the BNSF track, Bridge 3.0, and Bridge 3.9, as these structures would not be directly affected. As further described in Section 3.13, the centerline of the new main line track would be as close as 10 feet from the footing of the historic Northern Pacific Depot currently serving as the Sandpoint Amtrak Depot. Use of proposed equipment to construct the new track may result in vibration levels that exceed the threshold for potential vibration damage to the building. Ongoing monitoring and inspection of the building would be completed during construction to ensure that the Project does not adversely affect the building. While changes to the surrounding visual environment may result in indirect impacts to the historic built resources, indirect effects on such resources during construction and operation would be negligible and are not anticipated to alter or diminish any aspect of the resources' integrity of location, design, materials, workmanship, setting, feeling, or association.

## 3.10 Socioeconomics and Environmental Justice

NEPA requires that environmental considerations, including social and economic impacts of a project, are given due weight in the decision-making process (42 U.S.C § 4321 et seq., with federal implementing regulations in 23 CFR 771 and 40 CFR 1500–1508.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations to the greatest extent practicable and permitted by law. The order directs each agency to develop a strategy for implementing environmental justice. The order is also intended to promote nondiscrimination in federal programs that affect human health and the environment, as well as provide minority and low-income communities access to public information and public participation.

Environmental justice populations include both minority and low-income persons. The USDOT Guidance (2012) defines the term "minority" as a person who is:

- Black (having origins in any of the black racial groups of Africa)
- Hispanic (of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race)
- Asian American (having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands)
- American Indian and Alaskan Native (having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition)
- Native Hawaiian or Other Pacific Islander (a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands)

The Federal Highway Administration (FHWA 1998) guidance defines low-income as a household income at or below the Department of Health and Human Services poverty guidelines

### 3.10.1 Affected Environment

The study area, for purposes of the socioeconomic analysis, is a 0.25-mile radius from the Project area, within the incorporated limits of the City and the County. The north end of the study area is located within the City limits from BNSF MP 2.9+/- to 3.9+/-, where the existing tracks are surrounded on the west by a BNSF maintenance road, the Sandpoint Train Depot, and US 95 and on the east by Sandpoint Avenue, Seasons of Sandpoint Condominiums, Best Western Edgewater Resort, Sandpoint Edgewater RV Park, and a portion of the Sandpoint City Beach Marina. Within the County, BNSF Bridge 3.9 spans over the open water of LPO from MP 3.9+/- to 4.9+/-. At the south end of the Project from BNSF MP 4.9 to 5.1, the site is designated as Rural (5) residential (Bonner County, n.d.).

The racial composition of the City and the County is primarily White, at 96 and 98 percent, respectively (U.S. Census Bureau 2012–2016). The largest minority group in the area is Hispanic and Latino, constituting 5 percent of the City population and 3 percent of the County population. The City contains a higher proportion of residents living in poverty (22 percent) compared to the County and the state of Idaho (15 percent).

**Table 10** highlights key social and economic characteristics of the study area's year-round residential population, as compared to the City and the County.

**Table 10: Social and Economic Characteristics**

| Subject | Study Area | Sandpoint | Bonner County | State of Idaho |
|---|---|---|---|---|
| **Age and Education** | | | | |
| Total population | 5,880 | 7,918 | 41,855 | 1,657,375 |
| Persons under 18 | 1,271 | 1,707 | 8,466 | 434,611 |
| Persons 65 years and over | 1,021 | 1,549 | 9,228 | 242,449 |
| Educational attainment, high school graduate or higher | N/A | 86% | 91% | 90% |
| **Housing** | | | | |
| Total housing units | 3,526 | 3,900 | 24,935 | 701,196 |
| Occupied housing units | 70% | 89% | 70% | 87% |
| Vacant housing units | 30% | 11% | 30% | 13% |
| Homeowner vacancy rate | N/A | 3.9% | 2.7% | 1.8% |
| Rental vacancy rate | N/A | 4.9% | 4.8% | 5.3% |
| Median owner housing costs (monthly) | N/A | $1,151 | $1,236 | $1,195 |
| Median gross rent (monthly) | N/A | $838 | $752 | $792 |
| **Employment and Income** | | | | |
| In civilian labor force, 16 years and over | 54% | 56% | 52% | 63% |
| Management, business, science, and arts occupations | N/A | 25% | 27% | 34% |
| Service occupations | N/A | 26% | 19% | 18% |
| Sales and office occupations | N/A | 18% | 22% | 24% |

**Table 10: Social and Economic Characteristics (continued)**

| Subject | Study Area | Sandpoint | Bonner County | State of Idaho |
|---|---|---|---|---|
| Natural resources, construction, and maintenance occupations | N/A | 15% | 14% | 12% |
| Production, transportation, and material moving occupations | N/A | 16% | 18% | 13% |
| Employed civilian labor force | N/A | 54% | 50% | 60% |
| Unemployed civilian labor force | N/A | 1.9% | 2.3% | 3% |
| Median household income (in 2017 dollars) | N/A | $36,706 | $45,607 | $50,985 |

Notes:
Source: U.S. Census Bureau. 2013–2017 American Community Survey 5-year estimates. B01001, B01003, B15003, B19013, B23025, B25001, B25002, B25064, B25104, B25004, DP03, DP04, DP05, S2403, and S1501.
The study area consists of Tract 9502 Block Groups 2 and 6, Tract 9503 Block Group 4, and Tract 9509 Block Groups 1 and 3.
N/A indicates that comparable data is not available or complete for the study area U.S. Census Bureau tract block groups.

In addition to year-round residents, thousands of tourists and part-time residents are accommodated by the numerous motels, condominiums, lodges, seasonal homes, and trailer and RV parks located in the region (FHWA 1999).

The Socioeconomics Analysis Report, provided as **Appendix J**, contains greater detail regarding existing socioeconomic conditions in the study area.

### 3.10.2 Environmental Consequences

#### *No Action Alternative*

The No Action Alternative would result in no construction activity other than routine maintenance activities. Increased train delays waiting on regional sidings would have a minor impact on air quality, traffic noise, traffic circulation, and the local and regional economy. However, the impacts are expected to be the same across all population groups and would not result in disproportionately high and adverse impacts to low-income or minority populations.

#### *Proposed Action Alternative*

Construction activities under the Proposed Action Alternative would not result in the relocation of any businesses or residents. Some of the construction activities would be visible from Sandpoint. As indicated in Section 3.13.2, construction noise would be detectable within the study area but would be minimized through several measures implemented by the construction contractor, including preparation of a Construction Noise Logistics Plan that specifies timing and notification to the community. Noise impacts are expected to be the same across all population groups.

The potential impact to the local economy during construction is difficult to anticipate because it largely depends on the means and methods of the construction contractor, which has not been selected yet. Unknown variables include the use of local versus non-local workers and materials, the need for housing for non-local workers, and the actual duration of employment. Although the intensity and magnitude of impacts cannot be estimated due to these unknown variables, impacts to the local economy are not anticipated to be adverse but would likely result in some level of

beneficial impacts associated with the potential creation of an estimated 1,300 job-years such as lower unemployment rates, increased median household incomes, increased housing occupancy, increased consumer spending, and a reduced number of individuals living in poverty.

A large proportion of the vacant housing units within the study area (see **Table 10**) are intended for seasonal, recreational, or occasional use and are not available for rent. If there are not a sufficient number of available rental units in the study area and/or the City to accommodate the temporary increase in housing needs, construction workers may need to travel farther outside of the City to find available housing. The increased demand for temporary housing may result in an increase in rental rates within the City and County.

To the extent that construction workers would be attracted from outside the Sandpoint area, local hotel and restaurant sales revenue are expected to increase during construction. The Best Western Edgewater Resort may suffer some loss of patrons due to the increased noise and other disturbances during construction. However, the resort is scheduled for demolition and reconstruction starting in September 2020 and will be closed for 14 to 16 months to accommodate this work. No permanent roadway closures are anticipated and any potential impacts to local businesses will be minimized by timing restrictions and pedestrian and vehicle access requirements during construction activities near Bridge Street. Therefore, construction activities are not expected to restrict or prohibit access to local businesses, change local business revenue, or result in substantial disruptions to the tourist industry. Measures that are recommended to minimize potential effects to the local economy and community facilities during construction are provided in Section 4.0.

No measurable impact is anticipated to long-term employment, employee retention, or the overall ability of the region to attract employers who are drawn to the area by quality of life. By constructing a second main line track through the study area, the Project:

- Will not displace any businesses or residences.
- Will not separate any residences from community facilities or affect community cohesion.
- Will not result in any job losses or affect long-term employment.
- Will not eliminate any existing parking within the study area.

The Project is expected to result in some beneficial long-term effects on the local and regional economy, including:

- More efficient movement of passenger rail service.
- More efficient movement of freight in northern Idaho.

Elimination of the railroad bottleneck is expected to result in a minor long-term improvement in air quality and local traffic circulation. These benefits would accrue to all residents, and this action would not result in disproportionately high and adverse impacts to minority or low-income populations. The Socioeconomics Analysis Report, provided as **Appendix J**, contains greater detail regarding potential socioeconomic-related environmental consequences associated with the Project.

## 3.11 Land Use and Recreation

This section contains a combined analysis of the potential effects of the Project on land use and recreation. These two resources are intertwined in the study area because most of the temporary construction-related activities and all permanent Project structures and long-term operations would occur within BNSF ROW. While BNSF holds ownership over the entire ROW and maintains sole control over what is allowed within the ROW, other uses occur and have become customary among the members of the public at certain limited locations within the ROW. Those other uses are predominately recreational.

### 3.11.1 Affected Environment

The study area for this analysis consists of the BNSF ROW, LPO, Sand Creek, and Sandpoint Beach Park as a major recreational resource within sight of the study area. All but about 250 feet of temporary work bridge and a few square feet of temporary nearshore fill would be within existing BNSF ROW. A swath of land 400 feet wide, 200 feet on either side of the railroad, was transferred to the Northern Pacific Railroad and its successors (BNSF) by an act of Congress on July 2, 1864. The courts have held that the grant of land to a railroad is different than other land ownership transfers; the railroad performs a public service and is burdened with a public duty, which requires that the railroad have exclusive possession and dominion over its ROW (Lake CDA Investments LLC v. Idaho Department of Lands 2010).

Under Idaho's Lake Protection Act, the IDL regulates anything permanently fixed to lake beds or work that is done over lakes (Idaho Code Title 58, Chapter 13). The BNSF ROW extends across LPO with the right to conduct work to support the operation of the railroad. However, BNSF has worked cooperatively with IDL on past projects to obtain encroachment permits where its ROW crosses lakes. There are two other uses that legally occur in the BNSF ROW. A portion of the multiuse Serenity Lee Trail and a portion of US 95 enter the ROW.

LPO is a natural lake. Seasonal impoundment elevations have been managed by the USACE at Albeni Falls Dam since the dam was constructed in 1955. It is the largest natural lake in Idaho, with a surface area of 94,720 acres, a mean depth of 538 feet, and a maximum depth of 1,152 feet at its southern end.

Existing BNSF Bridge 3.9 crosses the northern end of the lake for almost a mile (4,769 feet) just south of Sandpoint. US 95 crosses the lake as two bridges (one vehicular, one multiuse and emergency access) for just over a mile (5,600 feet) south of Sandpoint. The highway bridges are west of BNSF Bridge 3.9 by approximately 0.7 mile. BNSF Bridge 3.1 crosses Sand Creek, which is considered part of LPO as the surface water elevations of Sand Creek for approximately two miles upstream from the bridge are also regulated by Albeni Falls Dam. Two US 95 bridges also cross Sand Creek near Bridge 3.1.

Vessel operation in LPO is primarily by motor vessels of varying size and human powered watercraft. Vessels operate near Bridge 3.1 and Bridge 3.9 year-round. However, the highest use period is typically from mid-May through mid-September with the highest use during that period occurring on weekends and summer holidays.

Sandpoint Beach Park is a City park immediately northeast of the study area. It is a waterfront park with 6 acres of grassy lawn and sandy beach, swimming areas, a boat launch ramp, and an adjacent marina. Sandpoint Beach Park offers expansive views of Bridge 3.9. With its immediate proximity to downtown Sandpoint, it is a recreational focal point of the City and is heavily used, particularly in the summer season.

Although not explicitly allowed, other uses within the BNSF ROW have become customary at some limited locations. For example, there is an approximately 0.5-acre shoreline area that has become known locally as “Dog Beach” that is within the ROW and sees frequent dog walking.

### 3.11.2 Environmental Consequences

#### *No Action Alternative*

Under the No Action Alternative, there would be no change in legal land use or recreational uses. BNSF would continue to maintain and operate the existing railroad and exercise access control over the land granted for railroad ROW. There could, however, potentially be a change in unsanctioned customary uses currently occurring within the ROW. As BNSF becomes aware of these uses, BNSF may work with the users to either find alternatives to continued use of the ROW or cooperatively come to agreement on some form of allowed use of the ROW through easement or other mechanism. BNSF may also request that these unsanctioned uses cease.

#### *Proposed Action Alternative*

Under the Proposed Action Alternative, there would be no change in legal land use within the BNSF ROW. As under the No Action Alternative, BNSF would continue to maintain and operate the existing railroad and exercise access control over the land granted for railroad ROW. There could, however, potentially be a change in unsanctioned customary uses currently occurring within the ROW. As BNSF becomes aware of these uses, BNSF may work with the users to either find alternatives to continued use of the ROW or cooperatively come to agreement on some form of allowed use through easement or other mechanism. BNSF may also request that these unsanctioned uses cease.

There would be temporary placement of approximately 250 feet of temporary work bridge and a few square feet of temporary nearshore fill outside the BNSF ROW associated with construction. IDL granted an encroachment permit to BNSF for the Project approving this use on June 21, 2018 (Permit No. L-96-S-0096E, **Appendix K**). This change would be temporary with these items being removed and the site restored once construction is complete. No indirect changes to surrounding land use would likely occur as a result of the Proposed Action Alternative.

The two legally allowed uses within the BNSF ROW would continue to remain. US 95 would continue to operate in its current configuration. BNSF is proposing to construct a new, permanent, grade-separated access point over the multiuse Serenity Lee Trail to ensure the trail remains open at all times during construction and adequately separates trail users from construction activity and equipment. User experiences may be similarly affected at Sandpoint Beach Park and the adjacent marina during construction where cranes and other construction equipment, particularly at Bridge 3.9, could be seen and construction noise would be noticeable.

Minor temporary and permanent changes to recreational navigation would occur under the Proposed Action Alternative during construction as temporary work bridges and new permanent bridges are put in place. USCG has broad legal authority to provide for safe vessel navigation on waters of the U.S., including law enforcement authority and administration of bridges. As part of

the bridge permit process for the Proposed Action Alternative, the USCG must review potential temporary and permanent changes to navigation, including solicitation and consideration of public comments. As stated in the USCG public notice for the second public comment period on the Draft EA and in a letter from USCG to BNSF (PN 03-19; USCG 2019), USCG has concluded that the Proposed Action Alternative would meet the reasonable needs of navigation. IDL also considered potential effects to navigation on LPO before issuing the encroachment permit for the Proposed Action Alternative.

## 3.12 Visual Quality

This section discusses the visual changes that may be perceived by people viewing Bridge 3.0, Bridge 3.1, and Bridge 3.9 both during construction and over the life of the new bridges. The visual quality analysis for this Project was conducted in accordance with the USDOT's, FHWA Guidelines for the Visual Impact Assessment of Highway Projects (FHWA 2015). The full analysis and technical memorandum is included in **Appendix L**. While this Project is not subject to this policy, the guidelines provide a useful and widely accepted framework for analyzing visual impacts. Although visual quality is inherently subjective, the FHWA methodology provides definitions and a process for evaluating existing and proposed views. By following this process, the assessment is repeatable by other experts.

### 3.12.1 Affected Environment

The study area for the visual effects analysis is based on the area of potential visual effect, or viewshed, and key views that represent the different types of people that may view the study area. The viewshed is defined as areas with a line of sight (exclusive of vegetation) looking toward and away from the Project. Viewers of the Project can be described as either static or dynamic. Dynamic viewers are those moving through the study area, such as boats on LPO and Sand Creek and motorists on Bridge Street. Motor vehicle operators can be further divided into local homeowners or those who live in the area and frequent the viewshed, recreationalists, freight movers, and commuters. Static viewers include people viewing the new rail bridges from homes or businesses.

Views from Bridge 3.0 and Bridge 3.1 would be of short duration, while trains are moving, and any changes in Bridge 3.1 itself would not be highly visible from the train. Views from the Bridge 3.9 would be of longer duration, and the new parallel bridge would be visible as the train crosses LPO. However, these views would be of short duration, and LPO would be visible beyond the parallel track. Many trains using this route carry freight, and the engineers operating the trains are there for business; while they may enjoy the view, they are working and likely less sensitive to changes in the view because they understand the need for the additional structure.

Drivers on local roads are presumed to be less sensitive to the view of the bridges than recreational users who view the lake and rail bridges from the nearby roadside park, hotel, and marina. These viewers are presumed to be highly sensitive to changes in the view. To effectively analyze the visual impacts of the Project, key views were established to best represent the views of the above users. A map illustrating the location of the four key views and photographs of existing views from each are included in the visual analysis technical memorandum included in **Appendix L**. In considering light and glare, navigational lighting on Bridge 3.1 and Bridge 3.9 is the only light source currently in place on the bridges.

### 3.12.2 Environmental Consequences

***No Action Alternative***

The No Action Alternative would not change the visual environment and, therefore, would result in no new visual impacts.

***Proposed Action Alternative***

During construction, there would be a temporary increase in signs in the study area to alert people to submerged work-related items such as turbidity curtain cables, service boat anchor lines, and to show navigation channels during construction. For the duration of construction, this would be an active work zone, which may provide visual interest as well as encroachment on views of Sand Creek and LPO. Temporary work bridges would have navigation and moorage lighting as required by the USCG. These temporary changes in visual quality would not result in significant adverse impacts.

Visual simulations of each key view after construction of the Proposed Action Alternative are included in **Appendix L** and **Figures 4** through **7** of this EA. Assessed from Key View 1, the new Bridge 3.0 would have a wider opening to accommodate both the road and sidewalks on either side (**Figure 7**). The red beam over the roadway would continue the color theme used on the bridge supporting US 95. Large shrubs and trees would be removed as part of the Project so the vegetation rating would decrease slightly, but the rating for man-made structures would increase slightly because of the more open structure and the color tie-in with the nearby US 95 bridge over Bridge Street, resulting in an equivalent total visual quality rating.

Assessed from Key View 2, removal of the trees between the existing rail bridge and US 95 would lower vividness ratings for vegetation (**Figure 5**). The new Bridge 3.1 would be constructed between the existing rail bridge and US 95. The new bridge would continue the visual theme of the red beam over the channel that is proposed over Bridge Street. It would screen the older bridge from this view point. While the bridge would still be an encroachment on a lake view, the more unified design theme would raise the ratings for man-made elements, which would offset the decrease in the rating for vegetation.

Assessed from Key View 3, the trees in the center of the view would be removed and the new bridge would screen the old bridge from this view (**Figure 6**). The more unified design theme would raise the ratings for man-made elements, which would offset the decrease in the rating for vegetation.

Assessed from Key View 4, the trees in the middle ground view would be removed and the shoreline would be restored using native shrubs at the toe of the slope (**Figure 4**). The expansive views of the water and the tree-covered hills beyond would remain with Bridge 3.9 providing the only break in the visual unity of the scene. The total visual quality rating from this view under the Proposed Action Alternative would be slightly lower because of the removal of the trees in the middle ground, but the total visual quality rating would remain high.

Fixed navigational lighting, as required by the USCG and the IDL, would be installed on Bridge 3.1 and Bridge 3.9. This lighting would be comparable to the existing navigational lighting.

## 3.13 Noise and Vibration

This section discusses potential noise and vibration impact to the human environment associated with Project construction and operation. Potential impacts to fish and wildlife are discussed in Section 3.7 and **Appendix E** (BO and BA).

### *Regulatory Background*

Noise

The Noise Control Act of 1972 requires that activities of federal agencies, such as issuing permits, must be consistent with federal, state, interstate, and local requirements for the control and abatement of environmental noise. The primary responsibility of regulating noise is with state and local governments. In Idaho, noise abatement and control rests primarily with the local government. The County has established regulations for the control of noise in Title 9, Special Environmental and Health, of its municipal code. Per code Section 12, the County has adopted requirements that the sources of industrial/commercial noise are designed and operated in a safe manner that minimize noise, smoke, dust, and other nuisance factors to nearby land uses. The City's Noise Ordinance (Title 5, Chapter 2, Section 6) identifies a construction activity limit of no work between 10:00 p.m. and 6:30 a.m. on any day of the week.

The Noise Control Act states that for "major noise sources in commerce," there must be "national uniformity of treatment." See 42 U.S.C. § 4901 (a)(2-3). The USEPA and the secretary of transportation were tasked with determining allowable noise levels for railroads, which they did (40 CFR 201). The Federal Railroad Administration (FRA) has issued regulations regarding noise limits for railroad equipment. Beyond these limits for equipment, no statutory limits apply to noise or vibration levels associated with freight rail operations. The interstate commerce clause preempts state and local authority over railroads, highways, and airports.

Acoustics is the study of sound, and noise is defined as unwanted sound. Airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure creating a sound wave. Typical acoustical terms used in this subsection are defined in **Table 11.**

The effects of noise on people can be categorized in three ways:

- Subjective effects of annoyance, nuisance, dissatisfaction
- Interference with activities such as speech, sleep, learning
- Physiological effects such as startling and hearing loss

In most cases, environmental noise may produce effects in the first two categories only. However, workers in industrial plants may experience noise effects in the last category. No completely satisfactory way exists to measure the subjective effects of noise or to measure the corresponding reactions of annoyance and dissatisfaction. This lack of a common standard is primarily due to the wide variation in individual thresholds of annoyance and habituation to noise.

**Table 11: Definitions of Acoustical Terms**

| Term | Definition |
|---|---|
| Ambient noise level | The composite of noise from all sources near and far. The normal or existing level of environmental noise or sound at a given location. The ambient level is typically defined by the A-weighted equivalent continuous noise level ($L_{eq}$). |
| Background noise level | The underlying, ever-present, lower level noise that remains in the absence of intrusive or intermittent sounds. Distant sources, such as traffic, typically make up the background. The background level is generally defined by the $L_{90}$ percentile noise level. |
| Intrusive | Noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, time of occurrence, tonal content, the prevailing ambient noise level, and the sensitivity of the receiver. The intrusive level is generally defined by the $L_{10}$ percentile noise level. |
| Decibel (dB) | A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter). |
| A-weighted sound level (dBA) | The sound level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighted filter de-emphasizes the very low and very high frequency components of sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. |
| Equivalent noise level ($L_{eq}$) | The average A-weighted noise level, on an equal energy basis, during the measurement period. |
| Day–night level ($L_{dn}$) | The day-night noise level ($L_{dn}$) is a 24-hour average $L_{eq}$ where 10 dBA is added to nighttime levels between 10:00 p.m. and 7:00 a.m. For a continuous source that emits the same noise level over a 24-hour period, the $L_{dn}$ will be 6.4 dB greater than the $L_{eq}$. |
| Sound exposure level (SEL) | The cumulative (energy equivalent) sound level of an event when it is compressed to a one-second duration. Louder events have greater SELs than quieter ones and events with longer durations have greater SELs than shorter events. |
| Percentile noise level ($L_n$) | The noise level exceeded during n percent of the measurement period, where n is a number between 0 and 100 (e.g., $L_{90}$). |

Source: Beranek and Vér 1992.

**Table 12** shows the relative noise levels of common sounds measured in the environment and in industry for various sound levels.

**Table 12: Typical Sound Levels Measured in the Environment and Industry**

| Noise Source at a Given Distance | A-Weighted Sound Level in Decibels | Qualitative Description |
|---|---|---|
| Carrier Deck Jet Operation | 140 | |
| | 130 | Pain threshold |
| Jet takeoff (200 feet) | 120 | |
| Auto Horn (3 feet) | 110 | Maximum Vocal Effort |
| Jet takeoff (2,000 feet)<br>Shout (0.5 foot) | 100 | |
| Heavy Truck (50 feet) | 90 | Very Annoying<br>Hearing Damage<br>(8-hour, continuous exposure) |
| Pneumatic drill (50 feet) | 80 | Annoying |
| Freight Train (50 feet)<br>Freeway Traffic (50 feet) | 70 to 80 | |
| | 70 | Intrusive<br>Telephone Use Difficult |
| Air Conditioning Unit (20 feet) | 60 | |
| Light auto traffic (50 feet) | 50 | Quiet |
| Living Room<br>Bedroom | 40 | |
| Library<br>Soft whisper (5 feet) | 30 | Very Quiet |
| Normal breathing | 10 | Just Audible |

Source: Adapted from Table E, New York Department of Environmental Conservation 2001.

Vibration

Vibration concepts, measurements, and analysis techniques for transit projects are discussed by the FTA in the *Transit Noise and Vibration Impact Assessment* (FTA 2018) guidance manual (the FTA Manual). The FTA Manual provides background information on the science and measurement of vibration, establishes analysis requirements, and provides guidance on vibration limits for transit projects. While these were not developed for freight rail such as this Project, no similar federal guidance document exists for freight railroads, so the concepts regarding transit construction vibration were used to evaluate vibration impacts in this EA.

Vibration can be described in many ways using various metrics, as shown in **Table 13**. The FTA Manual uses peak particle velocity (PPV) to assess the potential for damage to buildings and the vibration velocity level ($L_v$) to assess vibration-related annoyance. Building damage due to vibration is rare for typical transportation projects; in extreme cases, such as during blasting or pile driving during construction, vibration could cause damage to buildings. Because the FTA

standards do not take into account the frequency of the vibration being assessed, standards developed by the U.S. Bureau of Mines were used to assess operational vibration for the Project (U.S. Bureau of Mines 1980). See the Vibration Assessment in **Appendix M** for additional information.

**Table 13: Ground-Borne Vibration and Noise Metrics**

| Vibration Decibels | Abbreviation | Definition |
|---|---|---|
| Vibration Decibels | VdB | The vibration velocity level in decibel state. |
| Peak Particle Velocity | PPV | The peak signal value of an oscillating vibration velocity waveform. Usually expressed in inches per second in the United States. |
| Root Mean Square | RMS | The square root of the arithmetic average of the squared amplitude of the signal. |
| Vibration Velocity Level | $L_v$ or VdB | Expresses vibration in decibel notation (VdB) rather than inches per second to compress the range of numbers required to describe vibration |
| A-weighted Sound Level | dBA | A-weighted sound levels represent the overall noise at a receiver that is adjusted in frequency to approximate typical human hearing sensitivity. This unit is used to characterize ground-borne noise. |

Source: Adapted from Federal Transit Administration 2018.

### 3.13.1 Affected Environment

Existing ambient sound levels can vary considerably depending on population density, vehicular traffic noise, and other noise sources. Typically, the smaller the population and the more removed from transportation and other sources of noise, the lower the ambient sound level. The study area for evaluating potential noise impacts is approximately lateral 575 feet in either direction from the proposed rail alignment. Existing sources of noise in the study area include train traffic, nearby vehicular traffic on local roads and US 95, boat traffic, and commercial and recreational activity associated with adjacent land uses. Sensitive noise receptors in the study area include temporary lodging (Best Western Edgewater Resort), residential uses (single-family residences, Seasons of Sandpoint Condominiums), and recreational users of public spaces such as Sandpoint City Beach Park, Serenity Lee Trail, and LPO.

Ambient noise levels near the Project site are dominated by vehicular noise from US 95, which travels parallel to the BNSF main line in the study area. US 95 serves approximately 2,000 vehicles per hour during peak traffic (ITD 2005) and has varying traffic speeds of between 45 and 55 mph through the study area. At a reference speed of 50 mph and a distance of 100 feet, the approximate peak hour traffic sound level is 69.8 dBA (WSDOT 2019).

In addition, noise from existing train traffic approaching, travelling through, and departing the Project area (MP 2.9 to MP 5.1) can be heard in the study area. The current/existing speed limit for trains traveling through the study area is 25 mph for freight trains and 35 mph for passenger trains. Passing locomotives typically produce sound levels of about 95 dBA at 100 feet away and railcars typically produce sound levels of about 82 dBA at 100 feet (STB 1998). Train horns are required to produce sound levels between 96 and 110 dBA at 100 feet forward of the locomotive (49 CFR 229.129). Trains are required to sound their horns as they approach public at-grade crossings (49 CFR 222.21). Trains may also sound their horns at other times, such as when there

is a vehicle, person, or animal on or near the track and the crew determines it is appropriate to provide warning. Distant train horns sounded on BNSF and other railroad lines can be heard in the study area, but no public at-grade crossings exist within the study area.

### 3.13.2 Environmental Consequences

#### *No Action Alternative*

The No Action Alternative would result in no construction activity until maintenance is required to ensure that train traffic would be able to continually move through the site. The amount of freight moved by train is driven by market conditions and the number and type of freight origins and destinations along the rail line. As a federally designated common carrier, BNSF has a legal obligation to provide transportation services for all regulated goods upon reasonable request. Transport by rail may increase or decrease depending on market conditions. Train traffic within the study area has increased over the past 30 years, and it is reasonable to expect that it will continue to do so as population increases, market conditions change, and demand for movement of freight and passenger rail service increases. The existing line and bridges could accommodate an additional 19 trains per day through the Project area, up to the maximum capacity of 79 trains per day. Increased train delays from trains waiting on regional sidings would continue to increase idling noise at locations where trains wait for clearance. Trains waiting for a crossing opportunity can increase vehicular wait times on local County and City streets at public at-grade rail crossings.

#### *Proposed Action Alternative*

Construction Noise

Noise levels are anticipated to temporarily increase in areas near construction activities. **Table 14** provides a list of Project equipment expected to be used on-site and the typical noise level(s) for each piece of equipment as measured from 50 feet away. With the exception of pile-driving equipment, the loudest equipment generally emits noise in the range of 80 to 90 dBA at a distance of 50 feet. Pile driving can reach up to 110 dBA at a distance of 50 feet.

Noise at any specific receptor is dominated by the closest and loudest equipment. The type and numbers of construction equipment near any specific receptor location will vary over time. The FTA Manual indicates that the $L_{eq}$ descriptor be utilized to evaluate construction noise impacts associated with rail projects. This unit is appropriate because $L_{eq}$ can be used to describe the noise level from operation of each piece of equipment separately and because levels can be combined to represent the noise level from all equipment operating during a given period. Due to the difference in noise levels between pile-driving activities and the next loudest construction equipment, pile-driving activities would be the dominant and most noticeable noise during pile-driving activities. Assuming a usage factor of 20 percent, pile-driving noise may reach up to 97 dBA $L_{eq}$ at a distance of 100 feet, 91 dBA $L_{eq}$ at a distance of 200 feet, and 85 dBA $L_{eq}$ at a distance of 400 feet.

When projected to the nearest sensitive noise receptor (Sandpoint Edgewater RV Park) approximately 190 feet from the nearest pile-driving activities, pile-driving noise may reach up to 91.4 dBA $L_{eq}$. Pile driving in Sand Creek will be restricted to the winter LPO drawdown or low-pool season (see Section 4.1), when the RV park is much less likely to be fully occupied. When projected to the nearest single-family home approximately 300 feet from the nearest pile-driving activities, pile-driving noise may reach up to 87.4 dBA $L_{eq}$. These scenarios considered impacts to the single-family home and RV park during the closest pile-driving activities, while much of the pile driving would occur at a distance that would result in lower noise levels.

A worst-case construction noise scenario was modeled for typical construction activities that do not include pile driving, using a version of the FHWA's Roadway Construction Noise Model. The model utilizes standard noise emission levels for many different types of equipment and includes utilization percentage, impact, and shielding parameters. The construction noise estimate was based on conservative assumptions of multiple pieces of loud equipment operating in reasonable proximity to each other between 100 and 150 feet from the nearest sensitive receptor. This is believed to be a conservative, yet realistic scenario. Construction activities not related to pile driving are expected result in noise levels up to 77.6 dBA $L_{eq}$ at the nearest sensitive receptors.

As identified in Section 4.1.6, potential disturbances from construction noise would be minimized through several measures to be implemented by the construction contractor. The contractor will also prepare a Construction Noise Logistics Plan that specifies timing and notification to the community. Most construction noise would occur during daylight hours (7 a.m. to 7 p.m.), equipment would be muffled, and peak noise levels from impact pile driving in Sandpoint would be limited.

Operational Noise

This Project does not add any origin or destination facilities; therefore, it would not drive increases or decreases in rail volumes but instead is designed to increase efficiency of movement by rail. The factors driving a continued increase in train traffic in the study area will exist with or without construction of a second main line track and associated bridges. An additional 19 trains per day could travel through the Project area, up to the maximum capacity of 79 trains per day. Adding a second main line track along this segment would not increase rail line capacity beyond 79 trains per day because there are other constraints on the BNSF and MRL main line tracks east of LPO. As an example, the 7-mile-long Flathead Tunnel, located approximately 30 miles west of Whitefish, is currently a single main line tunnel with single main line track with sidings located on either side of the tunnel. Similarly, there are other constraints located to the east of Spokane, where the BNSF railroad once again becomes single main line tracks with sidings, as stated in Section 1.2.2. There are not currently any scheduled or funded projects to address these constraints, as indicated in Section 3.17. The new main line track parallels an existing main line track and would not represent a new track through a previously unused corridor. The Chicago Region Environmental and Transportation Efficiency noise model was used to perform sound level calculations for freight and passenger trains. An increase in speed from 25 mph to 35 mph for freight trains and 35 mph to 40 mph for passenger trains may result in an increase of 2 dBA $L_{dn}$. Changes that are less than 3 dB(A) may be considered negligible or unimportant under NEPA because they are barely perceptible (FHWA 2011).

Construction Vibration

**Table 14** identifies vibration levels for a range of typical construction equipment at a distance of 25 feet.

**Table 14: Vibration Source Levels for Construction Equipment**

| Equipment | | PPV at 25 feet (inch/second) | Approximate $L_v$[(1)] at 25 feet (VdB) |
|---|---|---|---|
| Pile Driver (impact) | upper range | 1.518 | 112 |
| | Typical | 0.644 | 104 |
| Pile Driver (vibratory) | upper range | 0.734 | 105 |
| | Typical | 0.170 | 93 |
| Clam shovel drop (slurry wall) | | 0.202 | 94 |
| Hydromill (slurry wall) | in soil | 0.008 | 66 |
| | in rock | 0.017 | 75 |
| Vibratory Roller | | 0.210 | 94 |
| Large bulldozer | | 0.089 | 87 |
| Calsson drilling | | 0.089 | 87 |
| Loaded trucks | | 0.076 | 86 |
| Jackhammer | | 0.035 | 79 |
| Small bulldozer | | 0.003 | 58 |

Notes:
Adapted from Federal Transit Administration Manual, Table 7-4, 2018.
PPV = peak particle velocity
(1)Root mean square in VdB (vibration decibels) relative to 1 micro-inch/second.

**Table 15** presents construction vibration damage criteria established by the FTA for different types of buildings. Depending on the construction type, the damage criteria ranges between 0.5 PPV for reinforced concrete, steel, or timber (no plaster) to 0.12 for buildings extremely susceptible to vibration damage.

**Table 15: Construction Vibration Damage Threshold Criteria**

| Building Category | PPV (inch/second) | Approximate $L_v$[(1)] (VdB) |
|---|---|---|
| I. Reinforced concrete, steel, or timber (no plaster) | 0.5 | 102 |
| II. Engineered concrete and masonry (no plaster) | 0.3 | 98 |
| III. Non-engineered timber and masonry buildings | 0.2 | 94 |
| IV. Buildings extremely susceptible to vibration damage | 0.12 | 90 |

Notes:
Adapted from Federal Transit Administration Manual, Table 7-5, 2018.
PPV = peak particle velocity
(1)Root mean square vibration velocity level in VdB (vibration decibels) relative to 1 micro-inch/second.

Upper range pile driving would reach up to a PPV of 1.518 inches per second at a distance of 25 feet and up to 0.037 PPV at the nearest sensitive receptor at approximately 300 feet. Typical pile driving will generate a PPV of approximately 0.644 inches per second at a distance of 25 feet or approximately 0.015 PPV at a distance of 300 feet. A large bulldozer would generate approximately 0.089 PPV at a distance of 25 feet.

The centerline of the new main line track would be as close as 10 feet from the footing of the Sandpoint Amtrak Depot. Use of proposed equipment to construct the new track may result in a PPV of up to 0.35 inches per second, which exceeds the threshold for vibration damage. To minimize the potential for vibration damage, vibration monitoring would be conducted during construction activities that utilize heavy equipment within 500 feet of the depot. An audible or remote alarm should sound when vibration levels exceed 0.12 inches per second, and work in that area should continue with smaller, less vibratory equipment. As discussed in Section 3.9, ongoing monitoring of this historic structure would be conducted during construction to ensure that the Project does not adversely affect the building. Other than the Amtrak depot, using the next most restrictive vibration standard of 0.12 PPV, pile driving nor operation of a large bulldozer would pose a threat to the structural integrity of any nearby structure.

Operational Vibration

The Proposed Action Alternative may result in an increase in speed from 35 mph to 40 mph for passenger trains and 25 mph to 35 mph for freight trains, which could result in an increase of 2.9 VdB. A Vibration Assessment was conducted to evaluate the potential for structural damage to the Amtrak Depot, which would be as close as 10 feet away from the centerline of the new main line track (see **Appendix M**). The assessment concluded that the potential for structural damage caused by vibration from trains operating at speeds up to 35 mph on the proposed main line track is very low. Although passenger trains would be permitted to travel faster than 35 mph (40 mph), Amtrak offers the only passenger rail service on this line and Amtrak trains always stop at the Sandpoint Amtrak Station within the Project area, meaning Amtrak trains are always decelerating or accelerating as they travel past the station rather than travelling at speed. In addition, if passenger trains were to travel at speed past the station, they would likely produce less vibration than freight trains due to their lighter weight.

## 3.14 Hazardous Materials and Wastes

### *Regulatory Background*

Several federal laws, regulations, and executive orders relate to the control and handling of hazardous substances, cleanup of hazardous wastes releases, and public protection from harm resulting from these materials. These include the Comprehensive Environmental Response, Compensation, and Liability Act; the Resource Conservation and Recovery Act; the CWA and Oil Pollution Act of 1990; the Emergency Planning and Community Right-to-Know Act; the Toxic Substances Control Act; Executive Order 12088 – Federal Compliance with Pollution Control Standards; and Executive Order 12856 – Federal Compliance with Right-To-Know Laws and Pollution Prevention Requirements.

Under 49 U.S.C. § 11101, common carrier transportation, service, and rates, railroads are required to provide transportation to all parties upon reasonable request, including for hazardous materials.

### *Emergency Planning Documents*

USDOT requirements for prevention, containment, and response planning for transportation of oil by railcar are identified in 49 CFR 130, Oil Spill Prevention and Response Plans. Part 130.31 specifies that transport of oil requires preparation of a "current basic written plan" that is consistent with the requirements of the National Contingency Plan (NCP) and Area Contingency Plans, identifies the personnel and equipment necessary to remove a worst-case discharge and mitigate or prevent a substantial threat of such a discharge, and describes the training, equipment testing, drills, and response actions of facility personnel.

The NCP provides the authority for federal entities to respond to environmental emergencies as required by the Comprehensive Environmental Response, Compensation, and Liability Act and the Oil Pollution Act. The NCP established the National Response Team and 13 Regional Response Teams (RRTs) who are responsible for national and regional planning and preparedness activities. RRT membership consists of designated representatives from key federal response and support agencies together with affected states. Per Executive Order 12777, USEPA Region 10 is the regional federal planning lead for implementation of the NCP in the inland Pacific Northwest Region, including Idaho, and has response authority for incidents in all areas inland of the coastal zone (RRT/Northwest Area Committee [NWAC] 2019).

As mandated by the NCP, the Region 10 RRT and the NWAC form a consolidated body with jurisdiction over oil and hazardous materials response and planning efforts in Washington, Oregon, and Idaho. RRT and NWAC were created to protect public health and safety and the environment by providing requirements for coordinated, efficient, and effective support of the federal, state, tribal, local, and international responses to significant oil and hazardous substance incidents. RRT and NWAC meets and functions as a unified organization, henceforth referred to as NWAC. NWAC membership includes representatives from various federal, state, and local government agencies as well as Tribes, nongovernmental organizations, industry, and response contractors. Key NWAC members include USEPA Region 10, USCG District 13, IDEQ, Bonner County Office of Emergency Management (OEM), and local Idaho area Tribes. Participation in NWAC meetings includes tribal representatives, members of the public, and other members of the spill response community.

The Northwest Area Contingency Plan (NWACP) is a regional plan required by the federal NCP. The purpose of the plan is to provide a playbook for oil and hazardous material responses in Washington, Oregon, and Idaho that involve state and federal agencies. NWAC directs development and maintenance of the NWACP, which is reviewed and updated annually (RRT/NWAC 2019). The NWAC Steering Committee solicits recommendations for revisions to the NWACP from workgroups, exercises/drills, training, and interested parties.

The NWAC, under the leadership of USEPA, is also responsible for developing GRPs in Idaho and engaging industry and community partners to support them. GRPs are site-specific plans that guide early actions where an oil or other hazardous materials spill occurs. GRPs serve as standard operating procedures and protocol tools useful for strategic planning purposes and guidelines for emergency response. The plans are tailored to a specific shoreline or waterway and are developed to minimize impact on sensitive areas threatened by the spill. GRP priorities include identifying sensitive natural, cultural, or significant economic resources and developing strategies to protect them. GRPs include pre-identified emergency notification information, boom deployment, and source control strategies for specific geographic locations. GRPs are intended to be living documents, subject to change as their response strategies are tested and new information is received.

The NWAC originally published a GRP addressing LPO in 2005 (RRT/NWAC 2005). No updates were made to the LPO GRP for the following decade. Having previously developed its own GRP for the LPO area, in 2014 BNSF met with multiple agencies in Sandpoint to improve upon the LPO GRP maintained by the NWAC. In 2015, field and resource-at-risk surveys were completed and updated, site-specific booming strategy lists were added. In 2016, the updated content was shared with the NWAC members. The NWAC evaluated this information and used it as the foundation for preparation of an updated "Lake Pend Oreille and Pend Oreille River GRP" (**Appendix N**). NWAC's LPO GRP, dated June 2017, covers the response area encompassed by the Cabinet Gorge Dam and all of LPO and its tributaries located on the Clark Fork River down to Albeni Falls Dam on the Pend Oreille River, which includes the study area and outlines resource-at-risk summaries and protective booming strategies within LPO. The LPO GRP supplements other local emergency planning documents, in addition to the NWACP:

- The Idaho Emergency Operations Plan is an all-discipline, all-hazard plan that delineates line of authority and responsibilities of emergency action agencies.
- The Idaho Hazardous Materials/Weapons of Mass Destruction Incident Command and Response Support Plan supports the Emergency Operations Plan and NWACP and is the primary mechanism for initial response to hazardous materials incidents in Idaho.
- The County Emergency Operations Plan identifies the roles, responsibilities, and direction for County agencies and some volunteer organizations in responding to emergencies or disasters.

***Emergency Preparedness***

The Resource Conservation and Recovery Act, Oil Pollution Act, and CWA contain provisions for assigning responsibility for potential oil spills. In recognizing the risk of a spill and its responsibility for preventing and responding to a spill, BNSF partners with NWAC members to assist with successful implementation of the NCP. BNSF's emergency preparedness program focuses on prevention, mitigation, and response, which addresses and upholds FEMA's National Preparedness Goal. This goal defines what it means to be prepared for all types of disasters and emergencies: "A secure and resilient nation with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risk" (FEMA 2015). The goal is capabilities-based and is organized into five mission areas:

- **Prevention**. Avoid, prevent or stop an imminent, threatened or actual act of terrorism.
- **Protection**. Protect our citizens, residents, visitors, and assets against the greatest threats and hazards in a manner that allows our interests, aspirations, and way of life to thrive.
- **Mitigation**. Reduce the loss of life and property by lessening the impact of future disasters.
- **Response**. Respond quickly to save lives, protect property and the environment, and meet basic human needs in the aftermath of an incident.
- **Recovery**. Assist communities affected by an incident to recover through a focus on the timely restoration, strengthening, and revitalization of infrastructure, housing and the economy, as well as the health, social, cultural, historic, and environmental fabric of communities affected by an incident.

As the potentially responsible party for a possible oil spill resulting from an accident involving one of its trains, BNSF recognizes the potential for serious environmental consequences of a spill. A summary of BNSF's efforts to implement each of the five mission areas is provided below. Specific efforts relevant to the study area are identified where applicable.

Prevention

A safe and secure railroad network is essential to the future of the nation. Federal safety standards for freight cars and locomotives are outlined in 49 CFR 215 and 49 CFR 229. Since 1980, U.S. railroads have reduced rates for accidents by 79 percent (Association of American Railroads 2018).

BNSF's safety vision is to operate injury and accident free. BNSF has invested more than $63 billion since 2000 in infrastructure, equipment, and technology. BNSF works toward preventing accidents in the following ways:

- **Bridge Design, Safety, and Maintenance**. BNSF bridges are designed by licensed professional engineers to meet current design and seismic standards per the American Railway Engineering and Maintenance-of-Way Association Manual for Railway Engineering (2019). The FRA requires railroads to have a Bridge Management Program that addresses minimum requirements for inspection, repair, and maintenance, as defined in 49 CFR 217 (Bridge Safety Standards). BNSF meets FRA's requirements to inspect railroad bridges annually, with no more than 540 days between inspections. The FRA audits these inspection programs through document review and field verification. Bridge inspection crews inspect the entire bridge structure, including the underside of the bridge deck, and divers inspect in-water piers. FRA's safety standards also require rail carriers to maintain and inventory all railroad bridges and know their safe load capacities; maintain design documents and document all repairs, modifications, and inspections; ensure bridge engineers, inspectors, and supervisors meet minimum qualifications; and verify bridge inspections are conducted under the direct supervision of a designated railroad bridge inspector (FRA 2016).
- **Track Speeds**. BNSF adheres to the maximum allowable speed for freight and passenger trains for different classes of track, as identified in 49 CFR 213.9. Main line track speeds are a function of site-specific operating conditions and rail geometry. The main line track within the study area is designated as a Class 3 main line track. Design speeds for new main line track under the Proposed Action Alternative would be 40 mph for passenger trains and 35 mph for freight trains.
- **Track Inspection**. BNSF meets FRA's track maintenance standards and requirements identified in 49 CFR 213 (Track Safety Standards). Per 49 CFR 213.233, track inspection frequency is based on the class of track. BNSF's existing main line in the study area is considered Class 3 main line track. Class 3 track must be inspected "Weekly with at least 3 calendar days interval between inspections, or before use, if the track is used less than once a week. If the track carries passenger trains or more than 10 million gross tons of traffic during the preceding calendar year, inspections are required twice weekly with at least 1 calendar day interval between inspections." Qualified inspectors visually inspect track geometry and gage under load to 1/16 of an inch tolerance to detect and correct any variations from the established track standards. Track inspection crews also walk the ROW and look for issues such as vegetation that may interfere with the track. Visual inspections are supplemented with inspection equipment such as geometry cars, rail detectors, ground penetrating radar, unmanned aerial vehicles, et cetera.

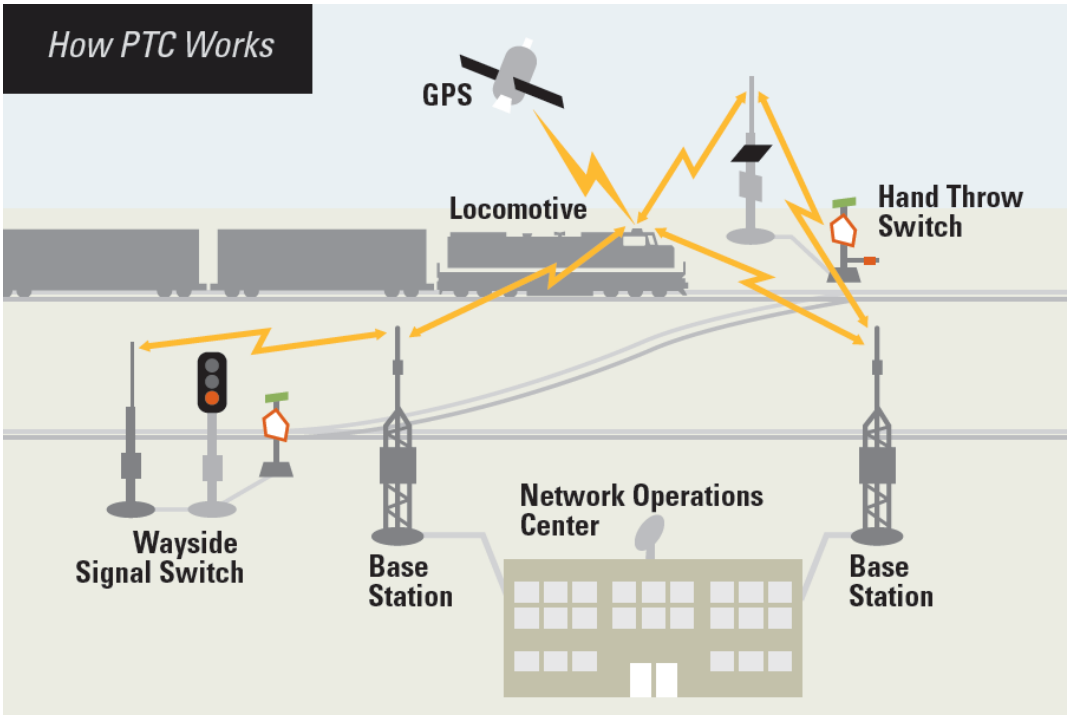
- **Trackside Detectors**. BNSF utilizes a network of detectors to evaluate passing trains and identify stresses on wheels and other equipment to prevent failures. If an abnormal condition is detected, on-board employees (engineers and conductors) are alerted so the issue can be proactively addressed to protect structures and waterways. As shown in **Figure 13**, there are more than 4,000 trackside detectors on the BNSF network (BNSF 2017). These detectors work in conjunction with predictive analytics tools to evaluate and act upon vast amounts of data (more than 35 million equipment readings per day). Multiple layers of technology are used to collect data 24 hours per day, 7 days a week. Algorithms help identify wheels that have experienced a recent traumatic event and wheels with low-level, long-term defects that could negatively affect the bearing or wheel life and rail health over time. This data is used to determine the urgency of equipment repairs and to spot trends that indicate when maintenance should happen. Hot bearing detectors and dragging equipment detectors are located within 2 miles of the study area in each direction. These detectors trigger a radio message with the position of the detection within the train and give a stop message to the operator. Once the train is stopped, BNSF crews inspect the train and address the problem.

**Figure 13: BNSF Track Detectors**


- **Positive Train Control (PTC)**. As mandated by federal law, BNSF utilizes PTC to prevent train-to-train collisions, derailments caused by excessive speed, unauthorized incursions by trains onto sections of track where maintenance activities are taking place, and movement of a train through a track switch left in the wrong position. As shown in **Figure 14**, PTC is a digital wireless system that uses global positioning data, Wi-Fi, and high-band

radio transmission to monitor train movement, provide warnings to crews, enforce speed limits, and stop trains when certain unsafe conditions arise. BNSF has completed installation of all federally mandated PTC infrastructure on its network, including 88 required subdivisions covering more than 11,500 route miles and 80 percent of BNSF freight volume (BNSF, n.d.). BNSF has run more than 2 million trains using PTC. PTC cannot be considered fully implemented until all railroads' PTC systems are interoperable. BNSF is working with each of the approximately 30 railroads with which it needs to be interoperable to identify their needs and provide assistance ranging from technical, operational, and regulatory advice. The FRA requires that full implementation of PTC technology is achieved by December 31, 2020.

**Figure 14: Positive Train Control Technology**




Source: BNSF Railway Company, n.d.

- **Network Operations Center**. BNSF has a centralized Network Operations Center (NOC) that handles train traffic monitoring and control systemwide. As shown in **Figure 14**, the NOC manages data received from PTC technology and trackside detectors and maintains constant communication with train operators to ensure safe and efficient operation. There are 100 to 150 dispatchers on duty at the NOC at any given time, managing roughly 1,400 trains across the BNSF system.
- **Hazardous Materials Management**. In addition to the prevention measures utilized above on all shipments, hazardous materials shipped on the BNSF network receive special identification and handling that include tracking all sensitive shipments, in-train placement checks, and emergency response information. In accordance with 49 CFR 130, Subpart B and C, BNSF adheres to requirements for Basic and Comprehensive Oil Spill Response Plans. BNSF also supports development and testing response strategies identified in the NWAC LPO GRP, which guides early actions in the event of an oil or other hazardous materials spill. BNSF has strategically placed response equipment across its network, including equipment trailers along routes in North Idaho, should an incident occur. An

inventory of BNSF-available response equipment within 2- and 6-hour response radii of Sandpoint is provided in **Appendix O**. BNSF also works closely with local and regional first responder personnel to safely use this equipment during emergencies. In addition to employee and community training efforts summarized below, BNSF has a team of approximately 260 emergency responders from a variety of backgrounds, including environmental, safety, and mechanical, as well as a network of contractors who are prepared to respond to an emergency.

- **Employee Safety Training**. BNSF invests in ongoing safety and technical training for its employees using a combination of field training, on-the-job training, long-distance learning, and technical training at a centralized training center. Employees are trained on exposure and risk identification as well as an array of technical rules and safety topics. Employees take courses and utilize simulation and lab tools that represent equipment, including locomotives, cranes and crossing gates. In 2017, BNSF trained more than 4,500 employees at its Technical Training Center and close to 20,000 employees in the field, as well as more than 500 other rail industry employees (BNSF, n.d.).
- **Community Safety Training**. In 2017, BNSF's environmental and hazardous materials teams trained more than 8,000 public emergency responders in communities across its network (BNSF, n.d.). BNSF sponsored and/or trained approximately 1,150 North Idaho first responders at the Security and Emergency Response Training Center in the past 5 years. Since 2013, BNSF has sponsored Community HazMat Trainings for over 500 local emergency responders in Idaho. BNSF, UPRR, and MRL participate and sponsor a regional oil spill technician fast water boom training in Alberton, Montana on the Upper Clark Fork River. The railroads and other oil industry partners also regularly attend and sponsor oil spill training with USEPA and the USCG at the Northwest Oil Spill School held annually in Port Angeles, WA. BNSF regularly participates in spill response exercises to bolster community safety training and emergency preparedness training.

Protection

BNSF implements its safety vision through safety programs, training, and technology as described in the Prevention, Mitigation, and Response mission areas. Several planning documents provide operational instructions for purposes of protecting BNSF employees and assets and the welfare of the general public. BNSF provides special instructions to its employees on what actions to take under excessive wind conditions, cold weather, or in the event of a tornado, flash flood, or earthquake. The BNSF Northwest Division Wild Fire Preparedness Plan (April 26, 2018) establishes a territory-specific process for effectively managing both predicted and emergency fire danger conditions on the Northwest and Montana Operating Divisions. The plan identifies procedures, priorities, and responsibilities for minimizing the impact of severe fire danger conditions.

Mitigation

BNSF takes steps to reduce the severity and probability of an incident by developing and continually updating a variety of safe operating procedures, safety protocols, response plans and training programs, as discussed under the Prevention and Response mission areas. In addition to NWAC's LPO GRP and other area response plans, specific BNSF facilities and projects have industrial and specific project SWPPPs and SPCC plans developed and implemented to mitigate potential risks associated with hazardous materials releases on BNSF property. BNSF also mitigates potential risk through compliance with several federal safety requirements for railroad operation. USDOT rules require customers to phase out old tank car technology (DOT-111 and

CPC-1232 tank cars) by 2025. BNSF provides incentives for its customers to use best available technology and phase out the old tank cars, and as a result BNSF's customers are nearly 100 percent complete with the transition. FRA's Emergency Order No. 30, issued on April 17, 2015, and made effective immediately, instituted a speed restriction of 40 mph for crude oil trains through "High Threat Urban Areas" to improve public safety. As an extra precaution, BNSF introduced a self-imposed speed restriction of 35 mph for crude oil trains in areas with populations over 100,000.

Response

BNSF follows the accepted USCG and USEPA NCP practice where emergency response services and resources (equipment and personnel) are staged in regional areas or population centers within 6- and 12-hour response times so they can be cascaded to incident locations by dedicated oil spill response organizations (OSROs) if an incident occurs.

BNSF works directly with the NWAC to develop, test, and continually improve emergency response plans and capabilities. BNSF, industry partners, OSROs, and key agencies regularly conduct oil spill training exercises and deploy and test LPO GRP booming strategies in LPO and the Clark Fork and Pend Oreille Rivers. **Appendix P** contains letters from the IDEQ and the County OEM dated November 28, 2018, and December 17, 2018, respectively, noting the efforts on the part of BNSF to continuously improve spill response capabilities in the LPO region, which include the permanent deployment of pre-staged emergency response equipment as well as an aggressive training and exercise regimen.

Exercises of any GRP are deliberately designed to determine the adequacy of planning documents and systematically probe for potential shortcomings in mission execution. Findings are then summarized in After-Action Reports, which serve both as an introspective tool and the analytical foundation for a cycle of continuous improvement. As such, GRPs are subject to recurrent modification and refinement to better adapt to any number of disparate factors and "worst-case scenarios." Accordingly, After-Action Reports are written objectively with the understanding that there will always be room for improvement in both emergency planning and response.

Since 2014, the following tabletop exercises and boom deployment training exercises have taken place to test the response strategies outlined in NWAC's LPO GRP, with After-Action Reports for the 2018 exercises provided in **Appendix Q**:

- May 2015 LPO tabletop exercise
- August 2016 Clark Fork River boom deployment training
- September 2016 LPO tabletop exercise and Long Bridge and Dover boom deployment
- January 2017 Kootenai River deployment and oil-under-ice training
- September 2017 LPO tabletop exercise and Long Bridge and Fork River Bridge boom deployments
- September 2018 Lightning Creek tabletop exercise
- October 2018 Long Bridge boom deployment exercise
- February 2019 certified boat operator training
- March 2019 LPO oil-under-ice training

These exercises were attended and observed by regional agency and community partners, including the USEPA, USCG, IDEQ, the County OEM, Boundary County OEM, local fire and sheriff departments, Kootenai Tribe of Idaho, and OSROs. The September 2017 training exercise at LPO deployed 48 support personnel, 3,500 feet of boom, multiple drum skimmers, current buster, multiple watercraft, and drones overseen by a mobile command post. The exercise identified equipment and training vulnerabilities in the LPO GRP response strategies (**Appendix N**). To address the vulnerabilities identified in the LPO GRP during the September 2017 training exercise, BNSF completed the following:

- Inventoried available response equipment within the 2- and 6-hour travel time radii to demonstrate adequate equipment availability exceeding the 6- and 12-hour response time standard, based on 33 CFR 154, Appendix C, paragraph 2.6 land-based travel speed of 35 mph.
- Purchased and staged additional equipment in the response area including:
  - Over 8,000 feet of new boom and six trailers
  - Three additional skimmers and three storage tanks
  - Current Buster with 4,000 gallons of storage and hi-volume skimmer
  - An emergency response storage cache at Clark Fork on MRL property
  - A jet boat at the Clark Fork storage cache
- Sponsored trainings for local and regional OSROs and fire districts addressed in the GRP (largely staffed by volunteers and a smaller number of professionals) on a variety of emergency scenarios to improve their response capabilities. An estimated 230 volunteers and local emergency responders have been trained by BNSF since 2015.

BNSF is working with the NWAC to update the LPO GRP in response to the September 2017 training exercise. BNSF provided recommended revisions to the 2017 LPO GRP in late July 2018 for review and consideration by IDEQ and USEPA, members of the NWAC. IDEQ and USEPA will review the recommended 2017 LPO GRP revisions and, if appropriate, update and disseminate to the NWAC. In response to the 2017 exercise, approximately 28,000 feet of boom is now available within a 2-hour travel time radius of Sandpoint. Boom, recovery, and storage equipment caches are located along the transportation corridors in four areas: Sandpoint Area Cache with approximately 10,800 feet of boom; Clark Fork Area Cache with approximately 5,100 feet of boom; the Bonners Ferry/Kootenai Area Cache with approximately 7,750 feet of boom; and the Regional Area Cache primarily from Spokane and Coeur d' Alene with approximately 5,200 feet of boom. A total of approximately 41,000 feet of boom is available within a 6-hour travel time radius of Sandpoint.

The October 2018 Long Bridge deployment exercise deployed 29 personnel and 6,000 feet of boom. The After-Action report in **Appendix Q** summarizes the strengths of the exercise and identifies areas of potential improvement. Boom reels worked as designed and reduced first responder effort to deploy long boom lengths. Based on field evaluations during the exercise, the following are recommended improvements to the LPO GRP response strategy:

- Confirm boom reel deployment locations
- Add a boom reel ramp on the north side of US 95
- Add equipment and boom reel and equipment support trailers

- Schedule additional training with local responders
- Consider deploying boom reels from the west side of US 95, west of the vehicle traffic lane

Boat access to LPO can be acquired from at least 35 boat ramps along LPO, the Clark Fork River, and the Pend Oreille River. Most of these boat ramps are unusable below a lake elevation of 2,056 feet, a level that can occur between mid-October and mid-May. Two boat ramps located at Priest River and Hope Basin offer reliable year-round response deployment; however, response time from those sites to an accident location may be complicated by wind, weather, and ice. Additionally, the shoreline area within BNSF ROW at the north end of Bridge 3.9 (the area commonly known as "Dog Beach") could be used to launch small boats during emergency events. Low water and no water access during low pool elevations, including access during winter months with icy conditions, may require air boat usage. BNSF purchased an air boat in 2019 that will be staged at the Sandpoint Station of the Selkirk Fire Rescue & EMS Department. During low pool elevations, equipment could also be delivered using high-flotation, wheeled vehicles; air boats; or helicopters.

Vacuum trucks and frac tanks are not staged within the LPO region but would be mobilized from outside the area with the initial OSRO mobilization. Railroads maintain a fleet of tank cars staged in the region that carry wildland firefighting water, which could be emptied and used for recovered oil storage. Additionally, emergency response equipment trailers can be moved with standard 1-ton, load-rated pickups to the appropriate staging area, as demonstrated during recent training events.

**Recovery**

In response to an emergency event, BNSF would implement the strategies contained in the LPO GRP to recover released material, minimizing potential damage. BNSF would then work with the appropriate regulatory agencies, property owners, and local community to restore residual damage that could not be avoided as the circumstances of the incident require.

### *Accidents and Derailments*

The Accident Reports Act of 1910 (49 USC 20901-20903) requires that railroad carriers file "all accidents and incidents resulting in injury or death to an individual or damage to equipment or a roadbed arising from the carrier's operations during the month" (FRA 2011). The FRA Office of Safety Analysis makes railroad safety information available to the public using dynamic queries dating back to 1975. The FRA uses the term "accident/incident" to describe the entire list of reportable events. Accidents are divided into three major groups for reporting purposes, including (1) train accidents, including collisions and derailments, which cause monetary damage above $9,200; (2) highway-rail grade crossing incidents; and (3) all other incidents (FRA 2012). The FRA indicates that train accidents are "frequently the culmination of a sequence of events, and a variety of conditions or circumstances that may have contributed to its occurrence." The FRA tracks railroad accidents by categories that related to five causes of accidents: (1) Track, Roadbed, and Structure; (2) Signal and Communication; (3) Train Operation – Human Factor; (4) Mechanical and Electrical Failures; and (5) Miscellaneous causes not otherwise listed.

A summary of accidents/incidents reported on all types of BNSF rail lines in the counties adjacent to the study area (Bonner and Kootenai Counties, Idaho; Lincoln County, Montana; and Spokane County, Washington) over the past 20 years is provided in **Table 16**. Table 2-3 and Figure 2-7 of the LPO GRP (**Appendix N**) summarize the 37 rail accidents that occurred in the County between 1995–2014. Of the 37 accidents, 13 occurred on BNSF rail lines. These numbers differ from the accident/incident data provided in **Table 16** because it includes all rail lines, rather than just BNSF, and covers a different time period.

**Table 16: Accident/Incident Overview on BNSF Rail Lines**

| Accident/Incident Type | Bonner County, ID | Kootenai County, ID | Lincoln County, MT | Spokane County, WA | Total |
|---|---|---|---|---|---|
| Train Accidents | 11 | 12 | 16 | 82 | 121 |
| Derailments | 3 | 6 | 9 | 58 | 81 |
| Hazardous Material Releases | 0 | 0 | 0 | 0 | 0 |
| Highway-Rail Incidents | 19 | 20 | 8 | 31 | 78 |
| Other Accidents/Incidents | 23 | 77 | 43 | 218 | 361 |
| **Total** | **53** | **109** | **67** | **331** | **560** |

Source: Ten-Year Accident/Incident Overview by Calendar Year (Federal Railroad Administration 2019). Query parameters include Individual Railroad Group (BNSF), calendar year January 2009 through December 2018, and county (Kootenai County, Idaho; Bonner County, Idaho; Lincoln County, Montana; Spokane County, Washington).

A total of 560 accidents/incidents were reported in a 20-year period. Of those, 81 were reported as derailments. According to the FRA, a derailment occurs when on-track equipment leaves the rail for a reason other than a collision, explosion, highway-rail grade crossing impact, et cetera (FRA 2011). Derailments can range from minor (such as a broken wheel rim) to a more serious incident that results in the release of a hazardous material. Of the 81 derailments, 58 occurred in Spokane County, 9 occurred in Lincoln County, and 14 occurred in Bonner and Kootenai Counties. Of the derailments that occurred on a main line track in Bonner or Kootenai County the causes of derailment were cited as train operation—human factor, mechanical and electrical failures, or miscellaneous causes. No derailments were caused by track, roadbed and structure, or signal and communication. None of the accidents/incidents, including derailments, reported on BNSF rail lines in the four-county area over the past 20 years were reported as hazardous releases.

### 3.14.1 Affected Environment

The study area is an interstate main line rail corridor. Any railroad ROWs have the potential to contain contaminated materials from historic materials used, construction methods, and actions. The study area does not have a recorded history of hazardous spills. Coal is not classified as a hazardous material for rail transport. Coal dust and incidental coal spillage has not been observed or documented in substantial levels within the study area uplands and research shows BNSF drive-through trains are not associated with substantial levels of coal dust (McCrone Associates 2012; Washington Research Council 2014; WDOE and Cowlitz County 2017). Coal dust and incidental coal spillage is not anticipated to be present in harmful levels within LPO sediments (see Section 3.3 for more details). Potential inadvertent and unrecorded releases could have occurred over the 120 or more years this study area has had a railroad and associated support facilities on it, but typically such contaminated conditions in soils are shallow and localized. If contaminated soils are determined to be present, they would be removed and disposed of in commercially approved remediation facilities.

Application of herbicides along the railroad ROW to keep vegetation from growing over the tracks can also affect the reuse of the soil. BNSF policy for contaminated conditions is to identify, remove, and safely dispose of them when they are found. Any soil removed from any part of the ROW must be tested prior to it leaving BNSF property.

***Regulatory Database Review***

The online USEPA "Cleanups in My Community Map" and IDEQ "Waste Remediation Facility Mapper" were reviewed for sites within 1.0 mile of the Project area. Contaminated sites that were separated from the Project area by a waterbody (LPO and/or Sand Creek) or were located down- or cross-gradient to the BNSF ROW, were eliminated because it is unlikely contamination from these sites has migrated to the BNSF ROW. Based on this regulatory database review, five listed sites have the potential to impact the Project area:

- Amtrak Sandpoint Station (Underground Storage Tank [UST] database)
- ITD Former Blacksmith Shop (General Remediation database)
- ITD Lakeside Hotel (General Remediation database)
- Sandpoint Byway (General Remediation database)
- Pend Oreille Bay Trail Zone 1 (Brownfields database)

All five sites are located on the peninsula of land directly east of Sand Creek and the City. The following discussion of the listed sites is based on information and reports provided by Mr. Steve Gill from IDEQ on May 2 and 3, 2018.

The Amtrak Sandpoint Station site was listed on the state UST database due to two USTs of unknown age that were closed in place in 1988. The tanks included one 500-gallon gasoline UST and one 200-gallon kerosene UST. The Amtrak Sandpoint Station site is not listed on the state Leaking UST database, and no documentation was found that indicates that a leak or spill occurred in association with this site.

The three general remediation database sites are associated with the Sandpoint Bypass west of the BNSF ROW. Arsenic, lead, and mercury contamination was found at a former blacksmith shop in 2006. Based on the No Further Action (NFA) letter from IDEQ, most contaminants have been removed from the site, and remaining concentrations are within normal background levels. A 2,300-gallon UST was discovered at the Lakeside Hotel site in 2007. The UST was a former boiler that had been used as a septic tank by the hotel.

Soils contaminated with polycyclic aromatic hydrocarbons (PAHs) and metals were excavated with the UST and removed from the site. Soil sampling conducted after the remediation activities indicated that only arsenic remained in soils above regulatory cleanup levels. However, IDEQ indicated that the arsenic concentrations were within normal background levels for the area and issued an NFA letter for the site in 2008. Soil samples collected and analyzed in 2009 during the Sandpoint Byway construction (Sandpoint Byway site) had concentrations of VOCs, PAHs, and metals below the regulatory cleanup levels. The site was issued an NFA in 2011.

The Pend Oreille Bay Trail Zone 1 site is associated with the former Humbird lumber mill and consists of five properties: two private parcels, two City parcels (WTPs), and the BNSF ROW. Phase I and Phase II Environmental Site Assessments were conducted for the private/City properties. PAHs and metals were found in site soils exceeding regulatory cleanup levels. Petroleum VOCs were also found but at concentrations below cleanup levels.

Based on risk evaluations conducted for the four parcels, an acceptable risk is associated with the detected contaminant concentrations for nonresidential and construction worker receptors. Because these parcels are used for recreation (Pend Oreille Bay Trail) and as a WTP (both nonresidential uses), no further cleanup was conducted. No investigation has been conducted on the BNSF ROW parcel. Based on contaminants found on the other four parcels, PAHs, metals, and petroleum VOCs have the potential to be present at the BNSF site at concentrations above regulatory cleanup levels.

Potential contaminants in lakebed sediments could include mercury (LPO and Sand Creek are listed as mercury-impaired), and arsenic, cadmium, copper, lead, and zinc primarily from legacy discharges from mining and smelting in the headwaters of Montana's Clark Fork River. The Clark Fork River contributes approximately 92 percent of the annual inflow to the lake and most of the annual suspended sediment load.

No sediment studies were conducted in the study area; however, a study done for the Clark Fork Delta restoration project (approximately 16 miles upstream of Bridge 3.9) detected metal concentrations (cadmium, copper, mercury, and zinc) exceeding the USEPA's Sediment Evaluation Framework Interim Freshwater SL1 Concentrations in 13 of 103 samples collected at 10 of 33 sampling locations; 8 of the 13 contaminated samples were at depths between 1.5 and 2.5 feet (GeoEngineers 2014 as cited in Jacobs 2018e). Concentrations of Clark Fork River bed-sediment metals decrease exponentially with distance downstream, away from mining (Axtmann 1990 as cited in Jacobs 2018e).

As discussed in Section 3.2, the existing water velocities in the vicinity of Bridge 3.9 and Bridge 3.1 are relatively low. The velocity peaks at 1.71 feet per second (1.01 knots) at Bridge 3.9 and 2.51 feet per second (1.48 knots) at Bridge 3.1. LPO gets narrower and shallower moving from the Clark Fork Delta toward Bridge 3.9 and water velocity likely increases as its pathway is constrained, meaning the water velocity in the wider, deeper areas of LPO closer to the Clark Fork Delta is likely slower than it is at Bridge 3.9. Slower moving water has less ability to mobilize and transport sediment. Sediments carried into LPO from the Clark Fork would be more likely to settle out of the water column before travelling approximately 16 miles through slower moving water to reach Bridge 3.9. Those Clark Fork sediments that may make it to Bridge 3.9 are more likely to move past Bridge 3.9 with the faster moving water than to settle in the vicinity of Bridge 3.9. It is important to note that Bridge 3.1 is located on Sand Creek, which is upgradient from the Clark Fork Delta with respect to water flow. Since water flows out of Sand Creek, towards the main body of LPO, contaminated Clark Fork sediments could not be transported to the vicinity of Bridge 3.1.

Several agencies with missions and jurisdictions that would indicate concerns with sediment contamination in LPO were contacted to identify existing LPO sediment sampling records and discuss concerns related to potential sediment contamination in LPO. USFWS, IDEQ, and IDFG were contacted by email and participated in a meeting with the Project team regarding the potential for LPO sediments to be contaminated. These contacts are identified in **Table 17** and in Section 5.4. No existing sediment sampling data was identified. Concern over potentially contaminated sediments was discussed as well as appropriate BMPs for addressing the potential mobilization of contaminated sediments during Project construction.

A WQC has been issued for the Project by IDEQ and a BO has been issued by USFWS. These regulatory compliance documents specify minimization measures that would be implemented during construction of the Project to minimize the risk of mobilizing potentially contaminated

sediments. These minimization measures are identified in Section 2.3.1, Section 3.2.2, Section 3.2.3, Section 3.7.2, Section 3.8.2, Section 3.12.2, and Section 4.1 and include use of a turbidity curtain during construction activities that have the potential to disturb sediment to minimize the potential for suspended sediment transport and the requirement to monitor water quality during construction to ensure water quality standards are maintained as per the Section 401 WQC issued for the Project (IDEQ 2019).

**Table 17: Contacts Made Regarding Potential LPO Sediment Contamination**

| Agency | Individual | Type of Contact | Date Contacted |
|---|---|---|---|
| IDEQ | June Bergquist,<br>Regional Water Quality Compliance Officer | Email | June 20, 2018 |
| IDEQ | June Bergquist,<br>Regional Water Quality Compliance Officer | Email | July 9, 2018 |
| IDEQ | Daniel Redline, Regional Administrator | 401 Water Quality Certification | September 21, 2018 |
| IDFG | Kathy Cousins, Mitigation Staff Biologist | Email | June 20 to 22, 2018 |
| USFWS | Gregory Hughes, State Supervisor | Biological Opinion for the Sandpoint Connector project | May 3, 2019 |
| USFWS | Marshall Williams,<br>Fish and Wildlife Biologist | Email | July 20,2018 |
| USFWS | Marshall Williams,<br>Fish and Wildlife Biologist<br>Kathy Fitzgerald Branch Chief – Conservation and Consultation | Biological Assessment Technical Assistance Meeting with USFWS, USCG, and BNSF | July 20, 2018 |
| USFWS | Marshall Williams,<br>Fish and Wildlife Biologist | Email | August 3, 2018 |

Notes:
IDEQ = Idaho Department of Environmental Quality
IDFG = Idaho Department of Fish and Game
USCG = U.S. Coast Guard
USFWS = U.S. Fish and Wildlife Service

### 3.14.2 Environmental Consequences

#### *No Action Alternative*

Under the No Action Alternative, no change would occur to the sites identified by IDEQ, except for continued maintenance and repairs of the existing railroad tracks and bridges. These maintenance actions would require the use of construction equipment that contains petroleum products. LPO and Sand Creek are sensitive environmental receptors that could be impacted by spills associated with the use of petroleum products. As discussed in Section 3.3.2, BNSF would implement the LPO GRP to efficiently and safely respond, recovering a spill, and restoring damaged resources in the event of a spill.

BNSF would continue to follow bridge and track inspections and maintenance protocol. BNSF would continue to integrate the LPO GRP into staff and maintenance contractor hazardous material response training and planning.

Accident risk is a function of ton-miles of freight moved and number of rail miles travelled. Train traffic within the study area has increased over the past 30 years and it is reasonable to expect that it will continue to do so as population increases, market conditions change, and demand for movement of freight and passenger rail service increases. As a result, the risk of train-related accidents in the study area would increase proportionately. During a spill event within the existing corridor, BNSF would implement the LPO GRP, which provides a comprehensive approach to oil spill response for overwater structures in the region.

***Proposed Action Alternative***

The construction of the Proposed Action Alternative would require the use of construction equipment that contains petroleum products. BMPs for maintenance of construction equipment would be implemented to minimize the potential for the release of oil, fuel, or other contaminated materials into adjacent waters (Section 4.0).

Construction activities would include pile driving for the temporary and permanent bridges and pile removal for the temporary bridges. These activities would disturb and temporarily resuspend lake sediments. Section 3.14.1 describes the limited potential for these sediments to be contaminated. Section 3.2 describes how these resuspended sediments would be contained and resettled near their existing locations using a turbidity curtain with water quality monitoring to ensure that water quality standards are maintained. Section 3.3 explains why resuspended sediments, even if contaminated, would not enter the aquifer.

The Proposed Action Alternative includes minimal clearing/grubbing activities and excavation to construct the new bridge abutments and the new grade for the second main line track (see Section 2.2). The potential for hazardous waste in the Project area was identified as associated with the former Humbird lumber mill. Contamination from the lumber mill, if present, may be cleaned up faster to accommodate Project construction. The Project site is also a railroad corridor, with the potential to have shallow soil contamination associated with spills, leaks, creosote-treated railroad ties, and the use of herbicides. If contaminated soil is encountered during construction, the contaminated soil would be assessed, handled, stored, and disposed of in accordance with applicable state and federal regulations.

During the construction and maintenance of the Proposed Action Alternative, BNSF would continue to follow track and bridge inspections and maintenance protocol. BNSF would continue to incorporate the LPO GRP into staff and maintenance contractor hazardous material response training and planning. As indicated for the No Action Alternative, rail traffic in this corridor is likely to increase in response to market conditions and BNSF would use and follow the LPO GRP during a spill event.

As described in Section 2.3, this Project is expected to improve the fluidity of movement through the study area for both trains and vehicles. Trains would be able to pass through the study area more efficiently by traveling on either the existing bridges or the new bridges. In addition, because each train passing through the study area would travel on either the existing bridges or the new bridges, travel distances would not increase with the construction of a second main line track.

Some of the trains travelling through the study area would also travel on new, modern, more reliable infrastructure requiring less maintenance. The Proposed Action Alternative would not increase the risk of spills within the study area over the same risk under the No Action Alternative.

## 3.15 Traffic

Local traffic includes surface vehicle traffic on state and local roadways and watercraft traffic that utilizes LPO and Sand Creek. As stated in Section 1.0, existing rail traffic congestion results in congestion in Sandpoint and the surrounding communities, which causes a delay of the local and regional transport of people, goods, and services from eastern Washington across northern Idaho to northwest Montana. The study area for vehicle traffic includes the at-grade rail crossings of private driveways and local County and City streets located on the BNSF, MRL, and UPRR railroad lines within 20 miles of the Project, which is the radius within which trains often must wait for an opportunity to cross the single-track section of the BNSF main line. The predominance of watercraft traffic is associated with recreation and fishing, both occurring primarily during the summer boating season from May 1 through October 15. The study area for watercraft traffic is the BNSF ROW at Bridges 3.1 and 3.9.

### 3.15.1 Affected Environment

Vehicle traffic at some of the at-grade crossings in the study area such as Boyer Avenue, Great Northern Road, and Mountain View Road currently experience long delays due to trains slowing or waiting to travel through the single-track portion of the rail line through the study area.

With much of the study area consisting of bridges over navigable waters, traffic within the study area also consists of recreational and commercial navigation. Recreational navigation within the study area is described in Section 3.11. Most of the limited commercial vessel traffic on LPO operates in support of recreational fishing and sightseeing excursions.

### 3.15.2 Environmental Consequences

#### *No Action Alternative*

As described in Section 2.0, train traffic within the study area has increased over the past 30 years and it is reasonable to expect that it will continue to do so as population increases, market conditions change, and demand for movement of freight and passenger rail service increases. The existing line and bridges could accommodate an additional 19 trains per day through the Project area, up to the maximum capacity of 79 trains per day. Currently, trains stack up waiting for an opportunity to cross Sand Creek and LPO and idle either on the main line or in sidings, which often causes increased vehicle wait times at at-grade crossings. These wait times would be expected to increase as rail traffic increases, consistent with the current trend.

#### *Proposed Action Alternative*

As stated in Section 3.11, prior to the construction of the Proposed Action Alternative, the USCG would review potential temporary and permanent changes to navigation as part of the bridge permit process, including solicitation and consideration of public comments. In addition, IDL considered potential effects to navigation on LPO before issuing an encroachment permit for the Project. As stated in the USCG public notice for the second public comment period on the Draft EA and in a letter from USCG to BNSF (PN 03-19; USCG 2019), USCG has reviewed a Bridge Permit application and has concluded that the Proposed Action Alternative would meet the reasonable needs of navigation. Detailed analysis in the Reasonable Needs of Navigation

Analysis reports for both the LPO Bridge 3.9 and Sand Creek Bridge 3.1 (Jacobs 2018a and 2018d) specify design features incorporated to minimize impacts to vessel traffic under the Proposed Action Alternative. These features address navigation needs both during construction and after bridge completion. These measures are identified in Section 4.1.

It is anticipated that construction equipment and materials would be transported by truck, and potential impacts to local vehicle traffic could occur. The construction contractor would be required to develop a traffic control plan compliant with ITD, Bonner County Road and Bridge, and Sandpoint Police Traffic Safety rules and requirements. The traffic control plan would propose transport of unique Project materials during nonpeak use times (such as nighttime) on US 95 and other public roadways. All construction materials and equipment would be stored on existing BNSF ROW.

The following public roadways/facilities would be utilized to access the south end of the Project site: US 95, Bottle Bay Road (between US 95 and Glen Eden Road) and Glen Eden Road (from Bottle Bay Road to BNSF ROW). The following public roadways/facilities would be utilized to access the north end of the Project site: US 95, Long Bridge, Superior Street (between US 95 and First Avenue), First Avenue (between Superior Street and Bridge Street), and Bridge Street (from First Avenue to BNSF ROW). Ballast and railroad track would be brought to the site by rail and the remaining construction material identified in **Table 4** would be brought to the site by truck. As shown in **Table 18**, approximately 7,700 truckloads would be needed to deliver material to the site during construction.

**Table 18: Estimated Construction Vehicle Trips**

| | Number of Truck Loads | | |
|---|---|---|---|
| | **Std. Truck Loads (10-14 cubic yards)** | **Std. Truck Loads (15-20 cubic yards)** | **Semi/Trailer** |
| Track and Civil Materials | 3,004 | 1,397 | 2,455 |
| Bridge Materials | 398 | 25 | 383 |
| Total Deliveries | 3,402 | 1,422 | 2,838 |

An estimated 25 to 50 construction workers would be present on-site at any given time during construction, resulting in an associated estimate of 50 single-occupancy vehicles commuting to and from the site each day. If each of these 50 workers take a mid-day trip to get lunch up to 200ecould be made by construction workers each day in the Sandpoint area. Parking for private construction worker vehicles would be accommodated on existing BNSF ROW.

During construction of Bridge 3.0, temporary closures of Bridge Street may be required. If closures are required, the traffic control plan would include measures to minimize impacts to local homes and businesses that rely on Bridge Street as a primary access point. The traffic control plan would also identify emergency access routes, as needed. No permanent roadway closures are anticipated. Any necessary temporary closures of Bridge Street would be coordinated with the City.

Similar to the No Action Alternative, an additional 19 trains per day could travel through the Project area, up to the maximum capacity of 79 trains per day. As described in Section 2.3, this Project is expected to directly improve the fluidity of movement through the study area for trains. Trains would be able to pass through the study area more efficiently by traveling on either the existing bridges or the new bridges. There would likely be an indirect benefit to drivers of roadway vehicles

who would likely see more rapid clearing of at-grade crossings, reduced congestion, and an overall improvement in access to the Sandpoint area. In addition, because each train passing through the study area would travel on either the existing bridges or the new bridges, travel distances would not increase with the construction of a second main line track.

A number of small work boats would be used to aid construction and a limited number of barges no larger than roughly the size of the largest vessels already on LPO may also be used but no additional nearshore fill or dredging would occur to facilitate the use of barges. The origin and total number of these boats and barges would depend on the construction contractor selected. Work boats and barges would be launched at existing boat ramps on LPO or directly placed in the water by crane within the Project area. The limited number and size of work boats and barges anticipated to be used during construction is not anticipated to have an adverse environmental effect nor an impact to lake users, residents, or the local economy.

## 3.16 Safety and Security

The Occupational Safety and Health Act (OSHA) was established to assure safe and healthful working conditions by providing workers a place of employment free from recognized hazards to safety and health, such as exposure to toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, or unsanitary conditions. OSHA standards require that employers adopt certain practices, means, methods, or processes reasonably necessary and appropriate to protect covered workers on the job. In addition, even in situations where OSHA does not apply, The FRA (2010) has implemented safety regulations that apply to workers who work on railroad property.

### 3.16.1 Affected Environment

BNSF utilizes a combination of field training, on-the-job training, long-distance learning, and technical training at a centralized training center, as described in Section 3.14. Contractors and consultants are required to undertake contractor safety orientation training and railroad safety training prior to being allowed on railroad property prior to completing any work.

Workers that enter BNSF ROW must implement applicable OSHA and/or FRA requirements and be certified as having undertaken railroad safety and security training per FRA's safety and security requirements.

### 3.16.2 Environmental Consequences

#### *No Action Alternative*

As stated in Section 1.2, the current single main line track configuration of this section of the BNSF main line is causing freight and passenger rail traffic congestion throughout the region. Leaving the track configuration as it is, and conducting maintenance as needed, would not provide a reduction in rail traffic congestion or reduce hold times on regional sidings and wait times at grade crossings. Increased potential conflicts could arise with emergency services or first responders in the Project vicinity due to more frequently blocked public at-grade road crossings with the No Action Alternative. Contracted work activities associated with maintenance of the existing bridge would be covered under OSHA and/or FRA requirements.

***Proposed Action Alternative***

The Proposed Action Alternative would be designed to meet current design and rail traffic operations requirements and would increase safety and security of rail operations to help prevent possible future impacts to life or human health. Work activities associated with construction of the second main line track and new bridges would be covered under OSHA and/or FRA requirements. Implementation of the Proposed Action Alternative would result in multiple safety benefits for train occupants, emergency response providers, and local drivers associated with the anticipated indirect benefit of reduced train and vehicle congestion and wait times at grade crossings. In addition, maintenance worker safety would be improved in a double-track main line configuration with the ability to shift train operations off of one main line track while maintenance activities on that track are ongoing.

## 3.17 Cumulative Impacts

Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions (RFFA) regardless of what agency (federal or nonfederal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts can result from individually minor actions that can collectively become a measurable impact when taking place over time.

The area around LPO and Sandpoint began to experience development in the 1880s as the Northern Pacific Railroad began construction on a rail line connecting the settlement that would become Sandpoint to Montana (City of Sandpoint, n.d.). Northern Pacific built the original railroad bridge across LPO in 1882. Timber along with some mineral extraction was the main industry in the area until the 1920s. As timber was cut, farming developed on cleared forest land, mainly supplying hay for livestock feed. The Farragut Naval Training Station was established in the 1940s at the southern end of LPO in Bayview, Idaho, bringing 300,000 servicemen to the area (City of Sandpoint, n.d.).

Albeni Falls Dam, on the Pend Oreille River at the Idaho/Washington border, was completed by the USACE in 1955 to generate hydroelectricity and control flooding. It permanently altered the area by maintaining a constant lake level, which, in turn, increased recreational boating opportunities (USACE, n.d.). The Noxon Rapids and Cabinet Gorge hydroelectric dams, upstream of LPO on the Clark Fork River near the Idaho/Montana border, were completed by the Washington Water Power Company (now Avista Corporation) in 1959 and 1952, respectively. The Schweitzer Basin ski area opened in 1963 and brought more tourism to the area (City of Sandpoint, n.d.).

Today, several small towns surround LPO connected by a network of roads and bridges including BNSF Bridges 3.0, 3.1 and 3.9 and the US 95 "Long Bridge." Residential development and waterfront lodging surrounds the northern shores of the lake with many marinas and boat launches supporting the primarily recreational boating activity. Although the U.S. Navy still maintains an acoustical research detachment at Bayview, most of the Farragut Naval Training Station has been turned into a state park. U.S. Highway 2, State Highway 200, and US 95 are major highways in the area.

According to the U.S. Census Bureau (n.d.-a, n.d.-b), the County and the City experienced a population growth of 6.6 percent and 12.5 percent, respectively, between April 2010 and July 2017. It is reasonable to assume the region will continue with a similar growth pattern over the next decade. There are a few RFFAs that are anticipated to occur in the Sandpoint and LPO area.

The ITD and the County do not have any permitted or funded projects beyond routine maintenance activities scheduled for the area. Relevant RFFAs are listed below.

- City of Sandpoint:
    - North Ella Avenue Improvements (summer 2018):
        - Work involves asphalt removal and replacement, improved stormwater management, Americans with Disabilities Act ramp installation at intersections, and tree and shrub trimming as needed to improve the line of sight along North Ella Avenue, from Chestnut Street south to Pine Street.
    - Oak Street Bike Path, Sidewalk, and Utilities (summer 2018):
        - Add new sidewalks along Oak Street between 5th Avenue and Boyer wherever existing sidewalks do not meet current standards.
        - Add bike paths along both sides of Oak Street from Boyer to the Community Trail.
        - Includes new curbs, driveways, and utilities, and refreshed striping and signage in conjunction with other work.
    - Downtown Revitalization:
        - Replaces and adds new sidewalks, landscaping, irrigation, benches, stormwater features, bike racks, lighting, roadway, striping, signage, and other features along Cedar Street between 2nd Avenue and 5th Avenue (summer 2018).
        - Similar improvements along 1st Avenue (2019).
    - Sewer main and associated laterals replacement Along First Avenue, north of Church (fall 2018).
    - Rebuild of historic downtown buildings damaged in February 2019 fire
    - No current plans or schedule have been developed, but the City has identified this activity as reasonably foreseeable within the anticipated time frame of the Project.
- USACE Albeni Falls Dam Fish Passage Project (Pend Oreille River):
    - Would allow bull trout that currently migrate downstream of Albeni Falls Dam to get back upstream to access LPO FMO habitat.
    - Would increase number of bull trout migrating from the Pend Oreille River to LPO and restore connectivity in the LPO bull trout core recovery area.
    - Earliest construction anticipated in 2022.
- Pend Oreille County Public Utility District Box Canyon Fish Passage Project (Pend Oreille River):
    - Would facilitate upstream passage of fish greater than 4 inches (Albeni Falls is the next upstream dam).
    - Ongoing construction to be complete in July 2018.
- Avista Cabinet Gorge Dam Fish Passage Facility (Clark Fork River):
    - Would construct a new facility to transport native migratory salmonids, with a focus on upstream transport of bull trout to tributaries in Montana to restore connectivity in the LPO bull trout core recovery area.
    - Construction to begin in fall 2018.

- IDFG/Avista ongoing LPO lake trout suppression efforts:
  - Uses gillnets to capture both adult and juvenile lake trout, a non-native competitor species to bull trout.
- BNSF Montana Division, Kootenai River Subdivision, Line Segment 45, MP 13.9 to MP 16.7 West Algoma to Cocolalla Double Track Project
  - BNSF double-track project south of Sandpoint in Bonner County
- Best Western Edgewater Resort, Sandpoint
  - Building demolition and reconstruction
  - Work to begin in September 2020 and continue for approximately 14 to 16 months (Cox 2019).
- PacWest Silicon Smelter Project, Pend Oreille County
  - Silica smelter that would produce up to 73,000 tons of silicon metal per year.
  - Located on a rail line operated by Pend Oreille Valley Railroad; movement of inbound and outbound rail movements would be determined by PacWest.
  - Currently in the environmental review process.

In addition to the RFFAs listed above, rail traffic volumes have risen steadily for the past three decades in this portion of the interstate main line as a result of market conditions changing in response to population growth in the United States and the corresponding increase in the demand for freight, a general trend that will likely continue over time.

### 3.17.1 Environmental Consequences

***No Action Alternative***

The No Action Alternative would have no measurable direct or indirect effects with respect to the following resources:

- Geology, Soils, and Topography
- Wetlands
- Floodplains
- Archaeological and Historic Resources

Ongoing maintenance and operation of the existing rail infrastructure and continued locomotive emissions during long periods of idling and related powering up to resume travel, would contribute toward a cumulative decline in ambient air quality in the area. However, given the trend of air quality improvement following the implementation of IDEQ's 2011 LMP, which addressed residential wood combustion, fugitive road dust, and industrial emissions, and the general improvements in efficiency of newer locomotive engines, these contributions to air quality would not be consequential.

Air emissions from the combustion of fuels at multiple and dispersed sources can cumulatively affect water quality through atmospheric deposition. Atmospheric deposition occurs when air pollutants fall to the ground or into a waterbody as either dry particles or gasses. These pollutants can then either directly affect water quality if deposited directly into water or enter a waterbody through surface runoff or by moving through soil. These effects may occur great distances from the emissions sources depending on weather patterns dispersing emissions. Contributions to cumulative effects on water quality through atmospheric deposition of locomotive air emissions

would be directly related to the effect of these emissions on air quality. For the reasons stated above regarding contributions to ambient air quality, the contributions of air emissions to water quality would not be consequential under the No Action Alternative.

No change in the frequency or intensity of railroad inspection and maintenance activities would be anticipated. Therefore, no change in contribution to cumulative impacts would be expected from the baseline condition and any impacts to the following resources would not be significant.

- Water Resources and Water Quality
- Vegetation
- Fish and Wildlife
- ESA-Listed Species and Critical Habitat
- Hazardous Materials and Wastes
- Land Use and Recreation

Train traffic has increased over the past 30 years, and it is reasonable to expect that it will continue to do so as population increases, market conditions change, and demand for freight and passenger rail service increases. Additional train traffic would increase wait times and congestion, negatively impacting North Idaho communities and communities throughout the BNSF network. Given the limited number and type of RFFAs identified, and the minor direct and indirect contributions of this no-action alternative, cumulative increases to noise, traffic, and safety and security would be minor.

***Proposed Action Alternative***

There would be no direct or indirect effects to land use; therefore, there would be no contribution to cumulative effects under the Proposed Action Alternative. While the temporary negative effects of the Proposed Action Alternative with respect to air quality, noise, traffic, and safety and security may overlap and combine with effects to those resources from other RFFAs, potential contributions from the Proposed Action Alternative would be minor and the related RFFAs are relatively small actions. Cumulative negative effects to these resources would not be consequential and would be temporary during construction. Additionally, potential traffic, street use, and temporary road closures that may result from other overlapping local construction projects, such as the Edgewater Resort demolition and reconstruction and the reconstruction of the historic downtown Sandpoint buildings damaged in the February 2019 fire, would be considered through coordination with the City. However, the long-term effects of the Proposed Action Alternative to these resources, including potential effects of atmospheric deposition of air emissions on water quality as discussed under the No Action Alternative, would likely be beneficial as a result of reduced locomotive idling and powering up to resume travel and reduced vehicle idling due to delays at regional and local at-grade railroad crossings.

The direct and indirect effects of the Proposed Action Alternative to geology and soils, water resources and water quality, floodplains, vegetation, archaeological and historic resources, visual quality, and hazardous materials and wastes are minor and would be of a very limited geographic scale and magnitude. When considered with the other small and scattered RFFAs, and conditions imposed by the Section 401 WQC, they would not contribute to cumulative impacts.

The direct and indirect effects to wetlands would be relatively small at 0.28 acre. The disturbance to this wetland acreage would comply with the CWA through purchase of mitigation bank credits from the Valencia Wetland Mitigation Bank/Valencia Wetlands Trust. The direct and indirect effects to fish and wildlife and ESA-listed species and critical habitat would be largely short-term and the Project would adhere to USFWS stipulations and permit conditions resulting from Section 7 ESA formal consultation and BO. The impacts associated with nearshore fill would be mitigated through the Valencia Wetland Mitigation Bank, which is an agreed upon strategy through ongoing discussions with agencies, Tribes, and LPO and Sand Creek stakeholders. Additional details regarding implementation of the mitigation strategy are provided in Section 4.0.

Residual impacts to bull trout as an ESA-listed species would be minor as part of a short-term adverse effect and would not contribute toward significant cumulative impacts when considered with the other RFFAs, particularly given that four RFFAs are projects specifically designed to benefit bull trout. The direct and indirect effects to navigation and recreation under the Proposed Action Alternative would be minor and the identified RFFAs are relatively small widely dispersed actions. Therefore, there would be no measurable contribution towards cumulative impacts to navigation or recreation under the Proposed Action Alternative.

## 3.18 Comparative Analysis of the No Action and Proposed Action Alternatives

The following section compares the potential environmental effects of the No Action Alternative and the Proposed Action Alternative. The purpose of this section is to allow a quick comparison of the differences in potential effects of the two alternatives. **Table 19** summarizes the potential direct, indirect and cumulative environmental effects of each alternative as detailed in Section 3.0 by resource area. Potential effects in all resource areas would not be significant and would be mitigated based on federal and applicable state and local standards. Neither alternative would contribute significantly to cumulative impacts.

**Table 19: Comparison of Potential Environmental Effects of Alternatives**

| Resource Area | No Action Alternative | Proposed Action Alternative |
|---|---|---|
| Air Quality | • Temporary localized increases in some criteria pollutants would result from ongoing maintenance and operation of the existing infrastructure.<br>• Continued locomotive emissions during long periods of idling and related powering up to resume travel. | • Temporary localized increases in some criteria pollutants would result from construction, maintenance, and operation of the new and existing infrastructure.<br>• Locomotive emissions associated with periods of idling and related powering up to resume travel would be reduced or eliminated resulting in improved air quality. |
| Geology, Soils, and Topography | • No effect. | • Removal of portions of small bedrock outcrops.<br>• Excavation of approximately 100 cubic yards of upland soils.<br>• Temporary displacement of approximately 2,000 square feet of submerged substrate for temporary piling. |

**Table 19: Comparison of Potential Environmental Effects of Alternatives (continued)**

| Resource Area | No Action Alternative | Proposed Action Alternative |
|---|---|---|
| Water Resources and Water Quality | • Increase in level of risk of spills related to maintenance and operation of existing infrastructure as train traffic increases. | • Temporary construction-related sedimentation and risk of petroleum and/or concrete spills.<br>• Slightly increased long-term risk of construction-related spills from additional maintenance of new infrastructure.<br>• 0.88 acre of nearshore fill. |
| Wetlands | • No effect. | • 0.28 acre of wetland fill. |
| Floodplains | • No effect. | • 1,500 cubic yards of permanent fill in the 100-year floodplain.<br>• 800 cubic yards of temporary fill in the 100-year floodplain.<br>• 950 steel piles permanently placed in Sand Creek and LPO. |
| Vegetation | • Minor maintenance removal of some trees as necessary to protect existing infrastructure (less than 3 acres of vegetation removal). | • Removal of approximately 3 acres of riparian vegetation; wetland vegetation; and upland trees, shrubs, and grasses.<br>• Minor risk of transport of upland and/or aquatic invasive species during construction. |
| Fish and Wildlife | • Minor effects associated with continued maintenance and operation of existing infrastructure. | • Temporary avoidance of the study area by birds and mammals during construction.<br>• Temporary avoidance of in-water pile driving activity by fish during construction.<br>• Potential injury and/or mortality of some fish during pile driving even with the implementation of BMPs. |
| Endangered Species Act Listed Species and Critical Habitat | • Minor short-term effects related to maintenance activities. | • Temporary effects to bull trout due to in-water pile-driving noise during construction.<br>• Long-term potential for increased predation of bull trout related to hiding habitat associated with new in-water structures.<br>• Likely to adversely affect bull trout(1)<br>• Not likely to adversely affect bull trout critical habitat(1) |
| Archaeological and Historic Resources | • No effect. | • No effect on archaeological resources.<br>• Temporary indirect visual effect on historic structures during construction. |
| Socioeconomics and Environmental Justice | • Minor long-term impacts on air quality, traffic noise, and traffic circulation.<br>• No disproportionately high and adverse impacts. | • Creation of 1,300 jobs during construction.<br>• Temporary increase in hotel and restaurant sales revenue during construction.<br>• Temporary loss of patrons at the Edgewater Resort during construction.<br>• Temporary construction-related impacts to air quality, noise, and traffic circulation.<br>• Long-term improvement in air quality and traffic circulation.<br>• No disproportionately high and adverse impacts. |

**Table 19: Comparison of Potential Environmental Effects of Alternatives (continued)**

| Resource Area | No Action Alternative | Proposed Action Alternative |
|---|---|---|
| Land Use and Recreation | • No effect | • No change in land use.<br>• Temporary placement of 250 feet of work bridge and a few square feet of temporary fill outside BNSF right-of-way.<br>• Minor temporary visual aesthetic and noise effects on recreational users of the multiuse Serenity Lee Trail and Sandpoint Beach Park and adjacent marina. |
| Visual Quality | • No effect. | • Temporary encroachment on views of Sand Creek and LPO during construction.<br>• Minor long-term changes to visual quality as a result of construction new Bridge 3.1 and new Bridge 3.9. |
| Noise | • Minor increases in noise resulting from continued and increased rail delays. | • Temporary increases in daytime noise levels during construction.<br>• Minor long-term increase in train noise due to increased train speeds. |
| Hazardous Materials and Wastes | • Minor risk of petroleum spills during routine maintenance of existing infrastructure. | • Minor risk of petroleum and/or concrete spills during routine maintenance of existing infrastructure and/or new construction.<br>• Potential to encounter contaminated soil during construction associated with the former Humbird Lumber Mill or other historic spills or leaks, creosote-treated railroad ties, or herbicide use within BNSF right-of-way. |
| Traffic | • Continued and increased delays for rail and roadway traffic.<br>• Increased truck and passenger vehicle traffic on roadways resulting from potential decreases in freight and passenger rail demand due to continued and increased rail delays. | • Temporary increased truck traffic during construction.<br>• Potential temporary closures of Bridge Street during construction.<br>• Likely reduced wait times at at-grade crossings. |
| Safety and Security | • Continued and increased emergency service response times due to delays at at-grade rail crossings. | • Likely reduced emergency service response times associated with reduced wait times at at-grade rail crossings. |

Notes:
BMP= best management practice
LPO = Lake Pend Oreille
(1)Proposed Endangered Species Act effect determinations; subject to U.S. Fish and Wildlife Service concurrence.

## 3.19 Statement of Environmental Significance of Proposed Action Alternative

As discussed in detail throughout Section 3.0 and summarized in Section 3.18, the potential environmental effects of implementing either the No Action Alternative or the Proposed Action Alternative would not result in any significant direct, indirect or cumulative environmental impacts. Therefore, preparation of an EIS is not warranted and preparation of a Finding of No Significant Impact would be appropriate.

# 4.0 MITIGATION

BNSF is coordinating with federal, state, and local agencies with jurisdiction over the Project and interested Tribes to develop appropriate mitigation measures to minimize potential environmental effects (see Section 5.0 for additional detail). Avoidance and minimization measures associated with the Proposed Action Alternative are identified in Section 4.1 and compensatory mitigation measures associated with the Proposed Action Alternative are identified in Section 4.2.

## 4.1 Avoidance and Minimization

### 4.1.1 Water Resources and Water Quality/Wetlands/Fish and Wildlife/Threatened and Endangered Species

As summarized in the Alternatives Analysis (Jacobs 2018c) completed for the Project to comply with Section 404 of the CWA, the design of the new bridges over LPO and Sand Creek were modified to reduce the area of temporary and permanent nearshore fill by over 2 acres.

The following minimization measures have also been established for this Project to further avoid or minimize potential impacts to water resources, water quality, and fish and wildlife, including threatened and endangered species:

- Protection of Existing Vegetation: Specific limits of activities and disturbance areas would be clearly marked with high-visibility construction fence for reference by construction work crews and machinery operators.
- All in-water work would comply with the approved permit conditions for LPO and Sand Creek.
- Implementation of 401 WQC Conditions 1 through 42 to ensure compliance with Idaho water quality standards (IDEQ 2019).
- Temporary in-water steel piles would be installed with a vibratory driver to resistance for the permanent bridges and to refusal for the temporary work bridges.
- Where practical, air bubble curtains would be used to attenuate sound, and turbidity curtains would be utilized to contain and settle sediments, when impact driving the 36-inch-diameter piles at Bridge 3.9.
- Dispersal strikes would be utilized when an impact hammer is used to install permanent in-water piles to minimize the potential for fish to be near when production pile driving occurs.
- A Temporary Erosion and Sediment Control Plan and BMPs would be installed to reduce erosion from exposed soils and maintained throughout the Project construction to ensure effectiveness.
- The contractor would install and maintain BMPs to keep construction debris from entering waters of the U.S.
- A SWPPP would be implemented as part of the NPDES Permit.

- To help prevent the spread of invasive species, equipment would be cleaned to the greatest extent practical prior to arriving to and immediately after leaving the Project site. Cleaning includes scraping/sweeping off any debris or soil and pressure washing at an off-site location before transportation to the work site to minimize impacts to fish and wildlife. Equipment coming into the LPO watershed, specifically from outside the state, would undergo high-risk inspection as required by ISDA and the Bonner Soil & Water Conservation District. If material is found, equipment would be hot-washed. Work boats and barges would procure annual invasive species stickers that certify watercraft would comply with the IDFG/ISDA inspection policies for invasive species prior to deployment into LPO. Cleaning shall be adequate to remove all life stages of aquatic invasive species.
- A migratory bird nesting survey would be conducted at the beginning of the season, within the study area, prior to ground-disturbing activities. If a nest is identified, a plan for impact minimization would be established with the necessary agencies.
- Turbidity curtains would be used to contain and settle sediments when removing the 24-inch piles at the Bridge 3.9 temporary work bridge.

### 4.1.2 Floodplains

BNSF would apply for local floodplain development permits from local agencies (City and County) to comply with FEMA National Flood Insurance Program standards. Applications for these permits would include a hydraulic analysis documenting that the Project would result in “no-rise” in the 100-year BFE.

### 4.1.3 Archaeological and Historic Resources

A Project-specific IDP would be prepared and provided to consulting parties and interested Tribes prior to construction. The IDP would identify the appropriate parties to be contacted and protocols to follow if cultural materials are exposed during construction.

BNSF would conduct a pre-construction assessment of the Sandpoint Amtrak Depot to document baseline conditions of the existing structure. Ongoing monitoring and inspection of the Sandpoint Amtrak Depot building would be conducted during construction.

### 4.1.4 Socioeconomics

The following minimization and mitigation measures are recommended during construction to minimize the effects of construction activities on the local economy and community facilities (noise-related measures are discussed in this section under Noise and Vibration):

- Construction activities at Bridge 3.0 and Bridge 3.1 shall only occur between October 1 and April 30.
- Coordinate with the City and County to schedule construction activities to accommodate special events.
- Prepare a Pedestrian Accessible Route Plan, including signage for pedestrians and a commitment to keep at least one sidewalk open at all times on Bridge Street.

### 4.1.5 Visual Quality

Avoidance and minimization measures related to visual quality include:

- Fugitive light from light sources used for construction would be minimized and directed toward the work zone. Where feasible, construction would be limited to daylight hours.
- Materials for permanent structures would be nonreflective to blend with the surroundings where practicable.
- Where feasible, trees may be planted to offset the removal of trees within Project area.

### 4.1.6 Noise and Vibration

Vibration monitoring would be conducted during all construction activities that utilize heavy equipment within 500 feet of the Sandpoint Amtrak Depot. An audible or remote alarm should sound when vibration levels exceed 0.12 inches per second and work in that area should continue with smaller, less vibratory equipment.

Avoidance and minimization measures related to construction noise include:

- Construction shall only occur between the hours of 7:00 a.m. to 7:00 p.m., all days of the week, with two exceptions: girder erection of Bridge 3.0 shall only occur between the hours of 8:00 p.m. and 6:30 a.m., unless otherwise approved by the City, and pile-driving activities at Bridge 3.0 and Bridge 3.1 shall only occur between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday. Pile-driving activities at Bridge 3.9 would be limited to the hours between 7:00 a.m. and 7:00 p.m., all days of the week.
- Construction equipment would be muffled.
- Radios that can be heard off-site should not be used before 7:00 a.m. and be no louder than necessary.
- Take care when dropping materials from a height, for example, into or out of a truck or when loading or unloading scaffolding.
- Shut or throttle down equipment (such as backhoes, cranes, bobcats, loaders, and generators) whenever they are not in actual use.
- Ensure that noise reduction devices, such as mufflers, are fitted and operating effectively.
- Use available and reasonable noise suppression devices and techniques during construction operations.
- A Construction Noise Logistics Plan would be prepared that specifies hours of construction, noise minimization measures, and construction schedule posting or notification to the community. The plan shall include, but not be limited to, the above-referenced noise measures to reduce construction noise levels as low as practical and appropriate noise notification measures developed in coordination with the City.

### 4.1.7 Hazardous Materials

Avoidance and minimization measures related to the management of hazardous materials include:

- Implementation of 401 WQC Conditions 35 through 42 related to the management of hazardous or deleterious materials (IDEQ 2019).
- An SPCC plan would be implemented to ensure that pollutants and products would be controlled and contained.
- All equipment would be cleaned of accumulated grease, oil, or mud and inspected daily to check for leaks or problems at an off-site location before transportation to the work site.
- Equipment and machinery used in or over water shall be steam cleaned of oils, grease, and invasive species in an upland location or staging area with appropriate wastewater controls and treatment prior to entering on or over a water of the state (LPO or Sand Creek). Any wastewater or wash water must not be allowed to enter a water of the state. Cleaning shall be enough to remove all life stages of aquatic invasive species.
- Fully stocked petroleum containment spill kits would be at power equipment work sites and construction staging areas during construction.
- Containment would be under equipment that contains fuels or other hazardous materials on the temporary bridge work or within 100 feet of the creek/lake.
- Fuel containers would not be stored on the temporary work bridge. Fueling and maintenance work would occur with secondary containment when on the temporary work bridge. Fuel and hazardous material storage and staging would occur 50 feet away from waters of the U.S.
- Fully stocked spill kits would be kept on-site during construction. Spill containment systems must be adequate to contain fuel leaks.
- Petroleum products and hazardous, toxic, and/or deleterious materials shall not be stored, disposed of, or accumulated adjacent to or in the immediate vicinity of waters of the state.
- If contaminated soil or materials are encountered during construction, the contaminated product would be assessed, handled, stored, and disposed of in accordance with established BNSF protocols and in compliance with applicable state and federal regulations.

### 4.1.8 Traffic

The Project would be designed to incorporate the following features to minimize impacts to vessel traffic, as identified in the Reasonable Needs of Navigation Analysis for BNSF Bridge 3.1 and BNSF Bridge 3.9:

- Construction timing of the new bridge over Sand Creek would be limited to periods of minimal to no navigation upstream of existing BNSF Bridge 3.1. Work in and immediately adjacent to the channel under the bridge would be restricted to the winter LPO drawdown or low-pool season. Temporary piles or work bridge spans in and over the creek channel would be removed to provide safe navigation clearances during the summer boating season.

- Design of the new bridges over Sand Creek (Bridge 3.1) and LPO (Bridge 3.9) would meet the reasonable needs of navigation as stated in the USCG public notice for the second public comment period on the Draft EA and in a letter from USCG to BNSF (PN 03-19; USCG 2019).
- During construction of the LPO Bridge (3.9), the temporary work bridges would be designated to comply with the requirements of the USCG Bridge Permit to provide adequate horizontal and vertical clearances and to protect the reasonable needs of navigation.
- Construction of new bridges and existing bridges would include signage and navigational lighting to provider boaters with clear information on navigational obstructions or limitations throughout construction and after the new rail bridges are in service.
- Notification to mariners would be provided through the USCG Notice to Mariners, signage at marinas and public boat launch facilities, state and local waterways agencies, local newspapers, and publications.

To minimize impacts to vehicular traffic, the BNSF construction contractor would develop a traffic control plan compliant with ITD, Bonner County Road and Bridge, and Sandpoint Police Traffic Safety rules and requirements. Break-in access may require access permits from ITD and/or road use permits from the County and the City may be required and would be acquired prior to use. The plan would include, but not be limited to, the following measures:

- Always allow emergency vehicles immediate passage on Bridge Street.
- Maintain a minimum vehicle travel width of no less than 9 feet at any time on Bridge Street.
- Single-lane closures on Bridge Street shall be approved by the City.
- Vehicles on Bridge Street shall not be stopped or help for more than 20 minutes at any time.

## 4.2 Compensatory Mitigation

### 4.2.1 Water Resources and Water Quality/Wetlands

Mitigation for the wetland fill associated with the Proposed Action Alternative is intended to be satisfied via an agency-approved mitigation bank, the Valencia Wetland Mitigation Bank/Valencia Wetlands Trust (bank) located in Priest River, Idaho. The bank is governed by an inter-agency review team consisting of the USACE, USEPA, IDFG, and IDEQ. The USEPA and USACE issued regulations in 2008 establishing a preference for the use of banks to offset wetland impacts when appropriate bank credits are available (40 CFR 230 and 33 CFR 325 and 332).

As previously mentioned, the Project would result in a total of 0.28-acre of permanent wetland fill. The bank requires applicants to use the Montana Wetland Function Assessment Method (Burglund and McEldowney 2008) that evaluates 12 specific functions and values of the impacted wetland for water quality, hydrology, and habitat and determines a rating category, functional points, and functional units. Once the functional units are calculated, the bank uses a 1:1 credit ratio for projects within their primary service area in the County, whereby 1 functional unit is equivalent to 1 mitigation bank credit. The functional units for the 0.28-acre wetland impact are calculated to be 0.95 units (see Table 4 in **Appendix F**); therefore, 0.95 credits (1:1 ratio) would be purchased at the bank for compensatory wetland mitigation. The bank currently has approximately 1,000 credits available for purchase (Valencia Wetlands Trust 2017).

Proposed mitigation for 0.88-acre of permanent nearshore fills was considered by interested LPO and Sand Creek stakeholders through a collaborative, consensus-based process. Participating stakeholders since May 2018 include the USFWS, IDFG, IDEQ, and other representatives from the Avista Clark Fork project and the Panhandle Chapter of Trout Unlimited. BNSF also separately requested meetings with interested Tribes in April 2018 to initiate mitigation discussions, and the Kootenai Tribe of Idaho subsequently requested participation in the collaborative stakeholder process.

These meetings identified feasible options to mitigate impacts to affected nearshore areas and aquatic resources, ranging from providing support for implementation of NWAC's LPO GRP response strategies to providing funding support for off-site fish habitat restoration projects that are underway or planned for the near future. Those meetings resulted in the recognition that there were not any current projects requiring financial or other in-kind support that BNSF could contribute to. Consequently, BNSF is currently proposing to provide compensatory mitigation for both the wetland fills and the nearshore impacts via purchase of credits at the Valencia Wetland Mitigation Bank. The mitigation bank's goal and objective of restoring numerous classes of palustrine wetlands, including open-water wetland complex such as nearshore areas of LPO impacted by the project, would provide significant improvements to aquatic resources and contribute positively to long-term functions in the watershed.

On-site restoration of the nearshore fill areas is additionally proposed within the study area and would occur near the end of Project construction. The proposed mitigation plan is currently under review by the USACE and will not be approved until the USACE issues its permit decision. However, the proposed mitigation concept and use of mitigation banking appears to be the most appropriate form of mitigation to offset unavoidable impacts to Waters of the US, related to the proposed discharges of fill material, and is in alignment with the Corps Mitigation Rule (33 CFR 332). BNSF will provide proof of the mitigation bank credit purchase, as required by the USACE.

# 5.0 COORDINATION AND COMPLIANCE

## 5.1 Agency and Tribal Consultation

### 5.1.1 USFWS

The USFWS is being formally consulted for potential impacts to listed species (bull trout) that are documented to occur in the study area under Section 7 of the ESA. A BA was prepared for the Proposed Action Alternative and was submitted to the USFWS by the USCG to initiate consultation. Consultation has been completed; the USFWS issued a BO for the proposed Project on May 3, 2019 (**Appendix E**).

### 5.1.2 Idaho SHPO

The USCG initiated Section 106 consultation with the Idaho SHPO on January 25, 2018, via transmittal of the Cultural Resources Technical Report for the Proposed Action Alternative. SHPO requested additional information regarding impacts to the non-water crossing bridge (Bridge 3.0 over Bridge Street) on March 10, 2018. Additional information was returned to the SHPO via the USCG on June 18, 2018. SHPO provided concurrence with the findings of the Cultural Resources Technical Report on August 8, 2018 (**Appendix I**).

### 5.1.3 Native American Tribes

The USCG initiated government-to-government Section 106 consultation with Native American Tribes on January 25, 2018. The Cultural Resources Technical Report for the Proposed Action Alternative was transmitted to the Kootenai Tribe of Idaho, the Coeur d' Alene Tribe, the Kalispel Tribe of Indians, and the Spokane Tribe of Indians. The Kootenai Tribe provided a letter to the USCG on February 20, 2018, accepting the offer to initiate government-to-government consultation for the Proposed Action Alternative. The USCG also notified the Confederated Salish and Kootenai Tribes of the Flathead Reservation of the second public comment period on the Draft EA ending May 1, 2019, by email in response to comments received during the first public comment period. Tribal consultation will be ongoing through the EA process. The results of the consultation process will be described in the NEPA decision document (a Finding of No Significant Impact would be provided, if determined appropriate).

## 5.2 Permits and Approvals

### 5.2.1 Federal

Due to the need to conduct in-water and overwater work across navigable waters, the Project requires bridge permits from the USCG under Section 9 of the RHA and an individual permit from the USACE under Section 404 of the CWA and Section 10 of the RHA. Applications for federal permits were submitted to these agencies on December 27, 2017.

Because of this federal permit requirement, the Project has received a WQC from IDEQ (as the federal representative of USEPA) to ensure compliance with Section 401 of the CWA. Since Project construction would disturb more than one acre, an NPDES permit is required from IDEQ (as the federal representative of USEPA) under Section 402 of the CWA. BNSF received confirmation of NPDES coverage for the Project in June 2019.

### 5.2.2 State and Local

Under the ICC Termination Act, 49 U.S.C. § 10501(b), the federal STB has exclusive jurisdiction over railroad operations and facilities. As such, state and local agencies do not have jurisdiction to require railroads to submit state or local permit applications to construct railroad interstate facilities. However, railroads can and often do voluntarily agree to comply with reasonable state and local environmental regulations. For the Proposed Action Alternative, BNSF has obtained an Encroachment Permit from the IDL under the Idaho Lake Protection Act and local floodplain development permits from the City and the County to comply with FEMA requirements, including preparation of a hydraulic analysis (**Appendix H**) documenting that the Project has no net rise in the 100-year BFE. In addition, the contractor would work with the Idaho Department of Transportation, the County, and the City, where necessary to obtain road and ROW use permits.

BNSF applied for the Encroachment Permit in December 2017. IDL held two public hearings on May 23, 2018, for the IDL Hearing Examiner to gather testimony regarding the Proposed Action Alternative for the record. BNSF conducted a presentation summarizing the Proposed Action Alternative and public testimony was taken, in addition to solicitation for written public comment. The Director of IDL issued a Final Order approving the application with no conditions on June 21, 2018 (**Appendix K**).

## 5.3 Compliance with Other Laws and Regulations

The current status of compliance with environmental laws and regulations that may apply to the Project is provided in **Table 20**.

**Table 20: Status of Compliance with Environmental Laws/Regulations**

| Law/Regulation | Requirement | Status of Compliance |
|---|---|---|
| American Indian Religious Freedom Act | Directs agencies to respect the practice of traditional American Indian religions, including access to religious sites and use of ceremonial items. | The Project is not located on federal lands and, although consultation with interested Tribes is ongoing as noted in Section 5.1, no religious sites have been identified within the Project study. |
| Archeological and Historic Preservation Act | Requires federal agencies to identify and recover data from archeological sites threatened by their actions. | Compliance with AHPA is satisfied through compliance with Section 106 of the NHPA. |
| Clean Air Act | Requires agencies to act in conformity with State Implementation Plans that set air quality standards. | The Project does not propose a change in operations beyond improving the fluidity of train traffic. As documented in Section 3.1 of the Draft EA, the Project would not result in an exceedance of regulated emissions standards or a change in attainment designation. |

**Table 20: Status of Compliance with Environmental Laws/Regulations (continued)**

| Law/Regulation | Requirement | Status of Compliance |
|---|---|---|
| Clean Water Act | Requires dredge and fill permits for certain actions affecting the waters of the U.S. | As discussed in Sections 3.3 and 3.4, the proposed Project would result in 0.88 acre of nearshore fill and 0.28 acre of wetland fill. BNSF has applied for a CWA Section 404 permit from the USACE. Compensatory mitigation would be provided. BNSF obtained CWA Section 401 Water Quality Certification from the Idaho Department of Environmental Quality. |
| Comprehensive Environmental Response, Compensation, and Liability Act | Requires reporting of releases and cleanup of hazardous substances. Requires identification of uncontaminated property prior to transfer. Requires plans for cleanup of contaminated sites and disclosure to public of hazardous materials and processes. | No property acquisition is proposed as part of the proposed Project. Section 3.14 of the Draft EA discusses the risk of spills, the potential to encounter contamination during Project construction and operation, and appropriate responses that would be implemented in such cases. |
| Endangered Species Act | Requires consultation with USFWS or NOAA Fisheries to ensure actions do not jeopardize threatened or endangered species or their habitat. | As discussed in Sections 3.8 and 5.1, the USCG initiated consultation with the USFWS under Section 7 of the Endangered Species Act. Consultation was ongoing through the EA process. The outcome included a Biological Opinion with an Incidental Take Statement which is included in **Appendix E**. No NOAA Fisheries-managed species are present in the action area; therefore, consultation with NOAA Fisheries is not required. |
| Environmental Quality Improvement Act | Declares a national policy for enhancement of environmental quality, assigns primary responsibility to state and local governments, and mandates that agencies conducting or supporting public works activities implement existing environmental protection and enhancement policies. | The USCG circulated the EA for public and agency review to facilitate preparation of a quality environmental document prior to issuing a decision on the Project. |
| Flood Disaster Protection Act | Prohibits federal actions related to an occupancy structure in areas subject to flood hazards, unless the property is covered by flood insurance. | As discussed in Section 3.5, the Project is not expected to increase the danger of flooding. BNSF prepared a hydraulic analysis to document no net rise in the BFE. |

**Table 20: Status of Compliance with Environmental Laws/Regulations (continued)**

| Law/Regulation | Requirement | Status of Compliance |
|---|---|---|
| Historic Sites Act | Establishes National Historic Landmark program and declares a national policy to preserve sites, buildings, and objects significant in American history. | As discussed in Section 3.9, the cultural resources evaluation conducted for the proposed Project under Section 106 of the NHPA indicates that none of the resources within the study area are considered significant in American history. |
| National Historic Preservation Act | Requires agencies to identify historic properties that may be affected by their actions, and to consult with the State Historic Preservation Officer and others about alternatives and mitigation in the event the Proposed Action Alternative affects an eligible or listed historic property. | Compliance with the NHPA is documented in Section 3.9 of the EA. Consultation with the Idaho State Historic Preservation Office is complete while consultation with other consulting parties is ongoing, as stated in Section 5.1. |
| Noise Control Act | Prohibits removing noise control devices or rendering them inoperable. Requires the USEPA to act as federal coordinator for noise control efforts and establishing noise control standards. | Section 3.13 of the EA documents potential noise impacts associated with the proposed Project. Construction activities would comply with local noise ordinances. |
| Resource Conservation and Recovery Act | Regulates hazardous and solid waste activities and underground storage tanks. | Section 3.14 of the EA discusses the potential to encounter contamination during Project construction and summarizes BNSF's emergency preparedness program. |
| Safe Drinking Water Act | Sets standards for drinking water quality and regulates activities affecting drinking water supplies. | Section 3.3 of the EA analyzes existing drinking water quality and potential impacts from the proposed Project. The EA found no issues with complying with the requirements of the SDWA. |
| Toxic Substances Control Act | Regulates specific chemical substances, including PCBs and asbestos. | Section 3.14 of the EA discusses the potential to encounter contamination during Project construction, including specific chemical substances. No PCBs or asbestos have been documented within the study area. |
| EO 11514: Protection and Enhancement of Environmental Quality | Requires agencies to monitor, evaluate, and control activities to protect and enhance the quality of the environment. | The USCG is soliciting input from cooperating agencies and other interested parties throughout preparation of the EA prior to issuing a decision on the Project. The USCG's decision document will identify appropriate mitigation measures to minimize potential impacts to the environment. |

**Table 20: Status of Compliance with Environmental Laws/Regulations (continued)**

| Law/Regulation | Requirement | Status of Compliance |
|---|---|---|
| EO 11988: Floodplain Management | Requires agencies to evaluate the potential effects of any action it takes in a floodplain and consider alternatives to avoid adverse effects. | Section 3.5 of the EA analyzes potential impacts to floodplains. The proposed Project would not result in a significant encroachment into the floodplain. BNSF has prepared a hydraulic analysis to document no net rise in the BFE. |
| EO 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations | Requires federal agencies to identify and address any disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. | Section 3.10 of the EA analyzes potential impacts to low-income and minority populations. The proposed project would not result in disproportionately high and adverse impacts. |
| EO 13045: Protection of Children from Environmental Health Risks and Safety Risks | Requires federal agencies to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. | As documented in Section 3.14 of the EA, the proposed Project would not generate any environmental health and safety risks that would disproportionately affect children. |

Notes:
AHPA = Archeological and Historic Preservation Act
BFE = Base Flood Elevation
CWA = Clean Water Act
EA = Environmental Assessment
NHPA = National Historic Preservation Act
NOAA = National Oceanic and Atmospheric Administration
PCB = polychlorinated biphenyl
SDWA = Safe Drinking Water Act
USACE = U.S. Army Corps of Engineers
USCG = U.S. Coast Guard
USEPA = U.S. Environmental Protection Agency
USFWS = U.S. Fish and Wildlife Service

## 5.4 Agency Coordination

A summary of agencies and persons contacted during preparation of the EA are identified in **Table 21.**

**Table 21: Agencies and Persons Contacted**

| Agency | Individual | Date Contacted |
|---|---|---|
| USACE | Shane Slate, Regulatory Project Manager | February 2017 and ongoing |
| USCG | Steven Fischer, District Bridge Manger, Thirteenth USCG District | February 2017 and ongoing |
| USCG | John Greene, Environmental Policy Analyst | February 2017 to April 2018 |
| USCG | Shelly Sugarman, USCG Headquarters, Chief, Bridge Permits and Policy Division | April 2018 and ongoing |
| USCG | Brian Dunn, USCG Headquarters, Chief, Office of Bridge Programs | May 2018 and ongoing |
| USCG | James Moore, Bridge Management Specialist | May 2018 and ongoing |
| USFWS | Marshall Williams, Biologist | August 2017 and ongoing |
| USFWS | Gregory Hughes, State Supervisor | May 2019 |
| NWCAA | Gail King, Air Quality Compliance Coordinator | April 2019 |
| NWCAA | Axel Franzmann, Atmospheric Measurement Manager | April 2019 |
| IDEQ | June Bergquist, Compliance Officer | February 2017 and ongoing |
| IDEQ | Daniel Redline, Regional Administrator | September 2018 |
| IDEQ | Aislinn Johns, Airshed Management Analyst | May 2019 and ongoing |
| IDFG | Kathy Cousins, Mitigation Staff Biologist | June 2018 |
| IDL | Amidy Fuson, Resource Specialist Sr. | February 2017 and ongoing |
| IDL | Jim Brady, Resource Supervisor | February 2017 and ongoing |
| Idaho SHPO | Matthew Halitsky, Historic Preservation Review Officer | July 2018 and ongoing |
| Idaho Department of Water Resources | Maureen O'Shea, State National Flood Insurance Program Coordinator | July 2018 and ongoing |
| Bonner County | Jason Johnson, Planner | July 2018 and ongoing |
| City of Sandpoint | Don Carter, Inspector | July 2018 and ongoing |
| City of Sandpoint | Ryan Shea, Assistant Planner | July 2018 and ongoing |

Notes:
IDEQ = Idaho Department of Environmental Quality
IDFG = Idaho Department of Fish and Game
IDL = Idaho Department of Lands
NWCAA = Northwest Clean Air Agency
SHPO = State Historic Preservation Office
USACE = U.S. Army Corps of Engineers
USCG = U.S. Coast Guard
USFWS = U.S. Fish and Wildlife Service

## 5.5 Public Involvement

The Draft EA was made available for public review, and comments were solicited by the USCG between February 6 and May 1, 2019. The USCG publicly announced the availability of the Draft EA and solicitation of comments through March 25, 2019, through publication of a notice in the Federal Register on February 6, 2019 (84 FR 2241). A second announcement was made on April 1, 2019, by USCG Public Notice extending the comment period to May 1, 2019 (Public Notice 03-19). The Draft EA was made available for review on the internet on the federal website (www.regulations.gov), in print at the East Bonner County Library in Sandpoint, and at the USCG's Thirteenth District Office in Seattle, Washington. Two public meetings were held on Wednesday, March 13, 2019, at 8:00 a.m. and 6:00 p.m. at the Ponderay Events Center in Ponderay, Idaho. Oral testimony from the public during each meeting was recorded as written transcripts for review and consideration along with written comments received.

Substantive comments are generally considered those that provide additional relevant information not already considered in the preparation of the EA, provide a reasonable basis for questioning the accuracy of the information or adequacy of the methodology used in the analysis, or identify a reasonable alternative that was not previously considered. Substantive comments were received related to several general topics covered in the EA. These substantive comments have been addressed by making revisions to the analysis and adding information as necessary in this Final EA. These changes are summarized by general topic in **Appendix A**.

## 5.6 List of Preparers

Individuals that contributed to preparation of the EA are identified in **Table 22**.

**Table 22: List of Environmental Assessment Preparers**

| Firm | Individual | Contribution |
|---|---|---|
| Jacobs | Pierre Bordenave, Director – Environmental Rail | PM, EA Author |
| Jacobs | Jason Smith, NW Environmental Program Manager | PIC, QA/QC |
| Jacobs | Diane Williams, Environmental Planner | QA/QC |
| Jacobs | Maggie Buckley, Senior Environmental Planner | EA Author |
| Jacobs | Railin Santiago, Environmental Planner | EA Author |
| Jacobs | Sue PaDelford, Senior Biologist | PM, EA Author |
| Jacobs | Craig Broadhead, Senior Biologist | EA Author |
| Jacobs | Bill Bumback, Senior Environmental Planner | EA Author |
| Jacobs | Sandra Salisbury, Senior Landscape Architect | EA Author |
| Jacobs | Jennifer Cyr, Technical Editor | QA/QC |
| Jacobs | Linda St. John, Technical Editor | QA/QC |
| Jacobs | Ian David Crickmore, GIS | GIS/Map Exhibits |
| Jacobs | Michael Hoffman, Senior Environmental Planner | EA Author |
| BNSF | Matt Keim, Manager Engineering | Project Description, QA/QC |
| BNSF | Kris Swanson, Manager Construction Permitting | Project Description, QA/QC |
| BNSF | Courtney Wallace, Regional Director Public Affairs | Information/Statistics |
| BNSF | Dava Kaitala, JD, General Director, Construction Permitting | QA/QC, Legal Review |
| BNSF | Teena Kilian, General Attorney | Legal Review |
| BNSF | Brooke Gaede, General Attorney | Legal Review |
| Hanson Professional Services, Inc. | Mat Fletcher, PE | Permit Drawings, Hydraulic Analysis |

Notes:
BNSF = BSNF Railway Company
EA = Environmental Assessment
GIS = geographic information system
Jacobs = Jacobs Engineering Group Inc.
PIC = principal in charge
PM = project manager
QA/QC = quality assurance/quality control

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# Appendix A

# Summary of Substantive Draft EA Comments and Responses

# Appendix B

# Bridge Permit Drawings

# Appendix C

# Site Photographs

# Appendix D

# Air Conformity Applicability Study

# Appendix E

# Biological Opinion and Biological Assessment

# Appendix F

# Wetlands and Waters of the U.S. Delineation Report

# Appendix G

# Waters of the U.S. Impact Maps

# Appendix H

# Hydraulic Analysis

# Appendix I

# State Historic Preservation Office Concurrence

# Appendix J

# Socioeconomic Analysis

# Appendix K

# Idaho Department of Lands Encroachment Permit

# Appendix L

# Visual Impact Analysis

# Appendix M

# Vibration Assessment

# Appendix N

# Lake Pend Oreille Geographic Response Plan

# Appendix O

# HazMat Response Equipment

# Appendix P

# State and Local Agency Letters

# Appendix Q

# Geographic Response Plan After Action Reports