Appendix F

Wetlands and Waters of the U.S. Delineation Report

WETLANDS AND WATERS OF THE U.S. DELINEATION REPORT - BNSF SANDPOINT JUNCTION CONNECTOR PROJECT

BNSF Montana Division, Kootenai River Subdivision,
Line Segment 45, MP 2.9 +/- to 5.1+/-
Bonner County, Idaho

November 29, 2017

UPDATED 10/17/2018

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Contents

Executive Summary

The BNSF Railway Co. (BNSF) proposes to construct a 2.2-mile-long second mainline track west of the existing BNSF mainline to connect the North Algoma Siding track (MP 5.1) south of Sandpoint, to the Sandpoint Junction switch (MP 2.9), where the BNSF and the Montana Rail Link (MRL) mainlines converge in Sandpoint, Idaho. The project includes the construction of a new track west of the existing mainline track with two new bridges over Sand Creek and Lake Pend Oreille, Bridge 3.1 and Bridge 3.9, respectively.

The project will require review and permitting by:

Section 404/Section 10 - Department of the Army, Walla Walla Regulatory Corps District (Corps)

- Section 404
  - Bridge 3.1 Over Sand Creek
    - 0.05 acres temporary nearshore impact (north end)
    - 0.28 acres permanent wetland fill (south end)
  - Bridge 3.9 Over Lake Pend Oreille
    - 0.30 acres temporary nearshore fill (north end)
    - 0.57 acres permanent nearshore fill (north end)
    - 0.03 acres temporary nearshore fill (south end)
    - 0.01 acres permanent nearshore fill (south end)
- Section 10 and Section 404
  - Algoma Switch (south end of project)
    - 0.29 acres permanent nearshore fill

Section 9 - US Coast Guard, Thirteenth District (USCG)

- Bridge 3.1 Over Sand Creek
  - 0.05 acres temporary nearshore impact (north end)
  - 0.01 acres temporary nearshore impact (south end)
  - New bridge
- Bridge 3.9 Over Lake Pend Oreille
  - 0.30 acres temporary nearshore fill (north end)
  - 0.57 acres permanent nearshore fill (north end)
  - 0.03 acres temporary nearshore fill (south end)
  - 0.01 acres permanent nearshore fill (south end)
  - New bridge

Non-Navigational Encroachment Permit – ID Department of Lands (IDL)

- Bridge 3.1 Over Sand Creek
  - New bridge
- Bridge 3.9 Over Lake Pend Oreille
  - New bridge

1. Introduction

This report identifies and describes wetland and stream resources in the study area in order to:

1. Avoid and minimize impacts to wetlands and streams during the design process;
2. Formally document wetland and stream boundaries for jurisdictional determination concurrence by regulatory agencies; and
3. Provide information to facilitate regulatory permitting.

The study area is identified as being within the 200-foot right-of-way (ROW) of the BNSF tracks from MP 2.9+/- to MP 5.1+/- (**refer to Appendix A – Reference Maps**). The work limits associated with construction of the second mainline track are within this area.

Jacobs' Biologist, Sue Platte, performed a wetland delineation of the study area in May 2015 and on September 25, 2017. The wetland delineated within the study area (Wetland A) occurs between the rail grade and the pedestrian path north of the Sand Creek Bridge 3.1. Most of this wetland bottom is just below 2062.5-foot OHWM, but retains wetland characteristics year round and is not navigable, so it is defined as having Corps-only jurisdiction.

2. Proposed Project

2.1 Location

The project is located in the BNSF Montana Division, Kootenai River Subdivision, Line Segment 45, from Milepost 2.9+/- to 5.1+/- in Bonner County, Idaho; in portions of Sections 15, 22, 23, 25, 26, and 36, Township 57 North, Range 2 West, Boise Meridian; and is partially within the City of Sandpoint. Latitudinal and longitudinal coordinates for the north end (MP 2.9) of the project are 48°16'54.10"N, 116°32'49.35"W, and for the south end (MP 5.1) are 48°14'56.24"N, 116°31'24.02"W (**refer to Appendix A – Reference Maps**).

2.2 Purpose and Project Description

The project work consists of the following key elements or actions:

1. A new mainline track west of the existing BNSF mainline track;
2. Track, switch and signal upgrades;
3. A new bridge over LPO (Bridge. 3.9) adjacent to (west of) the existing rail bridge;
4. A new bridge over Sand Creek (Bridge 3.1) adjacent to (west of) the existing rail bridge;
5. A new bridge over Bridge Street (Bridge 3.0) adjacent to (west of) the existing rail bridge;
6. 0.88-acre of permanent and 0.38-acre of temporary nearshore fill below the jurisdictional OHWM of 2062.5 feet, associated with bridge abutments and the south switch; and
7. 0.28-acre of wetland fill in one location between the rail grade and the pedestrian path south of the Sand Creek Bridge 3.1.

The project need is based on continued growth of freight rail service demands in the northern tier, high-volume traffic corridor between the Midwest (Chicago Terminus) and the West Coast. The existing single mainline and portions of the over-water rail bridges date from the early 1900s. Rail traffic volumes have risen steadily for the past three decades resulting in this portion of the interstate main line becoming a constraint to interstate commerce. The proposed project will relieve system congestion, back-up of rail traffic, and reduce hold times on sidings and wait times at grade crossings both locally and regionally.

3. Methods

Wetlands and other natural habitats within the study area were determined and delineated based on a professional field evaluation of vegetation, hydrology, and soils in conjunction with data from the following resources (**refer to Appendix A – Reference Maps**):

- USFWS National Wetland Inventory (NWI) map
- USGS 7.5 minute Topographic Survey Quad map
- Topographic surveys from the project design engineer (Hanson Professional Services)
- USGS Hydrography and StreamStats Mapping (for drainage analysis)
- FEMA Flood Insurance Rate Map (FIRM)
- NRCS Bonner County Soil Survey
- NRCS Bonner County Hydric Soils List
- Publicly available aerial photography
- Google Earth Pro Mapping™ Program

Jurisdictional areas were identified and delineated, and wetland functions and values were assessed in the study area, using the routine approach described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0), May 2010; and the *MDT Montana Wetland Assessment Method, 2008* (Burglund, and McEldowney, 2008).

Formal sampling plots were established within the study area to determine whether there was a prevalence of hydrophytic vegetation. The “50/20 Rule” was utilized during this review. Vegetation is considered hydrophytic (adapted to wet conditions) when over 50% of the dominant plant cover plus 20% or more of species-specific plant cover has a wetland indicator status of facultative (FAC), facultative wetland (FACW), or obligate (OBL).

Boundaries of jurisdictional areas within the study area were delineated with sequentially numbered flags/stakes. Jurisdictional areas on either side of the track within the 200-foot BNSF ROW were then calculated using computer-aided design (CAD) software.

4. Existing Conditions

4.1 Landscape Setting

The study area vicinity is within Hydrological Unit Code (HUC) 17010214–Pend Oreille Lake. Land use in the area within the City of Sandpoint is Urban Residential and Transportation Corridor. At the north end of the project from BNSF MP 2.9 – 3.9, the existing tracks are surrounded by the BNSF maintenance road, the Sandpoint Amtrak Depot, and US Highway 95 to the west; and Sandpoint Avenue, Seasons of Sandpoint condominiums, Best Western Edgewater Resort, Sandpoint Edgewater RV Park, and a portion of the Sandpoint City Beach Marina to the east. BNSF Bridge 3.0 spans over Bridge Street in Sandpoint, BNSF Bridge 3.1 spans over Sand Creek in Sandpoint, and BNSF Bridge 3.9 spans over the open water of Lake Pend Oreille from MP 3.9 to 4.9. The south end of the project from BNSF MP 4.9 – 5.1 is designated as Rural (5) residential (Bonner County, 2017).

The average annual precipitation is about 32 inches and average annual air temperature is about 45^0 F. The majority of precipitation occurs as winter snowfall and spring rain. High-volume runoff occurs during spring snowmelt and major rain-on-snow events (IDL, 2003).

Sandpoint lies on the shores of Idaho's largest lake, 43 mile-long Lake Pend Oreille, and is surrounded by three major mountain ranges, the Selkirk, Cabinet and Coeur d'Alene ranges.

Existing environmental conditions found in the study area consist of the following from north to south:

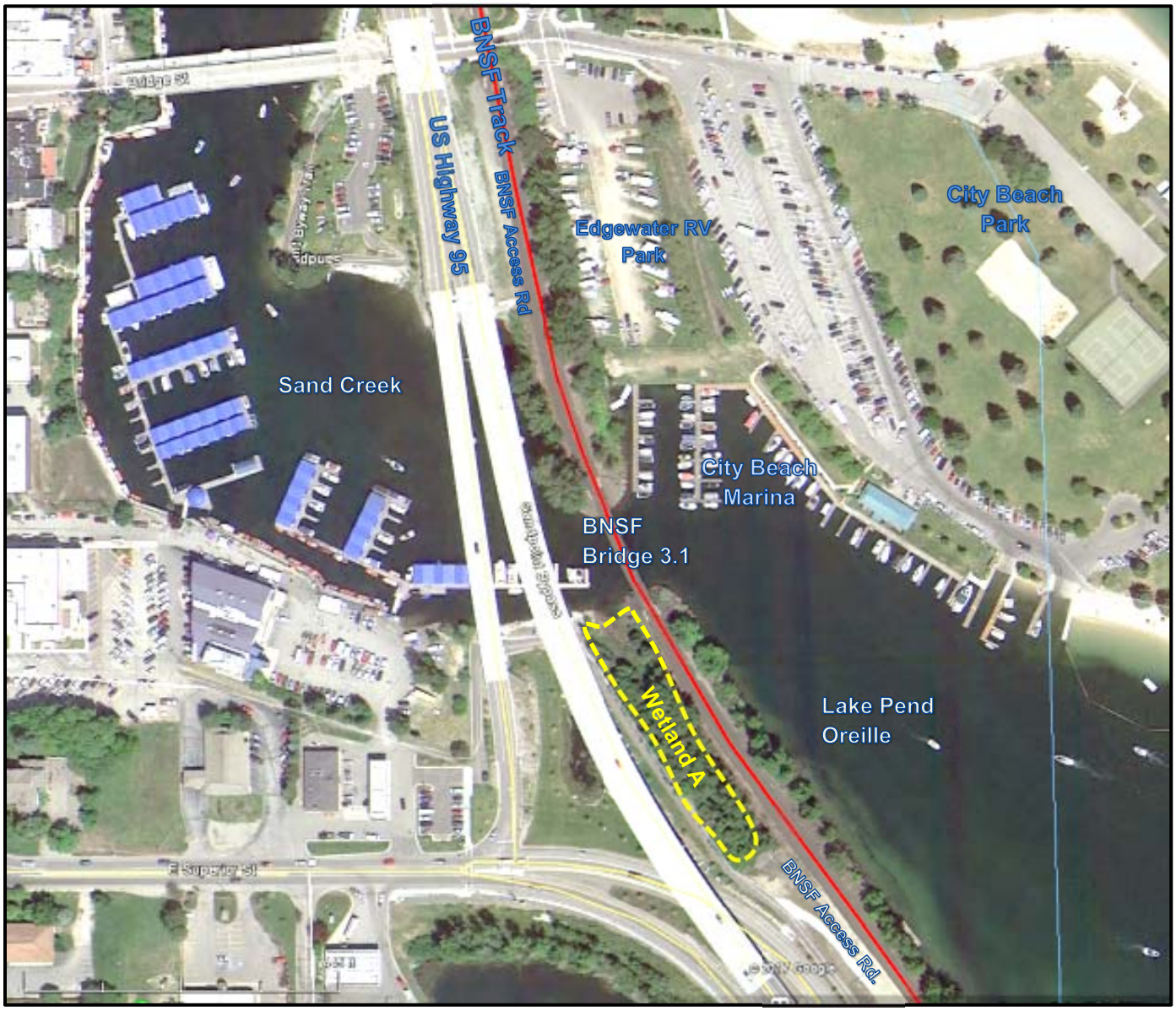
- from BNSF MP 2.9 – 3.05 (**refer to Figure 1**), the BNSF track, the BNSF access road, BNSF Bridge 3.0 over Bridge Street, and either bare ground or disturbed upland grasses on both sides of the track from the Sandpoint Junction switches at MP 2.9, south to the riparian area associated with Sand Creek, just north of BNSF Bridge 3.1 Bridge at MP 3.05;
- from MP BNSF 3.05 – 3.14 (**refer to Figure2**), The OHWM of Sand Creek with riparian vegetation is on both sides of the track situated between the Sandpoint City Beach Marina and US Highway 95;
- from BNSF MP 3.1-3.14 is the BNSF Bridge 3.1 over Sand Creek (**refer to Figure 2**);
- from BNSF MP 3.14 – 3.15 (**refer to Figure 2**), a small wetland area (Wetland A) is on the west side of the track (between the track and the pedestrian path) with riparian, scrub-shrub, and open water wetland vegetation, and the OHWM of Lake Pend Oreille with riparian vegetation is on the east side of the track;
- from BNSF MP 3.15 – 3.4 (**refer to Figure 2**), the BNSF access road with sparse, disturbed upland grasses is on the west side of the track, and the OHWM of Lake Pend Oreille with riparian vegetation on the east side of the track;
- from BNSF MP 3.4 – 3.9 (**refer to Figure 3**), the OHWM of Lake Pend Oreille with riparian vegetation is on both sides of the track and a public beach ("Dog Beach") is on the west side of the track;
- from BNSF MP 3.9 – 4.89 (**refer to Figure 3**), the BNSF Bridge 3.9 spans over Lake Pend Oreille, surrounded by open water;
- from BNSF MP 4.89 – 4.9 (**refer to Figure 3**) at the south end of BNSF Bridge 3.9, the OHWM of Lake Pend Oreille with riparian vegetation is on both sides of the track;

- from BNSF MP 4.9 to 5.0 (**refer to Figure 3**), upland forest is on the east side of the track and a BNSF access road is on the west side; and
- from BNSF MP 5.0 to 5.1(**refer to Figure 3**), the OHWM of Lake Pend Oreille with riparian vegetation is on the west side of the track and upland forest is on the east side.

Figure 1: North End of Study Area (BNSF MP 2.9 - 3.05)

View of the north end of study area near from BNSF MP 2.9 – 3.05. The BNSF track is surrounded by the BNSF access road, Highway 95, the Railroad Depot, and Sand Creek to the west; and the City of Sandpoint's Lake Pend Oreille Water Treatment Plant, Season's Resort, Best Western Edgewater Resort, and Lake Pend Oreille to the east.

Figure 2: Center of Study Area (BNSF MP 3.05 – 3.4)



View of the center of the study area from BNSF MP 3.05 – 3.4. The BNSF track is surrounded by the BNSF access road, Highway 95, Wetland A and the Edgewater Resort, City Beach Marina, and Lake Pend Oreille to the east. BNSF tracks cross over Sand Creek at BNSF Bridge 3.1.

Figure 3: South End of Study Area (BNSF MP 3.4 -5.1)

View of the south end of the study area from from MP 3.4 – 5.1. The BNSF track is surrounded by the pedstrian path, "Dog Beach", and US 95 to the west; Lake Pend Oreille exists to the east; and the BNSF Bridge 3.9 spans over Lake Pend Oreille. At the south end of the study area, upland forest exists on the east side of the track, and a BNSF access road and the OHWM of Lake Pend Oreille with riparian vegetation exists on the west side of the track.

4.1.1 National Wetland Inventory

The NWI for the study area did not identify any wetlands, but mapped Lake Pend Oreille as L2UBH (lacustrine, littoral, unconsolidated bottom, permanently flooded).

4.1.2 Soils

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 Web Soil Survey (NRCS)], and site-specific soil evaluations at the wetland field data points. The Soil Survey of Bonner County, Idaho (USDA, 2006) mapped two 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 (see Appendix A: Resource Mapping for Soil Survey Map, and Appendix B for Wetland Data Forms).

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. This soil is on the Bonner County Hydric Soils List for having inclusions of hydric soil in depressions.

The southern portion of the study area near MP 5.0 is mapped as (35) Pend Oreille silt loam, 5 to 45 percent slopes and (28) Lenz-Rock outcrop association, 30 to 65 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. The Lenz series consists of moderately deep, well-drained soils formed in material weathered from gneiss, schist, and granite, with small amounts of loess and volcanic ash in the upper part; formed on mountain and foothill side slopes. These soils are not on the Bonner County Hydric Soils List.

The upland soils examined onsite generally displayed the following profiles: 10YR 3/3 sandy silt loam with no redoximorphic features. The wetland soil generally displayed the following profiles: very dark brown dark grayish brown 10YR 3/2 silt loam with 10YR 4/6 mottles or redoximorphic features (refer to Appendix B).

4.1.3 Vegetation

Disturbed upland herb vegetation in the study area include species such as cheatgrass, common mullein, timothy, orange hawkweed, perennial ryegrass, rush skeletonweed, spotted knapweed, and western panicgrass, and western wheatgrass (refer to Appendix B, Study Area Plant List).

The riparian vegetation of Sand Creek and Lake Pend Oreille includes emergent species such as reed canarygrass, stinging nettle, smooth brome, and starry false Solomon's seal; and scrub-shrub and forested species such as black cottonwood, red alder, blue elderberry, Rocky Mountain maple, Scouler's willow, redosier dogwood, Nootka rose, Pacific ninebark, trailing blackberry, and Douglas spirea.

Wetland vegetation in the one study area wetland (Wetland A) includes riparian species previously noted, as well as species in the inundated portion of the wetland such as common cattail, common duckweed, and panicled bulrush.

The upland forested vegetation in the study area includes species such as Douglas fir, lodgepole pine, ponderosa pine, western hemlock, western larch, and western red cedar; and is often mixed with an understory of American trailplant, common snowberry, Nootka rose, queencup beadlily, and Oregon boxleaf.

4.1.4 Hydrology

Wetland A

Wetland hydrology was evaluated at the Wetland A (WL-A) data plots in the study area. Evaluation of hydrology included observation of surface water, soil saturation, groundwater depth, ponding, or evidence of drainage patterns. Study area wetland hydrology includes precipitation, adjacent area runoff, and seasonal overflow from Sand Creek.

Lake Pend Oreille

Lake Pend Oreille is the main hydrologic feature in the study area and is the fifth deepest lake in the United States, with a mean depth of 538 feet, a maximum depth of 1152 feet at its southern end, and a surface area of 94,720 acres. It is fed by streams originating in the Selkirk Mountains to the northwest, the Cabinet Mountains to the northeast, and the Coeur d'Alene Mountains to the east, which comprise most of the largely undeveloped, steep rocky terrain of the shoreline and littoral zone. The remaining littoral zone at the lake's northern end and bays consists of gradual or moderately sloping bottom, surrounded by generally flat to gently sloping uplands and floodplain.

The Clark Fork River, originating in western Montana, is the largest tributary into the lake providing 92% of the lake's inflow at the river's mouth near the City of Clark Fork. Three hydroelectric dams were constructed from 1913 to 1959 (Cabinet Gorge, Noxon, and Thompson Falls Dams), creating a series of impoundments on the lower Clark Fork River.

Lake Pend Oreille outlets to the Pend Oreille River near the City of Dover. The river flows west into eastern Washington, then to Canada, where it joins the Upper Columbia River. The Pend Oreille River 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 2062.5 feet from mid-June through September, and 2051 to 2056 feet from October through May.

Lake Pend Oreille lies in the Purcell Trench, a deep glacially carved, u-shaped valley separating the Selkirk Mountains to the northwest, the Cabinet Mountains to the north and east, and the Coeur d'Alene Mountains to the east and south. Much of the lake's shoreline is steep rock cliffs, and the remainder of the lake's perimeter is a combination of shifting river deltas, floodplains, and relict glacial deposits. Lake Pend Oreille is listed as Category 4a for total phosphorus; with a TMDL that was approved in 2008, and is listed as Category 5 in need of a TMDL for mercury impairment (IDEQ, 2017).

A wide diversity of fish species are present in LPO. The native fish present are westslope cutthroat trout, bull trout, mountain whitefish, pygmy whitefish, slimy sculpin, peamouth, northern pikeminnow, redside shiner, longnose sucker, and largescale sucker. Non-native sport fish that have been stocked or found their way into the lake over the years include kokanee, rainbow trout, Gerrard-strain rainbow trout, lake whitefish, lake trout, smallmouth bass, and several other species present in low abundance including northern pike, brown trout, largemouth bass, yellow perch, and walleye (McCubbins, 2016).

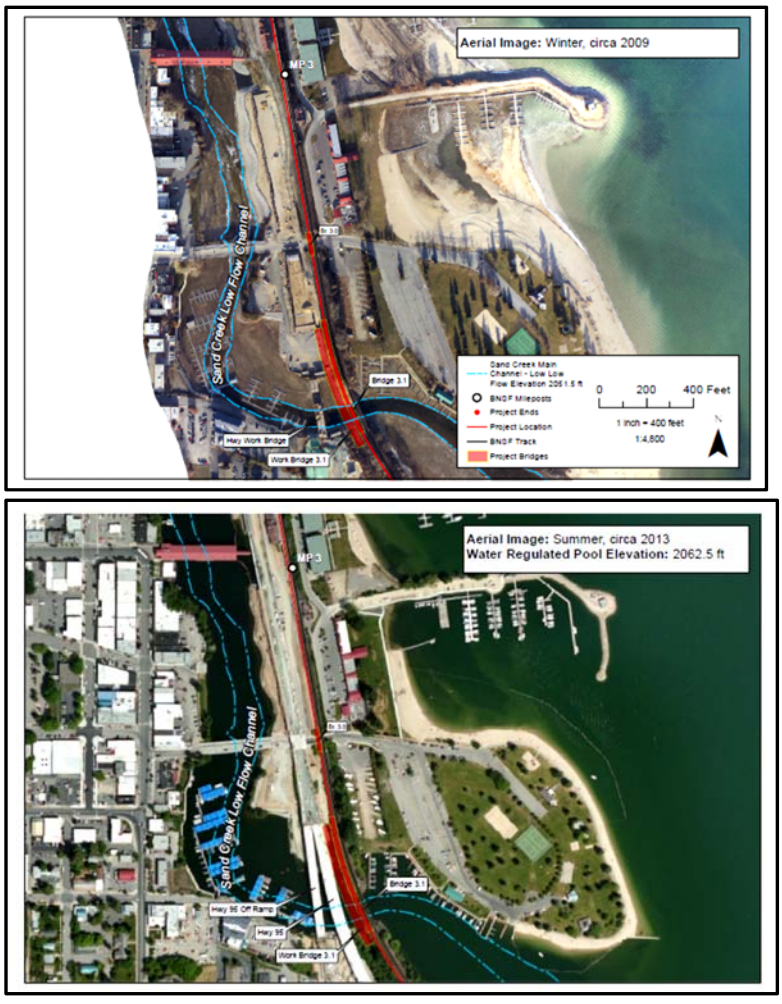
Sand Creek

The Sand Creek drainage generally flows from north to south, with elevation ranging from 5,710 feet at its headwaters north of Sandpoint to 2062.5 feet (summer) or 2051 (winter) at the creek's mouth where it flows into Lake Pend Oreille on the east side of Sandpoint. Sand Creek within the vicinity of the proposed project is subject to the fluctuating pool elevation from the Albeni Falls hydroelectric dam, and is very constricted between mid-October and mid-April due to low channel flow in the winter (refer to Figure 4).

The portion of Sand Creek in the City of Sandpoint is heavily used in the summer by motor boats, kayaks, and paddleboards. There is a pedestrian path along the east side of the creek, and public docks, restaurants, and day use boat access along the west shore. The regulated Ordinary High Water Mark (OHWM) elevation is 2062.5 feet above sea level. This elevation is typically maintained between mid-June, and the end of September.

Sand Creek is listed as Category 4a for sediment/siltation and temperature, and has TMDLs in place that were approved in 2008 (IDEQ, 2017). Fish species found in Sand Creek include brook trout, rainbow trout, westslope cutthroat trout, sculpin, sunfish, whitefish, and rough fish (TerraGraphics, 2006 and IDFG, 1984).

Figure 4: Sand Creek/ Lake Pend Oreille High and Low Water FlowComparisons



4.2 Waters of the U.S / Wetlands

4.2.1 Waters of the US Assessment Summaries

Table 1. Information Summary of Sand Creek in the Study Area

View from southwest side of Bridge 3.1 on the pedestrian path under I-95 underpass, looking east to Sand Creek, the BNSF Bridge 3.1 and northern edge of WL - A.

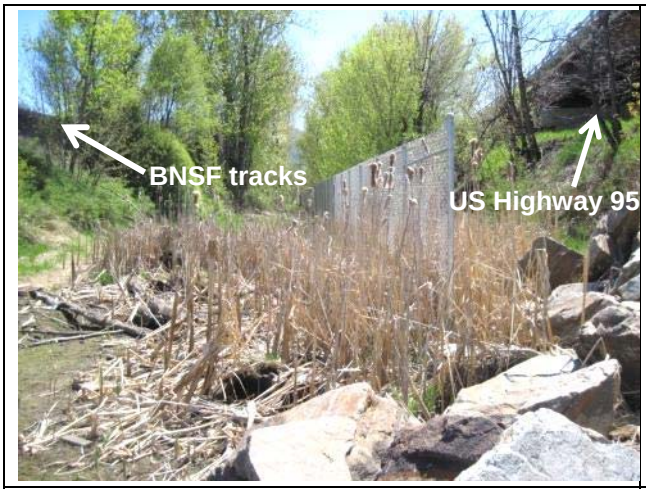
Water of the US Name	Sand Creek
HUC	17010214–Pend Oreille Lake
Potential Fish Use	brook trout, sculpin and sunfish
Location of Water of the US Relative to Study Area	Sand Creek flows under BNSF Milepost 3.1 Bridge in the study area and into Lake Pend Oreille past the Sandpoint City Beach Marina.
Connectivity (where stream flows from/to)	Sand Creek flows south from the mountains, and into Lake Pend Oreille.

Table 2. Information Summary of Lake Pend Oreille in the Study Area

View from the northwest side of BNSF Bridge 3.9 looking south to Lake Pend Oreille and the bridge.

Water of the US Name	Lake Pend Oreille
HUC	17010214–Pend Oreille Lake
Potential Fish Use	Bullheads, crappies, perch, largemouth bass, smallmouth bass, cutthroat trout, kokanee, Gerrard rainbows, bull trout and lake trout.
Location of Water of the US Relative to Study Area	Lake Pend Oreille is directly adjacent to the existing BNSF track in several locations and under BNSF Bridge 3.9
Connectivity (where stream flows from/to)	Lake Pend Oreille originates from the Clark Fork River in western Montana, and outlets to the Pend Oreille River near the City of Dover. The river flows west into eastern Washington, then to Canada, where it joins the Upper Columbia River.

Table 3. Information Summary of Wetland A in the Study Area

	
View looking south to Wetland A between the BNSF tracks to the east and Highway 95 overpass to the west.	View from southwest of Bridge 3.1 on the pedestrian path under Highway-95 overpass, looking east to the northern edge of WL -A, Sand Creek, and BNSF Bridge 3.1.
Wetland Name	Wetland A (WL-A)
WRIA	17010214 – Pend Oreille Lake Watershed
Wetland Size Within BNSF ROW	0.28 - acre
Cowardin Classification	Not mapped on the NWI
HGM Classification	Emergent/Scrub-shrub/Forested
Wetland Data Sheet(s)	A1 (wetland) and A2 (upland)
Dominant Vegetation	Black cottonwood, red alder, blue elderberry, Scouler's willow, redosier dogwood, Nootka rose, Douglas spirea, reed canarygrass, common cattail, duckweed, and panicled bulrush.
Soils	31 – Mission silt loam, 0 to 2 percent slopes
Hydrology	Sand Creek, precipitation, groundwater, and adjacent area runoff.

4.2.2 Wetland Functions and Values

A summary of the wetland functions from the *MDT Montana Wetland Assessment Form* (5/29/1999 version) is displayed in Table 2, and the form can be found in Appendix B of this report. Using the form and user's manual, we assessed and assigned applicable function and value ratings of low, moderate, or high, and scores on a scale of 0.1 (lowest) to 1.0 (highest) "functional points". The scoring scale for each function and value is similar to that of the hydrogeomorphic (HGM) method. Actual functional points were calculated on the data form and expressed as percentage of the possible total functional points. Wetland A rates as a Category IV wetland, with 36% of total possible functional points,.

Table 4. Functions and Values of the Delineated Wetland A

Function & Value Variables[1]	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)
A. Listed/Proposed T&E Species Habitat	L	0.0	1	0.00
B. MT Natural Heritage Program Species Habitat	L	0.1	1	0.028
C. General Wildlife Habitat	L	0.2	1	0.056
D. General Fish Habitat	M	0.5	1	0.14
E. Flood Attenuation	M	0.2	1	0.056
F. Short and Long Term Surface Water Storage	L	0.3	1	0.084
G. Sediment/Nutrient/Toxicant Removal	M	0.4	1	0.112
H. Sediment/Shoreline Stabilization	H	0.9	1	0.252
I. Production Export/Food Chain Support	M	0.5	1	0.14
J. Groundwater Discharge/Recharge	N/A	-	-	-
K. Uniqueness	L	0.2	1	0.056
L. Recreation/Education Potential (bonus points)	L	0.1	1	0.028
Totals:		3.4	11	0.95

1. "H" means that the function present is of high quality or has the potential to benefit the ecosystem; "M" means that the function present is of lower quality or has limited connection to the ecosystem; and "L" means the function present is of low quality or absent.

5. References

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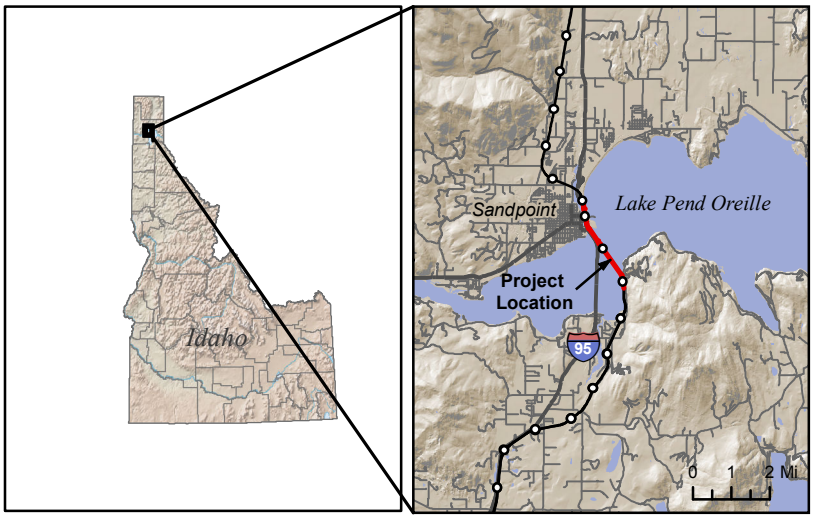
Appendix A. Reference Maps

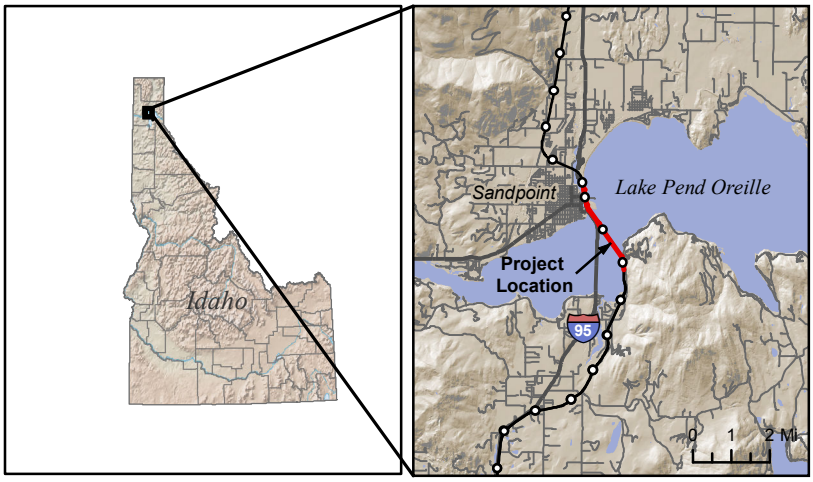
- Aerial Map
- USGS Map
- NRCS Soil Survey Map
- National Wetland Inventory Map
- FEMA Flood Zone Map



AERIAL OVERVIEW

PROJECT: BNSF SANDPOINT JUNCTION CONNECTOR
APPLICANT: BNSF RAILWAY CO.
BNSF LOCATION: MONTANA DIVISION, KOOTENAI RIVER SUBDIVISION, MP 2.9 - 5.1
PLSS: IN PARTS OF S15, 22, 23, 25, 26 & 36 T57 R2W - BOISE MERIDIAN
NORTH END (MP 2.9): 48°16'54.10"N, 116°32'49.35"W
SOUTH END (MP 5.1): 48°14'56.24"N, 116°31'24.02"W
WATERWAY: LAKE PEND OREILLE & SAND CREEK
CITY: SANDPOINT
COUNTY: BONNER
STATE: IDAHO
DATE: NOVEMBER 2017

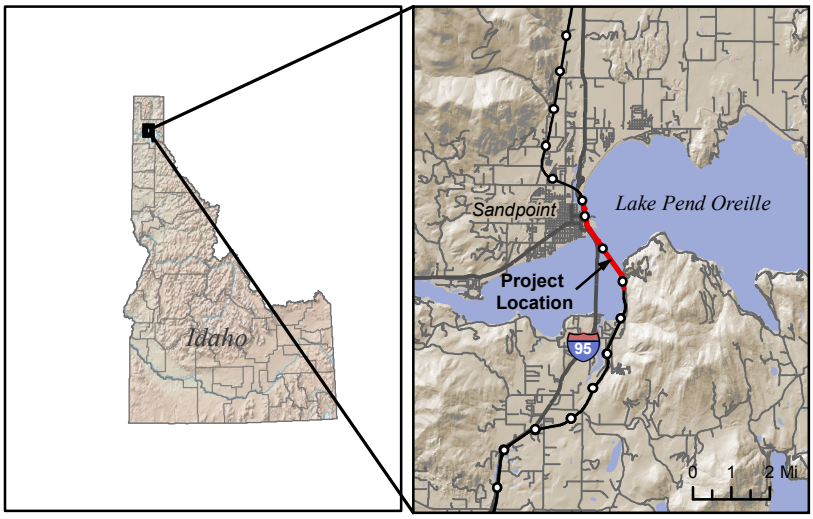
DATA SOURCES: ESRI (AERIAL), NATURAL EARTH (STATE MAP), BNSF (TRACK AND MILEPOSTS)



USGS OVERVIEW

PROJECT: BNSF SANDPOINT JUNCTION CONNECTOR
APPLICANT: BNSF RAILWAY CO.
BNSF LOCATION: MONTANA DIVISION, KOOTENAI RIVER SUBDIVISION, MP 2.9 - 5.1
PLSS: IN PARTS OF S15, 22, 23, 25, 26 & 36 T57 R2W - BOISE MERIDIAN
NORTH END (MP 2.9): 48°16'54.10"N, 116°32'49.35"W
SOUTH END (MP 5.1): 48°14'56.24"N, 116°31'24.02"W
WATERWAY: LAKE PEND OREILLE & SAND CREEK
CITY: SANDPOINT
COUNTY: BONNER
STATE: IDAHO
DATE: NOVEMBER 2017

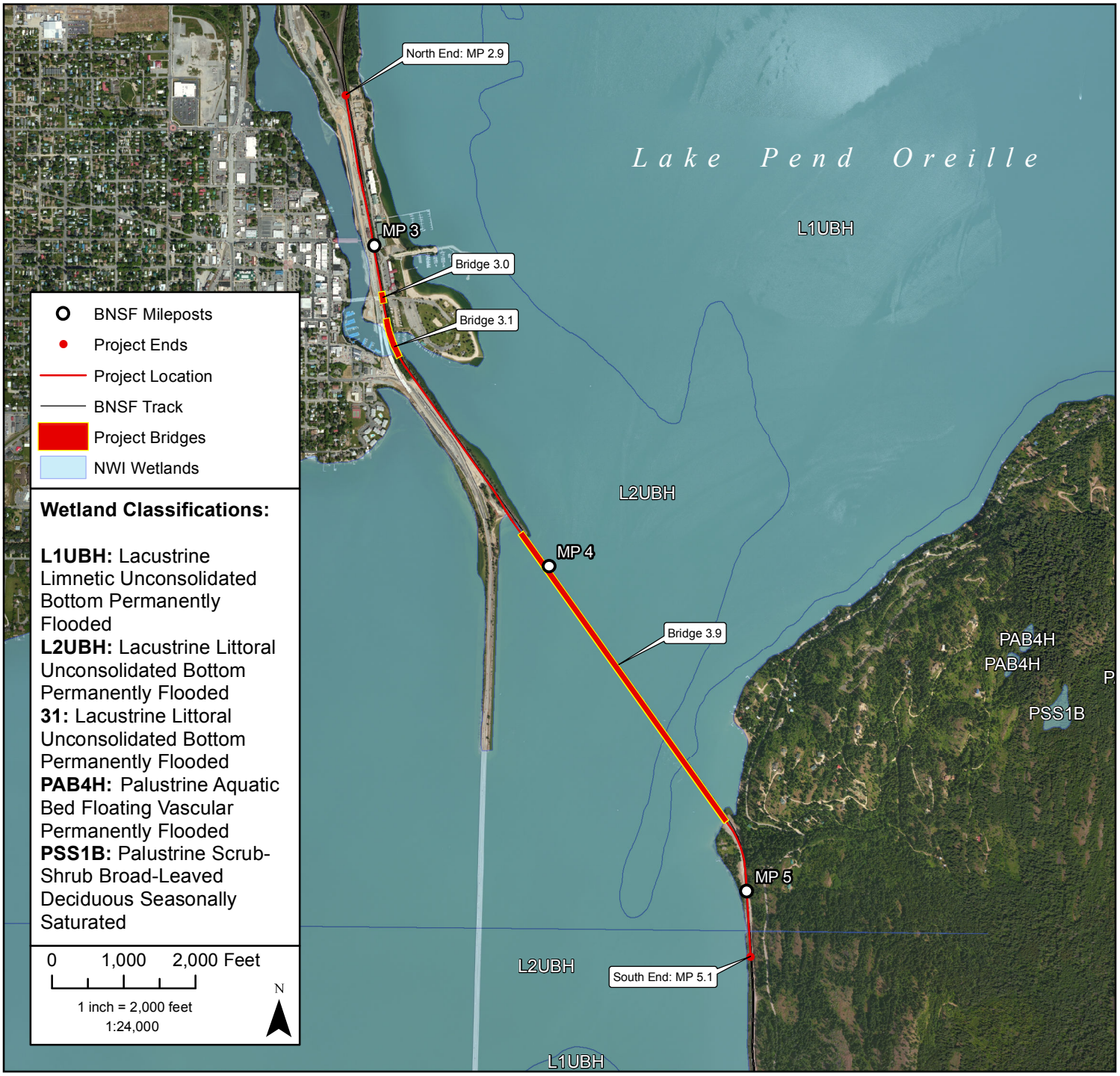
DATA SOURCES: USGS (TOPOGRAPHY), NATURAL EARTH (STATE MAP), BNSF (TRACK AND MILEPOSTS)

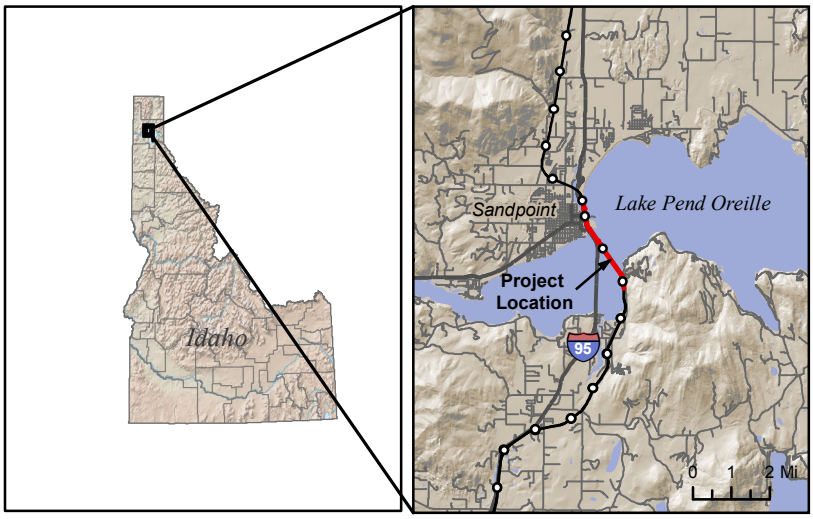


NRCS SOIL SURVEY MAP

PROJECT: BNSF SANDPOINT JUNCTION CONNECTOR
APPLICANT: BNSF RAILWAY CO.
BNSF LOCATION: MONTANA DIVISION, KOOTENAI RIVER SUBDIVISION, MP 2.9 - 5.1
PLSS: IN PARTS OF S15, 22, 23, 25, 26 & 36 T57 R2W - BOISE MERIDIAN
NORTH END (MP 2.9): 48°16'54.10"N, 116°32'49.35"W
SOUTH END (MP 5.1): 48°14'56.24"N, 116°31'24.02"W
WATERWAY: LAKE PEND OREILLE & SAND CREEK
CITY: SANDPOINT
COUNTY: BONNER
STATE: IDAHO
DATE: NOVEMBER 2017

DATA SOURCES: ESRI (AERIAL), NATURAL EARTH (STATE MAP), BNSF (TRACK AND MILEPOSTS), NATURAL RESOURCES CONSERVATION SERVICE (SOILS)

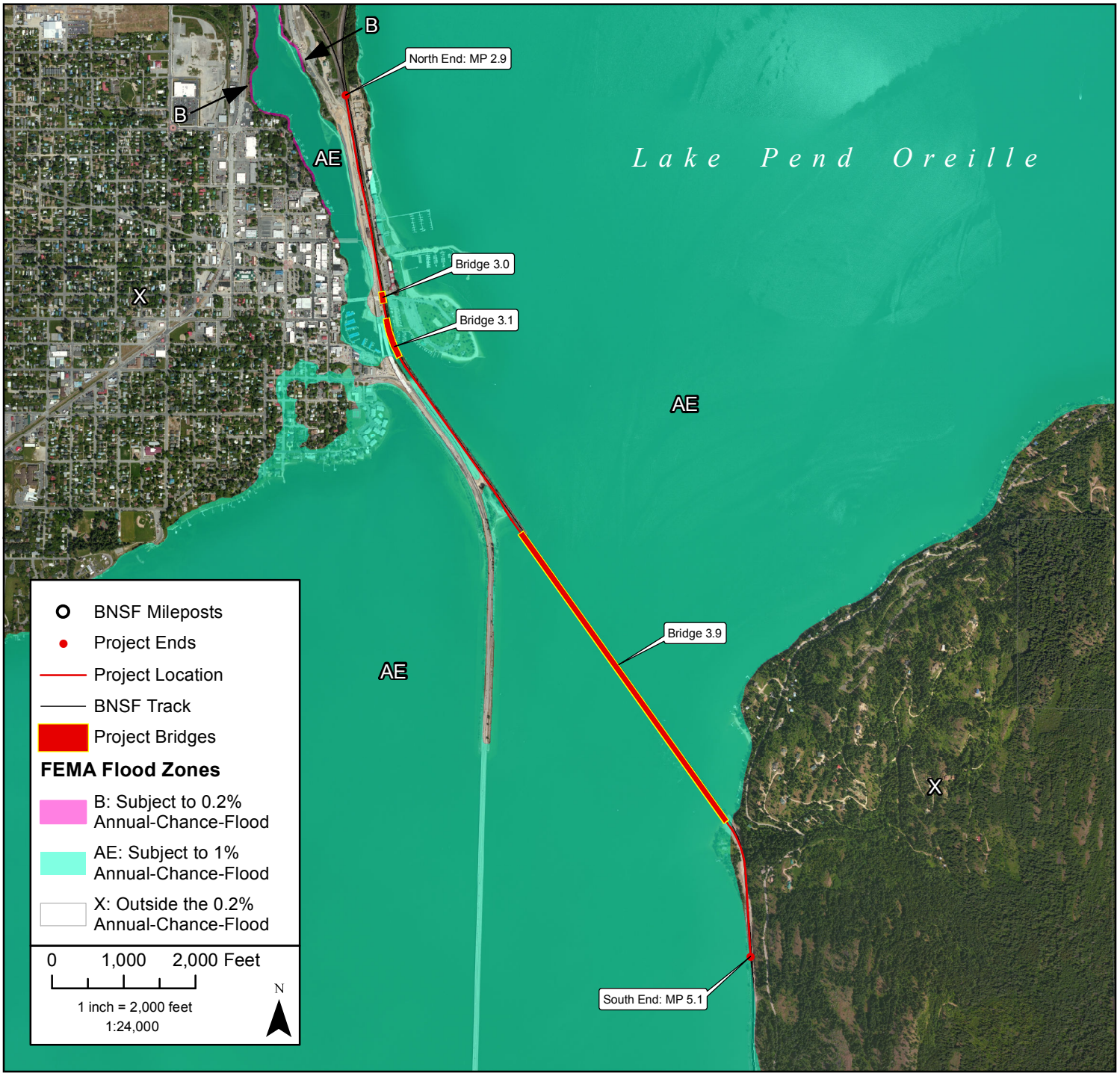


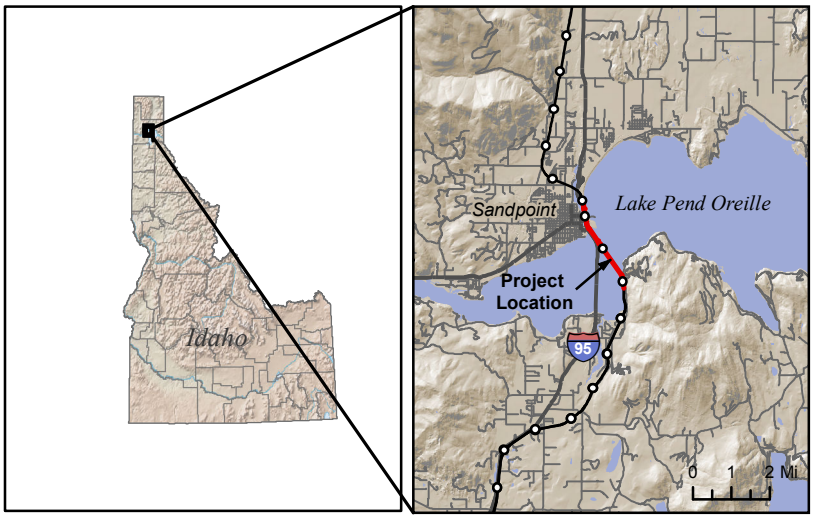


NATIONAL WETLAND INVENTORY MAP

PROJECT: BNSF SANDPOINT JUNCTION CONNECTOR
APPLICANT: BNSF RAILWAY CO.
BNSF LOCATION: MONTANA DIVISION, KOOTENAI RIVER SUBDIVISION, MP 2.9 - 5.1
PLSS: IN PARTS OF S15, 22, 23, 25, 26 & 36 T57 R2W - BOISE MERIDIAN
NORTH END (MP 2.9): 48°16'54.10"N, 116°32'49.35"W
SOUTH END (MP 5.1): 48°14'56.24"N, 116°31'24.02"W
WATERWAY: LAKE PEND OREILLE & SAND CREEK
CITY: SANDPOINT
COUNTY: BONNER
STATE: IDAHO
DATE: NOVEMBER 2017

DATA SOURCES: ESRI (AERIAL), NATURAL EARTH (STATE MAP), BNSF (TRACK AND MILEPOSTS), NATIONAL WETLAND INVENTORY (WETLANDS)





FEMA FLOOD ZONE MAP

PROJECT: BNSF SANDPOINT JUNCTION CONNECTOR
APPLICANT: BNSF RAILWAY CO.
BNSF LOCATION: MONTANA DIVISION, KOOTENAI RIVER SUBDIVISION, MP 2.9 - 5.1
PLSS: IN PARTS OF S15, 22, 23, 25, 26 & 36 T57 R2W - BOISE MERIDIAN
NORTH END (MP 2.9): 48°16'54.10"N, 116°32'49.35"W
SOUTH END (MP 5.1): 48°14'56.24"N, 116°31'24.02"W
WATERWAY: LAKE PEND OREILLE & SAND CREEK
CITY: SANDPOINT
COUNTY: BONNER
STATE: IDAHO
DATE: NOVEMBER 2017

DATA SOURCES: ESRI (AERIAL), NATURAL EARTH (STATE MAP), BNSF (TRACK AND MILEPOSTS), FEDERAL EMERGENCY MANAGEMENT AGENCY (FLOOD ZONES)

Appendix B. Forms / Plant List

- Corps Wetland Delineation Forms
- MDT Montana Wetland Assessment Form
- Study Area Plant List

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: **BNSF Sandpoint Junction Connector Project** City/County: Sandpoint/Bonner Sampling Date: 9/25/2017

Applicant/Owner: BNSF State: ID Sampling Point: A1

Investigator(s): SEP Section, Township, Range: S23,T57N, R2W

Landform (hillslope, terrace, etc.): Depressional area adjacent Sand Creek Local relief (concave, convex, none): concave Slope (%): 10%

Subregion (LRR): E Lat: 48°16' 18.39" N Long: 116°32' 38.40" W Datum: _____

Soil Map Unit Name: 31: Mission silt loam, 0 to 2 percent slopes NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒ No ☐**
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: All of the wetland indicators are present, therefore this area is considered wetland.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2.			
3.			
4. _____	_____	_____	_____
50% = _____, 20% = _____		= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. Woods' rose (Rosa woodsia)			
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
50% = _____, 20% = _____		= Total Cover	
Herb Stratum (Plot size: _____)			
1. *reed canarygrass (Pahalaris arundinacea)*	20	yes	FACW
2. *Common cattail (Typha latifolia)*	80	no	OBL
3.			
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____		_____	_____
11. _____	_____	_____	_____
50% = _____, 20% = _____	100	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
50% = _____, 20% = _____	_____	= Total Cover	
% Bare Ground in Herb Stratum _____			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	80	x1 =	80
FACW species	20	x2 =	40
FAC species		x3 =	
FACU species		x4 =	
UPL species	_____	x5 =	_____
Column Totals:	100 (A)		120 (B)

Prevalence Index = B/A = 1.2

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☒ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks: 100% of the dominant vegetation is FAC or greater; therefore vegetation is hydrophytic in this location.

Project Site: **BNSF Sandpoint Junction Connector Project**

SOIL

Sampling Point: A1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					SL	silt loam
4-12	10Y 4/1	100					SL	silt loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☒ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ____

Depth (inches): ____

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: Hydric soil indicators are present .

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☒	No	☐	Depth (inches):	2
Saturation Present? (includes capillary fringe)	Yes	☒	No	☐	Depth (inches):	1

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Primary and secondary indicators are present for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: **BNSF Sandpoint Junction Connector Project** City/County: Sandpoint/Bonner Sampling Date: 9/25/2017

Applicant/Owner: BNSF State: ID Sampling Point: A2

Investigator(s): SEP Section, Township, Range: S23, T57N, R2W

Landform (hillslope, terrace, etc.): above wetland near pedestrian path Local relief (concave, convex, none): none Slope (%): 1%

Subregion (LRR): E Lat: 48°08'17.94" Long: 116°36'38.73" Datum: _____

Soil Map Unit Name: Bonner gravelly silt loam, 0 to 4 % slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes** ☐	**No** ☒
Hydric Soil Present?	Yes ☐	No ☒			
Wetland Hydrology Present?	Yes ☐	No ☒			

Remarks: None of the wetland indicators are present, therefore this area is not considered wetland.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Black Locust *(Robinia pseudoacacia)*	20	Yes	FACU
2.			
3. _____			
4. _____			
50% = _____, 20% = _____		= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4. _____			
5. _____			
50% = 20% =		= Total Cover	
Herb Stratum (Plot size: _____)			
1. *Tansy ragweed (Senecio jacobaea)*	60	no	FACU
2. *Spotted knapweed (Centaurea stoebe)*	20	Yes	UPL
3. *Common tansy (Tanacetum vulgare)*	20	No	FACU
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
9. _____			
10. _____			
11. _____			
50% = _____, 20% = _____		= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1. _____			
2. _____			
50% = _____, 20% = _____		= Total Cover	
% Bare Ground in Herb Stratum 20%			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x1 = _____
FACW species	x2 =
FAC species	x3 =
FACU species	x4 =
UPL species	x5 = _____
Column Totals: (A)	(B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks: 0% of the dominant vegetation is FAC or greater.

Project Site: **BNSF Sandpoint Junction Connector Project**

SOIL

Sampling Point: A2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					SaSL	Sandy Silt loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ____

Depth (inches): ____

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: Soil profile is not hydric and no soil indicators are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	____
Water Table Present?	Yes	☐	No	☒	Depth (inches):	____
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	____

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology present. At the edge of the pedestrian path and above Wetland A.

MDT Montana Wetland Assessment Form (revised 5/25/1999)

1. **Project Name:** BNSF Sandpoint Junction Connector Project **2**. **Corps Project #:** NWW-2007-1303 **Control #:**

3. **Evaluation Date:** September 25, 2017 **4**. **Evaluator(s):** Sue Platte and Ariel Bordenave **5**. **Wetlands/Site #(s):** Wetland A (WL-A)

6. **Wetland Location(s): i**. **Legal:** T57N, R2W, Sec 23; Bonner County, Idaho
ii. Approx. Stationing or Mileposts: BNSF MP 3.14 -3.15
iii. Watershed: 17010214**;** Pend Oreille Lake Watershed, **GPS Reference No:** 48°16' 18.39" N, 116°32' 38.40" W

7. a. Evaluating Agency: Corps of Engineers – Walla Walla District
b. Purpose of Evaluation:
1. __ Wetlands potentially affected by MDT project
2. __ Mitigation wetlands; pre-construction
3. __ Mitigation wetlands; post-construction
4. X Other: Wetlands potentially affected by BNSF Project

8. Wetland size: (total acres) _____ (visually estimated)
0.28-acre (measured e.g by GPS [(if applies)]

9. Assessment area (AA): (WL-A tot.ac., see instructions on determining AA)
0.28-acre (measured e.g by GPS [(if applies)]

10. **Classification of Wetland and Aquatic Habitats in AA** (HGM according to Brinson, first col: USFWS according to Cowardin (1979), remaining cols.)

HGM Class	System	Subsystem	Class	Water Regime	Modifier	% of AA
DEPRESSIONAL	Palustrine	None	EM	C	I	50
RIVERINE	Riverine	Lower Perennial	UB	C	I	50

(Abbreviations: System: Palustrine (P): Subsytem: none **Classes:** Rock Bottom (RB), Unconsolidated bottom (UB), Aquatic Bed (AB), Unconsolidated Shore (US), Moss-lichen Wetland (ML), Emergent Wetland (EM), Scrub-Shrub Wetland (SS), Forested Wetland (FO); **System: Lacustrine** (L) Subsystem: Limnetic (2) / Classes RB, UB, AB; Subsystem: Littoral (4) / Classes RB, UB, AB, US, EM; **System: Riverine** Subsystem: Lower Perennial (3)/Classes RB, UB, AB, US, EM; **Subsystem:** Upper Perennial (3)/Classes RB, UB, AB, US; **Water Regimes:** Permanently Flooded (H) Intermittently Exposed (G), Semi-permanently Flooded (F), Seasonally Flooded (C), Saturated (B),Temporarily Flooded (A), Intermittently Flooded (J) **Modifiers:** Excavated (E), Impounded (I), Diked (D), Partly Drained (PD), Farmed (F), Artificial (A) **HGM Classes:** Riverine (R), Depressional (D), Slope (S), Mineral Soil Flats (MSF), Organic Soil Flats (OSF), Lacustrine Fringe (LF);

11. Estimated relative abundance: (of similarly classified sites within the same Major Montana Watershed Basin, see definitions)

(Circle one) Unknown Rare **Common** Abundant

Comments:

12. **General condition of AA:**

i. Regarding disturbance: (use matrix below to determine [circle] appropriate response

Conditions within AA	*Predominant conditions adjacent to (within 500 feet of) AA*		
	Land managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or buildings	Land not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to minor clearing; contains few roads or buildings	Land cultivated or heavily grazed or logged; subject to substantial fill placement, grading, clearing, or hydrological alteration; high road or building density
AA occurs and is managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings	low disturbance	low disturbance	moderate disturbance
AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, fill placement, or hydrological alteration; contains few roads or buildings	moderate disturbance	moderate disturbance	high disturbance
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density	high disturbance	high disturbance	**high disturbance**

Comments: (types of disturbance, intensity, season, etc.): BNSF tracks are located to the east; US Highway 95 interchange is located to the west; and the outlet of Sand Creek is located to the north.

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species Including those not domesticated, (feral): Common tansy, spotted knapweed, and rush skeleton weed found on the upland edges of AA

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: Highly disturbed area surrounded by railroad and road development; received hydrology from the outlet of Sand Creek, stormwater runoff, and precipitation in a topographically low, depressional area.

13. **Structural Diversity:** (based on number of "Cowardin" ***vegetated*** classes present [do not include unvegetated classes], see #10 above)

# of "Cowardin" Vegetated Classes present in AA (see#10)	≥3 vegetated classes (or ≥ 2 if 1 is forested)	2 vegetated classes (or 1 is forested)	≤1 vegetated class
Rating (circle)	High	**Moderate**	Low

Comments: WL-A has emergent, scrub-shrub components

SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

14A. **Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals:**

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Primary or critical habitat (**list species**)	D	S	_____
Secondary habitat (**list species**)	D	S	_____
Incidental habitat (**list species**)	D	S	_____
No usable habitat	D	**S**	_____

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating) [H=high, M=moderate or L=low] for this function)

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
Functional Points and Rating	1 (H)	.9 (H)	.8 (M)	.7 (M)	.3 (L)	.1 (L)	**0 (L)**

Sources for documented use (e.g. observations, records, etc): Idaho Conservation Data Center

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14B. **Habitat for plant or animals rated S1, S2, or S3 by the Montana Natural Heritage Program:** (not including species listed in14A above)

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Primary or critical habitat (**list species**)	D	S	_____
Secondary habitat (**list species**)	D	S	_____
Incidental habitat (**list species**)	**D**	S	shoreline; passerine birds
No usable habitat	D	S	_____

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
Functional Points and Rating	1 (H)	.9 (H)	.8 (M)	.7 (M)	.3 (L)	**.1 (L)**	0 (L)

Sources for documented use (e.g. observations, records, etc.): Idaho Conservation Data Center

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14C. **General Wildlife Habitat Rating:**

i. Evidence of overall wildlife use in AA (circle substantial, moderate, or low based on supporting evidence):

Substantial (based on any of the following [check]):
- _ observations of abundant wildlife #s or high species diversity (during any period)
- _ abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.
- _ presence of extremely limiting habitat features not available in the surrounding area
- _ interviews with local biologists with knowledge of the AA

Minimal (based on any of the following [check]):
- _ few or no wildlife observations during peak use periods
- X little to no wildlife sign
- X sparse adjacent upland food sources
- X interviews with local biologists with knowledge of the AA

Moderate (based on any of the following [check]):
- _ observations of scattered wildlife groups or individuals or relatively few species during peak periods
- _ common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.
- _ adequate adjacent upland food sources
- _ interviews with local biologists with knowledge of the AA

ii. Wildlife habitat features (Working from top to bottom, circle appropriate AA attributes in matrix to arrive at rating. Structural diversity is from #13. For class cover to be considered evenly distributed, the most and least prevalent **vegetated** classes must be within 20% of each other in terms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further definitions of these terms])

Structural diversity (see #13)	High								Moderate								Low			
Class cover distribution (all vegetated classes)	Even				Uneven				Even				Uneven				Even			
Duration of surface water in ≥ 10% of AA	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A
Low disturbance at AA (see #12i)	E	E	E	H	E	E	H	H	E	H	H	M	E	H	M	M	E	H	M	M
Moderate disturbance at AA (see #12i)	H	H	H	H	H	H	H	M	H	H	M	M	H	M	M	L	H	M	L	L
High disturbance at AA (see #12i)	M	M	M	L	M	M	L	L	M	**M**	L	L	M	L	L	L	L	L	L	L

iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [circle] the functional points and rating)

Evidence of wildlife use (i)	*Wildlife habitat features rating (ii)*			
	Exceptional	High	Moderate	Low
Substantial	1E	.9H	.8H	.7M
Moderate	.9H	.7M	.5M	.3L
Minimal	.6M	.4M	**.2L**	.1L

Comments:

14D. **General Fish Habitat Rating:** (Assess this function if the AA is used by fish or the existing situation is "correctable" such that the AA could be used by fish [i.e., fish use is precluded by perched culvert or other barrier, etc.]. If the AA is not used by fish, fish use is not restorable due to lack of habitat, excessive gradient, etc., circle **NA** here and proceed to the next function. If fish use occurs in the AA but is not desired from a resource management perspective [such as fish use within an irrigation canal], then Habitat Quality [i below] should be marked as "low", applied accordingly in ii below, and noted in the comments.)

i. Habitat Quality (circle appropriate AA attributes in matrix to arrive at exceptional (E), high (H), moderate (M), or low (l) quality rating.

Duration of surface water in AA	Permanent / Perennial			Seasonal/Intermittent			Temporary / Ephemeral		
Cover - % of waterbody in AA containing objects such as submerged logs, large rock and boulders, overhanging banks, floating-leaved vegetation, etc	>25%	10-25%	<10%	>25%	10-25%	<10%	>25%	10-25%	<10%
Shading > 75% of streambank or shoreline within AA contains riparian or wetland scrub-shrub or forested communities	E	E	H	H	H	M	M	M	M
Shading – 50 to 75% of streambank or shoreline within AA contains riparian or wetland scrub-shrub or forested communities	H	H	M	M	**M**	M	M	L	L
Shading - < 50% of streambank or shoreline within AA contains riparian or wetland scrub-shrub or forested communities	H	M	M	M	L	L	L	L	L

ii. Modified Habitat Quality (Circle the appropriate response to the following question. If answer is Y, then reduce rating in I above by one level [E=H, H=M, M=L, L=L), is fish us in the AA precluded or significantly reduced by a culvert, dike, or other man-made structure or activity **or** is the waterbody included on the MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support? [Y] N Modified habitat quality rating= (circle) E H M [L]

iii. Rating

Types of fish known or suspected within AA	*Modified Habitat Quality (ii)*			
	Exceptional	High	Moderate	Low
Native game fish	1(E)	.9(H)	.7(M)	**.5(M)**
Introduced game fish	.9(H)	.8(H)	.6(M)	.4(M)
Non-game fish	.7(M)	.6(M)	.5(M)	.3(L)
No fish	.5(M)	.3(L)	.2(L)	.1(L)

Comments:

14E. **Flood Attenuation:** (Applies only to wetlands subject to flooding via in-channel or overbank flow. If wetlands in AA are not flooded from in-channel or overbank flow, circle NA and proceed to next function.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H= high, M = moderate, or L =low] for this function)

Estimated wetland area in AA subject to periodic flooding	➢ 10 acres			<10.>2 acres			< 2 acres		
% of flooded wetland classified as forested , scrub-shrub, or both	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains **no outlet or restricted outlet**	1(H)	.9(H)	.6(M)	.8(H)	.7(M)	.5(M)	.4(M)	.3(L)	.2(L)
AA contains **unrestricted outlet**	.9(H)	.8(H)	.5(M)	.7(M)	.6(M)	.4(M)	.3(L)	**.2(L)**	.1(L)

ii. Are residences, businesses, or other features which may be significantly damaged by floods located within 0.5 miles downstream of the AA (circle)? [Y] N

Comments:

14F. Short and Long Term Surface Water Storage: (Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, circle NA and proceed with the evaluation.)

i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H= high, M = moderate, or L =low] for this function. Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see instructions for further definitions of these terms].)

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>5 acre feet			1.1 to 5 acre feet			≤1 acre foot		
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond **≥ 5 out of 10 years**	1H	.9H	.8H	.8H	.6M	.5M	.4M	**.3L**	.2L
Wetlands in AA flood or pond **< 5 out of 10 years**	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: Wetland ponds every year with the dam-regulated lake fluctuations in Lake Pend Oreille.

14G. **Sediment/Nutrient/Toxicant Retention and Removal:** (Applies to wetlands with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are subject to such input, circle NA and proceed to n

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H = high, M = moderate, or L = low] for this function)

Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.				Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants **or** AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.			
% cover of wetland vegetation in AA	≥ 70%		< 70%		≥ 70%		< 70%	
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
AA contains **no or restricted outlet**	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.7M	.6M	.4M	**.4M**	.3L	.2L	.1L

Comments:

14H Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks or a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action. If does not apply, circle NA and proceed to next function)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

*% Cover of **wetland** streambank or shoreline by species with deep, binding root masses*	*Duration of surface water adjacent to rooted vegetation*		
	Permanent / Perennial	Seasonal / Intermittent	Temporary / Ephemeral
≥ 65%	1H	.9H	.7M
35-64%	.7M	.6M	.5M
< 35%	.3L	.2L	.1L

Comments:

14I. Production Export/Food Chain Support:

i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Factor A = acreage of vegetated wetland component in the AA; Factor B = structural diversity rating from #13 Factor C = whether or not the AA contains a surface or subsurface outlet; the final three rows pertain to duration of surface water in the AA, where P/P=permanent/perennial, S/I=seasonal/intermittent, and T/E /A = temporary/ephemeral or absent [see instructions for further definitions of these terms].)

A	Vegetated component >5 acres						Vegetated component 1-5 acres						Vegetated component <1 acre					
B	High		Moderate		Low		High		Moderate		Low		High		Moderate		Low	
C	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	**.5M**	.3L	.3L	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

Comments:

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below that apply to the AA)

i. Discharge Indicators

_____ Springs or seeps are known or observed
_____ Vegetation growing during dormant season/drought
_____ Wetland occurs at the toe of a natural slope
_____ Seeps are present at the wetland edge
_____ AA permanently flooded during drought periods
_____ Wetland contains an outlet, but no inlet
_____ Other:

ii. Recharge Indicators

_____ Permeable substrate present without underlying impeding layer
_____ Wetland contains inlet but no outlet
_____ Other:

Not Applicable

iii. Rating (use the information from i and ii above and the table below to arrive at [circle] the functional points and rating [H= high, M = moderate, or L =low] for this function)

Criteria	*Functional Points and Rating*
AA is known Discharge/Recharge area of one or more indicators of D/R present	1 (H)
No Discharge/Recharge indicators present	.1 (L)
Available Discharge information inadequate to rate AA D/R potential	N/A (unknown)

Comments:

14K. Uniqueness:

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H= high, M= moderate, or L =low] for this function)

Replacement potential	AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland **or** plant association listed as "S1" by the MNHP			AA does not contain previously cited rare types **and** structural diversity (#13) is high **or** contains plant association listed as "S2" by the MTNHP			AA does not contain previously cited rare types or associations **and** structural diversity (#13) is low-moderate		
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L
High disturbance at AA (#12i)	.8H	.7M	.6M	.6M	.4M	.3L	.3L	**.2L**	.1L

Comments:

14L. Recreation/Education Potential: i. Is the AA a known or potential rec./ed. site: (circle) Y or N (if 'yes rate as (circle) High[1] and go to ii; if no go to iii) **ii.** Check categories that apply to the AA: Educational/scientific study; ___ Consumptive rec.; ___ Non-consumptive rec.; ___Other
iii. Based on location, diversity, size, and other site attributes, is there strong potential for rec/ed use? Y or N (if 'yes go to ii; then proceed to iv, if rate as (circle) Low [0.1] **iv.** Rating (use the matrix below to arrive at [circle] the functional points and rating)

Ownership	*Disturbance at AA*		
	Low	Moderate	High
Public ownership	1(H)	.5(M)	.2(L)
Private ownership	.7(M)	.3(L)	.1(L)

Comments: WL-A is within the BNSF right-of-way (ROW). As such, there is no potential for recreation or educational opportunities.

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): WL-A

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)
A. Listed/Proposed T&E Species Habitat	L	0.0	1	0.00
B. MT Natural Heritage Program Species Habitat	L	0.1	1	0.028
C. General Wildlife Habitat	L	0.2	1	0.056
D. General Fish Habitat	M	0.5	1	0.14
E. Flood Attenuation	M	0.2	1	0.056
F. Short and Long Term Surface Water Storage	L	0.3	1	0.084
G. Sediment/Nutrient/Toxicant Removal	M	0.4	1	0.112
H. Sediment/Shoreline Stabilization	H	0.9	1	0.252
I. Production Export/Food Chain Support	M	0.5	1	0.14
J. Groundwater Discharge/Recharge	N/A	-	-	-
K. Uniqueness	L	0.2	1	0.056
L. Recreation/Education Potential (bonus points)	L	0.1	1	0.028
Totals:		3.4	11	0.95

Category I Wetland: (must satisfy **one** of the following criteria; otherwise go to Category II)
_____ Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; **or**
_____ Score of 1 functional point for Uniqueness; **or**
_____ Score of 1 functional point for Flood Attenuation **and** answer to Question 14E.ii is "yes"; **or**
_____ Percent of possible score > 80% (round to nearest whole #).

Category II Wetland: (Criteria for Category I not satisfied **and** meets any **one** of the following criteria; otherwise go to Category IV)
_____ Score of 1 functional point for MT Natural Heritage Program Species Habitat; **or**
_____ Score of .9 or 1 functional point for General Wildlife Habitat; **or**
_____ Score of .9 or 1 functional point for General Fish Habitat; **or**
_____ "High" to “Exceptional” ratings for **both** General Wildlife Habitat **and** General Fish/Aquatic Habitat; **or**
_____ Score of .9 functional point for Uniqueness; **or**
_____ Percent of possible score > 65% (round to nearest whole #) of total possible functional points.

Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)

Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)
__X__ "Low" rating for Uniqueness; **and**
__X__ "Low" rating for Production Export / Food Chain Support; **and**
_____ Total actual functional points < 30% (round to nearest whole #) of total possible functional points.

OVERALL ANALYSIS AREA RATING: IV

Appendix B: Study Area Plant List

Trees		
Black cottonwood	*Populus balsamifera*	FAC
Black Locust	*Robinia pseudoacacia*	FACU
Douglas fir	*Pseudotsuga menziesii*	FACU
Lodgepole pine	*Pinus contorta*	FAC
Ponderosa pine	*Pinus ponderosa*	FACU
Red alder	*Alnus rubra*	FAC
Western hemlock	*Tsuga heterophylla*	FACU
Western larch	*Larix occidentalis*	FACU
Western red cedar	*Thuja plicata*	FAC
Shrubs		
Black hawthorn	*Crataegus douglasii*	FAC
Blue elderberry	*Sambucus nigra*	FACU
Chokecherry	*Prunus virginiana*	FACU
Common snowberry	*Symphoricarpos albus*	FACU
Douglas spirea	*Spiraea douglasii*	FACW
Nootka rose	*Rosa nutkana*	FAC
Ocean spray	*Holodiscus discolor*	FACU
Oregon boxleaf	*Paxistima myrsinites*	FACU
Pacific ninebark	*Physocarpus capitatus*	FACW
Redosier dogwood	*Cornus stolonifera*	FACW
Rocky mountain maple	*Acer glabrum*	FACU
Scouler’s willow	*Salix scouleriana*	FAC
Serviceberry	*Amelanchier alnifolia*	FACU
Smooth sumac	*Rhus glabra*	UPL
Thimbleberry	*Rubus parviflorus*	FACU
Trailing blackberry	*Rubus spectabilis*	FACU
Woods' rose	*Rosa woodsii*	FACU
Herbs		
American trailplant	*Adenocaulon bicolor*	UPL
Canada thistle	*Cirsium arvense*	FAC
Cheatgrass	*Bromus tectorum*	UPL
Common cattail	*Typha latifolia*	OBL
Common duckweed	*Lemna minor*	OBL
Common mullein	*Verbascum Thapsus*	FACU
Common panicgrass	*Panicum capillare*	FAC
Common plantain	*Plantago major*	FACU
Common tansy	*Tanacetum vulgare*	FACU
Common timothy	*Panicum capillare*	FAC

Creeping buttercup	*Ranunculus repens*	FACW
Crested wheat grass	*Agropyron cristatum*	NL
Eurasian water milfoil	*Myriophyllum spicatum*	OBL
Leafy spurge	*Euphorbia esula*	UPL
Meadow foxtail	*Alopecurus pratensis*	FACW
Orange hawkweed	*Hieracium aurantiacum*	UPL
Orchardgrass	*Dactylis glomerata*	FAC
Oregon boxleaf	*Paxistima myrsinites*	FACU
Oxeye daisy	*Leucanthemum vulgare*	FACU
Panicled bulrush	*Scirpus microcarpus*	OBL
Perennial rye grass	*Lolium perenne*	FAC
Queencup beadlily	*Clintonia uniflora*	FACU
Red clover	*Trifolium pratense*	FACU
Reed canarygrass	*Phalaris arundinaceae*	FACW
Rush skeletonweed	Chondrilla juncea	FACU
Smooth brome	*Bromus inermis*	FAC
Spotted knapweed	*Centaurea stoebe*	UPL
Starry false Solomon's seal	*Maianthemum stellatum*	FAC
Stinging nettle	*Urtica dioica*	FAC
Tansy ragweed	*Senecio jacobaea*	FACU
Timothy	*Phleum pratense*	FAC
Yellow star-thistle	*Centaurea solstitialis*	UPL
Western panicgrass	*Dichanthelium acuminatum*	NL
Western wheatgrass	*Pascopyrum smithii*	FACU

- Obligate (OBL) - occur almost always under natural conditions in wetlands.
- Facultative Wetland (FACW) - usually occur in wetlands but occasionally found in non-wetlands.
- Facultative (FAC) - equally likely to occur in wetlands and nonwetlands.
- Facultative Upland (FACU) - usually occur in non-wetlands but occasionally found in wetlands.
- Not Listed (NL)