DRAFT ENVIRONMENTAL ASSESSMENT
BNSF Sandpoint Junction Connector Project

Bonner County, Idaho

May 16, 2018

U.S. Coast Guard
District Thirteen
Seattle, Washington

U.S. COAST GUARD

ENVIRONMENTAL ASSESSMENT FOR

BNSF Sandpoint Junction Connector Project

This U.S. Coast Guard (USCG) Environmental Assessment (EA) was prepared in accordance with Commandant's Manual Instruction M16475.1D and is in compliance with the National Environmental Policy Act of 1969 (P.L. 91-190) and the Council of Environmental Quality Regulations dated 28 November 1978 (40 CFR Parts 1500-1508).

This EA serves as a concise public document to briefly provide sufficient evidence and analysis for determining the need to prepare an environmental impact statement or a finding of no significant impact.

This EA concisely describes the proposed action, the need for the proposal, the alternatives, and the environmental impacts of the proposal and alternatives. This EA also contains a comparative analysis of the action and alternatives, a statement of the environmental significance of the preferred alternative, and a list of the agencies and persons consulted during EA preparation.

Date	*Preparer/Environmental Project Manager	Title/Position

Date	**Environmental Reviewer	Title/Position

In reaching my decision/recommendation on the USCG's proposed action, I have considered the information contained in this EA on the potential for environmental impacts.

Date	Responsible Official	Title/Position

EXECUTIVE SUMMARY

The United States Coast Guard (USCG) as the lead 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 United States Code [USC] 4321 *et seq*.). This Environmental Assessment (EA) examines the potential environmental effects of the proposed BNSF Sandpoint Junction Connection Project. The project is the construction of a second mainline track connection between its Algoma Siding track and the Sandpoint Junction, where BNSF and the Montana Rail Link (MRL) mainline tracks join.

The purpose of the BNSF Sandpoint Junction Connector Project is to reduce the delay of freight and passenger rail traffic by increasing the operational efficiency of the BNSF freight rail system between its Algoma Siding track south of Sandpoint (BNSF Milepost [MP] 5.1) and the Sandpoint Junction (MP 2.9), where BNSF and the MRL mainline tracks join just north of the Sandpoint Amtrak Station.

The project need is based on the existing infrastructures' ability 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 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 in this portion of the interstate mainline. The 2.2-mile segment of single mainline track between BNSF MP 5.1 and MP 2.9 has become a constraint to safe and efficient rail movement in the BNSF northern tier, resulting in local and regional impacts to shipping and interstate commerce.

Several alternatives were considered and rejected; these alternatives are summarized in Chapter 2. As a result, this NEPA EA evaluates a No Action Alternative and a Proposed Action Alternative. Both alternatives are within the existing BNSF right-of-way (ROW). The No Action Alternative does not fulfill the project purpose and need. The Proposed Action Alternative meets the project purpose and need through the provision of a second mainline track on this section of the BNSF mainline tracks.

The Proposed Action Alternative consists of a new mainline track to the west of the existing BNSF mainline track; track, switch, and signal upgrades; a new bridge over Lake Pend Oreille (Bridge 3.9) adjacent to (west of) the existing rail bridge; a bridge over Sand Creek (Bridge 3.1) adjacent to (west of) the existing rail bridge; and a new bridge over Bridge Street (Bridge 3.0) adjacent to (west of) the existing rail bridge. The construction of the second mainline track adjacent to the existing single mainline track connects this 2.2-mile section and includes construction of two over-water bridges and one bridge crossing over a public street.

Due to the need to conduct in-water and over-water work across navigable waters, the project requires bridge permits from the USCG and a United States Army Corps of Engineers Clean Water Act Section 404 permit. Under the ICC Termination Act (ICCTA), 49 U.S.C. § 10501(b), the federal Surface Transportation Board has exclusive jurisdiction over railroad operations and facilities. Although state and local agencies do not have jurisdiction to compel railroads to submit to state or local permitting requirements as a condition of improving the railroads' interstate facilities, BNSF and other railroads can and often do voluntarily agree to comply with reasonable state and local environmental requirements in connection with railroad construction projects. This voluntary cooperation in no way is meant to confer jurisdiction on the state or local regulator but instead is a by-product of BNSF's commitment to partnership with the community.

This project will relieve system congestion of rail traffic and reduce hold times on sidings and wait times at grade crossings, both locally and regionally. The Proposed Action Alternative meets the project purpose and need and, with mitigation incorporated, will result in minimal impact to land, water resources, floodplains, and wetlands. The Proposed Action Alternative is anticipated to have no permanent substantial impacts to health and human resources. While the project does result in minimal localized short-term disturbances during construction, impact minimization measures are designed to reduce construction-related disturbances to a point where they are deemed negligible.

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ABBREVIATIONS AND ACRONYMS

ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effect
ARPA	Archaeological Resources Protection Act
BA	Biological Assessment
BMP	Best Management Practice
BNSF	BNSF Railway Company
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHRU	Columbia Headwaters Recovery Unit
CHU	Critical Habitat Unit
CWA	Clean Water Act
dB	decibel
dBA	decibel A-weighted
EA	Environmental Assessment
EFH	Essential Fish Habitat
EPA	U. S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
FHWA	Federal Highway Administration
FMO	foraging migration, and overwintering
FRA	Federal Railroad Administration
GRP	geographic response plan
ICS	Incident Command System
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
IDP	Inadvertent Discovery Plan
ISDA	Idaho State Department of Agriculture
Jacobs	Jacobs Engineering Group, Inc.
LPO	Lake Pend Oreille
LPO-B	Lake Pend Oreille Basin
MBTA	Migratory Bird Treaty Act
MM	minimization measure
MOA	Memorandum of Agreement
MP	Milepost
MRL	Montana Rail Link
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFA	No Further Action
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System

NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
OHWM	ordinary high water mark
OSHA	Occupational Safety and Health Act
PAHs	polycyclic aromatic hydrocarbons
PM	particulate matter
PM_{10}	particulate matter 10 micrometers or smaller
PPA	Pollution Prevention Act
RCRA	Resource Conservation and Recovery Act
RMS	Root Mean Square
ROW	right-of-way
SDWA	Safe Drinking Water Act
SEL	Sound Exposure Level
SHPO	State Historic Preservation Office
SPCC	Spill Prevention, Control, and Countermeasures Plan
SWPPP	Storm Water Pollution Prevention Plan
TMDL	total maximum daily load
TSCA	Toxic Substances Control Act
USACE	U.S. Army Corps of Engineers, Seattle District
USC	U.S. Code
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
VOC	volatile organic compound
WQC	Water Quality Certification
WQMPP	Water Quality Monitoring and Protection Plan

1.0 INTRODUCTION

The United States 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 United States Code [USC] 4321 *et seq*.). This Environmental Assessment (EA) examines the potential environmental effects of the BNSF Sandpoint Junction Connector Project. Where potential adverse impacts have been identified, this document discusses practical measures to avoid, minimize, or mitigate them.

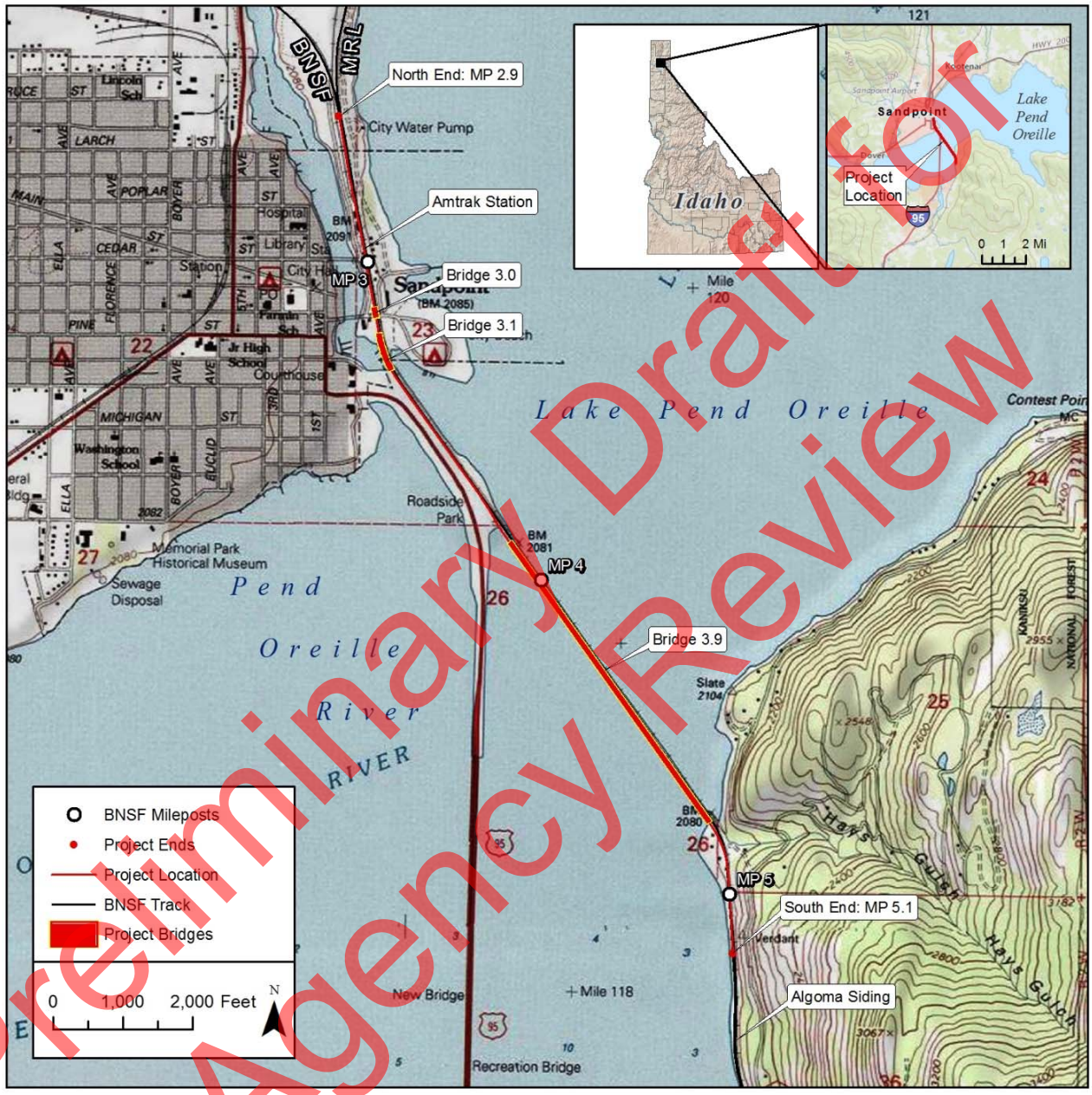
Under the ICC Termination Act (ICCTA), 49 U.S.C. § 10501(b), the federal Surface Transportation Board has exclusive jurisdiction over railroad operations and facilities. Although state and local agencies do not have jurisdiction to compel railroads to submit to state or local permitting requirements as a condition of improving the railroads' interstate facilities, BNSF and other railroads can and often do voluntarily agree to comply with reasonable state and local environmental requirements in connection with railroad construction projects. This voluntary cooperation in no way is meant to confer jurisdiction on the state or local regulator but instead is a by-product of BNSF's commitment to partnership with the community.

1.1 Site Location and Existing Structure

1.1.1 Site Location

The project is located within the existing BNSF Rights-of-Way (ROW) from Milepost (MP) 2.9+/- to MP 5.1+/-, on Line Segment 45 within the Montana Division, Kootenai River Subdivision. The site is located within the incorporated limits of the City of Sandpoint (City) and unincorporated Bonner County (County), Idaho. It is in portions of Sections 15, 22, 23, 23, 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 (Figure 1). The U.S. Geological Survey (USGS) Hydrologic Unit Code is 17010214 within the Idaho Panhandle Basin, Lake Pend Oreille Subbasin.

Figure 1. Project Location / Vicinity



1.1.2 Existing Conditions and Structures

The current track configuration involves a Montana Rail Link (MRL) siding and two mainline tracks, BNSF and MRL, meeting at the Sandpoint Junction (BNSF MP 2.9) just north of the Sandpoint Amtrak Station, becoming a single mainline track through Sandpoint and over Sand Creek and Lake Pend Oreille to the BNSF Algoma (East) Siding track (BNSF MP 5.1) where the single mainline switches to two mainlines. Key features of the project corridor are described below:

- The north end of the project (BNSF MP 2.9) is within the City of Sandpoint and is designated as an Urban Transportation Corridor (Bonner County 2017).
- From BNSF MP 2.9 – 3.9, the existing BNSF mainline track is surrounded by the BNSF maintenance road, the Sandpoint Amtrak Depot, United States (U.S.) Highway 95, and Sandpoint Marina 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 Bridge Street in Sandpoint.
- BNSF Bridge 3.1 spans Sand Creek in Sandpoint.
- BNSF Bridge 3.9 spans the open water of Lake Pend Oreille from MP 3.9-4.9.
- The south end of the project (BNSF MP 5.1) is designated as a Rural-Residential Transportation Corridor (Bonner County, 2017).

The existing BNSF Bridge 3.1 over Sand Creek is a fixed single-track bridge 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-deck and ballast-deck spans and is 4,769 feet long with 88 piers. Thirty-two of the original over100-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 in 2006-2009 with steel bents, each composed of six closed-end steel pipe piles. The existing bridge also has a non-operable swing span over the two existing, published 76.6-foot-wide navigation channels.

Appendix A includes a set of permit drawings showing the primary components of the existing bridges and trackwork along the project work corridor.

1.2 Purpose and Need

1.2.1 Project Purpose:

The purpose of the BNSF Sandpoint Junction Connector Project is to reduce the delay of freight and passenger rail traffic by increasing the operational efficiency of the BNSF freight rail system between its Algoma Siding track south of Sandpoint (BNSF MP 5.1) and the Sandpoint Junction (MP 2.9), where BNSF and the MRL mainline tracks join just north of the Sandpoint Amtrak Station.

1.2.2 Project Need:

The BNSF northern tier is a high-volume traffic corridor that connects both the Midwest Chicago Terminus and Canada to the West Coast. This rail corridor moves key commodities such as wheat, corn, and soybeans from the northern tier of Midwest states to West Coast ports of Seattle, Tacoma, and Vancouver, Washington, making it a critical transportation link in the international delivery of agricultural products. This corridor also serves as Amtrak's only route across the northern United States, connecting the Midwest (Chicago) with the West Coast, making it an important piece of the passenger rail system. Rail traffic volumes have risen steadily for the past three decades on this portion of the interstate mainline, increasing the economic significance of the corridor. Currently, approximately 60 trains use this section of track per day, resulting in nearly 22,000 over-water crossings per year.

Two sections of Line Segment 45 have two parallel mainline tracks ending at Algoma (BNSF MP 5.1) and Sandpoint Junction (BNSF MP 2.9). These sections of double track are separated by a 2.2-mile section with only one mainline track over Sand Creek and Lake Pend Oreille, which dates from the early 1900s (Figure 1). Sandpoint Junction is located at the north end of the single track section, just north of the Sandpoint Amtrak Station, where an MRL siding track meets two mainline tracks (BNSF and MRL). At the south end of the single track section, the mainline intersects with the BNSF Algoma (East) Siding track.

The 2.2-mile segment of single mainline track is a constraint to safe and efficient rail movement in the BNSF northern tier, resulting in local and regional impacts to shipping and interstate commerce. The existing single track configuration causes trains to back up on existing sidings and rail yards for up to 30 minutes waiting for an opening to cross the bottleneck. Trains waiting for a crossing opportunity cause long vehicular wait times on local County and City streets at public 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. If the bottleneck at this location is not addressed, the delay is expected to increase, resulting in a lower level of service for both rail and vehicle traffic and further constraining the movement of goods and services at a local, regional, and international level.

2.0 ALTERNATIVES

2.1 Alternative 1 – No Action Alternative

Under the No Action Alternative, the current track configuration would stay the same (two mainline tracks that switch to a single mainline track through Sandpoint and over the Sand Creek and Lake Pend Oreille 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 status quo includes efficient use of the existing line; however, even with very efficient operation, the status quo does not meet the purpose and need of the project.

The No Action Alternative is projected to result in continued and increased levels of trains waiting on regional sidings, with associated continued and increased idling emissions and noise at locations where trains wait for clearance as well as slower train clearing of local and regional at-grade crossings. As additional trains are delayed and commerce does not meet expected transportation goals, it is assumed that freight train use could decline and truck and passenger traffic could increase. 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.

2.2 Alternative 2 – Proposed Action Alternative

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

- A new mainline track west of the existing BNSF mainline track
- A new bridge over Lake Pend Oreille (LPO) (Bridge. 3.9) adjacent to (west of) the existing rail bridge
- A new bridge over Sand Creek (Bridge 3.1) adjacent to (west of) the existing rail bridge
- A new bridge over Bridge Street (Bridge 3.0) adjacent to (west of) the existing rail bridge
- Temporary construction bridges over LPO and Sand Creek
- 0.88 acre of permanent and 0.38 acre of temporary nearshore fill below the jurisdictional ordinary high water mark (OHWM) of 2,062.5 feet, associated with bridge abutments and the south switch
- 0.28 acre of wetland fill in one location between the rail grade and the multi-use public pathway south of the Sand Creek Bridge 3.1
- Development of temporary construction material/equipment work staging area
- Track, switch and signal upgrades

Appendix A 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 will remain unchanged, with the exception of routine maintenance and repair activities. Similar to the No Action Alternative, the Proposed Action Alternative includes continued, ongoing inspection and maintenance of the double track, bridges, and associated infrastructure in compliance with federal railroad regulations.

2.2.1 Construction Process

The construction process includes all assumed project activities including, but not limited to: mobilization of equipment and materials needed for construction, re-establishing and improving existing access roads at the north and south ends of the project corridor, improvements to staging areas within the existing BNSF ROW, construction of temporary work bridges, construction of new permanent bridges, removal of temporary work bridges, site restoration, and demobilization of equipment. Potential construction staging areas and access points are shown on Figure 2.

The assumed construction process is summarized as follows:

1. Mobilization of equipment and materials to staging areas will be an ongoing process during construction.

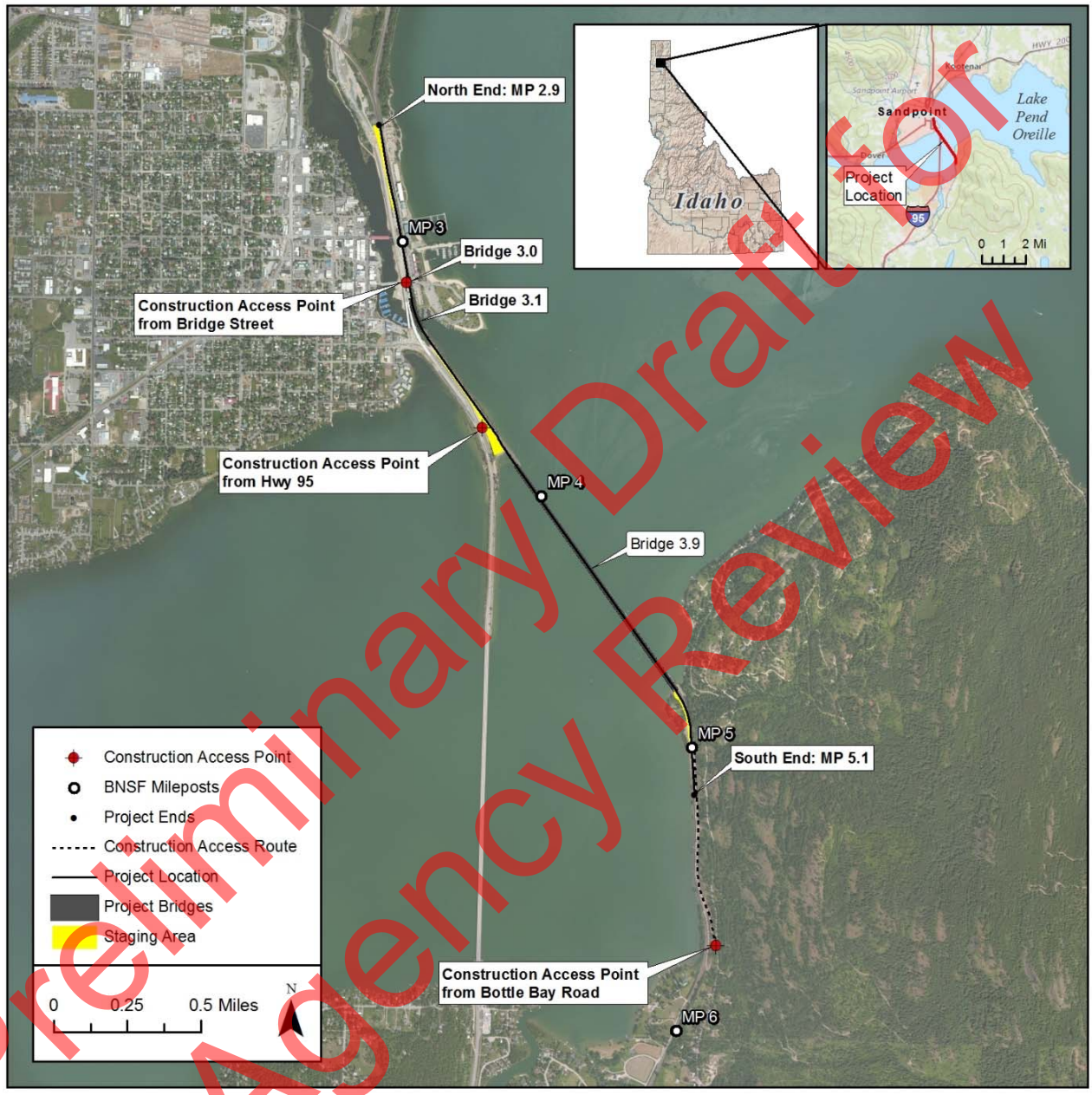
2. Site Preparation includes clear and grub activities, removal of existing fencing, installation of temporary construction fencing, and installation of temporary erosion control measures. Site preparation also includes improvement of existing access roads and staging areas in the existing BNSF ROW. For the most part, these areas have already been cleared and overlaid with compacted gravels. Site access will be from Highway 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. Two temporary work bridges will be constructed.

   3a. - Temporary work bridge over LPO. A temporary timber deck construction bridge will be constructed immediately adjacent to and west of the new LPO bridge location (Table 1). The temporary bridge over LPO will be approximately 4,800 feet long and 32 feet wide, with 101 approximate 48-foot-long spans and one 24-foot-long span at the north end. Additionally, eight 64-foot-wide staging set-outs will 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 bridge. The temporary work bridge will support large cranes that will be working to construct the new permanent bridge over LPO.

   The temporary work bridge piles will be vibrated to resistance, and one pile per pier will be proofed with an impact hammer at an estimated 20 to 50 strikes for a short duration. Impact and vibratory pile driving will occur only during daylight working hours. Assuming that 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.

Figure 2: Construction Staging Areas and Access Points



The low chord elevation of the temporary work bridge over LPO will gradually rise from the abutments at each end to a four-span section, corresponding to two spans on the existing bridge (Spans 64 and 65) with 15 feet of vertical clearance above the regulated summer pool elevation of 2062.5 feet. The construction bridge will grade at a 0.5-percent or less slope from the abutments to these 15-foot elevations. This will result in Spans 1 through 16 at the north end of the bridge having less than 10 feet of vertical clearance and the remaining 72 spans having 10 feet or greater vertical clearance.

The temporary work bridge over LPO will be constructed first and will 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 construction the second railroad bridge. The majority of the work bridge will retain an equivalent vertical and horizontal clearance as the existing railroad bridge during construction. All marine traffic that now passes below the existing bridge will be able to pass under the temporary work bridge throughout construction. Signage, lighting, and other notices will be in place to direct marine traffic on LPO away from restrictive spans to the safe, non-restrictive boating passage spans.

3b. – Temporary work bridge over Sand Creek. A temporary timber deck construction bridge will be constructed immediately adjacent to and west of the new Sand Creek bridge location (Table 1).

The temporary bridge over Sand Creek will be approximately 528 feet long and 32 feet wide, with 11 approximate 48-foot-long spans. The temporary work bridge over Sand Creek will be supported by 10 piers partially or fully below the OHWM. Eight piers will consist of four 24-inch-diameter, open-ended steel pipe piles, and two piers will consist of eight 24-inch-diameter, open-ended steel pipe piles. In total, 30 to 40 piles will be below the OHWM to account for minor adjustments in span support needs and site conditions. The temporary work bridge will support large cranes that will be working to construct the new permanent bridge over Sand Creek.

The temporary work bridge piles will be vibrated to resistance, and one pile per pier will be proofed with an impact hammer at an estimated 20 to 50 strikes for a short duration. Impact and vibratory pile driving will occur only 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, dependent on weather or other interruptions.

The temporary work bridge span over the Sand Creek marked and lighted navigation channel will 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. If required, the temporary work bridge span over the marked and lighted navigation channel for Sand Creek will be removed between April 15 and October 15 so no impacts to marine traffic occur in Sand Creek when navigational access up Sand Creek is available as a result of the temporary work bridge over Sand Creek.

The temporary work bridges will be used to facilitate construction of the new permanent bridges as needed.

4. Construct new permanent bridges over LPO and Sand Creek. Some of this work may occur concurrently with the construction of the temporary work bridges. Construction of the new permanent bridges 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 any final grading needed.

   The new permanent bridge over LPO will be constructed approximately 50 feet west of the existing rail bridge in existing BNSF ROW. It will be approximately 4,874 feet long by 18 feet wide. The new bridge will have 49 spans at the following lengths: 42 at 104 feet in length; 6 at 75 feet 11 inches in length; and 1 at 47 feet 10 inches in length. Each pier bent will consist of six open-ended, 36-inch diameter steel pipe piles for a total of 288 piles below the 2,062.5-foot jurisdictional OHWM of the lake. The new piers will align approximately with every other pier of the existing bridge.

   The new permanent bridge over LPO will have 10 spans at, and adjacent to, the designated navigation spans on the existing bridge that will closely match those longer-span horizontal clearances. The maximum vertical clearance (low chord) of the new bridge will be 15 feet above the regulated summer pool elevation of 2,062.5 feet. These 15-foot clearances will consist of six 75-foot-11-inch spans, four of which will align with the existing rail bridge's 77-foot spans that are equal to or greater than 15-foot vertical clearance.

   The new permanent LPO bridge piles will be vibrated to resistance into the lakebed and finished with an impact hammer with an average of 1,600 strikes per pile. Pile driving will occur only during daylight working hours. Assuming that up to two piles could be driven per day, pile driving would occur for at an estimated six months, dependent on weather-related or other interruptions. Air bubble curtains will be used during impact pile driving to attenuate in-water sound pressure levels per U.S. Fish and Wildlife Service (USFWS) protocol provided to BNSF, and a turbidity curtain will surround the area (when water is more than 3 feet deep) being disturbed. Open-ended piles will generally further attenuate in-water sound from pile driving (Table 1).

   The new permanent bridge over Sand Creek will be constructed approximately 35 feet west of the existing rail bridge in existing BNSF ROW. It will be approximately 505 feet long by 21 feet wide. The new bridge will 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 will consist of eight piles each; seven piers (one partially or wholly within the OHWM and six fully upland) will consist of six piles each; and two piers upland of the OHWM will consist of three piles each. A total of 64 piles will be placed, 22 of which will be below the OHWM. Piles within the main channel of Sand Creek will be driven during low-water conditions/winter pool elevation.

   Only two of the piers will be fully within the Sand Creek navigational channel. The new bridge navigational horizontal clearance is 74 feet; the existing bridge has an approximate 45-foot horizontal clearance. Vertical clearance of the new bridge will match the vertical clearance of the existing bridge, which is 17 feet above the 2,062.5-foot OWHM. The new permanent Sand Creek bridge piles will 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 will occur only during daylight working hours. Assuming that up to two piles could be driven per day, pile driving would occur for about one month, dependent on weather-related or other interruptions.

5. Construct new second mainline track on new permanent bridges. Once the new permanent bridges over LPO and Sand Creek are completed, BNSF employees, with contractor support, will construct the new second mainline track on the new permanent bridges. The temporary work bridges will be used to facilitate the track construction on the new permanent bridges.

6. Dismantle and remove temporary work bridges and temporary nearshore fills. The temporary work bridges will be removed in sections, stockpiled in upland staging areas as needed, and ultimately removed from the site. The temporary work bridge piles will be removed with a vibratory hammer as needed. The temporary nearshore fills will be removed once temporary work bridge removal allows.

7. Final grading, cleanup, and stabilization. While the temporary work bridges are being dismantled and removed from site, all remaining final grading and track construction will be occurring in upland areas within the project limits. All disturbed areas within the project limits will be stabilized as required by permits. Permanent fencing, where appropriate, will be constructed; and temporary construction fencing and erosion control measures will be removed. Final inspection punch-list items will be addressed at this time.

8. Demobilize. All construction supplies and equipment will be removed from the staging areas; project is completed.

Table 1. Number of Piles and Installation Detail

Action	Support Type	Installation Method	Total Quantity	In-water Quantity
Temporary Work Bridges				
Bridge 3.1 Install and remove temporary work bridge piles.	24-inch Steel Pipe Pile	Install: Vibratory to refusal and impact hammer for proofing, estimated 20-50 strikes per pile. Removal would be vibratory extraction.	30-40	10
Bridge 3.9 Install and remove temporary work bridge piles.	24-inch Steel Pipe Pile	Install: Vibratory to refusal and impact hammer for proofing, estimated 20-50 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 20-50 strikes per pile. Removal would be vibratory extraction.	Included in overall temp bridge pile quantities	Included in overall temp bridge pile quantities
New Bridges				
Bridge 3.1 Install bridge piles.	24-inch Steel Pipe Pile	Install: Vibratory to resistance and finished with an impact hammer, estimated 1200 strikes per pile.	64	22
Bridge 3.9 Install bridge piles.	36-inch Steel Pipe Pile	Install: Vibratory to resistance and finished with an impact hammer, estimated 1600 strikes per pile.	288	288
TOTAL			**1,024**	**920**

2.2.2 Temporary Bridge Demolition

The temporary bridges will not be demolished until the new bridge is in place and work is complete. At that time, bridge components will be partially disassembled, breaking the spans down to more manageable pieces that can be safely removed from the temporary work bridges. A crane will be used to hoist sections of the bridge to either a flatbed or dump truck. These parts will either be removed entirely from the project area and/or stockpiled at the staging areas to be further dismantled or removed after construction has been completed.

Appendix B includes site photographs of existing conditions that depict the location of the bridges along with conceptual renderings of the proposed new bridges' relationship to the existing bridges. Best Management Practices (BMPs) will be implemented during the temporary work bridge demolition to prevent temporary bridge materials from entering Sand Creek or LPO.

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

2.2.3 Site Rehabilitation

Site rehabilitation includes final grading along the new rail grade and around upland areas associated with the new bridge abutments, removal of temporary fills associated with the access roads, temporary at-grade crossings, seeding/mulching open soil bare earth, shoreline planting of riparian trees and shrubs, and removal of temporary construction materials such as fencing, signage, and erosion control products. This is the final construction-related action associated with this project.

2.2.4 Construction Equipment

The project will require the use of a wide array of construction equipment. Table 2 includes a list of project equipment, as well as the expected use and the typical maximum noise level as measured from 50 feet away (WSDOT 2015).

Table 2. Construction Equipment List, Use, and Reference Maximum In-Air Noise Levels

Equipment	Expected Use	Lmax (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 trestles, 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

Table 2. Construction Equipment List, Use, and Reference Maximum In-Air Noise Levels

Equipment	Expected Use	Lmax (dBA)
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
dBA = decibels on an A-weighted scale; Lmax = highest time-weighted sound level measured		

2.2.5 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, due to the fact that LPO water levels are controlled by dams, the upstream Noxon Dam and the downstream Albeni Falls Dam, nearshore fills are proposed to be completed during low or no-water times in the winter months. Table 3 summarizes the general work activities sequencing and timeline. The current proposed start date is late Fall of 2018.

Table 3. General Work Activities Sequencing and Timeline

Fall 2018	Develop access and staging areas Wetland & nearshore structural fills Begin temporary work bridges
2019	Finish structural fills Temporary work bridge(s) construction Begin permanent bridge(s) pile driving
2020	Finish permanent bridge(s) pile driving Install permanent bridge spans Track & infrastructure construction
2021	Finish track & infrastructure construction Remove temporary work bridges

2.3 Alternatives Considered and Dismissed

Alternatives to the proposed alternative of constructing a second mainline track west of the existing track are limited due to the linear nature of the existing rail line and the existing BNSF-owned property (i.e., ROW). However, two other alternatives were reviewed and discussed and are summarized in the following subsections. They do not meet the purpose and need for the project.

2.3.1 New Track East of the Existing Mainline Track

This alternative would have essentially all of the same work elements described under the Proposed Action Alternative but places the new tracks on the east side of the existing mainline. The following bullet items summarize why this alternative was determined not to be practical, nor to have the least impact to the environment:

- For a new mainline track to the east of the existing BNSF mainline track, access to all the work by large equipment within Sandpoint city limits is either limited to Bridge Street or would need to be barged in from the lake. This would likely have a measurable increase in traffic congestion in the Bridge Street corridor. Additionally, approximately 0.5 mile of rail grade was already constructed at the time of the Highway 95 Sandpoint Bypass project on the west side of the existing tracks. To provide 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).

- Track, switch, and signal upgrades would remain generally the same as the Proposed Action Alternative.

- To construct a new bridge over LPO (Bridge 3.9) east of the existing rail bridge would require substantially increased additional nearshore fills beyond what is proposed under the Proposed Action Alternative. The cranes necessary would need to be brought in by barge and require a large fill area for a 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. The estimated additional nearshore fill for the minimum staging required is approximately 1.2 acres. Additionally, a large barge landing area would be required for this staging access, resulting in both lake-bottom excavations and adjacent fill of an undetermined quantity up to 2 acres. No 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 recreational boating corridor where Sand Creek enters LPO.

- A new bridge over Sand Creek (Bridge 3.1) east of the existing rail bridge would have approximately the same nearshore fills as the Proposed Action Alternative, and 0.28 acre less fill to the wetlands just south of the bridge on the west side. However, the same limitation for access to the area with equipment and materials as with Bridge 3.9 under this alternative would occur. Generally, the same staging for both bridges could be used other than some additional staging would be required where the Sandpoint Marina encroaches on BNSF ROW, with a subsequent loss of boat slips and access.

- A new bridge over Bridge Street (Bridge 3.0) would be approximately the same as described with the Proposed Action Alternative. However, due to close proximity, increased disruptions to existing public and private road access to residents east of the tracks, and to the Edgewater Hotel adjacent to (east of) the existing Bridge 3.0, would be anticipated.

- The proposed 0.88 acre of permanent and 0.38 acre of temporary nearshore fill below the jurisdictional OHWM of 2,062.5 feet, associated with bridge abutments and the south switch identified in Proposed Action Alternative, would remain approximately the same.

- As identified above, the 0.28 acre of wetland fill in one location between the rail grade and the multi-use public pathway south of the Sand Creek Bridge 3.1 would not be required under this alternative.

2.3.2 Offsite/Outside Existing BNSF ROW

This alternative would require incorporation of property outside the proposed project limits as well as the need to purchase or acquire new ROW to meet up with the existing track configuration. This alternative is not preferred or viable for the following reasons:

- Large tracts of property to build new tracks outside the BNSF transportation corridor are not available.
- Social and environmental displacement risks to develop a new rail transportation corridor would be high.
- Environmental impacts at new acquired properties would still require crossing of LPO and Sand Creek, are unlikely to be less than the Proposed Action Alternative, and would be outside an existing transportation corridor.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The study area used to evaluate impacts associated with the No Action and Proposed Action Alternatives in this EA is the 200-foot BNSF ROW from BNSF MP 2.9 to MP 5.1.

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 Act 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 U.S. Environmental Protection Agency (EPA). 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 Idaho Department of Environmental Quality (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 EPA 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 EPA 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).

The Sandpoint area was designated nonattainment for particulate matter 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 and Re-Designation Request to EPA to re-designate 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, EPA re-designated the Sandpoint area to attainment for PM_{10} (IDEQ 2017). The Sandpoint area is in attainment for all other criteria pollutants.

3.1.2 Environmental Consequences

No Action

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 in order to maintain service and safety on the bridge under the No Action Alternative. Thus, an ongoing level of equipment emissions will occur each year from diesel and gasoline-powered equipment. This may result in temporary and localized increases in some criteria pollutants.

In the long term, the No Action Alternative will result in a continued and increased need for train idling in regional sidings and associated power-up starts from those holds. This will likely exacerbate vehicular idling on the local roadway system. This localized increase in emissions is not expected to change the status of regional air quality attainment.

Proposed Action

The Proposed Action Alternative is expected to result in short-term and localized increases of air emissions from the operation of diesel and gasoline-powered equipment during construction, as well as the potential for 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. By implementing BMPs such as maintained emission control devices on equipment and proper dust control, this temporary emissions increase would not be expected to result in a measurable impact on local or regional air quality.

The need to construct a second mainline track and new bridges is a response to an existing condition in which the volume of trains has met and exceeded the capacity of a single track and bridge crossing from Sandpoint Junction to the existing double track configuration starting at BNSF MP 5.1. This volume of traffic has steadily grown over the past three decades.

As a result of that existing high train traffic volume, trains must stop and wait as other trains cross and clear the existing bridges. This results at times in long periods of locomotives idling; and an interrelated higher rate of fuel consumption and emissions associated with trains having to power up from idle holding. Both of these emissions impacts are reduced when trains are able to operate in a more continuous and consistent speed through the area. Therefore, the Proposed Action Alternative will improve the efficient movement of rail and vehicle traffic through the project area, reducing idling times and resulting in a slight improvement in local air quality.

3.2 Geology, Soils, and Topography

3.2.1 Affected Environment

The project site is located within the Lake Pend Oreille Watershed and is defined as within the existing BNSF ROW from approximate BNSF MP 2.9 north of the Amtrak Station in Sandpoint, to approximate MP 5.1 at the Algoma Siding. The geology, soils, and topography of the project 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. No documented unique geologic features are in the work corridor.

Two levels of information were used to define the soils in the work corridor: preliminary research using the published data in the Bonner County Soil Survey (including information obtained from the Natural Resources Conservation Service (NRCS) Web Soil Survey and site-specific soil evaluations at wetland field data points. The Soil Survey Report of Bonner County Area, Idaho (USDA 2006), 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 work corridor 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 work corridor 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 length of the project work corridor within the BNSF ROW, the native soils have been buried or replaced with fills consisting of compactable soils and structural rock since the time of the railroad construction in the late nineteenth century.

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 mainline 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

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

Proposed Action

The Proposed Action Alternative does not substantially affect or alter geology, soils, or topography within the limits of the project. The proposed work is limited to constructing a parallel grade immediately to the west of the existing mainline grade within the BNSF ROW. Essentially all of the 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 is greater than that of the No Action Alternative, it would not result in a substantial impact on local geology or soils.

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 composed of predominately compacted gravels used for BNSF maintenance vehicles.

Construction of bridge abutments for the new bridges will require removal of approximately 2,500+/- square feet of uplands. However, these areas currently have minimal vegetation, so clearing/grubbing/excavation activities will be minimal. Approximately 100+/- cubic yards of soil would be excavated from the area where a bridge abutment would be built. The excavated soil would be disposed of in an upland location, away from wetlands and waters of the United States, and outside the floodplain, at an approved facility or location. Any soil removed from any part of the ROW must be tested prior to its leaving BNSF property.

The installation of in-water support piles for the temporary work bridges would displace 2,000+/- square feet of substrate. However, the substrate would revert back to its natural condition once the piles have been removed after construction.

3.3 Water Resources and Water Quality

The Clean Water Act (CWA) governs the release of pollutants into waterways. Wetlands and Floodplains are discussed under Sections 3.5 and 3.6 respectively. Four sections of the Act potentially apply to the project Action Alternatives: Sections 401, 402, 404, and 303(d):

- Section 401 requires Water Quality Certification (WQC) from the State when a 404 permit or USCG bridge permit is triggered. Typically, this certification is granted by the State to certify that the discharge will not violate the State's water quality standards. EPA retains jurisdiction in limited cases.

- Section 402 authorizes the EPA, or states to which the EPA has delegated authority, to permit the discharge of pollutants under the National Pollutant Discharge Elimination System (NPDES) program. Construction projects that disturb one or more acres of ground and discharge to surface waters are required to obtain an NPDES Storm Water Construction General Permit.

- Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Section 404 requires a permit from the U.S. Army Corps of Engineers (USACE) before dredged or fill material may be discharged into waters of the United States. 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.

- Section 303(d) of the CWA establishes that states are to list waters which are not meeting 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.

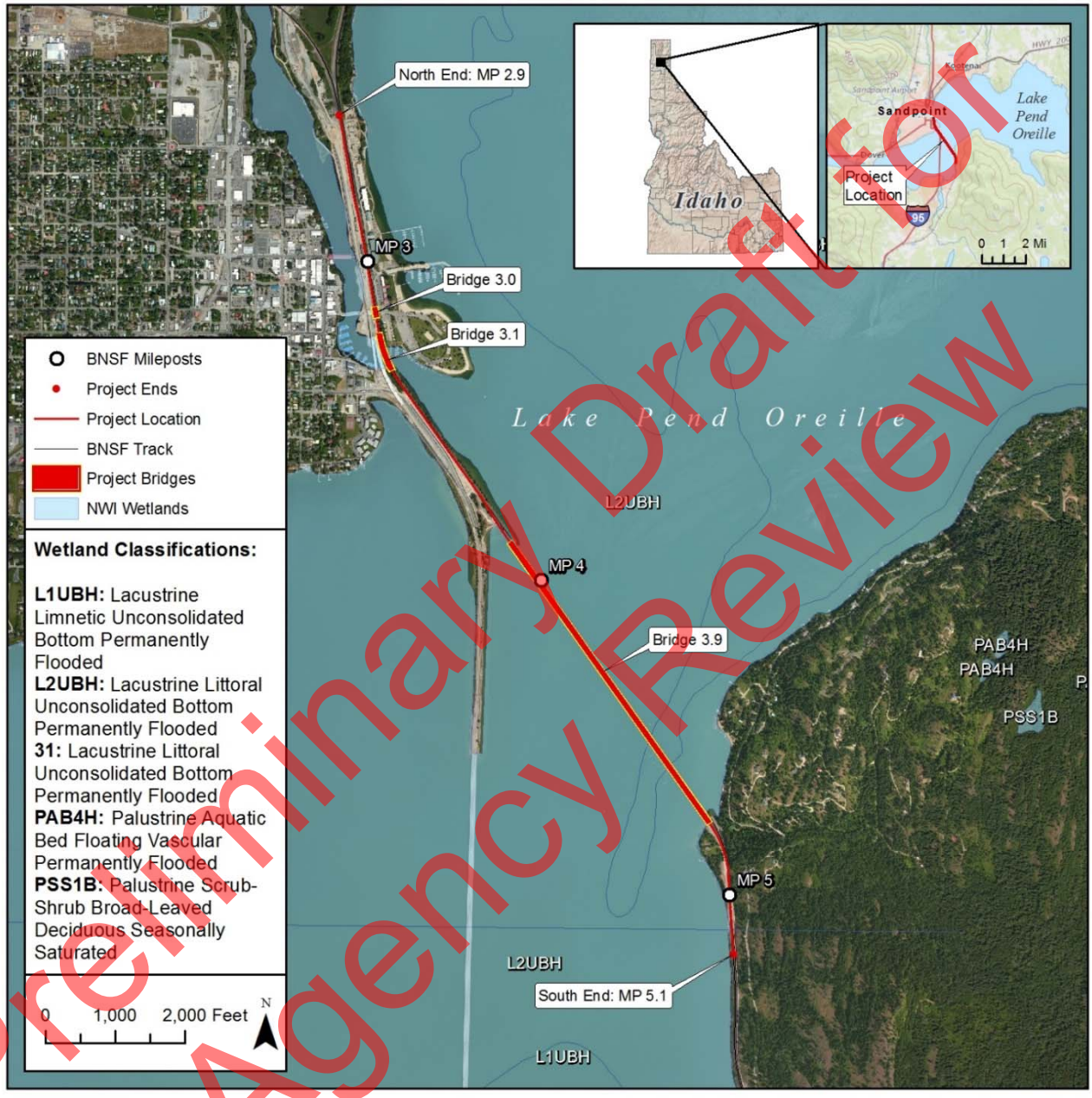
The Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of Americans' drinking water. Under the SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. The best way to maintain high-quality drinking water is to prevent contaminants from reaching drinking water sources. The SDWA 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 3. It is within the USGS Hydrologic Unit Code is 17010214 within the Idaho Panhandle Basin, Lake Pend Oreille Subbasin.

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.

Figure 3. Wetlands and Surface Water



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, then north into Canada where it joins the Upper Columbia River. The Pend Oreille River (along with the Lake) 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 of Sandpoint, 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.

The average annual precipitation is about 33 inches, and average annual air temperature is about 45 degrees Fahrenheit with a fairly 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. 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).

Existing environmental conditions found within the project work corridor are summarized from BNSF milepost (MP) to MP below and in the project Wetlands and Waters of the U.S. Delineation Report (Jacobs 2018d), describing conditions along the BNSF ROW from the north end of the project (MP 2.9) to the south end of the project (MP 5.1):

- MP 2.9 – 3.1: BNSF track and access road, and either bare ground or disturbed upland grasses, are on both sides of the track from the Sandpoint Junction switches at MP 2.9, south to the riparian area associated with Sand Creek at Bridge 3.1.
- MP 3.1 – 3.14: BNSF Bridge 3.1 over Sand Creek; and Sand Creek with riparian vegetation is on both sides above the OHWM.
- MP 3.14 – 3.15: A small wetland area (Wetland A) is on the west side of the track (between the track and the multi-use public pathway) with riparian, scrub-shrub, and open water wetland vegetation; and the OHWM of LPO with riparian vegetation is on the east side of the track.
- MP 3.15 – 3.8: BNSF track and access road with sparse upland grasses are on the west side of the track, and the OHWM of LPO with riparian vegetation is on the east side of the track.
- MP 3.8 – 3.9: OHWM of LPO with riparian vegetation is on both sides of the track.
- MP 3.9 – 4.89: BNSF Bridge 3.9 spans LPO.
- MP 4.89 – 4.9: OHWM of LPO with riparian vegetation is the east side of the tracks, and an existing access and staging area is on the west side of the tracks.
- MP 4.9 to 5.0: Steep upland forest and an unnamed seasonal creek is on the east side of the track and a BNSF access road, rock covered staging area, and residential lots are west of the tracks.
- MP 5.0 to 5.1: OHWM of LPO with riparian vegetation is west of the track, and steep upland forest and rock outcrops occur on the east side.

LPO 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. Sand Creek is listed as Category 4a for sediment/siltation and temperature and has TMDLs in place that were approved in 2008 (IDEQ 2017).

No wellhead protection areas are located within the immediate project vicinity (IDWR 2018). In addition, the State of Idaho does not contain national coastal areas; therefore, the state and this project are not subject to Coastal Zone Management Act regulations.

3.3.2 Environmental Consequences

No Action

Under the No Action Alternative, no construction impacts would occur. This alternative would preserve rail congestion to the north and south of the LPO crossing but is not anticipated to impact water resources or water quality.

Proposed Action

The Proposed Action Alternative for the construction of a second mainline track would impact 1.54 acres of waters of the United States, including wetlands, as described below and illustrated in **Appendix D**:

- 0.88 acre related to permanent nearshore fill below the LPO OHWM elevation of 2,062.5 feet above mean sea level for both new bridges 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 for construction access at various locations throughout the project work limits

The primary water quality impacts associated with this alternative are temporary and are related to construction. Temporary impacts could include potential sedimentation, potential petroleum spills from construction equipment operations, and potential spills from concrete work above the OHWM of LPO.

Implementation of BMPs defined within the Water Quality Monitoring and Protection Plan (WQMPP / 401 WQC) and the Storm Water Pollution Prevention Plan (SWPPP / 402 NPDES) as well as ongoing adaptive management adjustments throughout construction will be the means to maintain water quality standards during construction. Specifically, to minimize sediment impacts, a turbidity curtain will be used during in-water ground disturbance activities in waters greater than 3 feet deep. To prevent and minimize spill impacts, fully stocked petroleum containment spill kits will be located at all power equipment work sites and construction staging areas during construction.

Regarding long-term impacts, this alternative would not result in increased impacts to water quality from operations, as this is an existing interstate rail transportation corridor. The type of freight currently carried will not change with the proposed mainline track. Water resource impacts, including wetland and in-water fill are further discussed in **Section 3.5** and will be fully mitigated through the use of a mitigation bank and support of other mitigation opportunities in the Lake Pend Oreille watershed.

The Proposed Action Alternative would require a Bridge Permit, with the USCG as the lead federal agency, which is a federal action requiring NEPA review and compliance with various federal regulations, including the CWA. The fill required for the construction of the new, second mainline track and bridges triggers the need for a Section 404 (Individual Permit and/or Section 10 permit from the USACE). DEQ will review the project for compliance with CWA Section 401 WQC.

Construction projects in Idaho that disturb greater than one acre of ground must acquire a NPDES Permit. The Proposed Action Alternative would require approximately 20+/- acres of ground disturbing activities, exceeding the threshold triggering this permit. A Stormwater Pollution Prevention Plan (SWPPP), including a Spill Prevention, Control, and Countermeasures Plan (SPCC) will be prepared in accordance with the requirements of the NPDES authorization via the EPA.

Upon implementation of BMPs identified in **Section 4.0**, potential temporary impacts to water quality during construction are not considered substantial. In compliance with Section 404 of the CWA, long-term impacts to water resources, including wetlands, will be mitigated through the Valencia Wetland Mitigation Bank/Valencia Wetlands Trust (bank) located in Priest River, Idaho. Bank credits totaling 3.64 credits will be purchased to compensate for the 0.28 acre of wetland fill. Upon implementation of the mitigation identified in **Section 4.0**, long-term water resource impacts will be considered fully mitigated.

3.4 Wetlands

Executive Order 11990 – Protection of Wetlands requires federal agencies to take action 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 Nation Wetland Inventory (NWI) mapping did not identify any wetlands in the project work corridor but mapped LPO as L2UBH (lacustrine, littoral, unconsolidated bottom, permanently flooded). 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 Highway 95 multi-use public pathway (Figure 3). 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 all of the jurisdictional criteria of hydrology, hydric soils, and hydrophytic vegetation presence.

3.4.2 Environmental Consequences

No Action

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

Proposed Action

As stated in section 3.2.2, the Proposed Alternative would result in the unavoidable filling of 1.54 acres of jurisdictional waters of the United States. This includes 0.28 acre of permanent fill of Wetland A at the south end of Bridge 3.1 for the bridge and development of new rail grade/support for the second mainline track. Permanent impacts to Wetland A are illustrated in Appendix D. As Wetland A will be entirely filled, no temporary impacts are characterized for this feature. Temporary impacts, including the implementation of piles required to support a temporary work bridge, will occur in LPO. Temporary piles will be removed upon installation of the permanent structure.

Permanent impacts associated with fill in Wetland A will be fully mitigated through an agency-approved mitigation bank, the Valencia Wetland Mitigation Bank/Valencia Wetlands Trust (bank) located in Priest River, Idaho. Bank credits totaling 3.64 credits will be purchased to compensate for the 0.28 acre of wetland fill. As Wetland A impacts will be fully mitigated, the Proposed Action will not have significant impacts to wetlands.

3.5 Floodplains

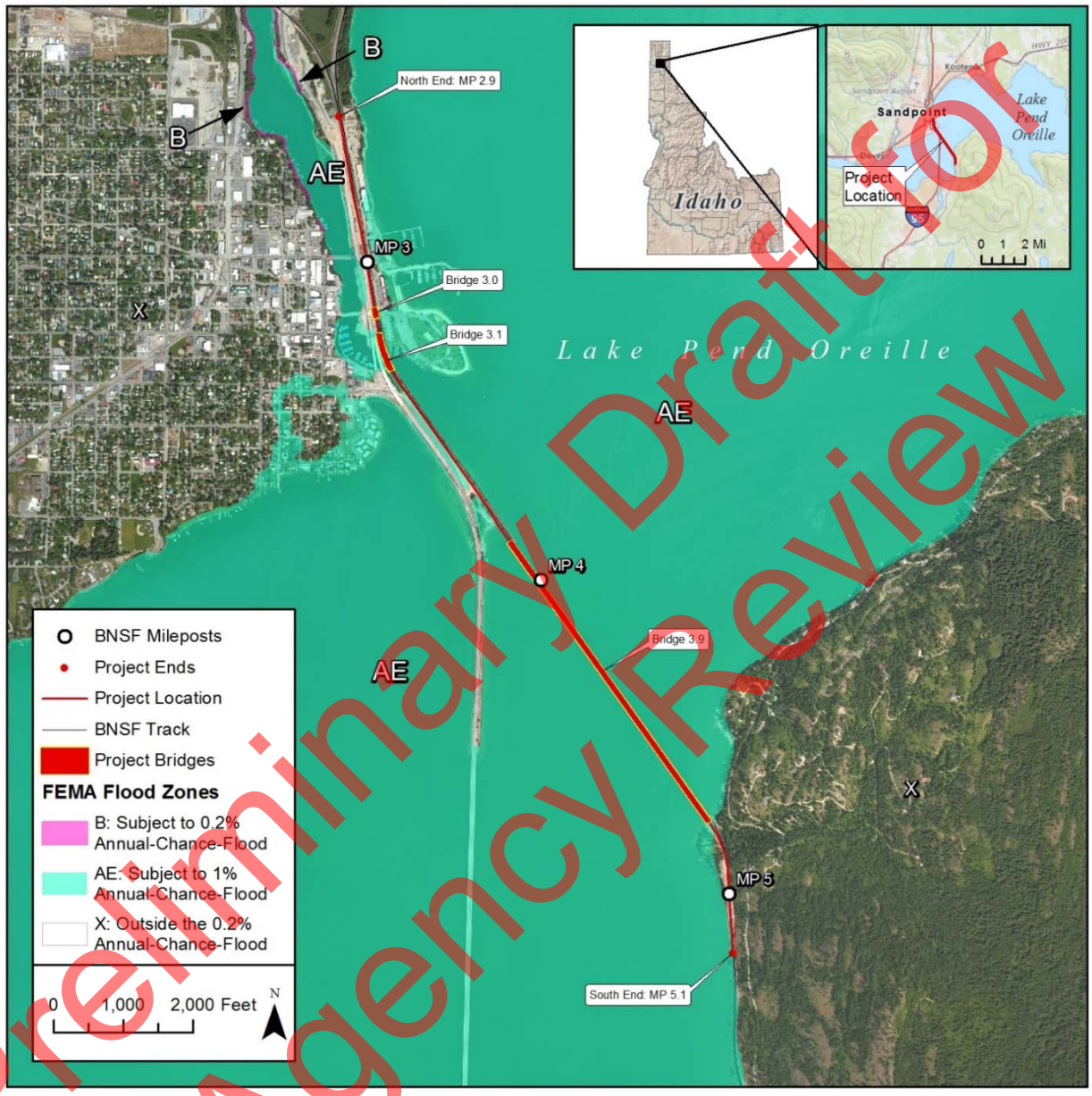
Executive Order 11988, Floodplain Management requires federal agencies to consider how their actions may encourage future development in floodplains and to minimize such development. DOT Order 5650.2, Floodplain Management and Protection, prescribes policies and procedures for ensuring that federal agencies consider the avoidance and mitigation of adverse floodplain impacts in its actions. DOT 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) effective Flood Insurance Rate Map for this area (Panel 16017C0718E), as shown in Figure 4. The effective 100-year flood elevation is mapped at 2,074 feet. 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.

Figure 4. Floodplains



3.5.2 Environmental Consequences

No Action

Efficient use of the existing line would not result in any floodplain impacts since it would not require additional fill or excavation on the project site. The No Action Alternative would not encourage future development in floodplains since it would constitute continued use and maintenance of existing structures.

Proposed Action

Due to the size and scale of the base floodplain associated with LPO and Sand Creek, impacts to the base floodplain cannot be avoided. The Proposed Action Alternative would result in approximately 1,500 cubic yards of permanent fill and 800 cubic yards of temporary fill within the 100-year floodplain. 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 project area. The proposed temporary and permanent bridges require installation of 920 steel pipe piles in Sand Creek and LPO. However, as shown in the permit drawings in Appendix A, the low chord of the new permanent and temporary bridge decks will be constructed above the 100-year flood elevation, minimizing the risk associated with the encroachment.

The project is being designed in compliance with Bonner County and City of Sandpoint floodplain development standards, as outlined in Bonner County Municipal Code Title 14, Flood Damage Prevention, and Sandpoint Municipal Code Title 8, Chapter 4, Flood Damage Control Ordinance. Compliance with these development standards requires demonstrating that the proposed encroachment will not result in any increase in flood levels during the occurrence of the base flood. The Proposed Action Alternative is intended to accommodate existing rail volumes on BNSF's northern tier and is not expected to facilitate future increases in floodplain development. Therefore, the Proposed Action Alternative will not result in a significant encroachment into the floodplain as defined by DOT Order 5650.2.

3.6 Vegetation

Vegetation stabilizes soils, controls erosion, and reduces sedimentation. Vegetation also provides habitat and forage for wildlife.

3.6.1 Affected Environment

Disturbed upland grasses in the project work corridor include species such as cheat grass, common mullein, common timothy, orange hawkweed, panic grass, perennial rye grass, rush skeleton weed, spotted knapweed, and western wheatgrass.

The riparian vegetation of Sand Creek and LPO includes emergent species such as reed canarygrass, stinging nettle, and common sedges and scrub-shrub and forested species such as black cottonwood, red alder, blue elderberry, Rocky Mountain maple, Scouler willow, red-osier dogwood, Nootka rose, Pacific ninebark, trailing blackberry, and Douglas spirea.

Wetland vegetation in the one wetland identified in the project work corridor includes species such as common cattail, duck weed, and panicled bulrush, in addition to the riparian vegetation described above.

The upland forested vegetation in the study area includes species such as Douglas fir, lodgepole pine, Ponderosa pine, western hemlock, and western red cedar and is often mixed with an understory of American trailplant, common snowberry, myrtle pachystima, Nootka rose, and various native and non-native grasses.

3.6.2 Environmental Consequences

No Action

Other than the removal of the cottonwood trees that presently threaten the integrity of the track structure along the west side of the mainline, no other vegetation impacts are anticipated to occur under this alternative. Potential impacts to upland vegetation would not be extensive.

Proposed Action

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) will 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 an existing 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. Thus, this alternative does not in itself result in the loss of the majority of those trees.

There would be a loss of some upland trees, shrubs, and grasses between the south end of Bridge 3.9 and the nearshore fill at MP 5.1. At that nearshore fill, most of that area is currently riprap facing along the lake, although several riparian shrubs will be lost in that location. Invasive upland 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 clearing only 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 always 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, all equipment would be cleaned to the greatest extent practical prior to arriving to 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 has been developed (see impact minimization measures in Section 4.1). Boats, barges, and over-water machinery will be thoroughly inspected for invasive species and cleaned as needed prior to accessing LPO or Sand Creek (ISDA 2014). This protocol will be in effect during the entire project.

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

3.7 Fish and Wildlife

The Fish and Wildlife Coordination Act (1934) directs federal agencies to prevent the loss and damage to fish and wildlife resources. Consultation with the USFWS is required when activities result in the control of, diversion, or modification to any natural habitat or associated water body, altering habitat quality and/or quantity for fish and wildlife.

The Migratory Bird Treaty Act (MBTA) makes it unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. Provisions are in place for the protection of migratory bird, part, nest, egg, or product. Under the MBTA, “migratory birds” essentially include 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.

3.7.1 Affected Environment

Birds

Lake Pend Oreille 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 also for overwintering or as a stopover during periods of migration.

The following listed in Table 4 are the observed birds in Bonner County Birds as documented by the Idaho Department of Fish and Game. (IDFG 2018).

Table 4: 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*)

Table 4: Birds of Bonner County

Species	Species	Species
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*)
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 anser domesticus*)	willow flycatcher (*Empidonax traillii*)

Table 4: Birds of Bonner County

Species	Species	Species
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 histrionicus*)	Pacific wren (*Troglodytes pacificus*)	

Numerous other species are likely to utilize the project work corridor and the surrounding uplands during various times of the year for various purposes.

Terrestrial Mammals

Due to the relatively high level of human-related activity associated with the rail line and Highway 95, generally only disturbance-tolerant terrestrial mammals are expected to occur within or around the project site. Deer, coyotes, skunks, raccoons, muskrat, and various rodents have been known to occur in the project vicinity. Typically, transportation corridors are purposely managed to be unattractive to larger terrestrial mammals to reduce both safety concerns (car and truck strikes) and wildlife kill. The immediate project footprint (BNSF ROW) is predominantly limited to disturbed open ground with sparse vegetation surrounded by marginal to medium value upland habitats.

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.

The fish species outlined in Table 5 are based on the current observed fish species by Idaho Fish and Game, 2017 data.

Table 5. 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 *(Onchorynchus nerka)*
cutthroat trout (*Onchorhynchus clarki*)	lake trout (*Salvelinus namaycushi)*
crappie (*Pomoxis spp.)*	smallmouth bass (*Micropterus dolomieu)*
rainbow trout (*Onchorhynchus mykiss*)	yellow perch *(Perca flavescens)*
westslope cutthroat trout *(Onchorynchus clarki lewis)*	longnose sucker *(Catostomus catastomus)*
peamouth (*Mylocheilus caurinus)*	Gerrard-strain rainbow trout (*Kamploops)*
pygmy whitefish (*Prosopium coulterii)*	largescale sucker (*Castomus clupeaformis)*

3.7.2 Environmental Consequences

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

No Action

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

Proposed Action

Pile driving has the highest potential to generate noise levels above the moderate level of disturbance. Species response would be, in part, dependent on proximity to the piles being installed, size (juvenile, subadult, adult), presence of a swim bladder, and activity (foraging, migrating, nesting, etc.). Large-scale construction activities associated with this alternative would be expected to result in avoidance of the general vicinity by both birds and mammals for the duration of the project. However, the project footprint is already fully within a high traffic transportation corridor, much of it disturbed and rock covered, and thus not expected to create a major impact or displacement of birds or mammals.

The pile driving proposed for the bridges has the potential for temporary impacts to all species, but in particular to fish species that are present in the project area. The expected response for fish species present in the work area would be avoidance of the general area. The availability of extensive alternate habitat in nearby creeks, river, and lake allows fish to widely disperse away

from both the potential immediate impact zone as well as the general work action area. This behavioral impact could potentially disrupt localized feeding opportunities, hiding habitat, and short-term migration.

Most species of fish are susceptible to 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. Mitigation approaches such as initiating limited low impact strikes at the beginning of each work period to encourage fish dispersal are day-to-day commonsense approaches that minimize the potential of fish injury and mortality.

Coordination with the USFWS and IDFG as well as other advisory entities to the permitting agencies for the project are ongoing and are expected to result in the adoption of appropriate BMPs to avoid, minimize, and mitigate impacts to fish and wildlife during construction.

Upon completion of construction, a second track will occupy a relatively small operational footprint within the existing transportation corridor. Thus, the post-construction conditions would not be expected to result in a substantial change to the present transportation corridor condition.

The Proposed Action Alternative could displace birds by altering flight patterns or cause other temporary behavioral changes during construction. It is not expected, however, that construction or operational activities in the project area associated with the bridge would rise to the level of prohibited conduct under the MBTA.

Due to the limited duration and spatial extent of construction activities, the Proposed Alternative is not expected to significantly impact fish and wildlife not listed under the Endangered Species Act (ESA). ESA-listed species determinations are provided in **Section 3.8** and the Biological Assessment (BA) associated with the project.

Invasive Species

Numerous invasive species exist in Bonner County. The Idaho Invasive Species Council is a multi-agency 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 (ID, Office of the Governor, Executive Order NO 2017-05).

Aquatic invasive species are always a concern when working above, in, or near water. Invasive invertebrates can be spread by equipment. To help prevent the spread of invasive species, all equipment would be cleaned to the greatest extent practical prior to arriving to 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 has been developed (see impact minimization measures in Section 4.1). Boats, barges, and over-water machinery will be thoroughly inspected for invasive species and cleaned as needed prior to accessing LPO or Sand Creek (ISDA 2014). This protocol will be in effect during the entire project. Through the use of BMPs, the project is not anticipated to contribute invasive species to the ecosystem.

3.8 Endangered Species Act Listed Species and Essential Fish Habitat

The primary federal law protecting threatened and endangered species is the ESA, 16 USC, Section 1531, *et seq*., as well as 50 Code of Federal Regulations (CFR) Part 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 Marine Fisheries Service [NMFS]) 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 Biological Opinion with an Incidental Take statement, a Letter of Concurrence and/or documentation of a no effect finding. 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 project alternatives reviewed are located across and along the western edge of LPO and immediately east of or presumably near Highway 95 and Sandpoint. Project area uplands are fully developed and consist of railroad tracks, gravel and paved parking areas, urban and urban fringe development, and highway/roadways. Other than bull trout, the specific habitat conditions required for the species in **Table 6** do not exist in the Alternative Action Areas.

Table 6. 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	Preliminary Determination *
Canada lynx	*Lynx canadensis*	Threatened	No	No	NE
grizzly bear	*Ursus arctos horribilis*	Threatened	n/a	No	NE
North American wolverine	*Gulo gulo luteus*	Proposed Threatened	No	No	NE
woodland caribou	*Rangifer tarandus caribou*	Endangered	No	No	NE
bull trout	***Salvelinus confluentus***	**Threatened**	**Yes**	**Yes**	**NLTAA (ESA) NE (Critical Habitat)**

**Definitions: NE = No Effect; NLTAA = May Affect, Not Likely to Adversely Affect*

Bull Trout. Both the USFWS and the IDFG have confirmed that there is no documented presence of bull trout, or designated bull trout habitat, in Sand Creek; and data is minimal on bull trout use of LPO within the project action area (K. Satori and M. Williams, personal comm.). However, bull trout most likely use the action area in the course of migrating between spawning habitat and as foraging, migration, and overwintering (FMO) habitat; and three separate studies of radio-tagged bull trout from 2005 through 2009 documented a few bull trout at or in close proximity to Bridge 3.9 throughout the winter. While most bull trout migration into LPO occurs from upstream

tributaries in the spring, a fall migration occurs from the downstream East Fork River, presumably to allow bull trout to avoid swimming upstream into the lake against the current during spring high flows (USFWS 2015).

In September 2010, the USFWS designated critical habitat for bull trout throughout their range that contains features considered essential for conservation of the species (75 Federal Register 63898). Thirty-two Critical Habitat Units (CHUs) were designated, including Habitat Unit 31-Clark Fork River Basin that includes the open water and shorelines of LPO and the Pend Oreille River within the project action area, but does not include Sand Creek.

The primary function of individual CHUs is to maintain and support core areas. The 32 designated CHUs are clustered into six recovery units. The Columbia Headwaters Recovery Unit (CHRU) includes western Montana, northern Idaho, and the northeastern corner of Washington. The CHRU is further divided into five geographic regions and 35 core areas. Core areas are defined as groups of partially isolated local populations of bull trout with some degree of gene flow occurring between them and are considered to be “metapopulations” (USFWS 2015).

LPO is identified as a complex core area contained within the designated Lower Clark Fork Geographic Region. The Lower Clark Fork Geographic Region, the largest and most diverse bull trout core recovery area in the CHRU, is essential to bull trout conservation because it is among the more secure and stable bull trout populations across the range of the species and may provide a very important stronghold against potential extinction. It also provides important bull trout FMO habitat for local populations in LPO, Pend Oreille River tributaries, and the Lower Clark Fork River, as well as an essential migratory corridor for bull trout from LPO to access upstream productive watersheds (USFWS 2009).

Lake Pend Oreille Basin (LPO-B) 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, are entirely in Idaho. LPO-B represents 15 percent of the LPO complex core area, covering 0.67 million acres with 1,250 miles of mapped streams. The BNSF Sandpoint Junction Connector project lies wholly within LPO-B.

Noise within the Project Area

Ambient noise levels at the project site are influenced by the local population level, traffic volumes on Highway 95, rail traffic, and commercial enterprises. The local population center is the City of Sandpoint. Highway 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. Ambient noise level projected at 50 A-weighted decibels (dBA) is expected with highway, local roadways, city activities, and regular train traffic. Peak rail noise levels are the whistles at 140 decibels (dB).

ESA Consultation History

The USCG is the lead federal agency associated with this action and is consulting with the USFWS regarding potential project-related effects to federally listed species and critical habitat. Jacobs has had several informal consultations with USFWS to review impacts, methodology, and mitigation opportunities.

3.8.2 Environmental Consequences

No Action

Implementation of maintenance actions associated with the No Action Alternative would result in limited in-water work and therefore result in a reduced level of potential impact to ESA-listed species in the short term compared to the Proposed Action. Although both alternatives would result in elevated levels of underwater and in-air noise generated during maintenance or construction, the ongoing maintenance actions associated with the No Action Alternative would not require consultation with the USFWS.

Proposed Action

Bull trout would be the only ESA-listed species to experience expected effects from the Proposed Action Alternative. Temporary impacts would be primarily associated with in-water noise from pile installation and potential reduction in water quality from increased turbidity. Detailed information regarding proposed pile driving actions directly applicable to bull trout is provided below.

Audible disturbances from construction activities are likely to exceed ambient noise. Based on Federal Highway Administration (FHWA) referenced guidance, a projected noise level of 110 dB is used for air noise levels. The distance in-air noise will extend from the project area before reaching background levels is identified in construction noise attenuation Table 7. Inputs included a projected intermittent 50 dBA for ambient noise level with highway and regular rail traffic and 110 dBA for the high point source construction noise with a hard (open) site type are assumed through most of the project (urban area and over water) and soft site to the south of Bridge 3.9 (over land with tree cover).

Table 7. Airborne Construction Noise Attenuation

Distance from Bridge	Construction Noise (Point source + hard site) (attenuation = -6 dBA)	Construction Noise (Point source + soft site) (attenuation = -7.5 dBA)	Ambient Noise
50 feet	110 dBA	110 dBA	50 dBA
100 feet	104 dBA	102.5 dBA	50 dBA
200 feet	98 dBA	95 dBA	50 dBA
400 feet	92 dBA	87.5 dBA	50 dBA
800 feet	86 dBA	80 dBA	50 dBA
1,600 feet	80 dBA	72.5 dBA	50 dBA
3,200 feet	74 dBA	65 dBA	50 dBA
6,400 feet	68 dBA	57.5 dBA	50 dBA

Based on the data in Table 7**,** construction noise will reach ambient noise levels over open or hard terrain approximately 50,000 feet (9.5 miles) from the project site, and over soft terrain approximately 12,559 feet (2.38 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 will be influenced by other variables not factored into the attenuation calculation, such as land forms, other roads, buildings, and weather (wind/rain).

For in water calculations, risk of injury or mortality to aquatic species resulting from noise 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. Different aquatic species exhibit different hearing ranges, and threshold distances and noise levels have been established to be used as a basis for effect determinations.

The decibel (dB) thresholds used in this analysis of effects to bull trout are (WSDOT 2017):

- Injury: > 2 grams – 187 dB cSEL; <2 grams – 183 dB cSEL; all sizes – 206 dB PEAK;
- Behavioral effects – 150 dB RMS

Peak dB describes the instantaneous peak sound pressure level and is used to evaluate potential injury to fish, and Root Mean Square (RMS) dB describes the pressure level during the impulse and is used to describe disturbance-related effects (i.e., harassment) to fish. Sound Exposure Level (SEL) is used as an indication of the energy dose.

The National Oceanic and Atmospheric Administration (NOAA) Pile Driving Impact Calculator was used to determine the distance that underwater unmitigated/unattenuated sound would extend for the two bridges, based on the size and type of piles as measured 10 meters from the pile driven with an impact hammer (WSDOT 2017).

Calculated results for the proposed **Bridge 3.9 over LPO** (entering 288 steel pipe piles 36 inches in diameter, driven with an estimated 1,600 strikes per pile), showed a cumulative SEL of 218 dB and the following distances at which various thresholds of accumulated SEL are expected to be exceeded:

- Distance at which 206 dB PEAK is expected to be exceeded (onset of physical injury) = 18 meters (59 feet)
- Distance at which 187 dB accumulated SEL is expected to be exceeded (onset of physical injury to fish weighing 2 grams or greater) = 1,175 meters (0.74 mile)
- Distance at which 183 dB accumulated SEL is expected to be exceeded (onset of physical injury to fish less than 2 grams) = 1,585 meters (0.98 mile)
- Distance at which 150 dB RMS is expected to be exceeded (behavioral effects) = **7,356 meters (4.57 miles)**

Therefore, the farthest extent of potential behavioral effects would be 4.57 miles northeast to Oden Bay and 4.44 miles southwest to the Pend Oreille River near the City of Dover at the lake's outlet.

Calculated results for the proposed **Bridge 3.1 over Sand Creek** (entering 64 steel pipe piles 24 inches in diameter, driven with an estimated 1,200 strikes per pile) showed a cumulative SEL of 214 dB and the following distances within which various thresholds of accumulated SEL are projected to be exceeded for bull trout:

- Distance within which 206 dB PEAK is expected to be exceeded (onset of physical injury) = 12 meters (39 feet)

- Distance within which 187 dB accumulated SEL is expected to be exceeded (onset of physical injury to fish 2 grams or greater) = 590 meters (0.37 mile)
- Distance within which 183 dB accumulated SEL is expected to be exceeded (onset of physical injury to fish less than 2 grams) = 736 meters (0.46 mile)
- Distance within which 150 dB RMS is expected to be exceeded (behavioral effects) = **8,577 meters (5.33 miles)**

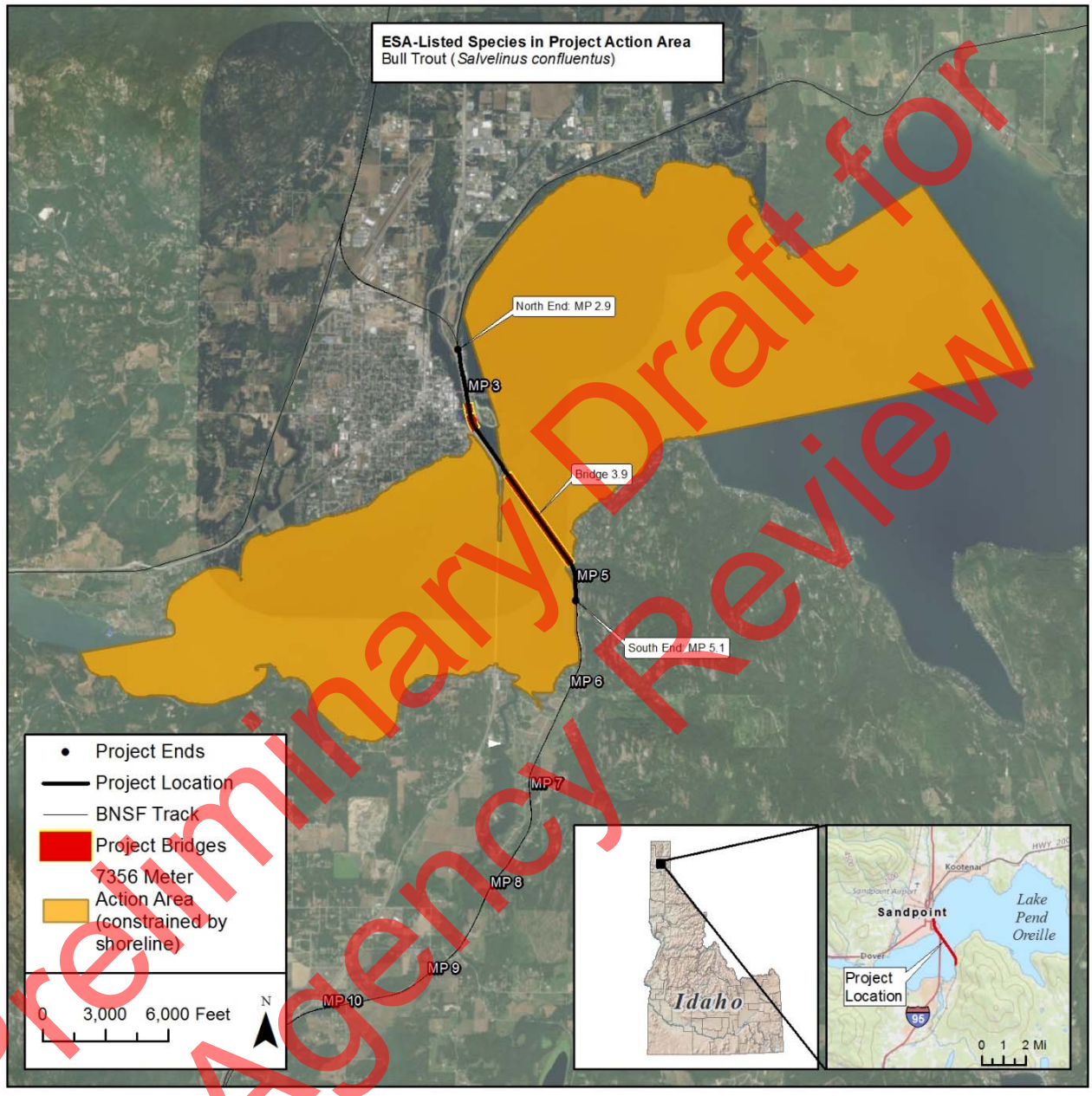
As a result of the noise analysis presented in Section 3.8, the farthest extent of potential behavioral effects would be upstream on Sand Creek for approximately 0.10 mile where the creek turns north, and approximately 1.48 miles to the east and southeast to the LPO shoreline west of Contest Point.

Based on the BA (Jacobs 2018b), the proposed alternative may result in temporary direct effects to bull trout from pile driving associated with the construction of both Bridge 3.9 and its temporary construction bridge. Bull trout would be expected to avoid the area due to increased activity and noise during construction activities. Therefore, project activities are unlikely to substantially affect subpopulation indicators at the watershed or Recovery Unit scales, either temporarily or permanently.

The in-water action area for the proposed project, which is defined as areas where threatened or endangered species may be directly or indirectly affected by the proposed project, is generally identified in Figures 5 and Figure 6, Bridge 3.1 over Sand Creek and Bridge 3.9 over LPO. ESA-listed species, proposed species, critical habitat, or essential fish habitat (EFH) that could potentially occur in Bonner County are summarized in Table 6. The in-water action area was determined through a noise analysis which is presented above. A terrestrial/ in-air action area is not provided since terrestrial ESA-listed species are not expected to occur within the vicinity of the project.

Figure 5. Bridge 3.1 Action Area

Figure 6. Bridge 3.9 Action Area



Permanent indirect effects may occur to bull trout due to the potential for increased predation associated with the increased shading and additional pier hiding habitat from Bridge 3.9 after construction. However, the area shaded by the permanent Bridge 3.9 over LPO is very 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). Similarly, the temporary construction bridge over LPO is also very small compared to the surface area of the lake (approximately 4 acres).

Other effects, turbidity, potential equipment fluid contamination, or temporary and permanent benthic habitat alteration, are also small relative to the overall area of bull trout dispersal in the lake and/or their designated critical habitat.

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.

The USFWS were consulted regarding the Proposed Action Alternative, construction methods, project timing, and impact minimization measures. The BA includes preliminary effect determinations (Jacobs 2018b).

Based on a review of the action area, species utilization within the action area, project actions and timing, impact minimization measures, and federally listed species and designated critical habitat that occurs in the action area, the following determinations in Table 8 are proposed.

Table 8. ESA Determination Summary (TBD)

Common Name	Determination
bull trout	Not likely to adversely affect
bull trout critical habitat	No effect

Indirect effects are those that may occur to listed species after the project has been completed. Common indirect effects include changes to ecological systems resulting in long-term habitat alteration, changes in predator/prey relationships, or changes in land use. The new track will be elevated and, therefore, is not anticipated to significantly alter predator/prey relationships associated with shading impacts. Long-term impact changes associated with filling wetland areas of the project will be fully mitigated through the use of a mitigation bank.

Compensatory mitigation for nearshore fill areas of LPO is currently being discussed and is under review with agencies and tribal natural resource departments. Impacts to LPO will likely be fully mitigated through BNSF's support of bull trout habitat and/or restoration projects in the LPO watershed. The proposed action does not propose increasing or changing rail traffic volumes or modifying land use. No indirect ESA effects are anticipated to result from the proposed action.

3.9 Archaeological and Historic Resources

The National Historic Preservation Act of 1966 (NHPA), 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 take into account 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 Idaho 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.

The Archaeological Resources Protection Act (ARPA) applies when a project may involve archaeological resources located on federal or tribal land. ARPA requires that a permit be obtained before excavation of an archaeological resource on such land can take place.

3.9.1 Affected Environment

The project vicinity was utilized by local Native American populations for hunting, fishing, and plant gathering; but the Area of Potential Effects (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 artificial 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.

Current and previous field assessments indicate that the APE does not contain any intact archaeological deposits near surface sediments. An evaluation of the archaeological and cultural resources in the project vicinity was completed for the proposed project. The evaluation identifies resources and provides management recommendations regarding NHPA compliance which are described in the Cultural Resources Technical Report (Jacobs 2018a). 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.

Site 10BR38, a prehistoric campsite and associated rail line, is at the south end of the bridge. Site 10BR1026, a prehistoric campsite and historic scatter, is at the north end of the bridge. 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. The newly recorded historic and cultural resources, BNSF Bridge 3.1 and Rock Wall 1, are recommended *not eligible for listing in the NRHP*.

All survey records are on file at Jacobs Engineering Group, Bellevue, Washington. Photographic prints and site forms will be submitted to the Idaho SHPO and will be on file at the Idaho State Historical Society, Boise (Jacobs 2018a).

3.9.2 Environmental Consequences

No Action

The No Action Alternative would result in no ground disturbance activities, but maintenance activities would continue. Maintenance would consist of periodic inspections and right-of-way 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 protocol 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, the potential for intact archaeological deposits to exist within the APE is considered remote; therefore, the No Action Alternative is unlikely to impact Archeological 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

To create the new bridge span, the Proposed Action will add fill and drive permanent and temporary piles. The Proposed Action is a federal undertaking because the project will require a USCG Bridge Permit and a USACE Clean Water Act 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 take into account the effects of the undertaking on historic properties and afford the ACHP an opportunity to comment on these actions. The Section 106 process, for the Proposed Action, includes five steps:

1. Initiate process by coordinating with other environmental reviews, consulting with the SHPO, identifying and consulting with interested parties, and identifying points in the process to seek input from the public and to notify the public of proposed actions
2. Identify cultural resources and evaluate them for NRHP eligibility, resulting in the identification of historic properties
3. Assess effects of the project on historic properties
4. Consult with the SHPO and interested parties regarding adverse effects on historic properties, resulting in a memorandum of agreement (MOA)
5. Proceed in accordance with the MOA, if necessary

Steps 1 through 4 have been initiated, and coordination has started with various interested parties including the Kootenai Tribe of Idaho, the Coeur d' Alene Tribe, the Kalispel Tribe of Indians, and the Spokane Tribe of Indians.

Section 106 was initiated with SHPO on 1/28/2018. On 3/8/2018, SHPO requested additional information regarding the impacts to the non-water crossing bridge in the project, Bridge 3.0 over Bridge Street. On 3/21/2018 additional information was returned to SHPO via the USCG and no

additional project information has been requested. The project anticipates SHPO concurrence with the findings and recommendations discussed in the Cultural Resources and Historic Built Resources sections below.

Cultural 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.

In consideration of the Proposed Action, 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.

The identification of archaeological remains typically results in the halt of excavations. A project-specific Inadvertent Discovery Plan (IDP) will be utilized in the unlikely event that archaeological materials are discovered.

The Cultural Resources Technical Report does not recommend additional archaeological evaluation or monitoring for the Proposed Action since *no adverse effect* and *no effect* determinations are recommended.

Historic Built Resources

In consideration of the Proposed Action, 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 will not be directly affected.

The report recommends ongoing monitoring and inspection of the BNSF-Amtrak (Northern Pacific) Depot building 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 environment, indirect effects on such resources during construction and operation will 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 Environmental Justice

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 also 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.

3.10.1 Affected Environment

The project site is located entirely within existing BNSF ROW within the incorporated limits of the City of Sandpoint and unincorporated Bonner County. The north end of the project is located within City limits from BNSF MP 2.9 to 3.9, where the existing tracks are surrounded by a BNSF maintenance road, the Sandpoint Train Depot and U.S. 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. Within unincorporated Bonner County, BNSF Bridge 3.9 spans over the open water of Lake Pend Oreille 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 2017).

The racial composition of the City of Sandpoint and Bonner County is primarily White, at 96 and 98 percent, respectively. 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 of Sandpoint contains a higher proportion of residents living in poverty (22 percent) compared to Bonner County and the State of Idaho (15 percent). Since the project site is limited to existing rail ROW, no minority or low-income populations are present within the immediate study area.

3.10.2 Environmental Consequences

No Action

The No Action Alternative would result in no construction activity other than routine maintenance activities. Increased train delays waiting on regional sidings will have a minor impact on air quality, traffic noise, and traffic circulation. 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

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. Construction noise, particularly pile driving at the Sand Creek Bridge (3.1) would be detectable along the eastern side of Sandpoint in the vicinity of Highway 95 but is anticipated to rapidly dissipate based on the presence of vegetation, structures, changes in topography, and increasing ambient noise levels associated with local businesses and Highway 95.

No construction activity is currently proposed during nighttime hours. Construction would occur within the existing railroad ROW easement. Elimination of the constraint is expected to result in a minor long-term improvement in air quality, traffic noise, and local traffic circulation. This action would not result in disproportionately high and adverse impacts to minority or low-income populations.

3.11 Prime and Unique Farmlands

The Farmland Protection Policy Act encourages federal agencies to minimize the impact of federal programs on the unnecessary and irreversible conversion of farmland (prime or unique) to nonagricultural uses. It follows that federal programs shall be administered in a manner that, as practicable, would be compatible with state and local government and private programs and policies to protect farmland.

3.11.1 Affected Environment

All work is proposed within the existing BNSF ROW transportation corridor. No designated farmlands or working farms are within that corridor, and none are adjacent to the project work corridor.

3.11.2 Environmental Consequences

As indicated in the USCG NEPA Implementing Procedures and Policy for considering Environmental Impacts (USCG 2000), actions that require bridge permits are exempt from the requirements of the Farmland Protection Policy Act. A bridge permit from the USCG would be required for all alternatives other than the No Action Alternative. Therefore, compliance with the Farmland Protection Policy Act is met.

3.12 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. Bonner County has established regulations for control of noise in Title 9 “Special Environmental and Health” of its municipal code. Per code section 12 the County has adopted requirements that 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 of Sandpoint’s Noise Ordinance (Title 5, Chapter 2, Section 6) identifies a construction activity limit of no work after 10:00 PM and before 6:30 AM of 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 USC Section 4901 (a)(2-3). The EPA and the Secretary of Transportation were tasked with determining allowable noise levels for railroads, which they did. The Federal Railroad Administration has issued regulations regarding noise limits for railroad equipment; and, under the Act, no state or local ordinance can further limit noise from railroads. See 42 USC Section 4916.

3.12.1 Affected Environment

Existing noise levels in the project vicinity include train traffic, nearby vehicular traffic on local roads and Highway 95, boat traffic, and commercial and recreational activity from the adjacent land uses. Sensitive noise receptors in the project vicinity include workers and residences/businesses in Sandpoint (e.g., Best Western Edgewater Resort, Seasons of Sandpoint Condominiums), recreational users of Sandpoint City Beach Park, Dog Beach Park, and Serenity Lee Trail, and fishers.

3.12.2 Environmental Consequences

No Action

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. However, increased train delays from trains waiting on regional sidings will continue to increase idling noise at locations where trains wait for clearance. Trains waiting for a crossing opportunity cause long vehicular wait time on local County and City streets at public at-grade rail crossings. As trains are continually delayed and commerce is interrupted, freight train use is expected to decline and truck traffic is expected to increase. The increased delay in train and vehicle traffic and overall increase in truck traffic will increase traffic noise levels in the project vicinity. These indirect noise impacts are not expected to be substantial.

Proposed Action

Elevated noise levels are anticipated during construction, especially during pile-driving activities. Potential impacts to fish and wildlife from construction noise is discussed in **Section 3.7**. During pile-driving activities, noise levels may reach up to 110 dBA; this will be audible to nearby residents/businesses and recreational users.

The predominance of construction activity related to elevated noise levels would occur during daylight hours, all equipment would be muffled, and that peak noise levels from impact driving would be limited to regular work hours from 7 AM to 5 PM. In the long term, elimination of the rail constraint is expected to result in a reduction in traffic noise levels as delay times are reduced and overall traffic circulation improves.

3.13 Hazardous Materials and Wastes

Several federal laws, regulations, and executive orders relate to the control and handling of hazardous substances, clean-up of releases of hazardous wastes, and protection from harm to the public from these materials. These include the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), the Pollution Prevention Act (PPA) of 1990, the Emergency Planning and Community Right to Know Act (EPCRA), the Toxic Substances Control Act (TSCA), Executive Order 12088 – Federal Compliance with Pollution Control Standards, and Executive Order 12856 – Federal Compliance with Right-To-Know Laws and Pollution Prevention Requirements. Federal agencies are required to coordinate with the EPA and applicable state, interstate, and local environmental protection programs to ensure consistency of major federal actions with all federal hazardous substances and waste laws, regulations, and executive orders.

For several years, BNSF has worked throughout their system with Incident Command System (ICS) support personnel, fire departments, regional response teams, and state and federal spill response teams to develop geographic response plans (GRP). GRPs serve as standard operating procedures and protocol tools useful for strategic planning purposes and guidelines for emergency response.

The current GRP that addresses BNSF operations in the Proposed Action Alternative or project area is the “Lake Pend Oreille and Pend Oreille River GRP” developed in 2017. (**Appendix C**) IDEQ, along with the EPA, USCG, Washington State Department of Ecology, and Oregon

Department of Environmental Quality, were co-contributors and signers of this GRP. The LPO GRP specifically addresses the Lake Pend Oreille region in Bonner County, ID. The plan assists individuals and organizations on initial responses to hazardous material and oil spills, along with prioritization of response strategies to minimize impacts to population centers and sensitive environmental, cultural, and economic resources.

BNSF current GRP training for staff and contractors is rigorous and a cornerstone of rail operations. BNSF has no record of hazardous material spills or incidents with bridges in the Proposed Action Alternative work area. BNSF implements an enhanced inspection program that exceeds Federal Railroad Administration (FRA) requirements.

3.13.1 Affected Environment

Land Use

The project site is an interstate mainline rail corridor. Any railroad ROWs have the potential to contain contaminated materials from historic materials used, construction methods, and actions. The corridor where the project is proposed does not have a recorded history of hazardous spills. Potential inadvertent and unrecorded releases could have occurred over the 120 or more years this corridor has had a railroad and associated support facilities on it, but typically contamination conditions in soils are shallow and localized. If contaminated soils are determined to be present, they are 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 when they are found. Any soil removed from any part of the ROW must be tested prior to its leaving BNSF property.

Regulatory Database Review

The online EPA Cleanups In My Community Map and the IDEQ Waste Remediation Facility Mapper were reviewed for sites within 1.0 mile of the project work corridor. Contaminated sites that were separated from the project work corridor 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 work corridor:

- Amtrak Sandpoint Station (Underground Storage Tank [UST] database)
- Idaho Transportation Department Former Blacksmith Shop (General Remediation database)
- Idaho Transportation Department 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 of Sandpoint. 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 Underground Storage Tank 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 Underground Storage Tank 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, the majority of the 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 volatile organic compounds (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 of Sandpoint parcels (water treatment plant), and the BNSF ROW. Phase I ESAs and Phase II ESAs were conducted for the private/City of Sandpoint 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 water treatment plant (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.

3.13.2 Environmental Consequences

No Action

Under the No Action Alternative, no change would occur to the sites identified by IDEQ, with the exception of 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.

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

Proposed Action

The construction of the Proposed Action Alternative will 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 (see **Section 4.0**).

The Proposed Action Alternative includes minimal clearing/grubbing activities and excavation to construct the new bridge abutments and the new grade for the second mainline track (see **Section 2.2**). The potential for hazardous waste in the BNSF work corridor 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 enhanced track and bridge inspections and maintenance protocol. BNSF would continue to implement the LPO GRP into staff and maintenance contractor hazardous material response training and planning.

The construction of the second mainline track and associated bridges would result in more efficient and timely transport of freight and passenger rail traffic through this portion of the BNSF interstate mainline, reducing the potential for conflicts associated with stopped or idling trains.

3.14 Traffic

Local traffic includes surface vehicle traffic on state and local roadways and watercraft traffic that utilizes LPO and Sand Creek. The predominance of watercraft traffic is associated with recreation and fishers, both primarily during the summer boating season from May 1 through October 15.

3.14.1 Affected Environment

The project area is generally isolated from surface vehicle traffic since it is located along the edge of the existing rail line. Local traffic is limited to BNSF maintenance workers and contractors. No local public access roads cross the tracks at grade within the project limits. The existing tracks pass over Bridge Street in Sandpoint via BNSF Bridge 3.0.

3.14.2 Environmental Consequences

No Action

Under the No Action Alternative, delays for at-grade crossings in the greater Sandpoint area would be expected to continue and increase over time. Delays in freight and Amtrak service could result in increases in truck and vehicle traffic on local, regional, and national roads and interstate highways.

Proposed Action

Detailed analysis in the Reasonable Needs to Navigation reports for both the LPO Bridge 3.9 and Sand Creek Bridge 3.1 (Jacobs 2018c) specify design features incorporated to minimize impacts to vessel traffic, both during construction and after bridge completion, under the Proposed Action Alternative. These measures are identified in Section 4.5.

It is anticipated that construction equipment and materials would be transported by truck, and potential impacts to local vehicle traffic could occur. The BNSF contractor will be required to develop a traffic control plan compliant with Idaho Transportation Department, Bonner County Road and Bridge, and Sandpoint Police Traffic Safety rules and requirements. The traffic control plan will propose transport of unique project materials during non-peak use times (such as nighttime) on Highway 95 and other public roadways.

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

In the long term, train and truck circulation will benefit due to more rapid clearing of at-grade crossings and a more continuous flow of train traffic as a result of trains not having to wait at sidings for the single mainline track constriction to clear.

3.15 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 has implemented safety regulations that apply to all workers who work on railroad property (FRA 2010).

3.15.1 Affected Environment

BNSF is a leader in railroad safety and recognizes that a safe and secure railroad network is essential to our nation's future. U.S. railroads have some of the lowest injury and accident rates in the transportation industry. The accident rate is substantially lower than that for the trucking industry. BNSF's vision is to operate injury and accident-free; and every day BNSF works to make that vision a reality through safety programs, training, and technology. BNSF has made a substantial investment in safety and technical training for employees. They utilize a combination of field training, on-the-job training, long-distance learning, and technical training at a centralized training center. Furthermore, all 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.

Per BNSF requirements, all workers that enter their right-of-way must implement all applicable OSHA and/or FRA requirements and be certified as having undertaken railroad safety and security training per FRA safety and security requirements.

3.15.2 Environmental Consequences

No Action

As stated in **Section 1.2**, the current single-mainline track configuration of this section of the BNSF mainline is causing freight and passenger rail traffic congestion throughout the region. Leaving the track configuration as it is, and conducting maintenance as needed, will 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

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 mainline 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 maintenance workers, train occupants, and local drivers associated with reduced train and vehicle congestion and wait times at grade crossings.

3.16 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 regardless of what agency (federal or non-federal) 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 a period of time.

Resources determined not to have the potential to result in measurable cumulative effects were not addressed in this analysis. Upon construction, the project does not have the potential to result in measurable cumulative effects, as no other activities in the area are dependent on this work and the project does not encourage further development or activities within the action area. It is anticipated that regular maintenance and repair of existing track and bridge structures will occur before, during, and after the project.

Temporary impacts during the construction phase of each alternative include increased noise levels, visual disruption, and potential for erosion and sedimentation. All areas would be returned to preconstruction conditions to the extent practicable following construction. No extensive indirect or cumulative impacts from past, present, or future activities are anticipated.

3.17 Statement of Environmental Significance of Proposed Action

The Proposed Preferred Action Alternative is needed to maintain both current and future uses and to protect life, health, and the environment. Construction of the project would prevent future health and/or environmental impacts potentially associated with ongoing and more frequent maintenance actions. This alternative has been designed to minimize impacts to land and water resources, floodplains, wetlands, and other environmental resources.

Specific construction methods were selected to minimize impacts to threatened and endangered species and/or habitat. It is anticipated that the project would have no significant impacts to health, human resources, and natural resources.

4.0 MITIGATION

4.1 Water Resources and Water Quality/Wetlands/Fish and Wildlife/Threatened and Endangered Species

To help prevent the spread of invasive species, all 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.

The following impact minimization measures (IMMs) have been established for this project to avoid or minimize potential impacts to water resources, water quality, and fish and wildlife, including threatened and endangered species:

IMM1 Protection of Existing Vegetation: Specific limits of activities and disturbance areas will be clearly marked for reference by construction work crews and machinery operators.

IMM2 All in-water work will comply with the approved permit conditions for Lake Pend Oreille and Sand Creek.

IMM3 Temporary in-water steel piles will be installed to refusal with a vibratory driver.

IMM4 A bubble curtain or cofferdam will be utilized when an impact hammer is used to install in-water piles in water depths greater than 6 feet.

IMM5 Dispersal strikes will be utilized when an impact hammer is used to install permanent in-water piles to minimize the potential for fish to be in the vicinity when production pile driving occurs.

IMM6 A Spill Prevention, Control, and Countermeasure (SPCC) Plan will be implemented to ensure that all pollutants and products will be controlled and contained.

IMM7 BMPs will be installed to reduce erosion from exposed soils and maintained throughout the project construction to ensure effectiveness.

IMM8 Fully stocked petroleum containment spill kits will be at all power equipment work sites and construction staging areas during construction.

IMM9 Containment will be under all equipment that contains fuels or other hazardous materials on the temporary bridge work or within 100 feet of the creek/lake.

IMM10 Fuel containers will not be stored on the temporary work bridge.

IMM11 The contractor will install and maintain BMPs to keep construction debris from entering waters of the United States.

IMM12 A Stormwater Pollution Prevention Plan (SWPPP) will be implemented as part of the NPDES Permit.

IMM13 Work boats or barges will be inspected for invasive species prior to deployment into Lake Pend Oreille.

IMM14 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 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 stages of aquatic invasive species.

The Proposed Action Alternative (IMM2), mitigation for the wetland fill is proposed to be satisfied via an agency-approved mitigation bank, the Valencia Wetland Mitigation Bank/Valencia Wetlands Trust (bank) located in Priest River, Idaho. Bank credits totaling 3.64 credits will be purchased to compensate for the 0.28 acre of wetland fill.

Proposed mitigation for nearshore, in-water fills will be satisfied via LPO and Sand Creek Stakeholders, including but not limited to the USFWS, Tribal fisheries, and other participating NGOs, which would provide the most benefit for the affected aquatic resources.

A navigation plan addressing lighting and other required navigation markings or aids for both the Bridge 3.1 over Sand Creek and the Bridge 3.9 over LPO temporary work and new bridges will be developed and approved by Idaho Department of Lands in accordance with Rule 015.13.g of Idaho Administrative Code 20.03.04 and as required by the USCG Title 33, Section 118 CFR prior to completion of the Proposed Action Alternative.

4.2 Floodplains

The project will be designed in compliance with Bonner County Municipal Code Title 14, Flood Damage Prevention, and Sandpoint Municipal Code Title 8, Chapter 4, Flood Damage Control Ordinance. Documentation will be prepared to demonstrate that the proposed encroachment will not result in an increase in flood levels.

4.3 Noise

Construction activity will occur during daylight hours, all equipment will be muffled, and impact driving will be limited to regular work hours from 7 a.m. to 5 p.m.

4.4 Hazardous Materials and Invasive Species

To ensure avoidance of impacts to aquatic resources within the Proposed Action Alternative, BMPs for maintenance of construction equipment include:

- 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.
- Fully stocked spill kits would be kept on site during construction. Spill containment systems must be adequate to contain all fuel leaks.

- Fuel containers or other hazardous materials would not be stored unsecured at the project site during non-work hours.

- Work boats, barges, and all equipment associated with them will be inspected for invasive species prior to launching on LPO or in Sand Creek. Appropriate decontamination measures will be implemented if needed.

If contaminated soil is encountered during construction, the contaminated soil will be assessed, handled, stored, and disposed of in accordance with applicable state and federal regulations.

4.5 Traffic

The project will 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 will be limited to periods of minimal to no navigation upstream of existing BNSF Bridge 3.1.

- Design of the new bridge over Sand Creek will have a higher vertical clearance and wider horizontal clearance than the existing bridge and upstream bridges.

- Proposed BNSF Bridge 3.9 will provide the same vertical clearance as the Highway 95 bridges to ensure the rail bridge is not the controlling structure for navigation on Pend Oreille Lake and River.

- Construction of new bridges and existing bridges will 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 will 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 will develop a traffic control plan compliant with Idaho Transportation Department, Bonner County Road and Bridge, and Sandpoint Police Traffic Safety rules and requirements.

5.0 COORDINATION AND LIST OF PREPARERS

Agencies and persons contacted during preparation of the EA are identified in **Table 9**.

Table 9. Agencies and Persons Contacted

Agency	Individual	Date Contacted
USACE	Shane Slate, Regulatory Project Manager	February 2017 and ongoing
USCG	Steven Fisher, Bridge Program Chief	February 2017 and ongoing
USCG	John Greene, Environmental Policy Analyst	February 2017 and ongoing
ID DEQ	June Bergquist, 401 WQ Specialist	February 2017 and ongoing
ID Dept. of Lands	Amidy Fuson, Resource Specialist Sr.	February 2017 and ongoing
ID Dept. of Lands	Jim Brady, Resource Supervisor	February 2017 and ongoing
USFWS	Marshall Williams, Biologist	July 2017 and ongoing

Individuals that contributed to preparation of the EA are identified in **Table 10**.

Table 10. List of EA Preparers

Firm	Individual	Contribution
Jacobs	Pierre Bordenave, Director-Environmental Rail	PM, EA Author
Jacobs	Diane Williams, Environmental Planner	QA/QC
Jacobs	Ariel Bordenave, Planner/Technical Editor	EA Author, QA/QC
Jacobs	Sue PaDelford, Senior Biologist	EA Author
Jacobs	Ian David Crickmore, GIS	GIS/ Map Exhibits
BNSF	Matt Keim, Manager Engineering	Project Description
BNSF	Kris Swanson, Manager Construction Permitting	Project Description
BNSF	Dava Kaitala, JD, General Director, Construction Permitting	QA/QC
Hanson Professional Services, Inc.	Mat Fletcher, P.E.	Permit Drawings

6.0 REFERENCES

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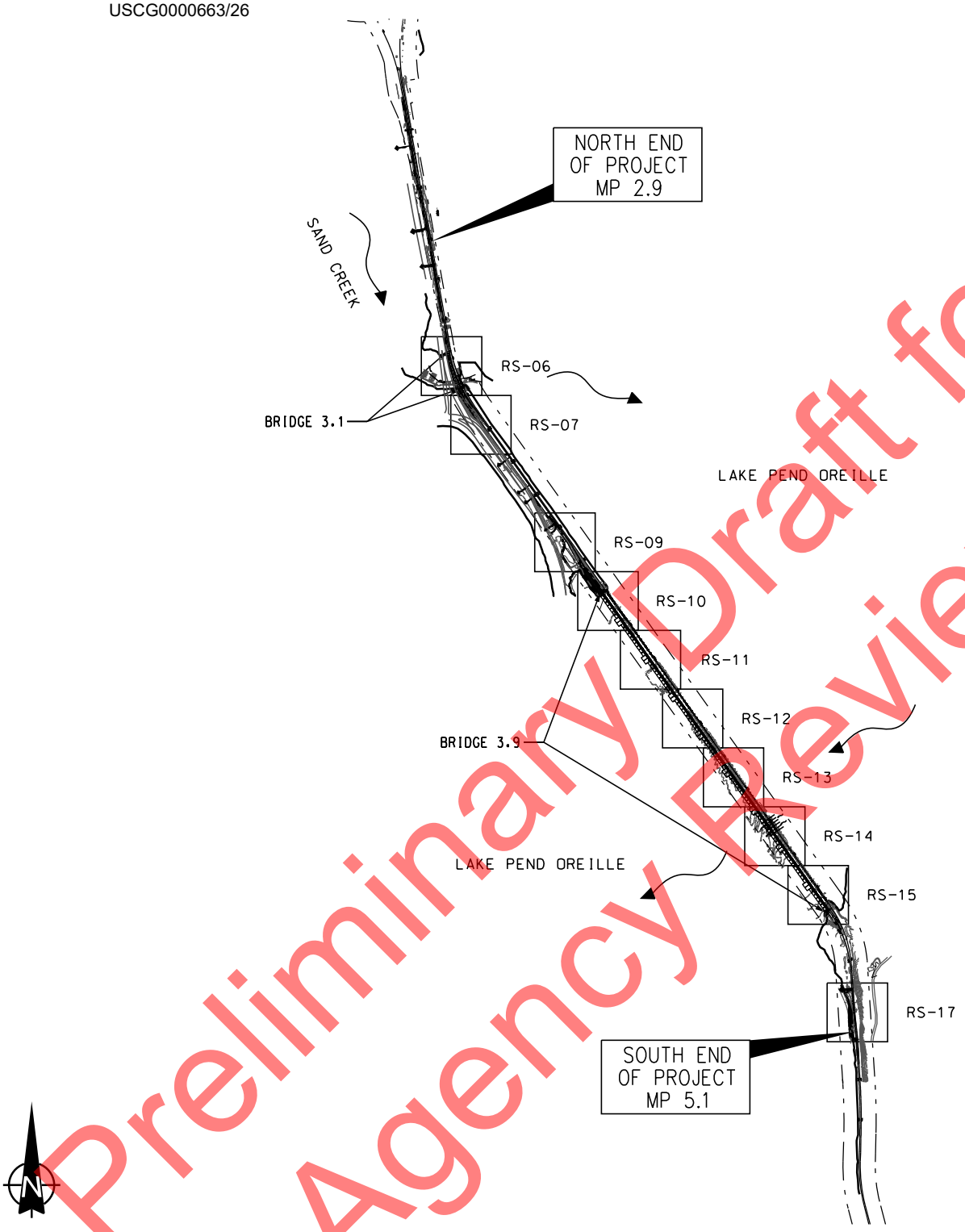
Appendix A
Bridge Permit Drawings

USCG0000663/26



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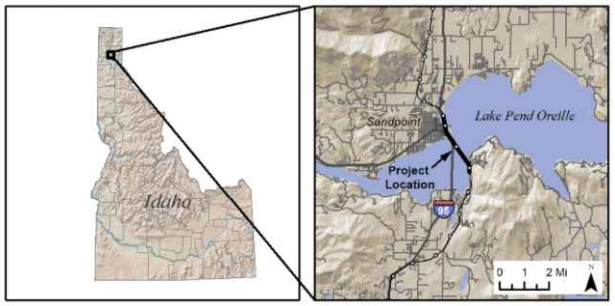

PROJECT PLAN OVERVIEW

AGENCY REF. NO.:
PROJECT: BNSF / SANDPOINT JUNCTION CONNECTOR
APPLICANT: BNSF RAILWAY COMPANY
CONSULTANT: JACOBS ENGINEERING GROUP
LOCATION: BNSF MONTANA DIVISION, KOOTENAI RIVER SUBDIVISION LINE SEGMENT 45, MP 2.9 - MP 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: DECEMBER 2017

DRAWN BY: J. SIEMENS
CHECKED BY: S. PADELFORD
APPROVED BY: P. BORDENAVE

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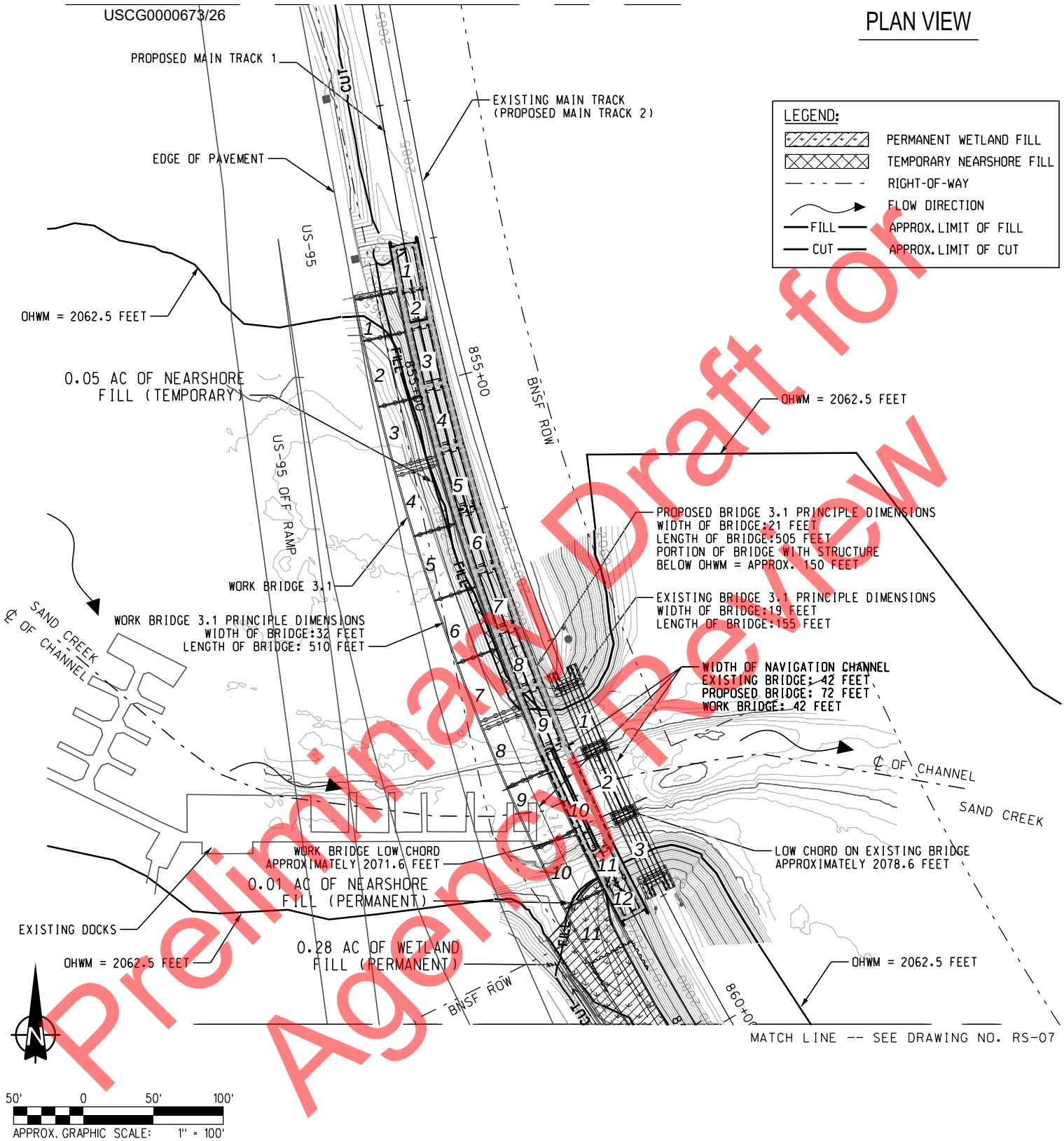

LEGEND:

- PERMANENT WETLAND FILL
- TEMPORARY NEARSHORE FILL
- RIGHT-OF-WAY
- FLOW DIRECTION
- FILL — APPROX. LIMIT OF FILL
- CUT — APPROX. LIMIT OF CUT

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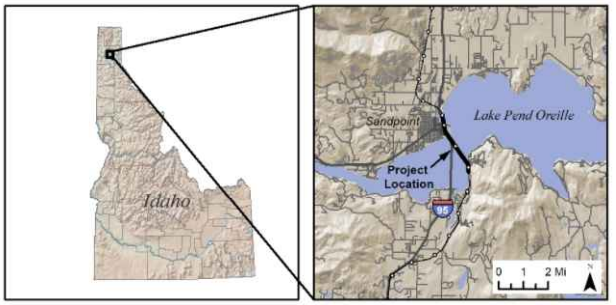

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EXISTING CONDITIONS / PROPOSED WORK

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WATERWAY: LAKE PEND OREILLE, SAND CREEK
CITY: SANDPOINT **COUNTY:** BONNER **STATE:** IDAHO
DATE: DECEMBER 2017

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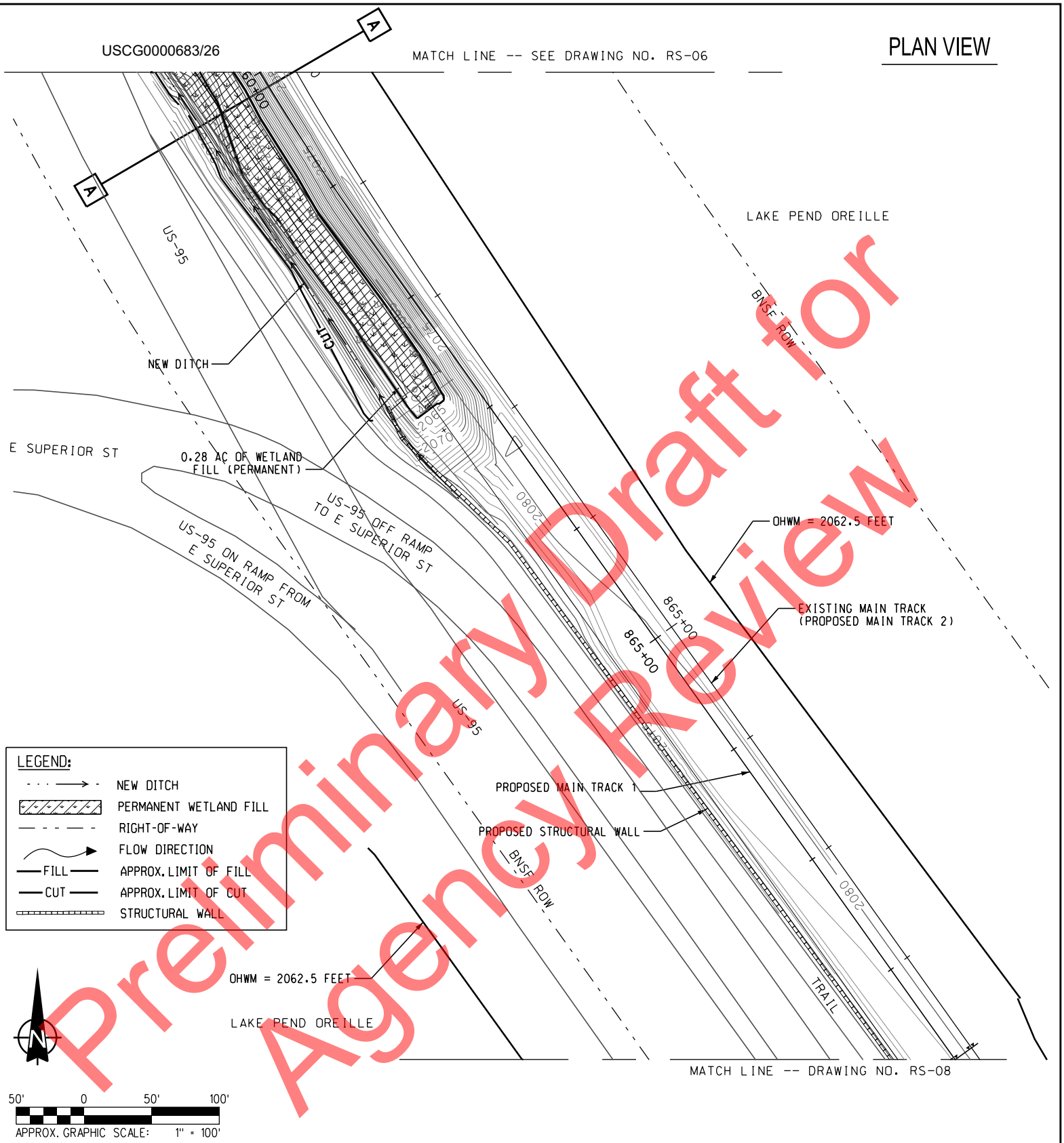

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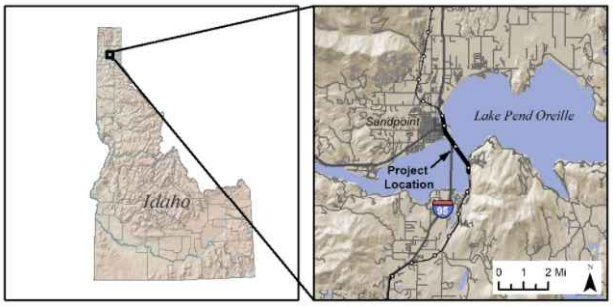

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EXISTING CONDITIONS / PROPOSED WORK

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DATE: DECEMBER 2017

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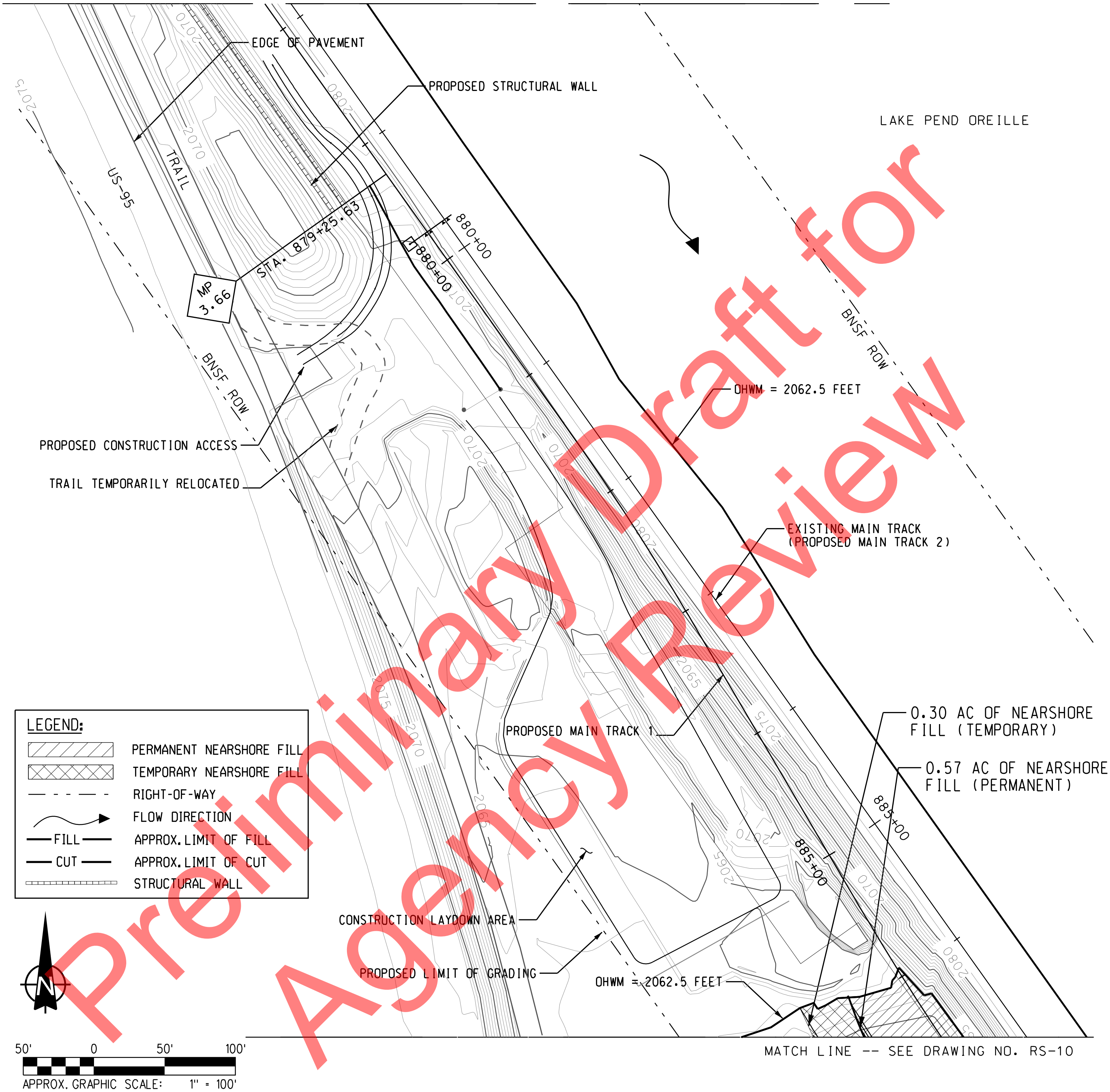

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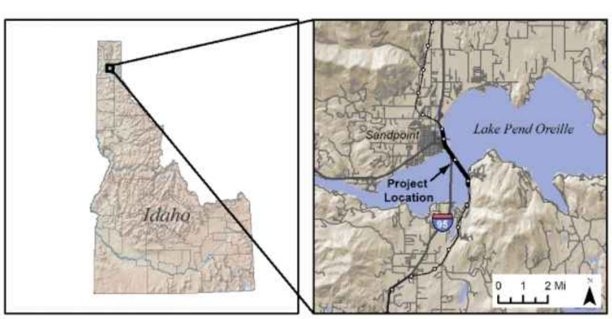

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CITY: SANDPOINT **COUNTY:** BONNER **STATE:** IDAHO
DATE: DECEMBER 2017

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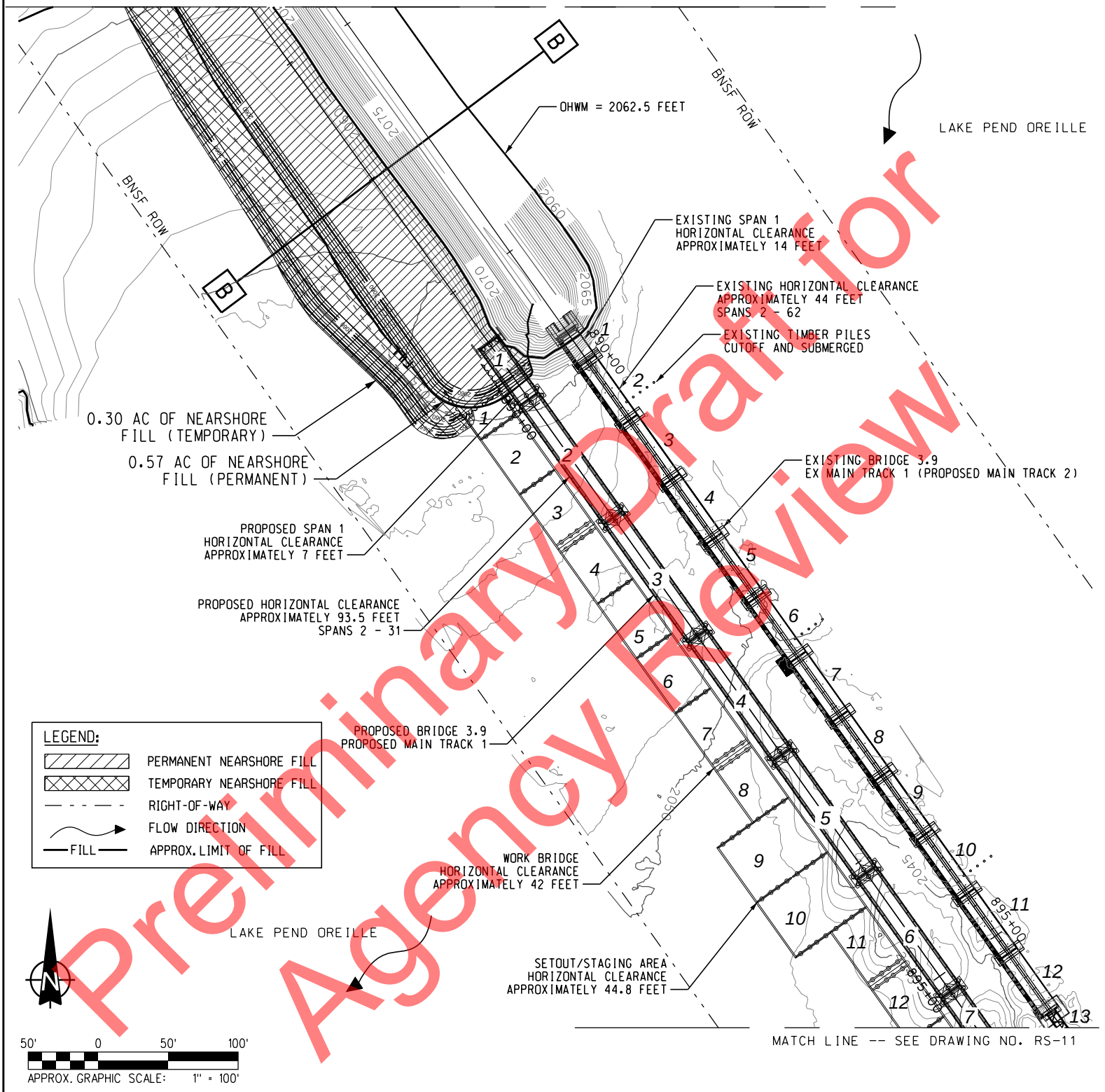

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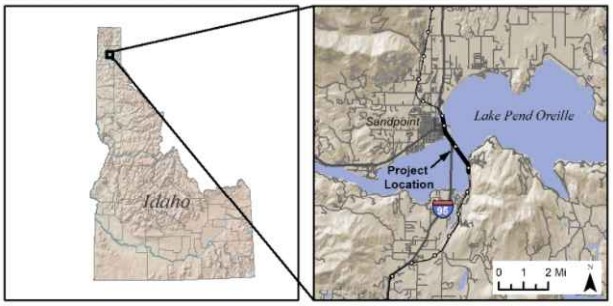

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DATE: DECEMBER 2017

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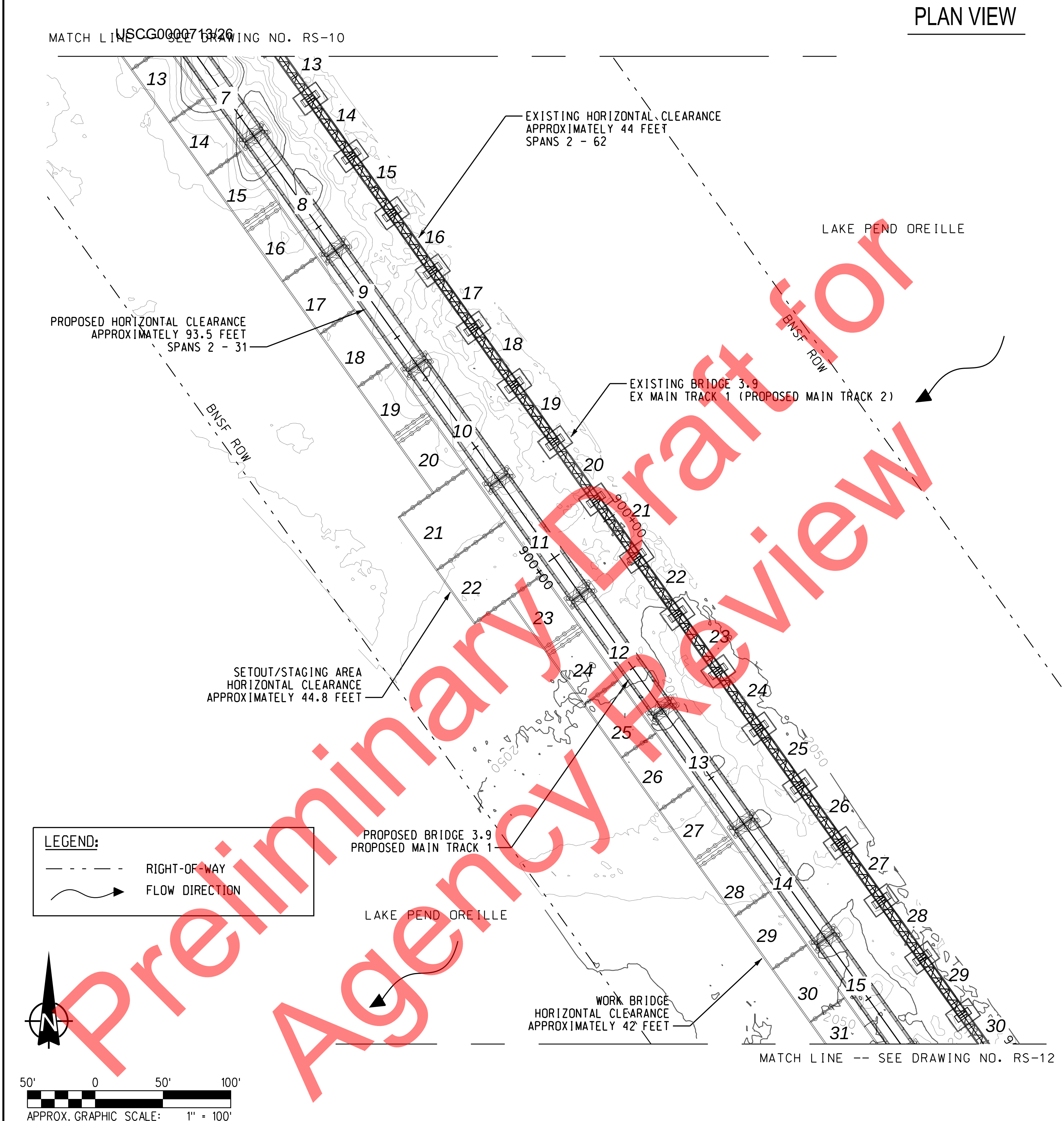

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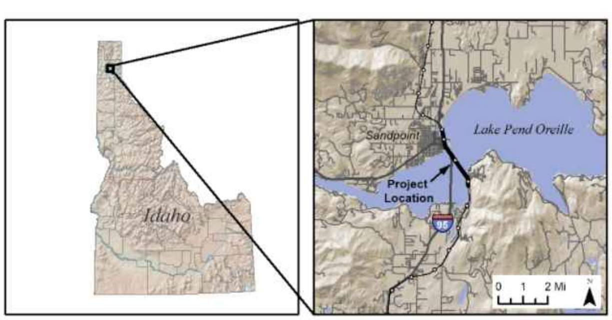

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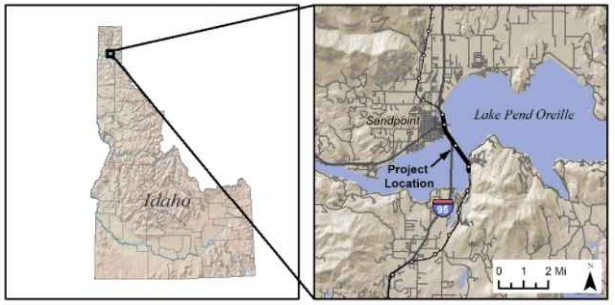

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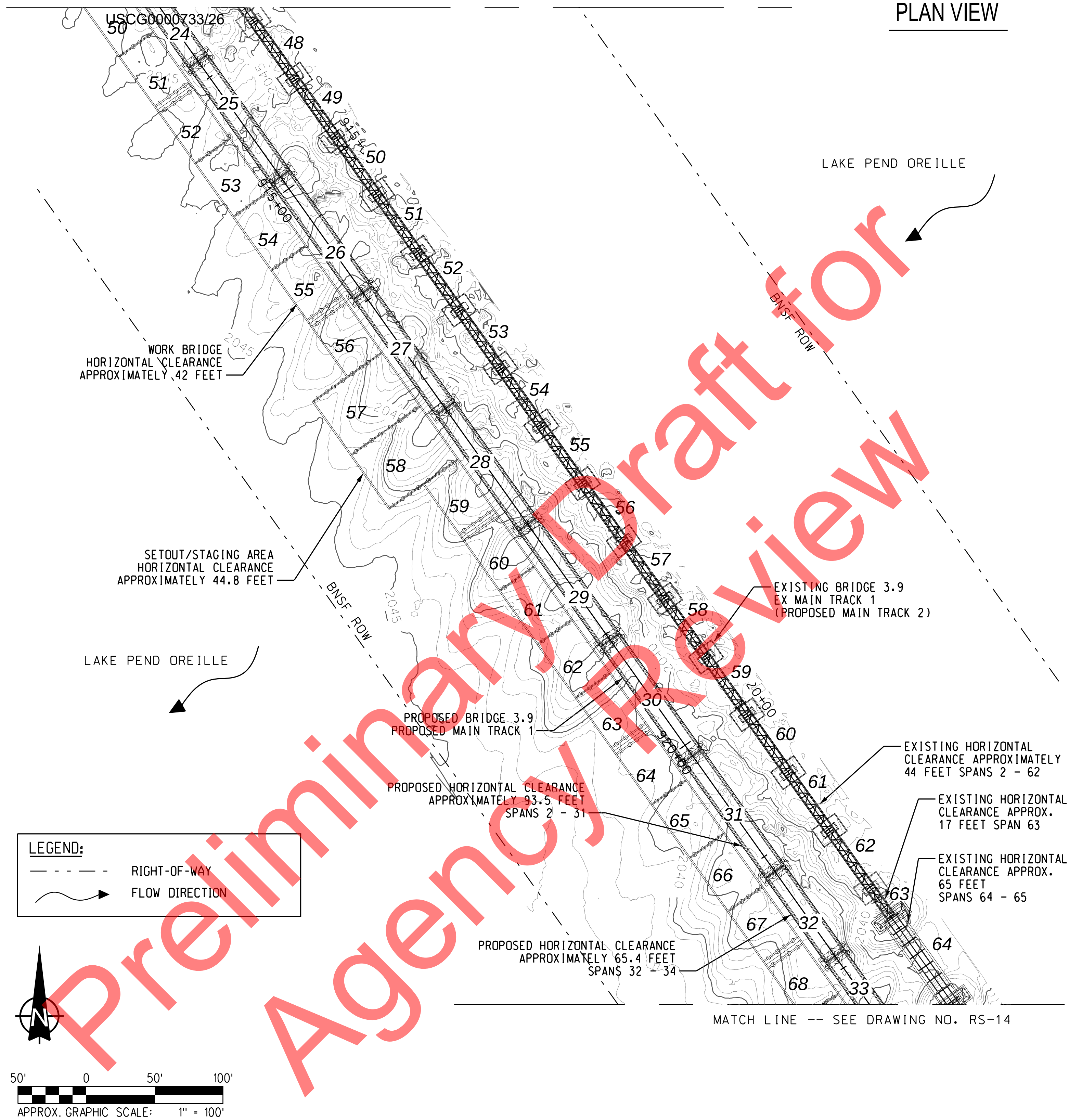

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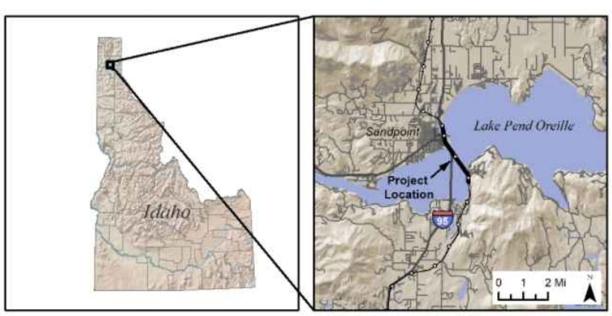

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EXISTING CONDITIONS / PROPOSED WORK

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WATERWAY: LAKE PEND OREILLE, SAND CREEK
CITY: SANDPOINT **COUNTY:** BONNER **STATE:** IDAHO
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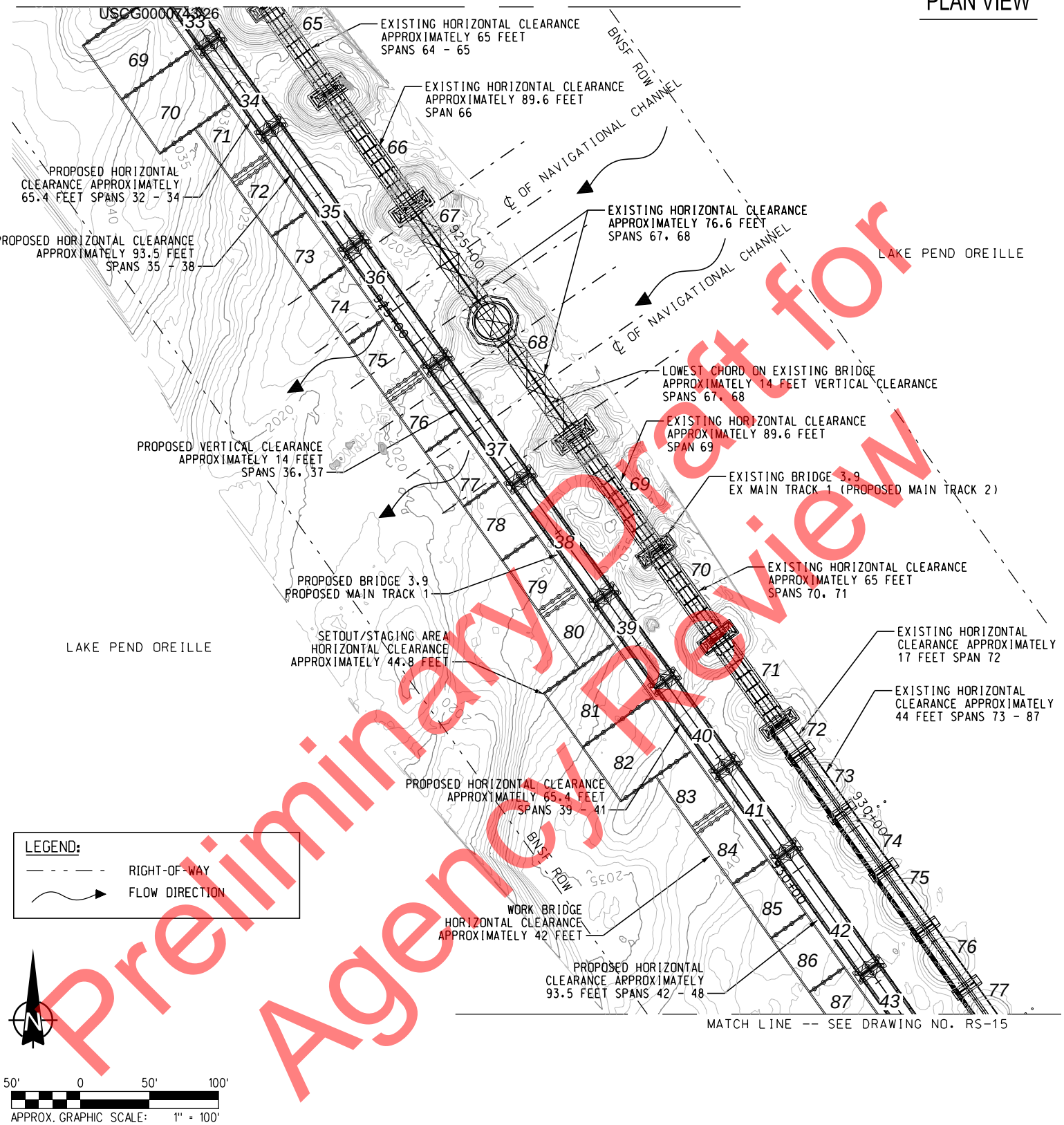

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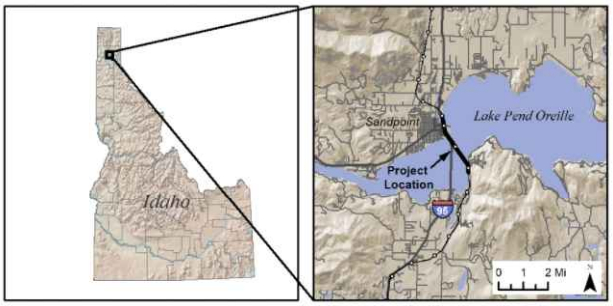

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DATE: DECEMBER 2017

DRAWN BY: J. SIEMENS
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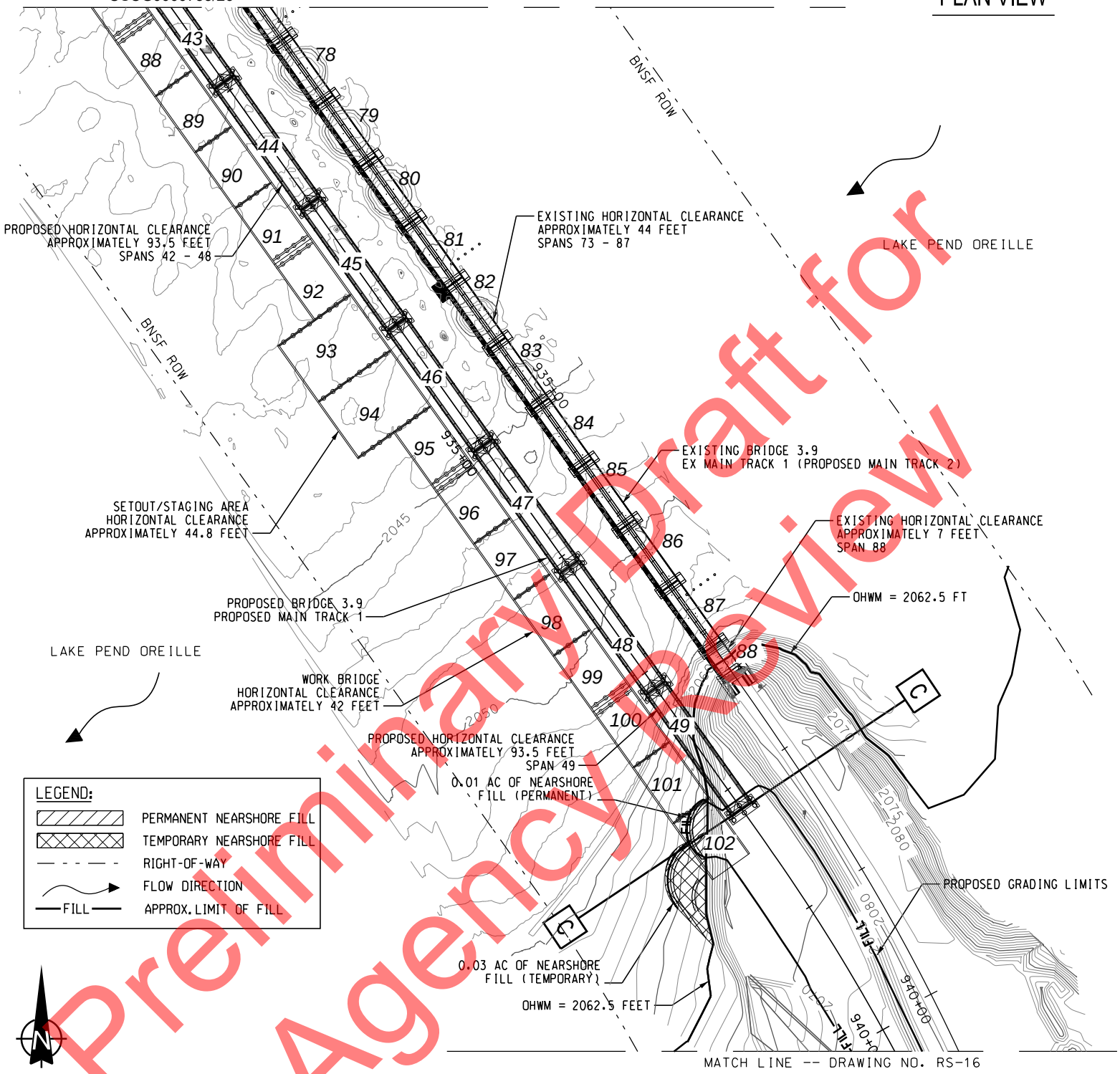

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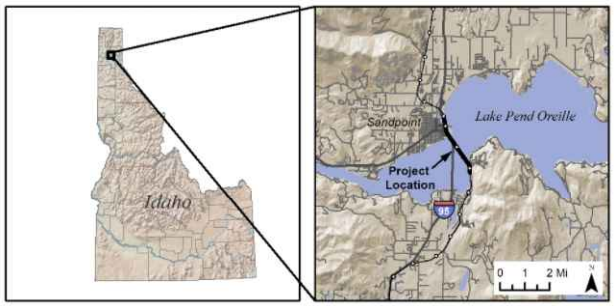

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EXISTING CONDITIONS / PROPOSED WORK

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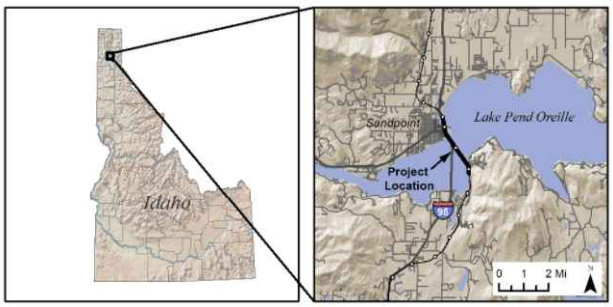

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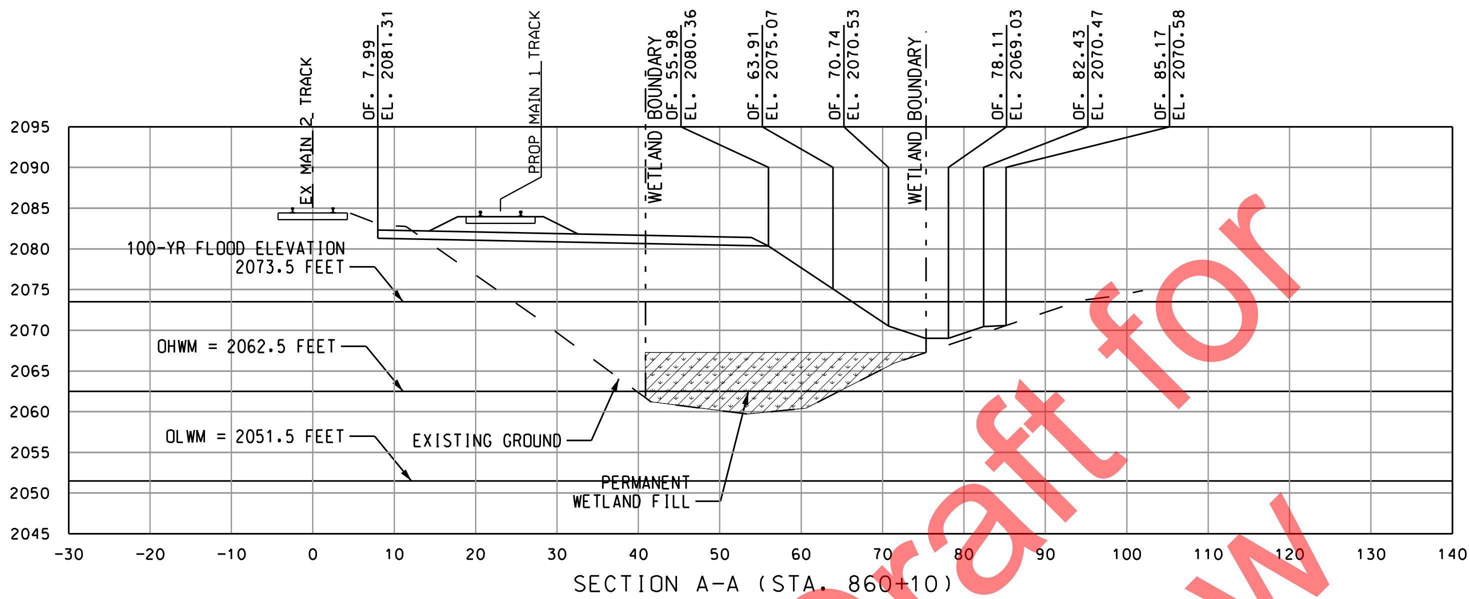
APPLICANT: BNSF RAILWAY COMPANY
CONSULTANT: JACOBS ENGINEERING GROUP
LOCATION: BNSF MONTANA DIVISION, KOOTENAI RIVER SUBDIVISION LINE SEGMENT 45, MP 2.9 - MP 5.1
PLSS: IN PARTS OF S15, 22, 23, 25, 26 & 36 T57 R2W BOISE MERIDIAN
NORTH END (MP 2.9): 48°16'54.10"N, 116°32'49.35"W
SOUTH END (MP 5.1): 48°14'56.24"N, 116°31'24.02"W
WATERWAY: LAKE PEND OREILLE, SAND CREEK
CITY: SANDPOINT **COUNTY:** BONNER **STATE:** IDAHO
DATE: DECEMBER 2017

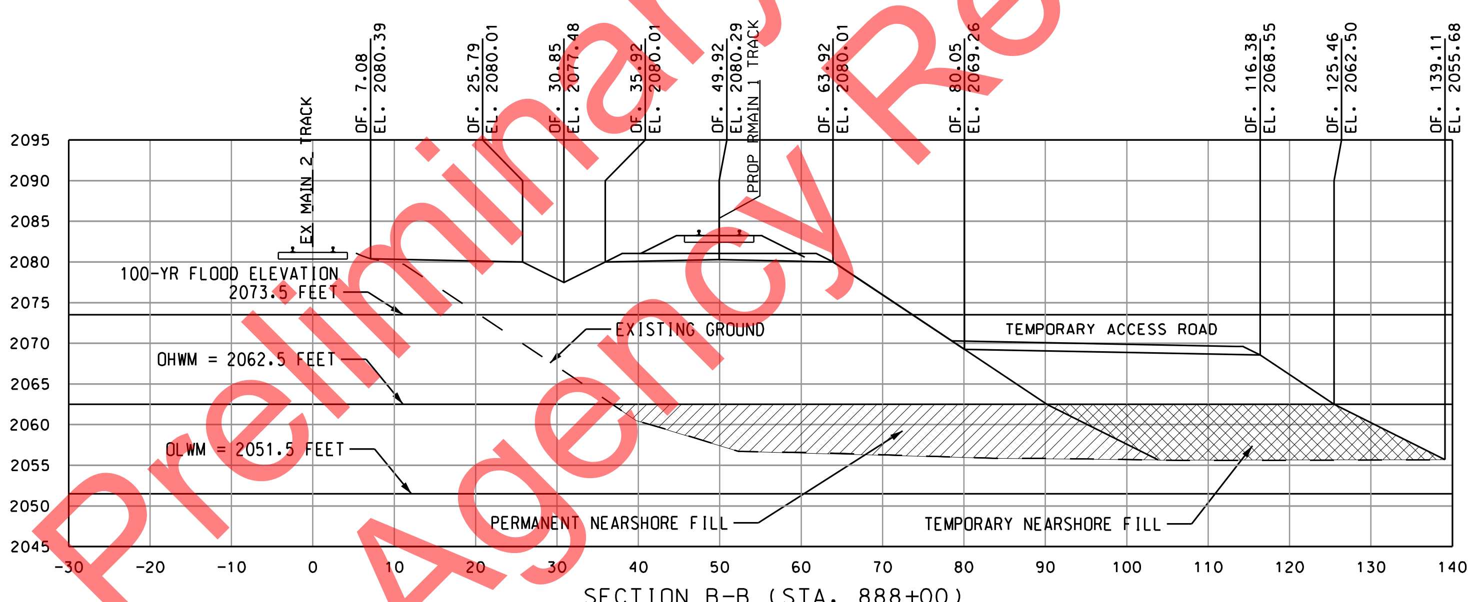
USCG0000773/26

WETLAND FILL CROSS SECTION



SECTION A-A (STA. 860+10)

NEARSHORE FILL CROSS SECTION



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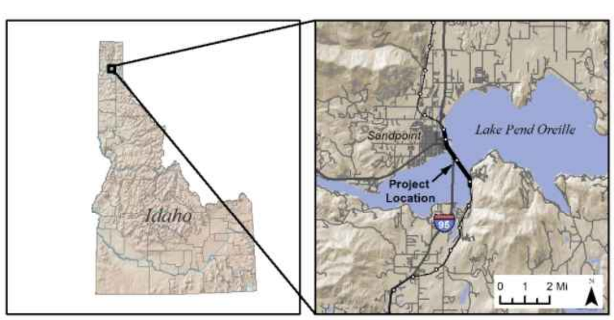

EXISTING CONDITIONS / PROPOSED WORK

AGENCY REF. NO.:
PROJECT: BNSF / SANDPOINT JUNCTION CONNECTOR
APPLICANT: BNSF RAILWAY COMPANY
CONSULTANT: JACOBS ENGINEERING GROUP
LOCATION: BNSF MONTANA DIVISION, KOOTENAI RIVER SUBDIVISION LINE SEGMENT 45, MP 2.9 - MP 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
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WATERWAY: LAKE PEND OREILLE, SAND CREEK
CITY: SANDPOINT **COUNTY:** BONNER **STATE:** IDAHO
DATE: DECEMBER 2017

DRAWN BY: J. SIEMENS
CHECKED BY: S. PADELFORD
APPROVED BY: P. BORDENAVE

DRAWING NO. XS-1 | PAGE NO. 12 OF 13 | SCALE AS SHOWN

12/6/2017 4:40:23 PM $USER$
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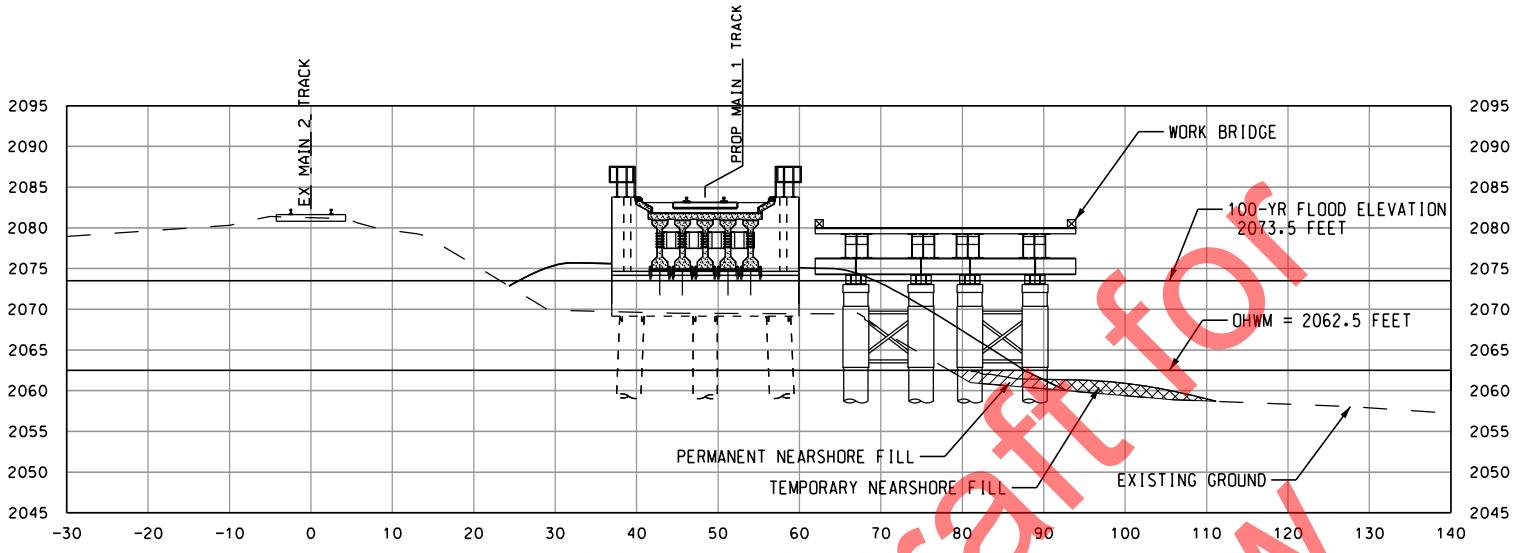
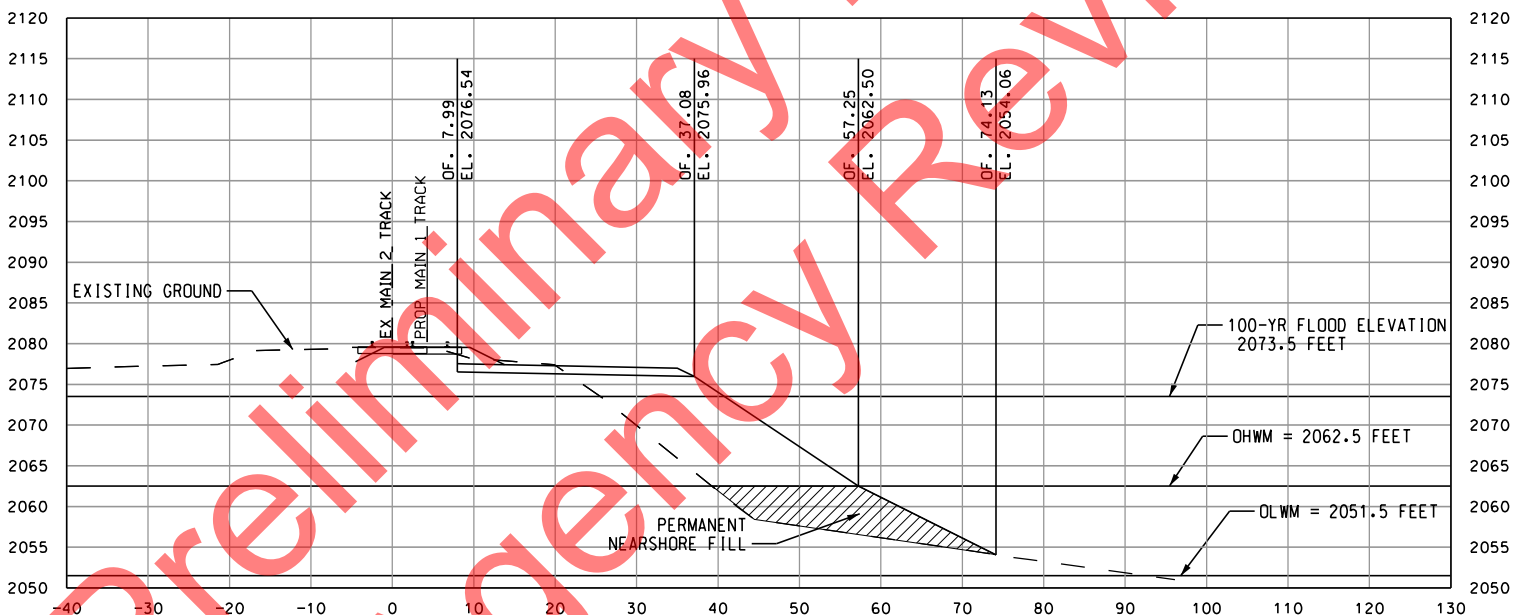
USCG0000783/26

NEARSHORE FILL CROSS SECTIONS



SECTION C-C (STA. 938+20)



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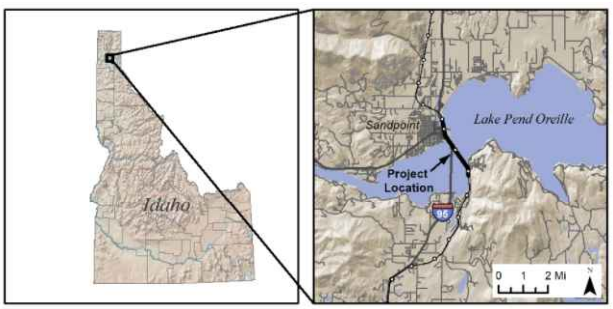

DRAWN BY: J. SIEMENS
CHECKED BY: S. PADELFORD
APPROVED BY: P. BORDENAVE

EXISTING CONDITIONS / PROPOSED WORK

AGENCY REF. NO.:
PROJECT: BNSF / SANDPOINT JUNCTION CONNECTOR
APPLICANT: BNSF RAILWAY COMPANY
CONSULTANT: JACOBS ENGINEERING GROUP
LOCATION: BNSF MONTANA DIVISION, KOOTENAI RIVER SUBDIVISION LINE SEGMENT 45, MP 2.9 - MP 5.1
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CITY: SANDPOINT **COUNTY:** BONNER **STATE:** IDAHO
DATE: DECEMBER 2017

Appendix B
Site Photographs

Photo 1:
Bridge 3.9 – View of Bridge from West side looking Southeast

Photo 2:
Bridge 3.9 – Close-up view of South end of Bridge

Photo 3:
Bridge 3.9 – Close-up view of North end of Bridge

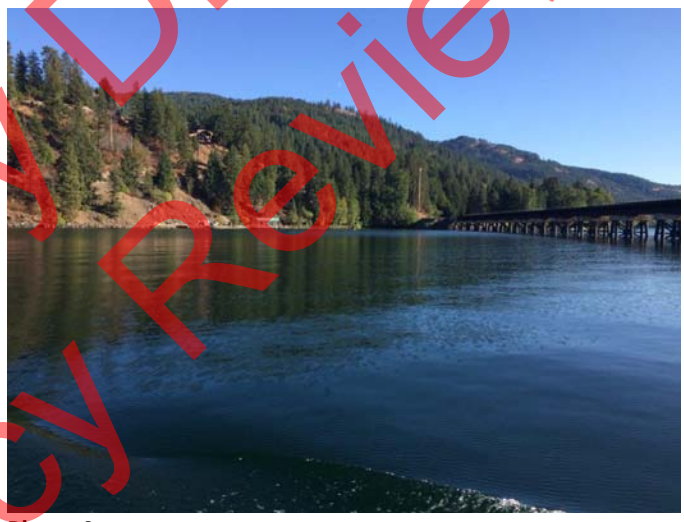


Photo 4:
Bridge 3.9 – View of Bridge from East side looking South

Photo 5:
Bridge 3.1 – View of Bridge from the West side looking East

Photo 6:
Bridge 3.1 – View of Bridge from East side looking West

Photo 7:
Bridge 3.0 – View of Bridge from West side looking East

Photo 8:
Bridge 3.9 – Conceptual Rendering

Photo 9:
Bridge 3.1 – Conceptual Rendering

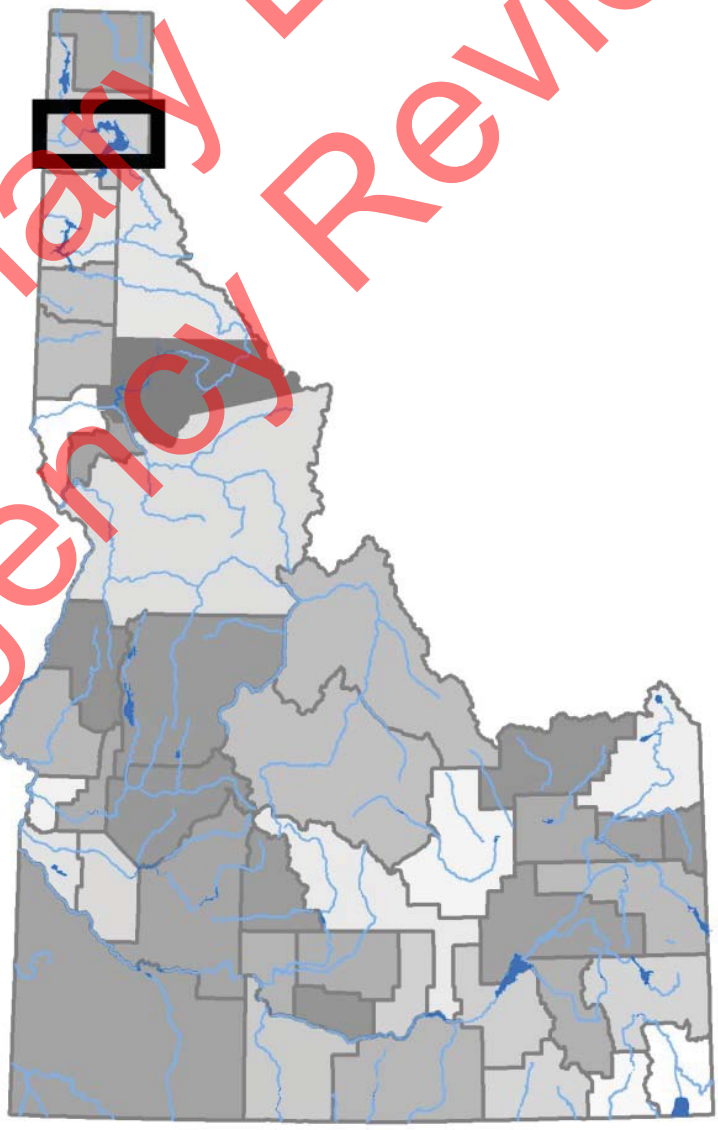
Photo 10:
Bridge 3.0 – Conceptual Rendering

Appendix C
Geographic Resource Plan

USCG0000843/26

LAKE PEND OREILLE AND PEND OREILLE RIVER

Geographic Response Plan



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LAKE PEND OREILLE AND PEND OREILLE RIVER

GEOGRAPHIC RESPONSE PLAN

June 2017

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Emergency Contact Sheet

Required Notifications Activation of StateComm through the 911 system will automatically include these notifications			
National Response Center	**800-424-8802**	Idaho Dept. of Environmental Quality, Coeur d'Alene Regional Office	208-769-1422 208-660-9285
Idaho Department of Environmental Quality	**855-647-3777**	Idaho State Communications Center	800-632-8000

Railroad Contacts	
BNSF Resource Operations Center	800-832-5452
BNSF Mgr. Hazmat Planning	406-202-8051
BNSF Director Hazmat, Special Ops	817-821-1325
Union Pacific Railroad Response Management Communication Center	888-877-7267
Montana Rail Link Emergency Hotline	800-498-4838

Federal	
U.S. EPA Region 10 Spill Response Team	206-553-1263
Coast Guard Watchstander	503-240-9301
Coast Guard Pacific Strike Team	415-883-3311
Coast Guard Region 13 Officer of the Day	206-217-6004
U.S. Fish Wildlife Service—Spokane	509-891-6839
U.S. Forest Service—Sandpoint Ranger District	208-263-5111
U.S. Army Corp Of Engineers—District Office / Albeni Falls Dam	206-764-3690 208-437-3133
NOAA Weather Spokane	509-244-0537
NOAA Hazmat Response	206-526-4911
NOAA Scientific Support Coordinator	206-849-9926
U.S. Fish Wildlife Service—Boise, ID	208-378-5243

Water Supply Contacts	
Clark Fork Public Water Supply	208-266-1853 (after hours emergency)
Dover Public Works—Water & Sewer	208-265-4270
Laclede Public Water	208-265-4270
Oden Water Association	208-265-4270
Sandpoint Public Works (Distribution)	208-263-3428
Sourdough Point Water System	208-265-4270
Sunnyside Water	208-265-4270
Cabinet Gorge Dam – Operations Control Room	208-266-1531

State	
Idaho State Police	208-884-7000 HQ in Boise 208-209-8730 dispatch
Idaho DOT—Bonner County Area (District 1)	208-772-1200
Idaho Ops Office	208-378-5773
Idaho Department of Fish and Game	208-769-1414 208-799-5010
State Historic Preservation Office	208 334-3861 208-488-7468
Dig Line (ID)	800-342-1585 or 811
Panhandle Health District	208-415-5200
Idaho Department of Water Resources	208-769-1422

Tribal - Kootenai Tribe	
Kootenai Tribe of Idaho Ext 514 Cell	 208-267-3519 208-597-2002
Kootenai Tribe of Idaho 2nd Contact	208-267-7451

Medical Services	
Bonner General Hospital	208-263-1441
Kootenai Health	208-625-5700

Pipeline Company	
Trans Canada Community Relations Specialist	509-533-2869

Local Government (County, City)	
Bonner County Department of Emergency Management	208-265-8867 208-255-6901
Bonner County Sheriff (including Marine Division)	9-1-1 or 208-263-8417
Bonner County—Commissioners	208-265-1438
Bonner County Public Works	208-255-5681 ext. 2
Bonner County Public Safety Technology Director	208-255-3630 x 1196
Bonner County Road & Bridge Dept.	208-255-5681
Clark Fork, ID, City Hall & Mayor	208-266-1315
Dover, ID	208-265-8339
East Hope, ID	208-264-5877
Kootenai, ID	208-265-2431
Ponderay, ID	208-265-5468
Priest River, ID, Public Works	208-946-9750 208-290-4721
Sandpoint, ID	208-263-3158

Preface

Intended Audience

This geographic response plan (GRP) is intended to satisfy the needs of various users. Response strategies are provided for numerous unique sites that are located in the transportation corridors most likely to have a spill. First responders and emergency dispatch operators will find benefit in identifying the unique features of the spill location. Access descriptions, equipment proximity, and location-specific emergency contact information is provided for each response strategy.

Incident Command System (ICS) support personnel, fire departments, regional response teams, railroads, and state and federal spill response teams will find this GRP useful as a briefing tool to prepare for boom deployment and initial product recovery. Unique features such as booming anchor points, proximity of equipment caches, staging areas, and critical seasonal variations are provided. Local natural and cultural resources that may be affected are identified in this document so that the ICS team can direct protection efforts.

Emergency management personnel will find this document useful for strategic planning purposes. Recommended equipment needed for each location is provided; the equipment needs can be compared to known inventories to ensure readiness of equipment caches. This GRP identifies vulnerabilities in the emergency planning system so that resources can be identified to protect citizens and natural resources.

Content for this document was compiled using material previously published and adapted from the 2005 Lake Pend Oreille Geographic Response Plan (RRT/NWAC, 2005) as well as the BNSF Railroad Draft Pend Oreille Subbasin Geographical Response Plan (Kennedy/Jenks, 2015).

How to Use This Document

The bulk of this plan is contained in Section 4 and associated appendices (Response Strategies and Priorities), which provide information on response strategies and the order they should be implemented, based on potential spill origin points and their proximity to population centers and sensitive resources.

To aid the user in locating a particular strategy, the Lake Pend Oreille region was divided into seven sectors, with each sector having numerous response strategies. Electronic PDF versions of this document have hyperlinks to enable the user to bore down from a regional map, to a sector map, then to a particular response strategy.

Printed versions of this document are arranged by sector and then numerically by highway milepost number. Railroad and river milepost information is also provided in Section 4.

This document recommends strategies and priorities for the order in which strategies should be implemented until a unified command is established. However, these recommendations are not a substitute for proper judgement based on current local factors.

Protecting human life is always the highest priority—public evacuation should be considered immediately. Control and containment of a spill becomes the next priority, followed by the appropriate response strategy. The information contained in the response strategy descriptions (Appendix B) is recommended guidance, not prescriptive requirements.

Vulnerabilities

During development of this GRP, challenges beyond the scope of this plan were identified that need further attention. The purpose of this preface is to highlight those concerns and encourage dialogue followed by action to obtain appropriate funding and implementation of the needed changes. State and local civic leaders and managers of the various emergency response agencies are the parties who may be able to address these vulnerabilities. These challenges are current as of June 2017.

Equipment Vulnerabilities

A comparison of the inventory presented in Section 4.6 with the equipment needs stated in the prioritization tables provided in Section 4.4 reveals that, with the exception of the Clark Fork Delta area, the amount of boom and anchor posts available appears adequate for anticipated needs. A full response in the Clark Fork Delta could require as much as 8,300 feet which would consume the entire boom inventory in all five of the local equipment caches. Recovery devices such as skimmers and vacuum trucks are not staged within the Lake Pend Oreille region and would need to be obtained from outside the area. Additionally, conversations with the various fire departments in the Lake Pend Oreille region indicate the equipment trailers do not have an assigned or designated tow vehicle to move the trailer to the appropriate staging area.

Training Vulnerabilities

Like most emergency response tasks, deployment of a spill response boom is a specialized skill that requires training and field practice. Boom deployment in swift moving water or iced-over conditions adds complexity necessitating additional training. The seven fire districts addressed in this plan are largely staffed by volunteers and a smaller number of professionals; they are trained for a variety of emergency scenarios. However, most of the volunteers have not yet received boom deployment training, thus limiting the response to a hazardous material or oil spill into regional waterways.

Evacuation and Procedural Vulnerabilities

The propensity of oil train accidents to erupt into significant spills and fires, coupled with the proximity of rail lines to high population areas, indicate that the Bonner County communities must be prepared to invoke prompt evacuations or provide shelter-in-place assistance. Facilities that are required to have an evacuation plan, such as schools and nursing homes, should also periodically review their plan and conduct appropriate training.

Bonner County has an Evacuation and Reception Plan that was written prior to the large increase in unit oil train traffic (Bonner County, 2010a). Recent lessons learned from either the Cascadia Rising emergency action drill in 2015 or actual oil train accidents in other areas have not been incorporated. As discussed in Section 4.7, an oil train or hazardous material accident in the Sandpoint area would likely require evacuation of half the city's area. Existing preparations do not appear to adequately address the process for a hasty evacuation. Section 4.7 provided details regarding evacuation considerations.

Geographic Vulnerabilities

The Lake Pend Oreille region is vulnerable to spills of hazardous material from highway vehicles and rail cars primarily because the transportation corridors are in close proximity to the rivers and the lake. Additionally, the rail lines and highways pass through or near many high-value wetlands (see Section 6.1.4) and cross over numerous streams and rivers. Of the 37 accidents reported between 1995 and 2014, 21 were at or near a lake, stream, or wetland.

Most notably, the Clark Fork Delta is vulnerable to any spill downstream of the Cabinet Gorge Dam, which is located only 7.5 miles upstream. At a stream velocity of 4.5 miles per hour (mph), a spill could reach the delta in under 2 hours. The nearest equipment cache is located at the Cabinet Gorge Dam. Although response strategies are presented in this plan, their deployment is complex and resource intense. The response may be ineffective. Section 4.3.1 provides recommendations that may enhance response effectiveness.

Table of Contents

List of Figures

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List of Acronyms

BLM	Bureau of Land Management
BPA	Bonneville Power Administration
cfs	cubic foot per second
BNSF	Burlington Northern Santa Fe railroad
CERCLA	Comprehensive Emergency Response Compensation & Liability Act
DEQ	Idaho Department of Environmental Quality
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning and Community Right to Know Act
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
ft	foot
GIS	geographic information system
GRP	geographic response plan

ICS	Incident Command System
IDFG	Idaho Fish and Game
IGBC	Interagency Grizzly Bear Committee
IMP	Intermountain Province
IOEM	Idaho Office of Emergency Management
IPUC	Idaho Public Utilities Commission
IT	information technology
ITD	Idaho Department of Transportation
kg	kilogram
LMZ	Lynx Management Zones
mph	mile per hour
msl	mean sea level
MRL	Montana Rail Link railroad
NOS	not otherwise specified (a proper shipping name designator)
NPCC	Northwest Power and Conservation Council
NRHP	National Register of Historic Places
NWACP	Northwest Area Contingency Plan
RPA	Rathdrum Prairie Aquifer
SCAT	Shoreline Cleanup Assessment Techniques
SCBA	self-contained breathing apparatus
SHPO	State Historic Preservation Office
SR	State Route
UP	Union Pacific Railroad

USACE	United States Army Corps of Engineers
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WMA	Wildlife Management Area

1 Introduction

This geographic response plan (GRP) is an emergency planning document to guide individuals and organizations responding to hazardous material and oil spills during the initial phase of the incident. The plan suggests and prioritizes response strategies based upon the proximity of a spill to population centers and sensitive natural, cultural, and economic resources.

This GRP addresses the Lake Pend Oreille region in Bonner County, Idaho.

1.1 Standardized Response Language

To avoid confusion in response terminology, this plan uses standard National Interagency Incident Management System, Incident Command System (ICS) terminology. The glossary provided in Section 1000 of the Northwest Area Contingency Plan (NWACP) should be used when seeking the meaning of terms used in this plan.

1.2 Emergency Notification Protocols

1.2.1 When Must Notification Take Place?

In Idaho, reportable spills are generally defined as any of the following:

- Spills of hazardous materials or oil, that enter, or threaten to enter, surface water or groundwater waterbodies of the state
- Discharges exceeding Comprehensive Environmental Response, Compensation, and Liability Act reportable quantities

1.2.2 Who Makes Notification?

Anyone can make notification to activate an emergency response. Persons causing a hazardous material spill **must** notify emergency response (9-1-1) if they cannot immediately contain and control the spill. All hazardous materials incidents must be reported by the local incident commander to Idaho State Communications Center, commonly known as "StateComm," even if the local jurisdiction requires no outside assistance. If spill exceeds reportable quantity, then report to the National Response Center (1-800-424-8802).

1.2.3 Who Gets Notified?

The initial notification of hazardous materials incidents should be made through the 9-1-1 emergency services system. All hazardous materials incidents will be managed using the ICS. Additional details on hazardous material spill reporting can be found in Appendix A.

The Idaho Hazardous Materials/Weapons of Mass Destruction Incident Command and Response Support Plan is the primary mechanism for initial response to hazmat incidents in Idaho and is part of the Idaho Emergency Operations Plan (IOEM, 2013).

All hazardous materials incidents should be reported by the local incident commander to StateComm even if the local jurisdiction requires no outside assistance. Doing so enables the Idaho Office of Emergency Management (IOEM), Idaho Department of Environmental Quality (DEQ), Idaho State Police, Idaho Public Utilities Commission, Idaho Transportation Department (ITD), U.S. Environmental Protection Agency (EPA), Federal Bureau of Investigation, and other state/federal agencies to perform their regulatory responsibilities concerning public health and responsible parties, including the owner, user, site operator, shipping agent, carrier, or others in whose custody the material has been placed. Reporting hazardous material incidents to StateComm also fulfills state reporting requirements as established by the Emergency Planning and Community Right-to-Know Act and the Idaho Hazardous Substance Emergency Response Act (IOEM, 2013).

A comprehensive list of agency and emergency contacts is provided at the beginning of this document.

1.2.4 Hierarchy of Emergency Planning Documents

This GRP supplements other emergency planning documents.

- The Idaho Emergency Operations Plan (IOEM, 2015) is an all-discipline, all-hazard plan that delineates lines of authority and responsibilities of emergency action agencies.
- The Northwest Area Contingency Plan (RRT/NWAC, 2017) is a regional plan that is required by the federal national contingency plan. The purpose of this plan is to provide a playbook for oil and hazmat responses that involve state and federal agencies. It covers Washington, Oregon, and Idaho.
- The Idaho Hazardous Materials/Weapons of Mass Destruction Incident Command and Response Support Plan (IOEM, 2013) supports the two plans above and is the primary mechanism for initial response to hazardous materials incidents in Idaho. This plan is also referred to as the "Yellow Book."
- The Bonner County Emergency Operations Plan (Bonner County, 2009) identifies the roles, responsibilities, and direction for Bonner County agencies and some volunteer organizations in responding to emergencies or disasters.

This GRP is a guidance document that provides response tactics and local information to inform and speed the initial response to a spill. It is a technical supplement to the Northwest Area Contingency Plan. This GRP is intended to be an informational resource to first responders and support personnel arriving from outside the area. It can also be used as a training tool or a resource for civic leaders and local emergency management personnel to assess spill preparedness.

1.3 Bonner County Technology Resources

Bonner County has a variety of technology-based systems that can significantly enhance communications and strategy development during an emergency response. Requests for assistance from the Bonner County Technology Department should be made through the department director. Contact information is provided in the contact sheet at the front of this document. The Technology Department manages four primary areas:

- Public safety technology
- Geographic information systems
- Information technology
- Communication systems

1.3.1 Public Safety Technology

The Bonner County Technology Department manages the technical resources of the Sheriff's Office and the 9-1-1 Dispatch Center, including the software, hardware, network, and communications network assets.

1.3.2 Geographic Information Systems (GIS)

The GIS Team is located in the Bonner County Administrative Building on Highway 2. This team manages the geospatial data of the county and surrounding areas. The GIS Team integrates data with spatial information to enable the county's data to be visualized, analyzed, and printed spatially. The GIS Team provides support to all programs of the county that require spatial applications. The GIS Team also provides the public with geospatial data in an interactive mapping application located at http://maps.bonnercounty.us/apps/public/.

1.3.3 Information Technology (IT)

The IT Team manages the network and computer assets of the county. The IT Team supports all the county users of technology with technical support and administers and operates the technology help desk system. The IT Team is responsible for the back office assets of the county that include networks and internet access, servers, routers, switches, and network storage and manages the security, access, and credentials of authorized network users.

1.3.4 Communications Systems

The team manages the communication assets of the county including base/mobile/portable radio systems, repeater sites, microwave network, and telephones.

1.3.5 Technology Resources for Incident Managers

- The Bonner County Map Portal at http://maps.bonnercounty.us provides authoritative road, parcel, and address data for incident command. The map at http://maps.bonnercounty.us/apps/public/ can show all the many GIS layers in the county and allows the user to annotate a map with text and geometric shapes.
- The Bonner County Mobile Map at http://maps.bonnercounty.us/apps/mobile/ provides a basic mapping system for a smart phone or tablet that has the ability to route between two addresses, find an address, and show the location of the user on a map. It would be a key tool in an evacuation scenario because a user can see all the address points on the map relative to the user's location.
- **Reverse 9-1-1:** The 9-1-1 Dispatch Center has access to the Everbridge Emergency Notification System that can notify the public of an emergency within any polygon drawn on the map by the 9-1-1 dispatcher. Everbridge can send an emergency notification to any landline as well as cell

phones within a given area through a Federal Emergency Management Agency program called Integrated Public Alert and Warning System.

- The web site at https://bonnercom.org/ describes the county's public safety communication systems. For registered users, there is a frequency list and frequency technical details for all agencies operating in Bonner County including all the Bonner County public safety frequencies for all the county's repeater sites. In an emergency, request a current list from technology@bonnercountyid.gov.
- The 9-1-1 Dispatch Center has a portable or towable 65 kilowatt Kohler 70REZGT propane three-phased generator and a portable public safety radio repeater system that can be deployed anywhere in the county in an emergency. A request for use of these assets should be made through the Sheriff's Department.

1.4 Emergency Radio Communications

Radio communication for emergency responders is provided by Bonner County through a series of repeaters. The repeater locations are listed in Table 1-1 and shown in Figure 1-1 below. Frequencies and other technical details for those repeaters can be found at https://www.bonnercom.org/Current_Sites.

Emergency responders arriving from outside Bonner County who need access to this radio system should contact the Bonner County Public Safety Technology Director or the 9-1-1 Dispatch Center for specific instructions on how to link into this system.

Table 1-1: Bonner County Radio Repeater Locations

Site Name	Longitude	Latitude
Baldy Mountain	-116.6941	48.33158
Bonner County Courthouse	-116.5472	48.27220
Bonner County Jail	-116.5586	48.30890
Clark Fork	-116.1919	48.13714
Hoodoo Mountain	-116.9536	48.08053
Little Blacktail	-116.5544	48.09406
Priest River Junior High	-116.9175	48.18108
Samuels Transcanada	-116.4871	48.43547
Sandpoint City Hall	-116.5549	48.27186
Schweitzer Mountain	-116.6446	48.36731
Sundance	-116.7516	48.49075

Figure 1-1: Bonner County Emergency Radio Repeaters Locations

1.5 Cell Phone Communications

Cellular telephone coverage along the main transportation corridors in Bonner County is quite complete, with the exception of the area east of Clark Fork to the Cabinet Gorge Dam at the Montana state line and beyond. A current map of the cellular phone coverage is available from the Idaho Department of Commerce at http://www.gemstateprospector.com/mapping.html.

2 Site Description and GRP Coverage Area

This section contains topographic descriptions, physical river features, river hydrology, climate, and resources in the GRP coverage area. The intended users of this section are ICS support personnel who are arriving from outside of the North Idaho area and need to quickly learn the major features of the area. Due to the diversity of landforms, waterbodies, and ecosystems throughout the GRP coverage area—and the modification of each by climate, aspect, hydrology, geomorphology, etc.—this section should not be considered comprehensive or exhaustive. Section 2 is meant to give an overview of the GRP coverage area and readily identifiable sub-areas and provide adequate detail for response managers to make informed emergency response management decisions, in consultation with other stakeholders in the GRP coverage area.

Section 2 relies heavily on information from the Northwest Power and Conservation Council (NPCC) Intermountain Province Subbasin Plan and Pend Oreille Subbasin Plan (NPCC, 2005a-b).

2.1 General Description of the Natural Environment of the Intermountain Province (IMP)

The IMP, which contains the Pend Oreille Subbasin relevant to the GRP (and five others outside the GRP coverage area), is characterized by a diverse landscape ranging from 1,000 feet (ft) above mean sea level (msl) near the tailwaters of Chief Joseph Dam to 7,690 ft above msl at Illinois Peak in the headwaters of the St. Joe River. The northern and eastern boundaries lie within the Northern Rocky Mountains (NPCC, 2005a). These areas are generally characterized as alpine and subalpine forests with a decaying granitic geology (Alt and Hyndman, 1994). In the eastern portion of the province, in both the Coeur d' Alene and Pend Oreille Subbasins, the Precambrian Belt Supergroup is the predominant bedrock (NPCC, 2005a). Belt rocks are a thick layer of sedimentary sandstones and mudstones, approximately 1 billion years old (Alt, 2001). Much of the southwestern portion of the IMP is within an area known as the Palouse Hills. The Palouse Hills are a softly rounded landscape with rich, fertile, silty soils (NPCC, 2005a). Set within this farmland are areas known as scablands, with outcrops of black basalt, broad expanses of raw gravel, and dry stream channels (coulees) (Alt, 2001). This landscape was carved during the most recent ice age. About 15,000 years ago, the southern glacial fringe encroached upon the mountain valleys of northern Washington and Idaho. Glaciers dammed the Clark Fork River creating Glacial Lake Missoula. The dam broke and the lake drained catastrophically causing a torrential flood (NPCC, 2005a). This process happened several dozen times, resulting in the landscape seen today (Alt, 2001).

2.2 Environmental Conditions within the Pend Oreille Subbasin

Euro-American settlement of the Clark Fork River valley and Lake Pend Oreille was accompanied by forest clearing, agricultural development, logging, introduction of nonnative species, mining, railroad construction, hydroelectric projects, and general urbanization (Entz and Maroney, 2001). Natural and human-made fires, past timber harvest activities, and dams have also heavily influenced the landscape in the Pend Oreille Subbasin (NPCC, 2005b).

In the early and mid-1900s, hydroelectric facilities within the Pend Oreille Subbasin and upstream in the Clark Fork and Flathead drainages were present or under construction (NPCC, 2005b). Facilities in Idaho and Montana—such as the Albeni Falls Dam (inside the GRP coverage area) and Hungry Horse, Kerr, and Noxon Rapids Dams (outside the GRP coverage area)—were built for hydropower, flood protection, fisheries, and recreation (U.S. Senate, 1949).

Large-scale habitat degradation occurred due to operation of Cabinet Gorge, Noxon Rapids, and Albeni Falls Dams. Upstream dams impeded sediment transport to the Clark Fork River Delta, prohibiting development of delta landforms and the protective lakeside beach. Widely fluctuating flows associated with dam operations continued to erode delta shorelines that would naturally be protected by armored streambeds during low fall/winter flows. These and other impacts have resulted in the loss of roughly

50% of functional delta wildlife habitat and ongoing losses estimated at 7.9–11.9 acres per year (NPCC, 2005b).

2.3 Pend Oreille Subbasin Sub-Area Site Description and Physical Features

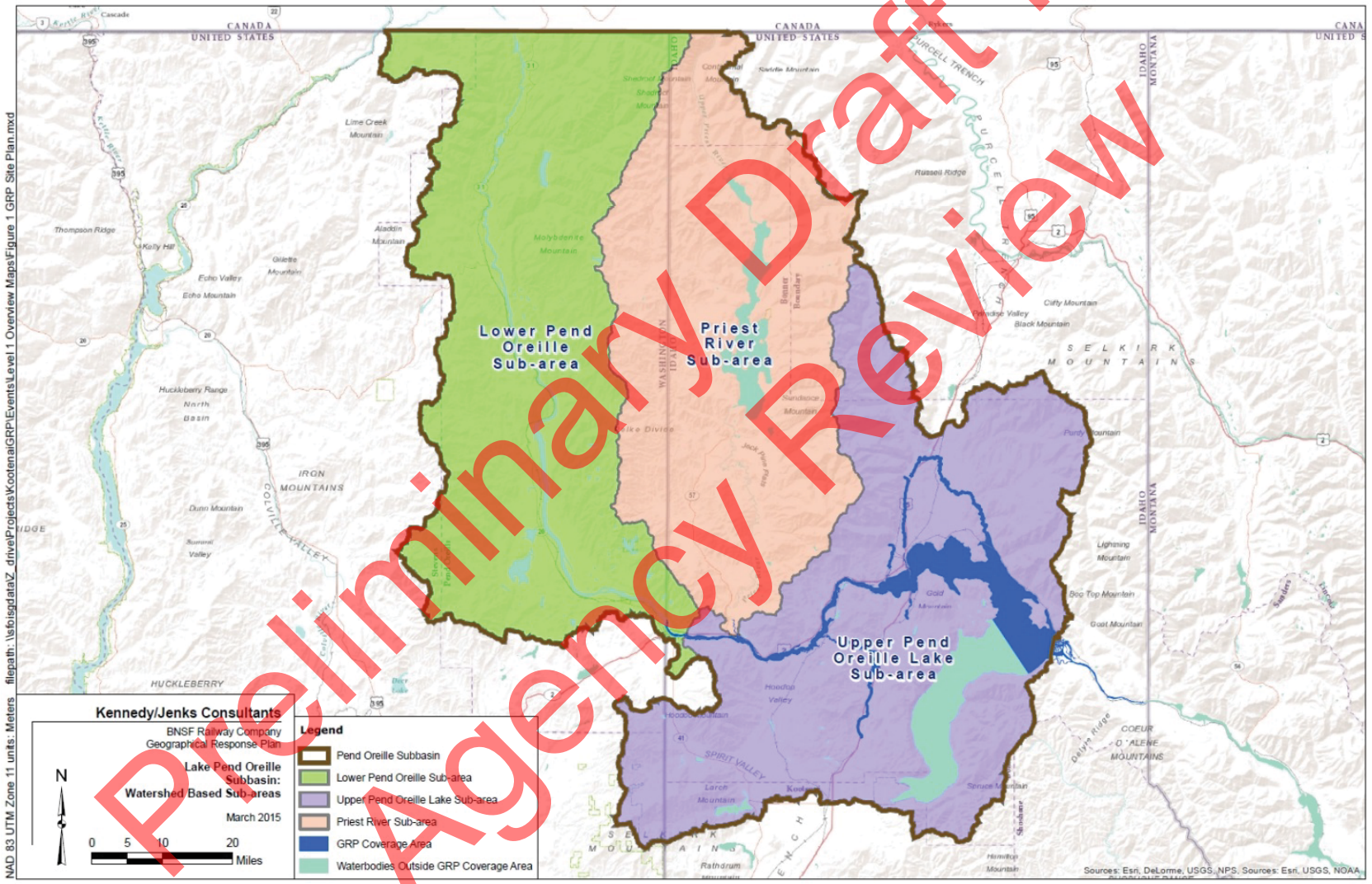
The Pend Oreille Subbasin is located in northern Idaho and northeastern Washington and represents the northeastern-most corner of the IMP. As shown in Figure 2-1, the Pend Oreille Subbasin is comprised of three sub-areas: the Lower Pend Oreille Sub-Area, the Priest Lake Sub-Area, and the Upper Lake Pend Oreille Sub-Area. This GRP addresses only the Upper Lake Pend Oreille Sub-Area, which is shown in greater detail in Figure 2-2. The Upper Pend Oreille Sub-Area encompasses the Cabinet Gorge Dam and all of Lake Pend Oreille and its tributaries located on the Clark Fork River down to Albeni Falls Dam, which is located on the Pend Oreille River.

The Pend Oreille River is the largest river in the subbasin and flows west out of Lake Pend Oreille and north across the Idaho panhandle and the northeastern corner of Washington before draining into the Columbia River in British Columbia, Canada.

Much of the northern and eastern parts of the Pend Oreille River watershed sub-area are public lands comprising mountainous or hilly terrain deeply cut by streams and mostly forested. The broad, fertile valleys and river bottoms, predominately in the western part of the watershed, are mostly in private ownership. Near the lake and on its shore, private lands account for more than half of the ownership. The remaining land is managed by the U.S. Forest Service (USFS) (25%), the state (7%), and the Bureau of Land Management (BLM) (1.6%). Major land uses in the sub-area include agricultural and timber production and recreational development. Only 12% of the drainage is open water.

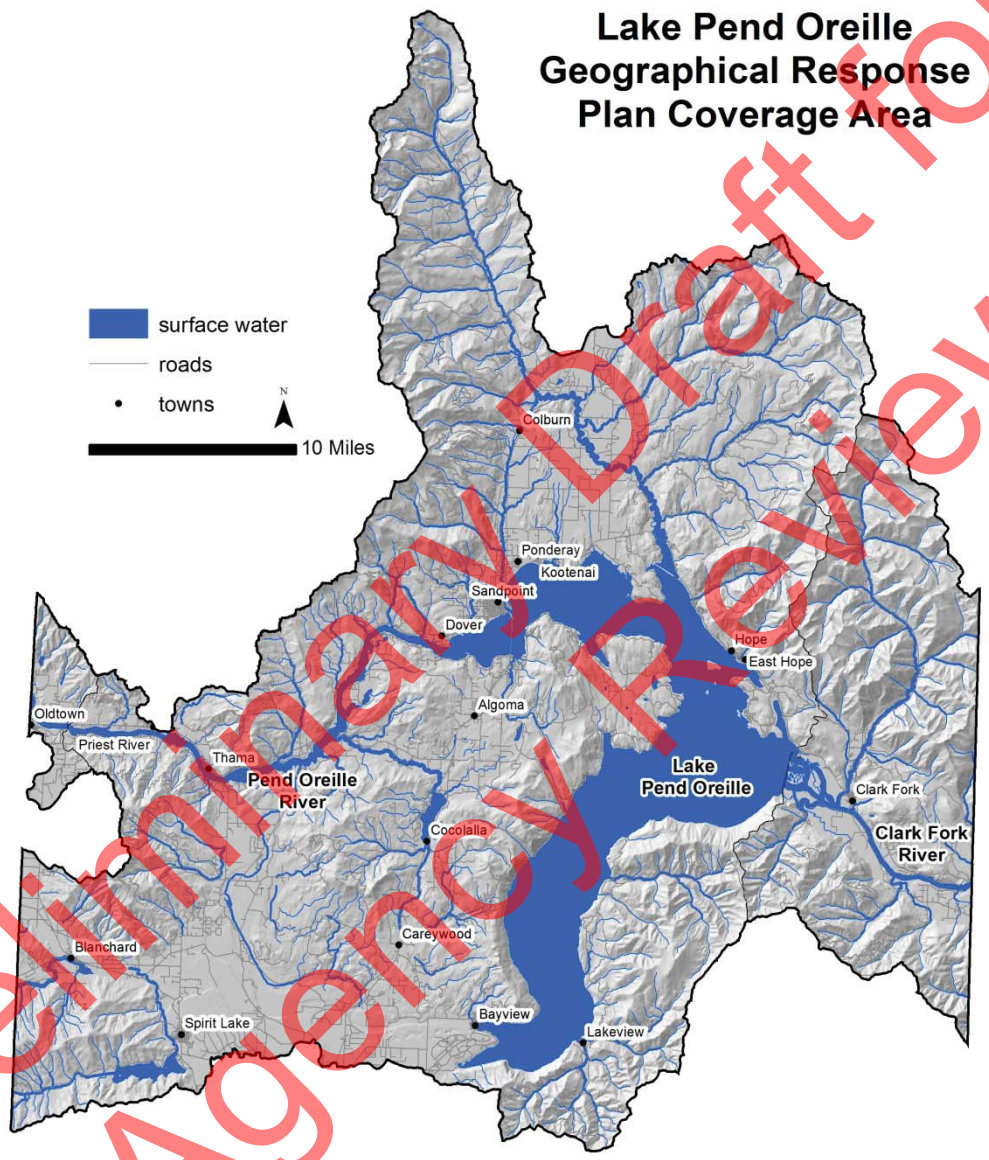
Lake Pend Oreille's elevation is regulated by Albeni Falls Dam, operated by the U.S. Army Corps of Engineers (USACE). Three major tributaries enter Lake Pend Oreille: the Clark Fork River enters the lake approximately 9.3 miles west of the Idaho-Montana border, the Pack River enters the northeastern portion of the lake, and the Priest River enters the Pend Oreille River about 5 miles upstream of Albeni Falls Dam (this portion of the river is backed up by the dam). Lake Pend Oreille is the fifth-largest natural freshwater lake in the United States.

Figure 2-1: Lake Pend Oreille Subbasin: Watershed-Based Sub-Areas[1]



[1] Figure courtesy of BNSF railroad.

Figure 2-2: Lake Pend Oreille Geographical Response Plan Coverage Area



2.3.1 Upper Pend Oreille Sub-Area Description

The Upper Pend Oreille Sub-Area is sparsely settled; Bonner County has a population of about 42,500 people. Sandpoint, the county's largest city with about 7,800 residents, and the surrounding cities and rural areas along the northern shore of the lake comprise about half the county's population (U.S.

Census, 2017). In summer, an additional 5,000 people call the northern shore their home (RRT/NWAC, 2005).

The Upper Pend Oreille Sub-area drainage (approximately 1,972 square miles) encompasses all of Lake Pend Oreille and its tributaries, including 9.3 miles of the Clark Fork River upstream to Cabinet Gorge Dam, and the Pend Oreille River and its tributaries down to the lake's control point, Albeni Falls Dam. Lake Pend Oreille is located in the Panhandle region of northern Idaho and lies primarily within Bonner County. Lake elevation is regulated by Albeni Falls Dam. Congressional authorization of Albeni Falls Dam (by the 81st Congress, 1st Session, Senate Document No. 9, February 7, 1949) requires that the Albeni Falls Dam not contribute to downstream flooding. Inflow comes through Cabinet Gorge and Noxon Rapids Dams, which are "power peaking" facilities owned and operated by Avista Utilities. During low flow (non-runoff) season, Avista operates these dams for hourly peaking, but these projects do not affect lake levels (NPCC, 2005b). The USACE operates Albeni Falls Dam, which is located on the Pend Oreille River near the Washington border.

The Pend Oreille River, prior to the construction of Albeni Falls Dam in 1952, provided free-flowing riverine habitat that supported a cold water fishery. Prior to construction of Albeni Falls and Cabinet Gorge Dams, the lower Clark Fork River supported important fisheries for migrating kokanee salmon, mountain whitefish, and bull trout. Westslope cutthroat trout were also present in the river and provided a fishery for fluvial and adfluvial fish (NPCC, 2005b). Today, the upper Pend Oreille River supports a limited warm water fishery, and the presence of salmonids is very low (Bennett and DuPont, 1993). Bennett and DuPont (1993) conducted a 2-year survey (1991 to 1992) and found salmonids (native and nonnative species) accounted for only 1.9% of all species collected in 1991 and 0.6% in 1992. Management direction is to work with USACE on lake level management to improve conditions for fish species (NPCC, 2005b).

Fish habitat in tributary streams within the Upper Pend Oreille Sub-Area has been impaired through delivery of excess bedload sediment, fine sediment delivery, loss of large woody debris and riparian forest habitat, channelization, and isolation of streams from their floodplains (PBTTAT, 1998). Human-made fish migration barriers and water diversions are scattered around the subbasin, resulting in loss of access to spawning and rearing habitat and loss of flow and migrating fish to diversions. During the summer and fall months, the lower 3.4 miles of the Clark Fork River (the headwaters of Lake Pend Oreille) are flooded by backwater from Albeni Falls Dam, creating an unproductive environment for native and introduced salmonids (NPCC, 2005b). Riverine habitat has been further compromised by Cabinet Gorge Dam and its operations, resulting in blocked fish passage, rapidly fluctuating river flows, and during high water years (such as 1997), total dissolved gas levels exceeding 150% saturation (Weitkamp et al., 2003).

Cabinet Gorge Dam presents a complete migration block to fish migrating upstream from the Clark Fork River. Steps are underway to restore fish passage as part of the Federal Energy Regulatory Commission (FERC) re-licensing process (NPCC, 2005b).

2.3.2 Upper Pend Oreille Sub-Area Topography/Geomorphology

The Selkirk Mountains to the west, the Cabinet Mountains to the north, and the Bitterroot Mountains to the east shape the Upper Pend Oreille Sub-Area. During the ancient Precambrian period over 600 million years ago, shallow seas inundated northern Idaho. Sediments of clay, silt, and sand settled out of brackish waters as seas retreated, subsequently metamorphosed, and began to fold and fault. In the last few million years, the sub-area was substantially altered by major glacial events in the late Pleistocene period. Glacial advances resulted in highly dissected watersheds with high stream density, shallow soils, and subsoil compaction of glacial tills. Groundwater seeps and springs are prevalent in tributaries draining the Cabinet and Bitterroot Mountains to the north and east of Lake Pend Oreille, reflecting the more recent geology. The parent rocks of soils developed from the Precambrian Belt Supergroup weather to a preponderance of coarse fragments (60 to 70%), fine silts (20% plus), and a small amount of gravel and sand. When these soils are eroded by natural or human-caused agents into high gradient mountain streams (Rosgen B or steeper; Rosgen, 1994), the fine silts are transported rapidly downstream out of the system while the coarse fragments remain as bedload. This bedload is transported locally within the channel during channel-forming events (2-year discharge events). If erosion has been accelerated, the excess bedload fills pools and triggers additional bank cutting (NPCC, 2005b).

Generally, streams on the northern and eastern sides of Lake Pend Oreille tend to be more productive and have much less fine sediment than streams draining the granitic soils of the Selkirk Mountains. Streams flowing from the Cabinet and Bitterroot Mountains are more likely to have bedload as a limiting habitat factor, whereas streams flowing from the granitic watersheds of the Selkirk Mountains may have fine sediment limiting habitat condition. Migratory fish are precluded from several tributaries, or portions of tributaries, due to natural waterfalls found throughout the basin (NPCC, 2005b).

2.3.3 Upper Pend Oreille Sub-Area Vegetation

Historical vegetation patterns in the Upper Pend Oreille Sub-Area were largely influenced by wildfire. Uplands were more typically dominated by seral species in various stages of succession, with age and composition dependent largely on fire cycles, elevation, slope, and aspect (NPCC, 2005b).
Low elevation riparian zones near tributary mouths include areas with and without tree canopy cover. Along stream corridors where tree overstory does not exist or is thin, vegetation includes shrubs and small trees such as thin-leaf alder, *Alnus sinuate;* willows, *Salix* spp.; snowberry, *Symphoricarpos albus*; mountain maple, *Acer glabrum*; red-osier dogwood, *Cornus stolonifera*; blue elderberry, *Sambucus cerulea*; and black hawthorn, *Crataegus douglasii.* Where tree canopy is present, tree species include black cottonwood, *Populus trichocarpa*; water birch, *Betula occidentalis*; quaking aspen, *Populus tremuloides*; and a mix of conifer species including western red cedar, *Thuja plicates*; western hemlock, *Tsuga heterophylla;* Douglas-fir, *Psuedotsuga menziesi*; grand fir, *Abies grandis*; and western white pine, *Pinus monticola* (NPCC, 2005b).

Conifer forests in the sub-area consist of mixed stands, typified by stands of western red cedar/western hemlock; stands of co-dominant Douglas-fir and ponderosa pine, *Pinus ponderosa;* and stands of Douglas-fir; western larch, *Larix occidentalis;* lodgepole pine, *Pinus contorta;* and western white pine (NPCC, 2005b). Dense stands of Douglas-fir, larch, and lodgepole are characteristic of slopes with

northern and eastern aspects. Relatively open stands of Douglas-fir and ponderosa pine are typical on the warmer, dryer southern and western aspects. Representative species of upland shrubs include western serviceberry, *Amelachier alnifolia*; mountain maple; snowberry; mountain balm, *Ceanothus velutinus*; mallow ninebark, *Physocarpus malvaceus*; huckleberry, *Vaccinium* spp.; and others (NPCC, 2005b).

2.4 Hydrology

Lake Pend Oreille is the largest and deepest natural lake in Idaho, covering approximately 83,264 acres prior to impoundment by Albeni Falls Dam in 1952. At full pool, the lake now covers 94,794 acres (USFWS, 1953; Hoelscher, 1993). The lake has more than 175 miles of shoreline and has a mean and maximum depth of 538 ft and 1,151 ft, respectively (Rieman and Falter, 1976). An estimated 95% of the lake's volume is held in the large, southern-most basin, a glacially influenced portion of the Purcell Trench (Savage, 1965) with a mean depth of 715 ft.

The USACE regulates the lake's elevation via operations at Albeni Falls Dam within about 11 ft, between a winter low of 2,051.5 ft above msl and a summer high of 2,062.5 ft above msl. Winter drawdown generally begins after Labor Day. Minimum pool is normally reached between November 15 and December 1, with a target date of November 15 to facilitate kokanee salmon spawning (Fredericks et al., 1995).

The Clark Fork River is the largest tributary to Lake Pend Oreille and drains a watershed of approximately 22,905 square miles (Lee and Lunetta, 1990). The river contributes approximately 92% of the annual inflow to the lake (Frenzel, 1991) and most of the annual suspended sediment load. Tributaries to the Clark Fork below Cabinet Gorge Dam include Lightning, Twin, Mosquito, and Johnson Creeks. Pack River is the second-largest tributary to the lake and is fed by a number of significant tributary watersheds, including Grouse Creek.

Melting snow produces peak flows in the Clark Fork River typically between 30 and 60 thousand cubic feet per second (cfs) in May or June. Mid-winter rain-on-snow events can result in rapid snowmelt, and in some years the peak flow from tributary watersheds occurs during these events in winter (i.e., the non-runoff season). Lightning Creek and other tributaries draining the Cabinet and Bitterroot Mountains are particularly susceptible to rain-on-snow events due to high precipitation, their location relative to the lake, prevailing winds, and the tendency for warm winter storms to pick up moisture from the lake. The Pend Oreille River is the only surface outflow from Lake Pend Oreille. The reservoir narrows to what was once the natural river channel but is now the forebay of Albeni Falls Dam. Velocities in the channel can be river-like during high flow conditions. The constricted sections of the lake flow for about 27 miles from the lake's northwest corner near Sandpoint into Washington.

2.5 Climate

Continental and marine weather patterns influence climatic conditions in the Upper Pend Oreille Sub-Area. Winter storms pass over the area from November through March causing a noticeably wet climate. Mid-winter storms periodically bring warm air masses resulting in rain-on-snow events at middle elevations ranging between 2,500 and 4,500 ft above msl. Summer storms generally pass farther

north, resulting in relatively dry seasonal conditions. Winds typically prevail from the southwest across Lake Pend Oreille.

Average monthly temperatures in the area range from 27 to 65°F. Precipitation varies widely throughout the year. November is the wettest month with a monthly average of 3.5 inches, while August is the driest with a monthly average of 0.7 inches (Weatherspark, 2017). Precipitation falls mainly as snow in the winter months, averaging 88 inches per year. The main body of Lake Pend Oreille seldom freezes in winter; however, shallow areas in the northern end of the lake form an ice cover some years.

The climate in Bonner County is generally sub-humid characterized by warm, dry summers and cold, wet winters. The mountains have cooler summers and colder winters than areas in the valley (Bonner County, 2010b).

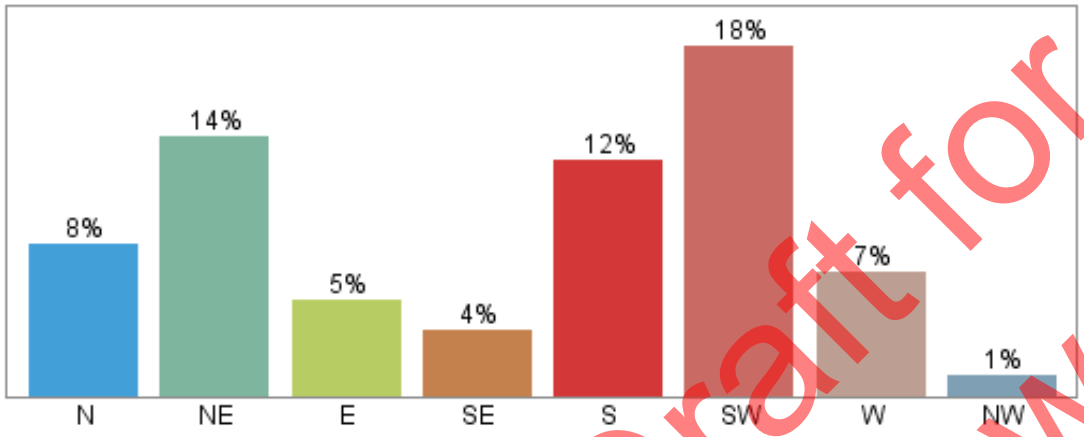
Annual precipitation in Bonner County ranges from 20 to 60 inches and the most precipitation is received in the mountains in the northwestern part of the county. The southern part of the county receives the least. The driest months for Bonner County are normally July, August, and September and correspond to the height of the wildland fire season for northern Idaho. Some rainfall normally occurs during these months, but extended dry periods can occur. Precipitation occurs year-round in the mountains, with deep snowpack accumulating during winter months (Bonner County, 2010b).

Chinook winds, which blow downslope and are warm and dry, often melt and evaporate snow. Summers in Bonner County are warm to hot in the valleys, with much cooler temperatures in the mountains. In the winter, the average temperature is 20 F and the average daily minimum temperate is 23 F. Average temperatures in the summer are 63 F and the average daily maximum temperature is 78 F (Bonner County, 2010b).

Over the course of the year, typical wind speeds vary from 0 to 13 miles per hour (mph) (calm to moderate breeze), rarely exceeding 17 mph (moderate breeze). The highest average wind speed of 5 mph (light breeze) occurs around mid-April, at which time the average daily maximum wind speed is 13 mph (moderate breeze). The lowest average wind speed of 3 mph (light breeze) occurs around mid- to late October, at which time the average daily maximum wind speed is 9 mph (gentle breeze) (Weatherspark, 2017).

The wind in Sandpoint is most often out of the southwest (18% of the time), northeast (14% of the time), and south (12% of the time) (Figure 2-3). The wind is least often out of the northwest (1% of the time) and southeast (4% of the time) (Weatherspark, 2017).

Figure 2-3: Sandpoint, Idaho, Wind Directions over the Entire Year



Note: Values do not sum to 100% because the wind direction is undefined when the wind speed is zero.

2.6 Risk Assessment

Numerous transportation and facility-based oil and chemical threats exist in proximity to Lake Pend Oreille. U.S. Highways 2 and 95, State Route 200, and the BNSF Railway/Montana Rail Link (MRL) paralleling Lake Pend Oreille and the Union Pacific (UP) rail line paralleling Pend Oreille River are the primary spill risks. The Cabinet Gorge Dam may also maintain an oil supply for normal operations. Facilities are located on the Clark Fork River approximately 8 miles upstream of Lake Pend Oreille.

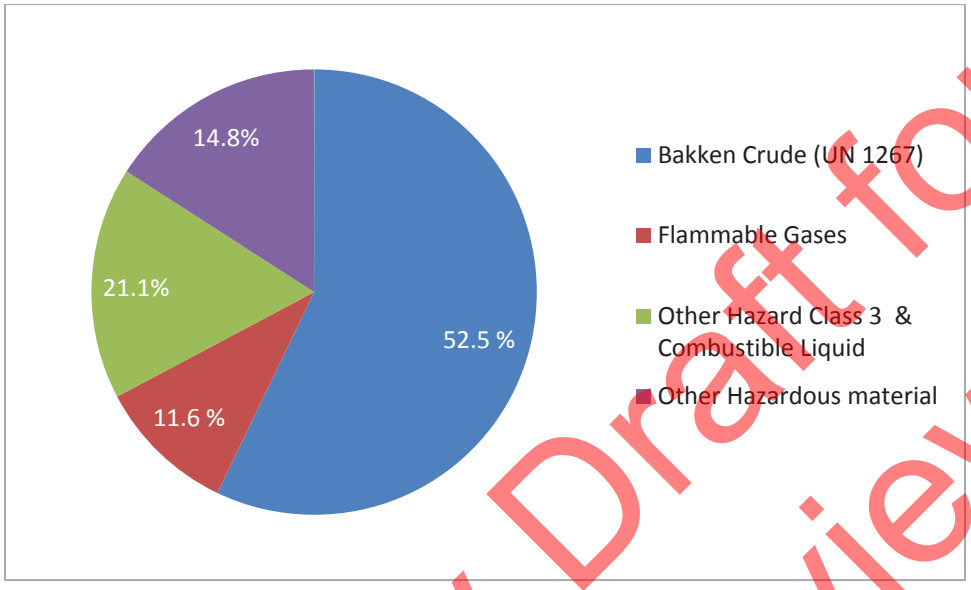
2.6.1 Oil and Hazardous Materials Transit in Bonner County

Numerous trains travel through the city of Sandpoint daily and many carry hazardous materials and crude oil. In 2016, three railroads provided commodity transportation information to DEQ. These three railroads combined moved significantly more than 300,000 rail cars or tank cars containing various forms of hazardous materials and crude oil. Currently, approximately 24 unit trains per week carrying crude oil from the Bakken oil fields in the Dakotas and Saskatchewan travel through Sandpoint. As such, the Bakken crude oil trains represent approximately 52.5% of the total number of hazardous material carloads traveling this area. Additionally, butane and alcohols represent about 11.6% of the total hazmat carloads. Table 2-1 and Figure 2-4 summarize the types and quantities of hazardous materials transported through Bonner County.

Table 2-1: Oil and Hazardous Material Rail Shipments in Bonner County (More than 300,000 Total Loads Per Year)

Hazardous Material Rail Shipments in Bonner County per Year (2016)	Hazard Class	% of total
Bakken Crude (UN 1267)	3	52.5%
Flammable Gases	2.1	11.6%
Other Hazard Class 3 & Combustible Liquid	3	21.1%
Hazard Class 9 and other hazardous material	9	14.8%

Figure 2-4: Hazardous Material by Rail in Bonner County



Further analysis of the rail commodities reveals that the 20 most frequently shipped commodities comprise 97% of the total number of packages shipped. A review of the most frequently shipped commodities against guidance from the North American Emergency Response Guidebook (US Department of Transportation, 2016) indicates the following:

- All of the top 20 hazardous materials require self-contained breathing apparatus (SCBA) as personal protective equipment, and 5 require SCBA personal protective equipment that is "specifically recommended by the manufacturer."
- 13 of the top 20 are liquid.
- 4 of the top 20 are gaseous.
- 1 of the top 20 is a solid (ammonium nitrate).
- Sulfuric acid and hydrochloric acid represent 1.1% of the total number of hazmat rail shipments. These materials are reactive and may release corrosive, toxic, or combustible gases.
- Aside from the two acids mentioned, all of the top 20 hazmat rail shipments are combustible.
- Evacuation criteria for accidents involving rail cars transporting these hazardous materials range from 0.5 to 1 mile.
- Allyl bromide comprises 2.5% of the total hazmat rail shipments. It has a specific gravity greater than 1 and will sink if spilled into a waterway.
- Alcohol NOS, sulfuric acid, hydrochloric acid, and methanol comprise 12.9% of the total hazmat rail shipments. These items are soluble in water.
- Current response trailers are set up for crude oil releases (see Section 4.6). Collection of other materials may create hazardous and explosive environments.

A considerable amount of hazardous materials is also shipped on the highways of Bonner County. In 2010, a qualitative survey was conducted to assess the amount and type of hazardous materials flowing

through the county (Bonner County, 2010c). During two separate 2-hour periods at four different locations, a total of 310 commercial vehicles were observed passing through. Of those vehicles, 35 were observed to be placarded as containing hazardous materials. Table 2-2 lists the relative percentage of the types of materials observed. Not surprisingly, flammable liquid, such as gasoline and diesel fuel, were the largest contributors.

Table 2-2: Hazardous Materials by Highway in Bonner County

Hazard Class	Description	Number observed (for a 16 hour period)	Percentage
2.1	Flammable Gas	13	37.1
3	Flammable Liquid	16	45.7
5.1	Oxidizer	1	2.9
8	Corrosive	3	8.6
9	Class 9 (and Other)	2	5.7
	TOTAL	**35**	**100**

Since the 2010 survey was completed, mining operations in Canada have resulted in numerous truckloads of "ammonium nitrate liquid (hot concentrated solution)" (ID number 2426, Hazard Class 5.1) being transported through Bonner County. This material is very hazardous and may react explosively when heated (Cameo Chemicals, 2017).

The 2010 highway survey and recent observations result in a qualitative assessment because the survey was conducted for a short duration at one particular time of year. Seasonal variations in weather as well as commercial and recreational activities would alter the amount of fuel being delivered to or through the county. Nevertheless, the survey and observations indicate that a wide variety of hazardous materials are being transported by truck through Bonner County.

2.6.2 Roadway

U.S. Highways 2 and 95 and State Route 200 are the primary roadways passing through the GRP coverage area. ITD conducted a highway safety corridor analysis for Bonner County (Figure 2-5). Highway 200 along the north shore of Lake Pend Oreille represents a unique challenge in that accidents are more frequent and the highway runs very close to the lake shore.

Figure 2-5: Highway Accident Safety Corridor Map for Bonner County

2.6.3 Railroads

The topography of Bonner County has been very attractive to the railroad industry over the last one and a half centuries. Figure 2-6 shows the rail lines in Bonner County. The MRL follows the Clark Fork River and the northern shore of Lake Pend Oreille to Sandpoint. The UP railroad runs from Bonners Ferry southwards through Sandpoint and southwest toward Spokane. The UP railroad also shares trackage with the MRL. The BNSF Railway also runs south from Bonners Ferry through Sandpoint but crosses the Pend Oreille River at its junction with the lake; the BNSF line then continues south to the county line

where it runs adjacent to the UP railroad before turning west towards Spokane, Washington. The Pend Oreille Valley railroad is a short line railroad operating between Newport, Washington, and Sandpoint, Idaho, along the north side of the Pend Oreille River.

Railroad accidents in Bonner County are common. Between 1995 and 2014, the last date for which data were available, the Federal Railroad Administration reported 37 unique accidents, which includes all accidents from minor mishaps to significant derailments. In the spring of 2017, at least four significant derailments occurred in Bonner and Boundary Counties near waterways. Table 2-3 below summarizes those accidents by rail line. Figure 2-7 and Figure 2-8 show the location of those accidents; the north side of Sandpoint appears to be an area where accidents are more frequent.

Table 2-3: Bonner County Rail Accidents, 1995–2014

Railroad	Number of Accidents
BNSF	13
MRL	8
UP	15
Pend Oreille Valley	1
TOTAL	**37**

In fall 2016, at the request of DEQ, the four railroads provided copies of the public version of their bridge inspection reports. All bridge inspections were current in accordance with the Fixing America's Surface Transportation Act Public Law 114-94. The reports indicated that all bridges passed inspection and were "confirmed to have the capacity to safely carry traffic being operated over the bridge."

Figure 2-6: Bonner County Railroads

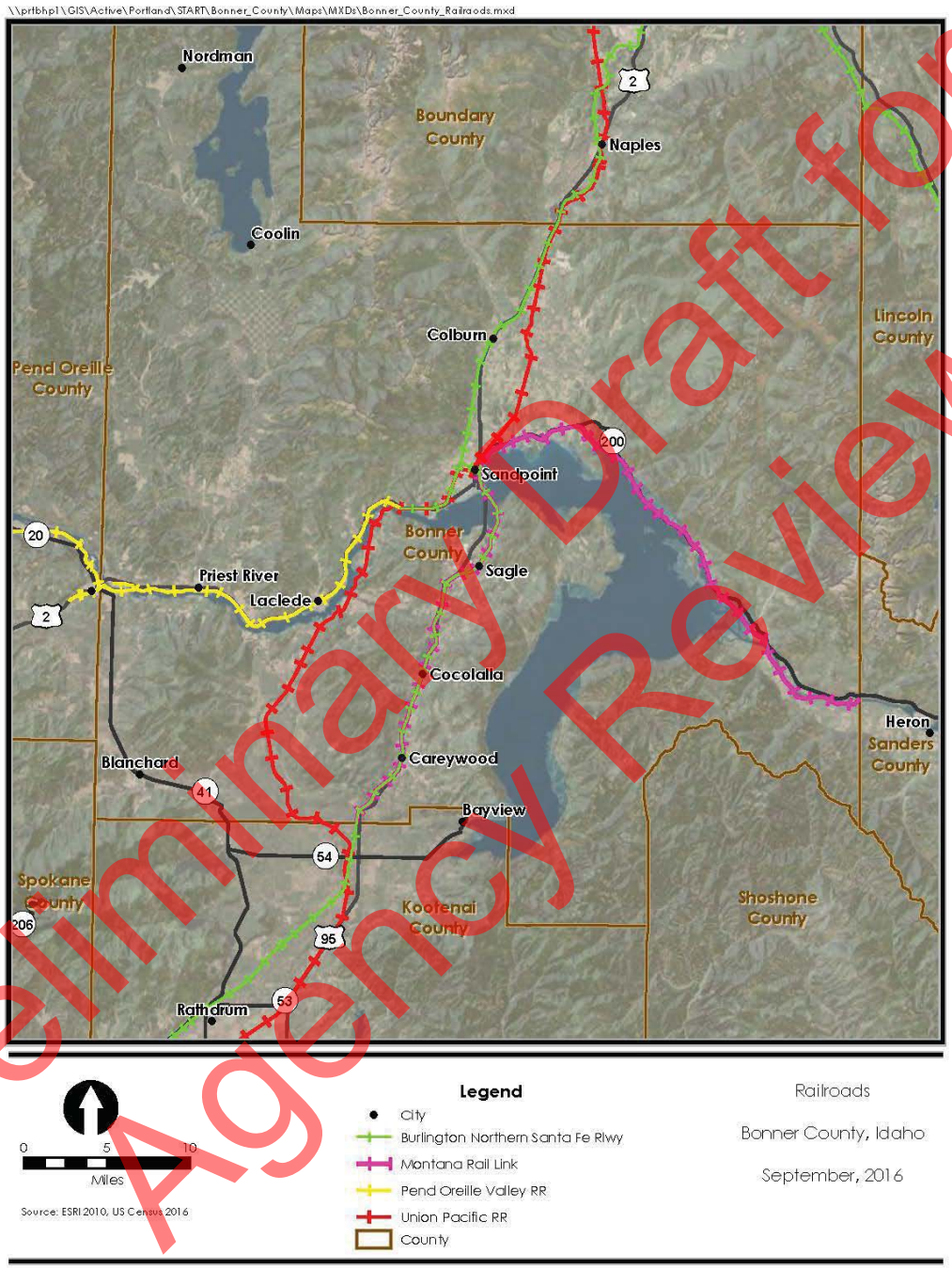


Figure 2-7: Bonner County Train Accidents (1995–2014)

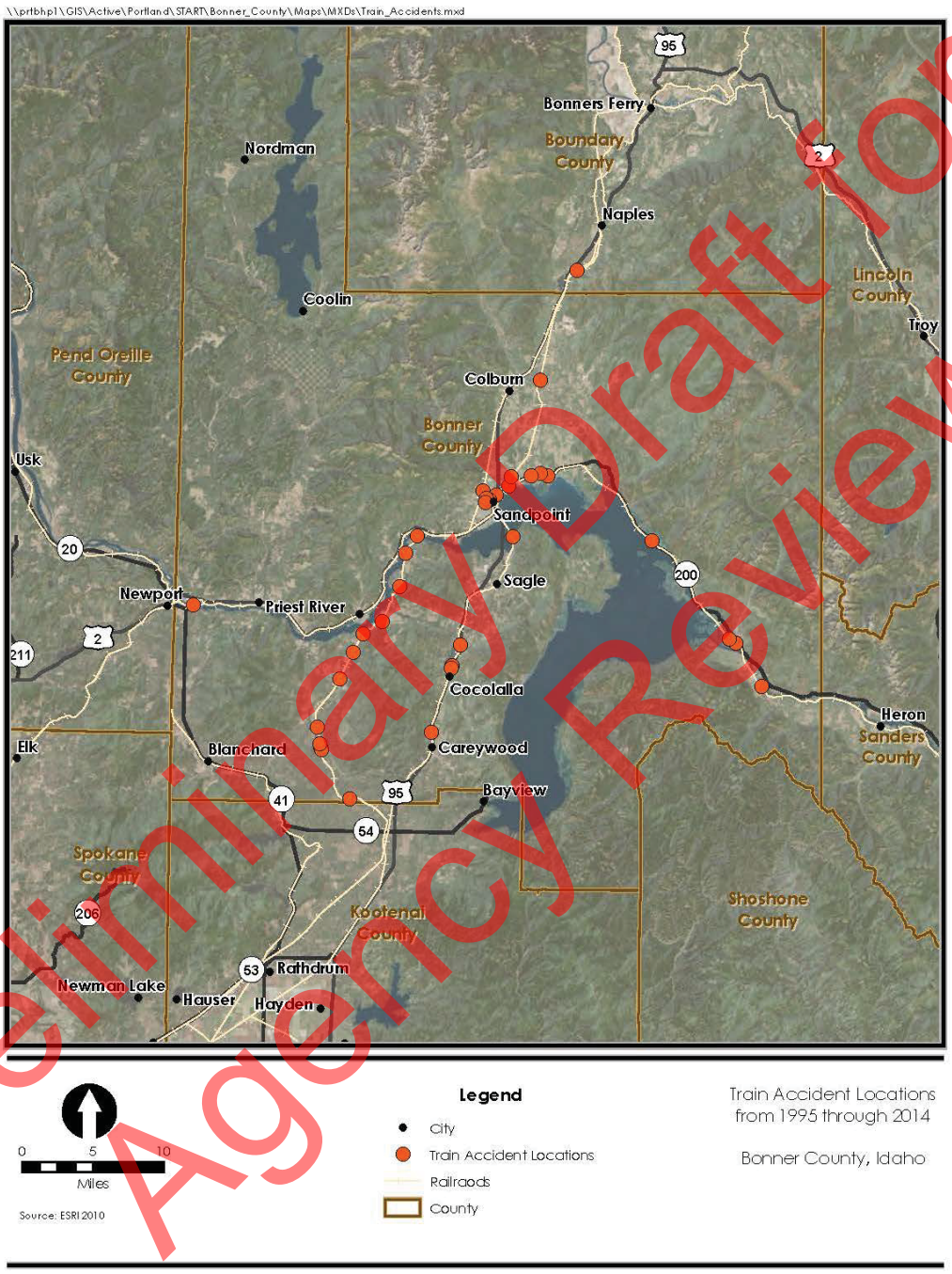


Figure 2-8: Sandpoint, Idaho, Train Accidents (1995–2014)

3 Response Options and Considerations

The table provided in this section correlates the type of terrain or other environmental feature with the response sectors. The response sectors are further described in Section 4.3.

Lake Pend Oreille GRP
Spill Response Options and Considerations

		Location							
		Sector 1A–1B West Pend Oreille	Sector 2 Westside Fire	Sector 3A–3D Sandpoint	Sector 4A Northside (Lakeshore)	Sector 4B Northside (Selle Valley)	Sector 5 Sam Owens	Sector 6 Clark Fork	Sector 7A–7B Sagle
Waterbody	Rivers	●	●		●	●		●	
	Creeks	●	●	●	●	●	●	●	●
	Lakes			●	●		●		●
	Pool Area formed by Dam							●	
	Wetland Area(s)	●	●	●	●	●	●	●	●
	Intermittent Streams (Seasonal Flow)	●	●	●	●	●	●	●	●
Potential Response Options	Source Control and Containment Activities	●	●	●	●	●	●	●	●
	Aerial/Vessel Surveillance Activities	●	●	●	●	●	●	●	●
	Wildlife Rescue and Rehabilitation Activities	●	●	●	●	●	●	●	●
	Shoreside Collection and Oil Recovery *(Note: 1)*	●	●	●	●	●	●	●	●
	Vessel-Based Skimming Operations *(Note: 2)*	●	●	●	●		●	●	●
	Shore- or Vessel-Based Skimming Operations *(Note: 3)*	●	●	●	●	●	●	●	●
	Shoreline Protection Booming *(Note: 4)*	●	●	●	●	●	●	●	●

Lake Pend Oreille GRP
Spill Response Options and Considerations

		Location							
		Sector 1A–1B West Pend Oreille	Sector 2 Westside Fire	Sector 3A–3D Sandpoint	Sector 4A Northside (Lakeshore)	Sector 4B Northside (Selle Valley)	Sector 5 Sam Owens	Sector 6 Clark Fork	Sector 7A–7B Sagle
	Shoreline Cleanup Activities *(Note: 5)*	●	●	●	●	●	●	●	●
	Containment in Ditches or Outfalls (Note: 6)								
	In-Situ Burning ***Area is not pre-approved (Note: 7)***								
Considerations	High Water vs. Low Water Boat Launches	●	●	●	●		●	●	●
	Current – Ability to Boom	●						●	
	Weather Concerns – Freezing Waterway Potential and Safety of Roads	●	●	●	●	●	●	●	●
	Shoreside Access can be Limited by Private Property	●	●	●	●	●	●	●	●
	State or National Wildlife Refuge / Recreation Area	●	●	●	●		●	●	
	Threatened/Endangered Species	●	●	●	●	●	●	●	●
	Public or Commercial Marina(s) in Area		●	●			●		
	Recreational Boat Traffic	●	●	●	●		●	●	●
	Tribal Lands or Usual and Accustom Interests *(Note: 8)*	●	●	●	●	●	●	●	●
	Historic / Cultural District(s) in Area			●			●		
	Dam(s) in Area							●	
	U.S. Highway Corridor		●	●	●	●			●
	Oil Movement by Rail in Area	●	●	●	●	●			●
	Oil Pipeline(s) in Area								

Note 1: Shoreside Collection and Oil Recovery response options should only happen in locations where skimmers or vacuum trucks can access the collected oil.
Note 2: Vessel-Based Skimming response options should include enhanced skimming using a U-boom, V-boom, or J-boom configuration in waters large enough for boats to maneuver (e.g., lake, large river).
Note 3: Shore-Based Skimming response options should include use of fixed skimmers: weir, belt, brush, drum, or other skimmer types.
Note 4: Shoreline Protection Booming should include deploying response strategies (booms) to divert and collect oil off of the water before shoreline areas are impacted, or deflect and exclude oil away from shoreline areas. These strategies include those published in this document (GRP response strategies), those provided in other plans (e.g., facility contingency plans), and "ad-hoc" strategies developed during the spill itself.
Note 5: Shoreline Cleanup options depend on safe and efficient access to spill locations and the type of river, creek, or stream bank present. Potential activities could include flooding, flushing, manual removal, vacuum, mechanical removal, sorbents, vegetation cutting, mechanical tilling/aeration, and/or sediment reworking/surf washing.
Note 6: A culvert block or underflow dam might be installed to aid in the recovery of spilled oil in small streams or those with intermittent flow. This strategy is used to protect downstream waterbodies such as Lake Pend Oreille and the rivers from upstream releases of oil.
Note 7: These areas are not pre-approved for the use of in-situ burning. Refer to the Northwest Area Contingency Plan for the in-situ burn policy. The use of in-situ burning would require incident approval from EPA, the Department of the Interior, and the National Oceanic and Atmospheric Administration.
Note 8: This sheet doesn't represent all locations where Tribes and Tribal Nations have lands or areas of specific interest (including lands established by treaty or rights to Usual and Accustom areas). Early coordination with tribal governments is highly recommended during a response, regardless of the spill location or potential impact areas.

4 Response Strategies and Priorities

This section provides information on GRP response strategies and the order (priority) they should be implemented, based on potential spill origin points and their proximity to sensitive resources. The primary intended audience of this section is responders who will deploy physical responses at the accident area. Area maps, sector maps, and information on staging areas and boat launch locations are also provided in this section. During a spill incident, GRP response strategies should be implemented as soon as possible.

Unless circumstances unique to a particular spill situation dictate otherwise, the priority tables in Section 4 should be used to decide the order that GRP strategies are deployed. The downstream movement of spills and the time it takes to mobilize response resources to deploy GRP strategies must always be considered when setting implementation priorities. Information on resources at risk and sensitive areas can be found in Section 6 of this plan. Information on shoreline countermeasures can be found in Section 5 of this document and in the Northwest Area Shoreline Countermeasures Manual (NWACP Section 9420, available at http://www.rrt10nwac.com/NWACP/Default.aspx).

The GRP strategies provided in this section have been created to reduce a spill's impact on sensitive resources. They do not include everything that should or could be done during a response to lessen the chance of injury to natural, cultural, and economic resources at risk from spills. Although designed to be implemented during the initial phase of a spill, GRP strategies may continue to be used throughout a response at the discretion of the incident commander or unified command.

4.1 On-Site Considerations

4.1.1 Before Deploying a GRP Strategy (Questions to Ask)

- Are conditions safe? Response managers and responders must first determine if efforts to implement a response strategy would pose an undue risk to worker safety or the public, based on conditions present during the time of the emergency. No strategy should be implemented if doing so would threaten public safety or present an unreasonable risk to the safety of responders.
- Has initial control and containment been sufficiently achieved? Source control and containment of the spill at or near the source of a spill are always higher priorities than the deployment of GRP response strategies, especially when concurrent response activities are not possible.
- How far downstream or out into the river environment is the spill likely to travel before response personnel will be ready and able to deploy GRP response strategies?
- Are permits required? Contact the DEQ regional administrator in Coeur d'Alene for guidance. Additional information can be found in the NWACP Permit Summary Table (NWACP Section 9401)
- Will equipment or vehicles need to be staged on or near a roadway? If so, traffic control may be required.

4.1.2 During Strategy Implementation (Things to Remember)

- On-scene conditions (weather, currents, lake level, waves, river speed, and debris) may require that strategies be modified to be effective. Weather and conditions experienced at a particular strategy location during an actual spill event will likely be different from those when data were gathered during field visits. Response managers and responders must remain flexible and modify the strategies provided in this section as needed to meet the challenges experienced during an actual response.
- Certain strategies may call for access points or staging areas that are not easily reached at all times of the year or in all conditions. Lake water levels factor heavily into the ability to access anchor points for booming.
- Oil containment booms must be free of twists, gaps, and debris in order to remain effective.
- The GRP response strategies provided in this section were designed for use with persistent heavy oils that float on water and may not be suitable for other petroleum products or hazardous substances.

4.1.3 After Strategy Implementation (Things to Understand)

- Oil containment booms should be maintained and periodically monitored to ensure effectiveness. Changes in river or current speed will likely require modifications to boom deflection angles (see additional discussion in Section 4.2.2). Depending on conditions, some booming strategies may require around-the-clock tending.
- Although designed for implementation during the initial phase of an oil spill, GRP strategies may continue to be deployed and implemented throughout the entire lifespan of a response, as deemed appropriate and necessary by the incident commander or unified command.

4.2 Hydrologic Considerations

4.2.1 Hydrographs for Rail-Adjacent GRP Waterbodies

The water level on Lake Pend Oreille varies between its low pool level of 2,051.5 ft and the upper level of 2,062.5 ft. The level is actively managed by the USACE to control flood waters from spring runoff as well as for power generation and recreational needs. Figure 4-1 shows a probability chart of the water level as measured at the Hope Gage station on the north side of the lake (USACE, 2016).

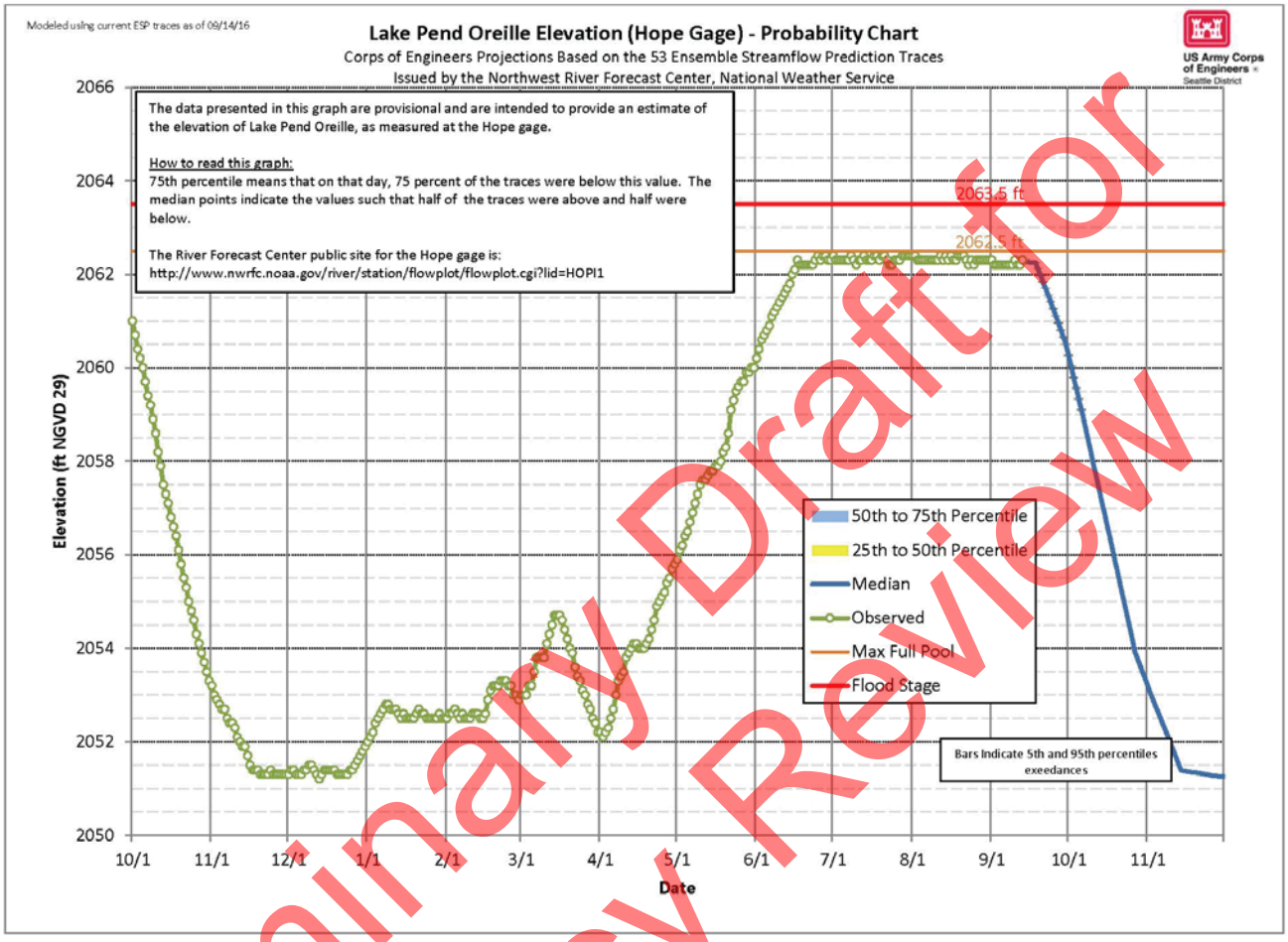
Inflows to Lake Pend Oreille from spring runoff are highest in May and June. The Clark Fork River dominates the spring flow and is managed at the Cabinet Gorge Dam. The Pack River, Lightning Creek, and Trestle Creek, all on the north side of the lake, are also significant contributors.

Current and historical stream flow information is available from the USACE Albeni Falls Dam website (http://www.nwd-wc.usace.army.mil/nws/hh/www/index.html). Current stream flow gaging stations are also reported by the U.S. Geological Survey (USGS). From upstream to

downstream, USGS gaging stations include the following (click the name to open the gage-specific web page):

- **USGS 12391950 CLARK FORK RIVER BELOW CABINET GORGE DAM**
  Peak flows of about 55,000 cfs usually occur between May and June and drop throughout the summer. Flows are directly controlled by snowmelt and upstream dam operations. During low flow periods, discharges from the dam can be as low as 6,000 cfs but can vary widely; increases to over 32,000 cfs with subsequent reductions to 6,000 cfs are commonly observed within a single day. This will affect the wetted area of the river bank.
- **USGS 12392000 CLARK FORK AT WHITEHORSE RAPIDS NR CABINET**
  Peak flows of about 55,000 cfs usually occur between May and June and drop throughout the summer. Flows are directly controlled by snowmelt and upstream dam operations.
- **USGS 12392155 LIGHTNING CREEK AT CLARK FORK**
  Peak flows of about 1,200 cfs usually occur between May and June and drop throughout the summer. Flows are directly impacted by snowmelt. Lightning Creek is a tributary of the Clark Fork River and crosses under the MRL-operated track to the north.
- **USGS 12392300 PACK RIVER NR COLBURN ID**
  Peak flows of about 1,200 cfs usually occur between May and June and drop throughout the summer. Flows are directly impacted by seasonal snowmelt.
- **USGS 12395500 PEND OREILLE RIVER AT NEWPORT WA**
  Peak flows of about 60,000 cfs usually occur between May and June and drop throughout the summer. Flows are directly controlled by snowmelt and downstream dam operations.
- **USGS 12393000 PRIEST LAKE AT OUTLET NR COOLIN ID**
  Peak flows (as measured by gage height, not cfs) typically occur from May to October. Priest Lake is regulated to hold lake at levels desirable for recreation interests during summer months, and storage is released for power use downstream during winter months.
- **USGS 12395000 PRIEST RIVER NR PRIEST RIVER ID**
  Peak flows of about 6,000 cfs usually occur between May and June and drop throughout the summer. Flow is partly regulated by Priest Lake.

Figure 4-1: Lake Pend Oreille Elevation (Hope Gage)—Probability Chart



4.2.2 Stream Velocity Ranges

Stream velocity data are not available from any of the gages above. Water speed drift measurement data in Table 4-1 can be used to calculate river velocity/speed in ft per second or miles per hour. Velocities in miles per hour or nautical miles per hour (knots) need to be verified at several locations, as they are subject to change based on the configuration of the riverbed channel and variability in river discharge volumes.

Knot = 1.6 mile/hr or 6,080 ft/hr or 1.7 ft/sec

The table uses the time for floating debris to drift 100 ft, which is accurately determined by anchoring a line with two floating buoy markers attached at a spacing 100 ft apart. Floating debris is then thrown into the water approximately 20 ft upstream of the first buoy marker, and the time it takes the debris to transit the distance between the two marker buoys is recorded in seconds. This measurement assumes that the minimum escape velocity under a boom perpendicular (90 degrees) to the current is 1.2 ft per second. The table provides an estimate of the length of boom required for deflecting oil at a specified angle for a 110-foot profile

(perpendicular length) to the current. It also provides an estimate of the number of anchors or shoreline tiebacks required for that length of boom assuming anchor points are required every 50 ft.

Table 4-1: Water Speed Drift Measurement Data and Boom Angle Considerations

Time to Drift 100 ft (seconds)	Velocity (ft/sec)	Max. Boom Deflection Angle (degrees)	Boom for 100 Foot Profile to Current (ft)	Anchors if Placed Every 50 Feet (number)
6	16.7	4.0	1,429	30
8	12.5	5.4	1,071	22
10	10.0	6.7	857	18
12	8.3	8.0	714	15
14	7.1	9.4	612	13
17	5.9	11.4	504	11
20	5.0	13.5	429	10
24	4.2	16.3	357	8
30	3.3	20.5	286	7
40	2.5	27.8	214	5
60	1.7	44.4	143	4
>86	<1.2	90.0	100	3

4.2.3 River Hazards

Although the Clark Fork River between the Cabinet Gorge Dam and Lake Pend Oreille is not commonly known for whitewater rapids, some key hazards do need consideration. At and below the confluence of Lightning Creek and the Clark Fork, large boulders and rocky debris washed in from Lightning Creek can create unusual hydraulics that are dependent on lake elevation and river flows. Additionally, large standing waves originating from dam discharges may be present below the Cabinet Gorge Dam.

A debris collection weir extending across the Clark Fork River (latitude 48.145820, longitude -116.202927), southeast of the City of Clark Fork, is used to deflect large woody debris in the river to the Clark Fork drift yard. The primary purpose of this weir is to prevent logs from hampering navigation in Lake Pend Oreille.

Responders intending on boating the Clark Fork River should scout these areas and consult local resources regarding current river navigation conditions.

4.2.4 Current Weather Conditions

Weather conditions on Lake Pend Oreille can vary dramatically from one moment to the next. Local wind conditions on the lake may be considerably different than conditions reported at the airport or other nearby weather stations. The long 34-mile fetch between Bayview at the southern end of the lake and Hope on the north can cause the buildup of very large waves, which could make boom deployment particularly hazardous.

In the event of a significant spill, the incident commander may request specialized assistance from the National Weather Service (see contact sheet). Additionally, Table 4-2 lists several sources of local weather conditions. Boaters from outside the area are encouraged to seek additional local weather wisdom from the Bonner County Sheriff Marine Patrol or U.S. Coast Guard Auxiliary (see contact sheet).

Table 4-2: Current Weather Condition Resources

Resource Name	Location	Link
National Oceanic and Atmosphere Administration—National Weather Service	Spokane, WA	http://www.wrh.noaa.gov/otx/
Windbag Marina	Sandpoint, ID	http://www.nwd-wc.usace.army.mil/nws/hh/www/index.html# Then select "Albeni Falls Dam," then "Windbag Mariana"
Hope Weather	Hope, ID	http://www.nwd-wc.usace.army.mil/nws/hh/www/index.html# Then select "Albeni Falls Dam," then "Hope Weather"

4.3 Regional Area Maps

Appendix B provides maps depicting the Pend Oreille River and Lake Pend Oreille Regions. Each region is subdivided in geographic sectors. Hyperlinks are embedded in the sectors that lead to more detailed maps and tables and individual strategies. Listed below are the seven sectors, which largely correspond to the Bonner County fire districts. These items are hyperlinked to the corresponding start of the sector in Appendix B.

- Sector 1: West Pend Oreille Fire District
- Sector 2: Westside Fire District
- Sector 3: Sandpoint / Selkirk Fire District
- Sector 4: Northside Fire District
- Sector 5: Sam Owen Fire District
- Sector 6: Clark Fork Fire District
- Sector 7: Sagle Fire District

4.3.1 Clark Fork Delta

As described in Sections 2 and 6, the Clark Fork Delta is a unique ecosystem and has cultural significance for the Kalispel Tribe and Coeur d'Alene Tribe. Due to the complex labyrinth of the estuary and difficult access, spill response will be particularly challenging. Spills upstream of the Cabinet Gorge Dam would be addressed by strategy SR200 62.95 and largely caught in the dam area. Spills between the Cabinet Gorge Dam and the City of Clark Fork, which is about 7 miles downstream, may be addressed by the booming strategy for the Clark Fork Bridge (SR200 56.05). Spills downstream of this point may be addressed by applying booms to the

shear boom (i.e., debris diversion weir [Mouth of Clark Fork Strategy SR200 55.3] and Johnson Creek Trestle [Strategy SR200 54.83]).

The travel time for a plume in the Clark Fork River to reach the delta is dependent upon the location of the spill, the amount of spilled material, the type of material spilled, and water flow. Appendix C provides the results of an analysis that shows the travel time between the Cabinet Gorge Dam and the delta could range between 1 and 4 hours.

As shown in Figure 4-2, several booming options are suggested based upon water level. During periods of low river flow, typically between late June and early April, the Clark Fork Bridge (SR200 56.05) or Mouth of Clark Fork SR200 55.3—Booming Option A, may be feasible. About 1 mile separates the two strategies. Of these two strategies, the Clark Fork Bridge is preferable for the following reasons:

- Easier river access
- Ability to anchor boom to permanent structures in the stream bed
- Not adversely affected by potential runoff from Lightning Creek

High river flows may preclude safe installation of boom across the river at either SR200 55.3—Booming Option A, or the Clark Fork Bridge. In these cases, SR200 55.3—Booming Option B could be used to attach diversion boom to the permanently installed shear debris diversion in several locations. Booming Option B includes diversion booms further downstream near the drift yard, as shown in Figure 4-3.

The shear debris diversion extends approximately 16 in. below the water surface, and it may provide for sufficient contaminant diversion such that additional temporary boom is unnecessary. If used, temporary boom should be applied on the upstream side of the permanent boom. Lag bolts may be screwed into the permanent boom structure to secure temporary boom.

The effectiveness of the SR200 55.3—Booming Option B response will be hampered by:

- Extraordinary length of boom needed (up to 8,400 ft of boom would be needed for the full deployment of Option B)
- Large number of swift water technicians needed (two teams of three)
- Current lack of permanent anchor points away from the shear debris diversion
- Current deteriorated condition of the shear debris diversion
- Swift moving water during periods of high flow, such as spring runoff
- Poor boat access

Deployment of SR200 55.3—Booming Option B may make the Clark Fork drift yard boat ramp unusable because the spill may direct itself to the ramp.

The incident commander will need to evaluate these factors with consultation from the local response community, Idaho Fish and Game (IDFG), the Kalispel Tribe, Avista Dam Operations, and USACE to evaluate the safety and efficacy of this strategy deployment.

Recommendations

The strategy for the Clark Fork Delta (Strategy SR200 55.3) represents the last opportunity to protect the delta and Lake Pend Oreille from a spill in the Clark Fork River. Future spill response preparations should consider the following enhancements that would facilitate spill response safety and effectiveness.

- Installation of a cable from the Clark Fork auto bridge or railroad trestle that could be lowered to the water level for attachment of collection booms (see Strategy SR200 56.05 photos)
- Installation of permanent anchor points on the river banks near the Clark Fork auto bridge or railroad trestle
- Installation of permanent anchor points that would be integrated with the shear debris diversion
- Caching of additional boom in the City of Clark Fork
- Additional training of the Clark Fork and Sam Owen Fire Departments for swift water boom deployment
- Staging of an appropriately equipped jet boat at the drift yard boat ramp (SR200 51.69) (This boat could serve multiple purposes for a variety of agencies.)
- Construction of an additional boat ramp near the Clark Fork Bridge

Safety Note: As of June 2017, the shear debris diversion boom is in a state of disrepair. Emergency responders should use extreme caution to avoid getting sucked under the structure or pinched between a boat and the structure. The surface of the structure may be slippery, and due to the buildup of vegetation, weak points in the walking surface may not be visible; walking on the structure should be avoided.

Cultural Note: Certain areas in the Clark Fork Delta have special significance to the Kalispel Tribe. The incident commander should contact USACE, the State Historic Preservation Office (SHPO), and the Kalispel Tribe for guidance on the placement of boom anchors; see the notification information at the beginning of this document for contact information.

4.3.2 Denton Slough

Denton Slough is also a unique and valuable wetland that hosts significant cultural resources. Several booming strategies are depicted in Appendix B, Sector 5, SR200 50.4, and additional information is provided in Table 4-3. The booming strategy selected is a function of the water level and the location of the spilled material. If the spilled material originates from the slough itself, then the boom should be located as shown for Option A in Figure 4-4. This will mitigate the flow of contamination to Lake Pend Oreille.

If the contamination originates in Lake Pend Oreille, then a boom located as shown for Option B, will mitigate contaminant migration into the slough. This option requires an in-water anchor for the west side.

At low water, the slough is largely a mud flat and boat access is extremely difficult. The water channel is located on the west side of the slough, as depicted in Figure 4-4. During low water conditions, a short boom across the water channel may mitigate contaminant migration into or out of the slough. However, anchoring the boom could be problematic due to soft mud and shallow water access.

Due to the presence of cultural resources in this area, the incident commander should contact the USACE, SHPO, and the Kalispel Tribe for guidance on the placement of boom anchors (see contact sheet).

Safety Note: Emergency responders should use caution in this area to avoid getting themselves or their boat stuck in the mud.

Figure 4-2: SR200 55.3 Mouth of Clark Fork Booming Options

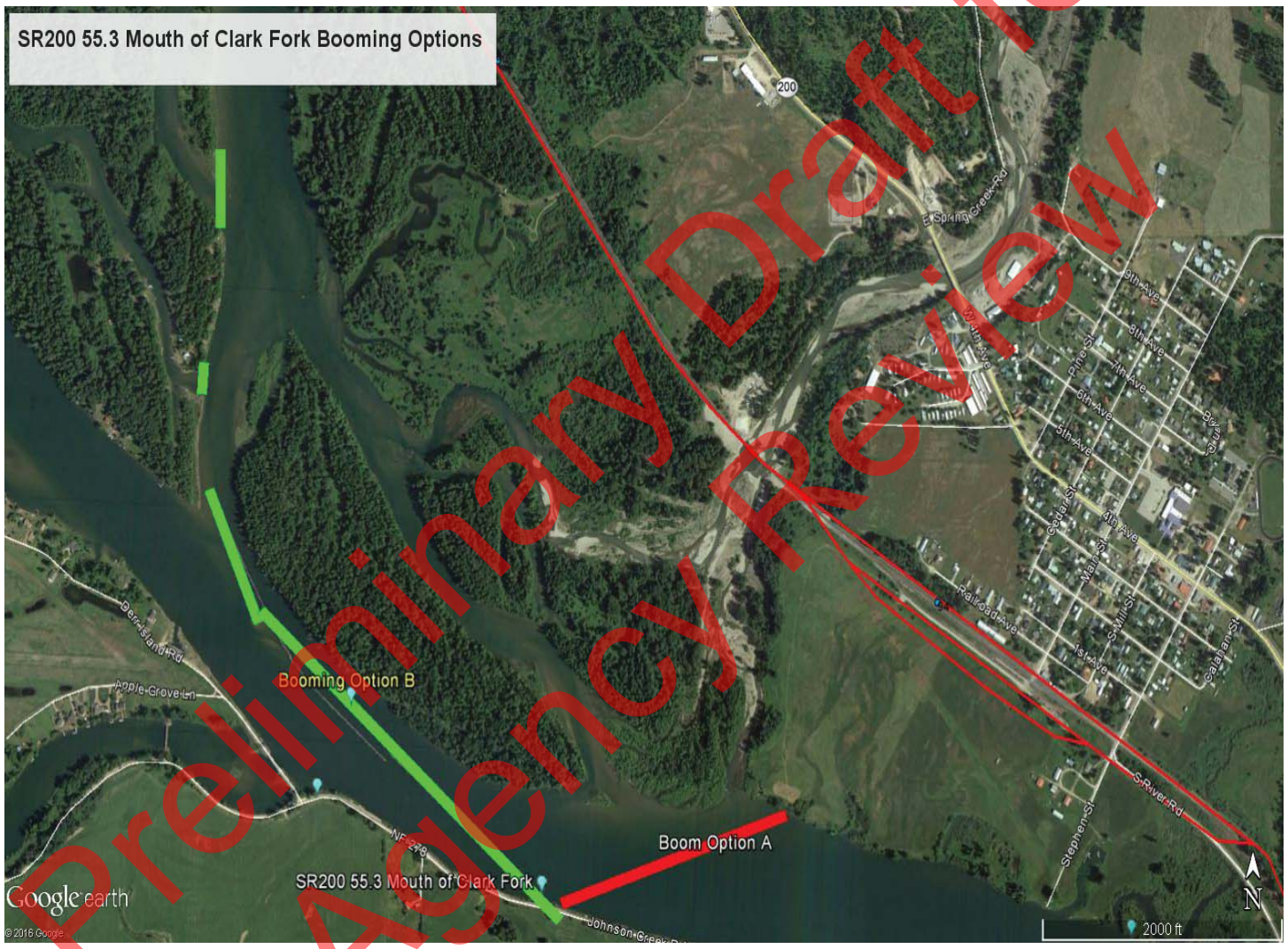


Figure 4-3: SR200 55.3 Mouth of Clark Fork Booming Options: Drift Yard Area

Figure 4-4: SR200 50.4 Denton Slough Booming Options

Table 4-3: Denton Slough Supplemental Information

Denton Slough	(MRL4 98.43) SR200 50.4
Implementation	Three booming options are suggested depending upon source of contamination, wind direction, and water level. **See Section 4.3.2 for further descriptions and a larger booming photo.** • Boom Option A—Secure boom to east and west shorelines to steel posts with one in-water anchor in the middle. • Boom Option B—Secure east side to steel post and west side to an in-water anchor, with another in-water anchor in the middle if needed. • Boom Option C for low water situations—Secure east and west sides to steel posts driven into channel bottom. Anticipate significant mud for Boom Option C. • Deploy deflection boom as shown in photo below for contamination moving from the lake northwards.
Field Notes	• No vehicle access on west side; Dormar Drive, also known as Hope School Road, is gated and does not reach the shore. • Vacuum truck access is good on east side • Use Clark Fork River boat ramp for access from water. No boat ramp at this location. • 4WD Access: **No** • Seasonal Access Only: **No** • Locked Gates: o West side: **Yes** o East side: **No**
Contact Notes	For all booming options, contact USACE, SHPO, and Kalispel Tribe for boom anchor location limitations.

4.4 Priority Tables

Certain locations along the principal transportation corridors in Bonner County are more susceptible to transportation accidents. Section 2.6 shows areas in which accidents have been more frequent. This information was used to qualitatively select several hazard zones to develop a list of additional response suggestions. Seven hazard zones were identified and are shown in Figure 4-5 and Figure 4-6.

For each of the seven hazard zones, Table 4-4 lists suggested nearby boat ramps, response strategies, and needed key equipment. The order in which the strategies are deployed is dependent entirely on the location of an accident in that hazard zone; the incident commander will need to make a field judgement on which strategy to deploy first.

The hazard zones depicted in Figure 4-5 and Figure 4-6 are based on risk of highway and rail accidents, whereas the sectors described in Section 4.3 are based on fire districts. Table 4-4 correlates the hazard zones to nearby sectors and response strategies.

The boat ramps listed are generally near the hazard zone. Most boat ramps may not be practicable in low water or adverse weather conditions. Local wisdom will be the key to proper boat ramp selection. Additional discussion on boat ramps is given in Section 4.6.

The list below provides some additional suggestions for prioritization of response activities:

1. Safety is always the number one priority. Do not attempt to implement a strategy or take action that will unduly jeopardize worker safety or the public.
2. Ensure public evacuation is considered immediately. Oil train accidents have often erupted into severe fires shortly after derailment. See the additional discussion in the Preface.
3. Ensure appropriate notifications have been made; see additional discussion in Section 1.2.
4. Control and contain the source of the spill; mobilize resources to the spill location. Source control and containment are always a higher priority than implementing GRP strategies.
5. Determining the priority or order that GRP strategies should be implemented is based on the location of the spill or affected area.
6. As response resources become available, implement the GRP strategies.

In summary:

Protecting human life is always the highest priority—public evacuation should be considered immediately. Control and containment of a spill becomes the next priority, followed by the appropriate response strategy. The information contained in the strategy descriptions (Appendix B) is recommended guidance, not prescriptive requirements.

Figure 4-5: Hazard Zone A

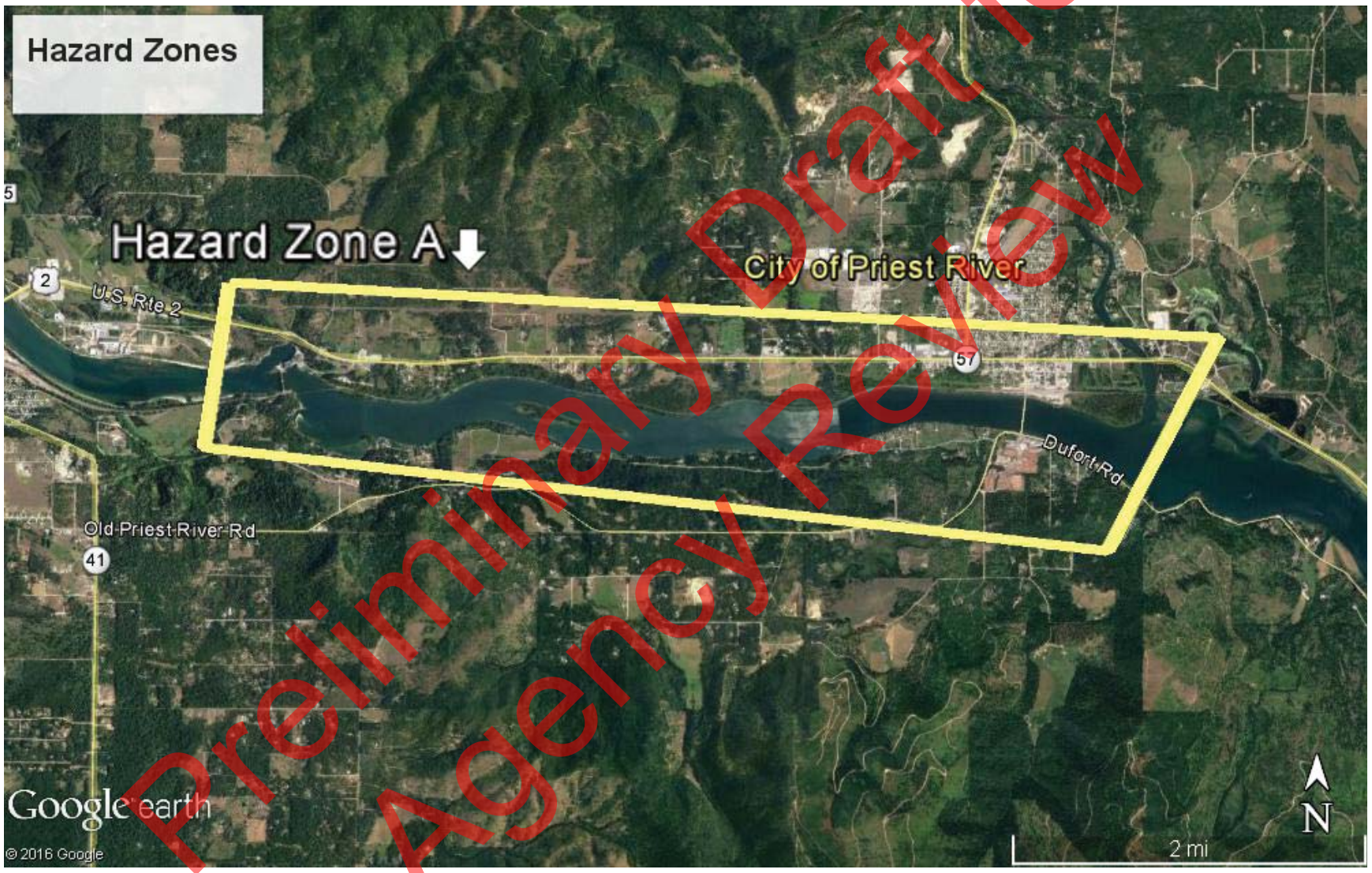


Figure 4-6: Hazard Zones B through G

Table 4-4: Hazard Prioritization Tables

Hazard Zone A — US 2 (Priest River)

General Strategy Description Open Water Collection and Diversion Strategies

Staging Area Common Name	Staging Area
Priest River City	US2 6.38

Suggested Boat Launches	Site ID
Priest River City	US2 6.38
Albeni Cove	US2 2.21

Suggested Strategies	Site ID	Equipment Needs: Curtain Boom(ft)	Recovery Device	PP Line (ft)	Steel Post Anchors	In Water Anchors	Jet Boat Needed?
10th Outfall	US2 5.73	150	Curtain boom	200	4	1	Yes
Priest River Intake	US2 6.38	550	Curtain boom	700	4	1	Yes
Albeni Falls Rec	US2 2.21	2,200	Vacuum Truck; Portable Skimmer	2,800	24	4	Yes
Albeni Falls	US2 2.19	1,200	Vacuum Truck; Portable Skimmer	1,500	12	3	Yes
		4,100		***5,200***	***44***	***9***	

Related Sectors

Sector 1A

Sector 1B

Hazard Zone B US95 Sagle & Cocolalla

Sagle

General Strategy Description Open Water Collection and Diversion Strategies

Staging Area Common Name	Staging Area
Dover Bay Marina	US2 25.16

Suggested Boat Launches	Site ID
Bottle Bay Bridge	US95 471.08
Sandpoint City Beach	US95 473.87
Memorial Park Boat Ramp	US2 27.9

Suggested Strategies	Site ID	Equipment Needs					
		Curtain Boom(ft)	Recovery Device	PP Line (ft)	Steel Post Anchors	In Water Anchors	Jet Boat Needed?
Bottle Bay Bridge	US95 471.08	100	Curtain boom	150	6	0	No
Dover Intake	US2 25.63	800	Curtain boom	1,000	4	1	Yes
Dover Bay Marina	US2 25.16	1,000	Curtain boom	1,250	6	3	Yes
		1,900		***500***	***16***	***1***	

Related Sectors

Sector 7B

Hazard Zone B — US95 Sagle & Cocolalla

Cocolalla

General Strategy Description Open Water Collection and Diversion Strategies

Staging Area Common Name	Staging Area
Lake Cocolalla	US 95 463.62

Suggested Boat Launches	Site ID
Lake Cocolalla	US95 463.62
Round Lake	US95 465.12
Morton Slough	US2 16.29

Suggested Strategies	Site ID
Cocolalla Creek Outlet	US95 463.82
Cocolalla Loop Rd Bridge	US95 463.95
Round Lake	US95 465.11
Cocolalla Creek Mouth	US2 16.06

Related Sectors

Sector 7A
Sector 7B
Sector 2A

Equipment Needs					
Curtain Boom (ft)	Recovery Device	PP Line (ft)	Steel Post Anchors	In Water Anchors	Jet Boat Needed?
200	Curtain boom	250	6	0	Yes
50	Curtain boom	50	6	0	No
200	Curtain boom	0	6	0	Yes
1,000	Curtain boom	1,000	10	1	Yes
1,450		***1,300***	***28***	***1***	

Hazard Zone C Sandpoint & Convergence

Sandpoint Area

General Strategy Description Open Water Collection and Diversion Strategies

Staging Area Common Name	Staging Area
Sandpoint City Beach	US95 473.87

Suggested Boat Launches	Site ID
Sandpoint City Beach	US95 473.87

Suggested Strategies	Site ID	Equipment Needs					
		Curtain Boom (ft)	Recovery Device	PP Line (ft)	Steel Post Anchors	In Water Anchors	Jet Boat Needed?
Lower Sand Creek	US95 474.31	700	Vacuum Truck; Portable Skimmer	500	5	0	Yes
Mouth of Sand Creek	US 95 473.91	360	Vacuum Truck; Curtain boom	450	0	0	Yes
Sandpoint Intake	US95 473.84	800	Curtain boom	1,000	0	6	Yes
Sandpoint City Beach	US95 473.9	2,000	Curtain boom	2,500	0	4	Yes
Long Bridge	US95 472.85	3,500	Curtain boom	4,375	8	0	Yes
		7,360		***8,825***	***13***	***10***	

Related Sectors

Sector 3B

Hazard Zone C Sandpoint & Convergence

Convergence

General Strategy Description Diversion Strategies

Staging Area Common Name	**Staging Area**
Sandpoint City Beach	US95 473.87

Suggested Boat Launches	**Site ID**
Sandpoint City Beach	US95 473.87
Memorial Park Boat Ramp	US2 27.9

Suggested Strategies	**Site ID**	**Equipment Needs**					
		Curtain Boom (ft)	Recovery Device	PP Line (ft)	Steel Post Anchors	In Water Anchors	Jet Boat Needed?
Sand Creek Trestle	US95 475.3	750	Vacuum Truck; Portable Skimmer	1,000	5	0	Yes
Lower Sand Creek	US95 474.31	700	Vacuum Truck; Portable Skimmer	500	5	0	Yes
Mouth of Sand Creek	US95 473.91	360	Portable Skimmer; Vacuum Truck	450	0	0	Yes
Sandpoint Intake	US95 473.84	800	Curtain boom	1,000	0	6	Yes
Long Bridge	US95 472.85	3,500	Curtain boom	4,375	8	0	Yes
		6,110		***2,950***	***10***	***6***	

Related Sectors

Sector 3B

Sector 3C

Sector 3D

Comments: The numerous storm water outfalls draining to Sand Creek need to be considered. A spill in the convergence area may be blocked within the surface water drain before it goes into the underground storm water drain. Once it enters Sand Creek, then the strategies should be considered.

Hazard Zone D — SR 200 Kootenai

General Strategy Description Open Water Collection and Diversion Strategies

Staging Area Common Name	Staging Area
Sandpoint City Beach	US95 473.87

Suggested Boat Launches	Site ID
Sandpoint City Beach	US95 473.87
Memorial Park Boat Ramp	US2
Laclede	US2

Suggested Strategies	Site ID	Equipment Needs: Curtain Boom (ft)	Recovery Device	PP Line (ft)	Steel Post Anchors	In Water Anchors	Jet Boat Needed?
Boyer Slough	SR200 33.15	200	Portable Skimmer; Vacuum Truck	300	6	0	Yes
Sandpoint Intake	US95 473.84	800	Curtain boom	1,000	0	6	Yes
Long Bridge	US95 472.85	3,500	Portable Skimmer; Vacuum Truck; Absorbent Boom	4,375	8	0	Yes
Sandpoint City Beach	US95 473.90	2,000	Curtain boom	2,500	0	4	Yes
		6,500		***8,175***	***14***	***10***	

Related Sectors

Sector 4A

Hazard Zone E — SR 200 Trestle Creek to Pack River

General Strategy Description: Open Water Collection

Staging Area Common Name	Staging Area
Trestle Creek	SR200 42.59

Suggested Boat Launches	Site ID
Trestle Creek	SR200 42.59
Hawkins Point	SR200 41.38
Hope Boat Basin	SR200 44.98

Suggested Strategies	Site ID	Equipment Needs					
		Curtain Boom (ft)	Recovery Device	PP Line (ft)	Steel Post Anchors	In Water Anchors	Jet Boat Needed?
Pack River Bridge	SR200 38.69	700	Curtain booms	900	18	0	No
Pack River Trestle	SR200 40.78	300	Curtain boom	450	10	0	Yes
Sunnyside Intake	SR200 41.28	550	Curtain boom	650	0	1	Yes
Trestle Creek	SR200 42.09	950	Curtain boom	1,250	6	3	Yes
		2,500		***3,250***	***34***	***4***	

Related Sectors

Sector 4A

Sector 5

Hazard Zone F SR 200 Clark Fork to Hope

General Strategy Description: Open Water Collection

Staging Area Common Name	Staging Area
Denton Slough	SR200 50.40

Suggested Boat Launches	Site ID
Island View	SR200 51.63
	SR200 49.76
Beyond Hope	SR200 47.90

Suggested Strategies	Site ID
Denton Slough	SR200 50.4
David Thompson	SR200 50.19
Kullyspell Intake	SR200 49.45
Islandview Intake	SR200 48.08
Red Fir Intake	SR200 46.4

Related Sectors

Sector 5

Sector 6

Equipment Needs					
Curtain Boom (ft)	Recovery Device	PP Line (ft)	Steel Post Anchors	In Water Anchors	Jet Boat Needed?
1,900	Vacuum truck & skimmer	2,400	10	3	Yes
400	Curtain boom	525	6	1	Yes
1,500	Curtain boom	1,900	6	1	Yes
550	Curtain boom	750	0	3	Yes
900	Curtain boom	1,100	8	3	Yes
5,250		***6,675***	***30***	***11***	

Hazard Zone G Clark Fork Delta

General Strategy Description: Diversion to collection area

Staging Area Common Name	Staging Area
Clark Fork Drift Yard Boat Ramp	SR200 51.69

Suggested Boat Launches	Site ID
Clark Fork Drift Yard Boat Ramp	SR200 51.69
Derr Island Boat Ramp	SR200 54.83
Johnson Creek Boat Ramp	SR200 54.28

Note: Not all of these strategies would be deployed simultaneously.

Suggested Strategies	Site ID
Mouth of Clark Fork	SR200 55.3
Clark Fork Dam	SR200 62.95
Clark Fork Bridge	SR200 56.05
Johnson Creek Trestle	SR200 54.83

Equipment Needs

Curtain Boom (ft)	Recovery Device	PP Line (ft)	Steel Post Anchors	In Water Anchors	Jet Boat Needed?
8,400	Skimmer & vacuum truck	1,000	20	5	Yes
1,300	Skimmer & vacuum truck	1,700	8	2	Yes
1,100	Curtain boom vacuum truck	1,350	5	2	Yes
300	Curtain boom	400	6	10	Yes

Related Sectors

Sector 6

4.5 Water Users

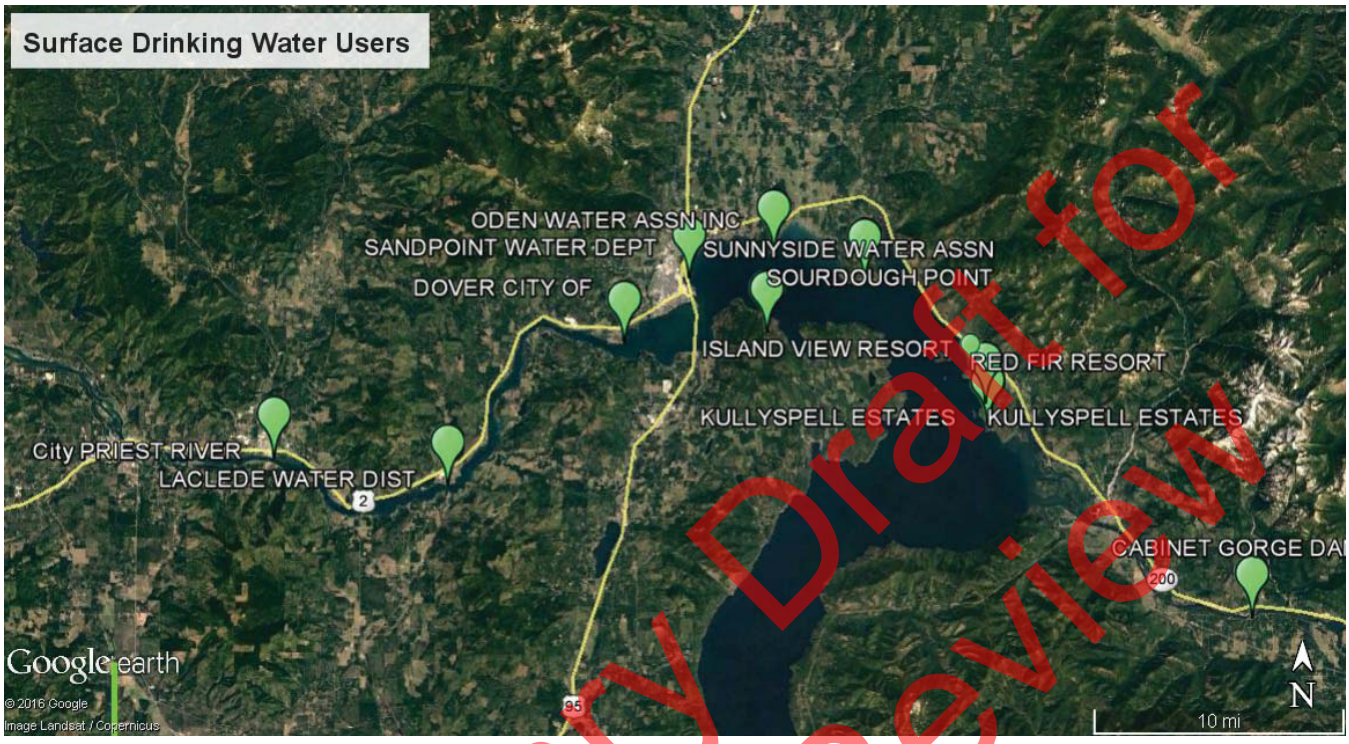
Bonner County has 19 registered public water systems that obtain surface water. Of these, eleven actively draw water from Lake Pend Oreille or the Pend Oreille River. Table 4-5 lists those water users and current contact information; Figure 4-7 shows their general location. These water systems are most likely to be adversely affected by a nearby hazardous material spill. The strategy reports in Appendix B provide guidance for notifying and protecting these water systems and their sources. The remaining public water systems draw surface water from tributary streams that are not adjacent to the transportation corridors.

Bonner County also has several hundred private and public water system wells, and the list of those wells is dynamic. In the event of a hazardous material spill, the Idaho Department of Water Resources should be contacted so that they can assist in notifying nearby water users. Contact the drinking water supervisor in the Coeur d'Alene regional office at 208-769-1422.

Table 4-5: Public Water Systems Drawing Surface Water from Lake Pend Oreille or Pend Oreille River

Sector	Strategy Sheet Identifier (See Appendix B)	Public Water System Number	Public Water System Name	Administrative Contact Phone	Source Name
1A	US2 6.38	ID1090107	City of Priest River	208-448-2123	Pend Oreille River
2	US2 14.37	ID1090073	Laclede Water Dist.	208-265-4270	Pend Oreille River
2	US2 25.63	ID1090193	City of Dover	208-755-1116	Pend Oreille River
3B	US95 473.84	ID1090121	Sandpoint Public Works Dept.	208-263-3407	Lake Pend Oreille
4A	SR200 33.15	ID1090092	Oden Water Assn. Inc.	208-255-4001	Lake Pend Oreille
4A	SR200 41.28	ID1090132	Sunnyside Water Assn.	208-265-4270	Lake Pend Oreille
5	SR200 46.4	ID1090113	Red Fir Resort	208-264-5287	Lake Pend Oreille
5	SR200 48.08	ID1090057	Island View Resort	208-264-5509	Lake Pend Oreille
5	SR200 49.45	ID1090053	Kullyspell Estates	208-290-4184	Pend Oreille River
6	SR200 62.95	ID1090012	Cabinet Gorge Dam	208-266-1531	Lake Pend Oreille
7B	US95 472.98	ID1090129	Sourdough Point	208-265-4270	Lake Pend Oreille

Figure 4-7: Public Water Systems Drawing from Lake Pend Oreille and the Pend Oreille River



4.6 Equipment Cache

Three oil-spill response equipment caches are located in the Lake Pend Oreille region in Sandpoint, Bonners Ferry, and Cabinet Gorge Dam. Appendix D illustrates the current inventory of key items and provides the locations of the caches. The strategy reports in Appendix B indicate the location of the nearest equipment cache (see second page, left side of each strategy report). Additional equipment is available from the Regional Response Team 1 in Coeur d'Alene; their boom inventory is included in Appendix D.

Note that the equipment trailers do not have an assigned or designated tow vehicle to move the trailer. The written inventory provided for the various caches did not clearly quantify the amount of rope and line available.

A comparison of the inventory presented in Appendix D with the equipment needs stated in the prioritization tables (Section 4.4) reveals that the amount of boom and anchor posts available appears adequate for most anticipated needs. A notable exception, however, is the amount of boom needed for the Mouth of the Clark Fork (SR200 55.3), which requires over 8,000 ft of boom. Additionally, recovery devices, such as skimmers and vacuum trucks, are not staged within the Lake Pend Oreille region and would need to be obtained from outside the area. Table 4-6 lists some of the work boats available in the Lake Pend Oreille area that could be used to implement a hazardous material spill response.

Table 4-6: Available Work Boats for Boom Deployment

Boat Type	Most Common Location	Owner / Contact	Additional Equipment
Uncertain	Hope Basin	Idaho Fish and Game	Uncertain
28 ft	Coolin, ID	Bonner County Sheriff	2 ea 225 hp engines
23 ft	Riley Creek		Single 225 hp
26 ft	Dover, ID		Single 225 hp
28 ft	Waterlife		2 ea 225 hp engines
30 ft	Hope Basin		2 ea 225 hp engines
30 ft	Garfield Bay (year round availability)		2 ea 225 hp engines
18 ft	Trailerable—location varies		40 hp. Low draft
24 ft	Trailerable—location varies		Single 225 hp
2 ea Jet skies	Trailerable—location varies		Uncertain
Various private vessels	Various	U.S. Coast Guard Auxiliary[1]	Uncertain
Various	Hope, ID	Kramer Marina	Uncertain
Type 4 Fire Boat	Priest Lake	West Priest Lake Fire	Uncertain
27 ft. Boston Whaler	Sandpoint	Selkirk Fire Department	750 gpm midship pump
27 ft. Jet Boat[2]	Albeni Cove	West Pend Oreille Fire	1750 gpm fire pump 26 in. draft fully loaded
Fire Boat	Coolin-Cavanaugh Bay Priest Lake		Fire boat 385 gpm pump and fire hose
Fire Boat	North of the Narrows Priest Lake		350 gpm pump 400 ft 2.5 in. hose 200 ft 1.5 in. hose 400 ft 1.4 in. wildland hose 400 ft 1 in. wildland hose

1. The local Coast Guard Auxiliary has numerous privately owned vessels that could be deployed for marine traffic control and ancillary duties but are unavailable for boom deployment. Activation is through the ICS and U.S. Coast Guard.
2. As of May, 2017, this boat is in disrepair.

Additionally, there are numerous recreational and sport fishing boats that could become available when requested.

4.7 Evacuation Considerations

Recent experience with crude oil train accidents indicates that the average time between derailment and the onset of fire is less than 20 minutes. On several occasions, the fire started immediately. Once an oil train fire starts, it is extremely difficult to extinguish and has the propensity to spread to other rail cars, the surrounding occupied facilities, and adjacent landscapes. The initial response is almost always defensive until the fire cools sufficiently to begin offensive tactics.

One of the first considerations in response to oil train fires is evacuating people from the blast zone. The North American Emergency Response Guidebook recommends "initial evacuation for 800 meters (1/2 mile) in all directions" (U.S. Department of Transportation, 2016). This recommendation poses a unique problem for the cities in Bonner County because each city was developed adjacent to the rail lines; following the guidebook's recommendation, approximately half of each city would need evacuation, depending on the accident location. Additionally, the evacuation routes out of the city are all two-lane roadways, most notably the long bridge on Sandpoint's south side, which is a traffic bottleneck during high traffic flows.

A further complicating consideration is the predominance of high-occupancy facilities adjacent to the railroad tracks. Appendix E provides a series of maps showing the location of high-occupancy facilities and the rail lines. The appendix also includes the name and contact information for those facilities.

In accordance with the Bonner County Evacuation and Reception Plan, the governor of Idaho is responsible for issuing *mandatory* evacuation orders. Voluntary evacuation recommendations are made by the Bonner County Sheriff (Bonner County, 2010a), in coordination with the Bonner County Commissioners and Emergency Management. In the event of an oil train derailment, the Bonner County 9-1-1 Dispatch Center should immediately notify both the sheriff and the county commissioners; evacuation of the neighboring area should begin without delay. If resources are limited, evacuation considerations should take precedence over strategy deployment or offensive firefighting.

Due to the physical limitations of their occupants, hospitals, nursing homes, and assisted living facilities face a unique challenge in their ability to evacuate. Such facilities may need to shelter in place rather than evacuate.

Additional evacuation considerations are found in the Bonner County Evacuation and Reception Plan (Bonner County, 2010a).

4.8 Boat Ramps and Staging Areas

The Lake Pend Oreille region has at least 35 boat ramps scattered along the Clark Fork River, Pend Oreille River, and the lake itself. The boat ramps vary in quality and size. In addition, their usability is highly dependent on the lake's water level. The USACE controls flow at Albeni Falls Dam such that the pool level varies between 2,051.5 ft and 2,062.5 ft above msl. Figure 4-1 shows the pool level throughout the water year. Most boat ramps are unusable below a lake elevation of 2,056 ft; thus, water access to deploy a hazardous material spill response is severely restricted between mid-October and mid-May. The only two boat ramps that are reliably suitable for year-round response deployment are located at Priest River and Hope Basin. Response time from those sites to an accident location may be further complicated by wind, weather, and occasionally ice.

Appendix F provides a summary of the boat ramps and marinas, as well as their mapped locations. Each marina and boat ramp is further detailed in the appendix.

The current water level information is available from the National Weather Service Advance Hydrologic Prediction Service at http://water.weather.gov/ahps2/hydrograph.php?gage=hopi1&wfo=otx.

4.9 Natural Gas Pipelines

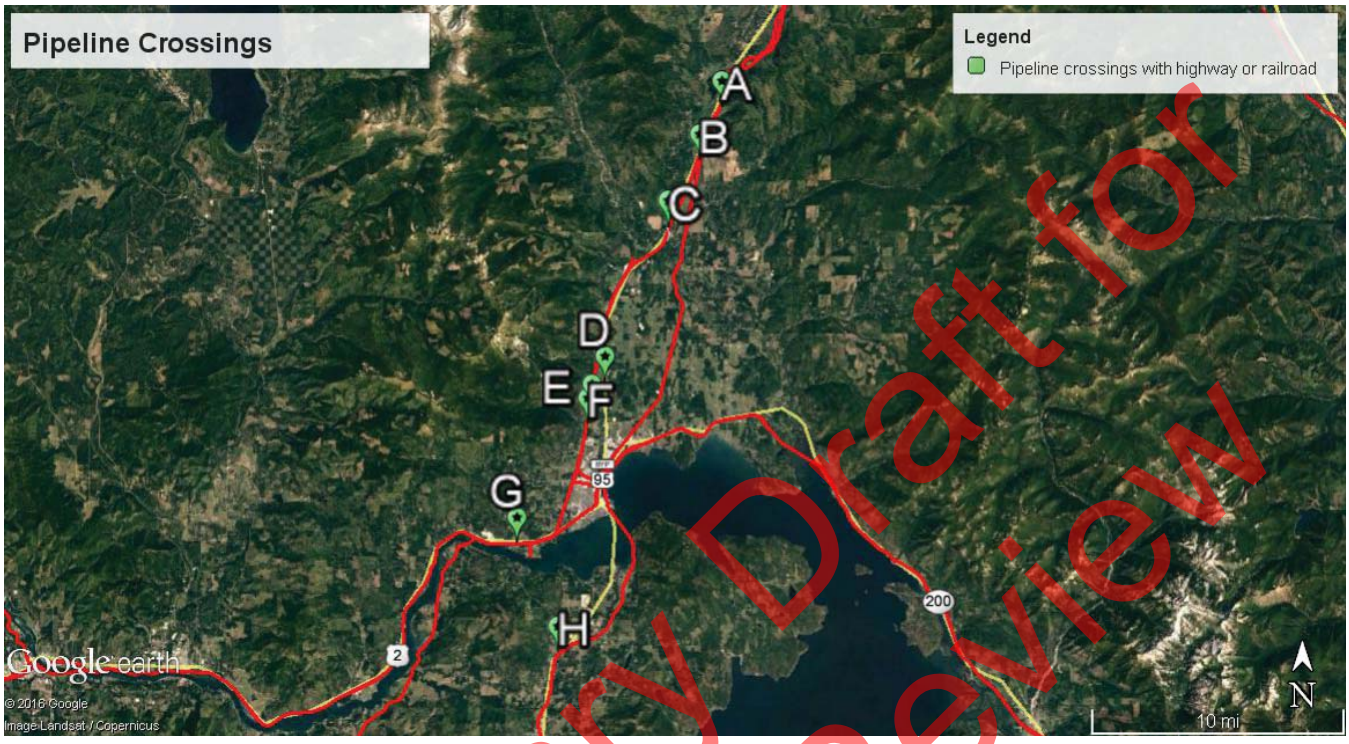
TransCanada Pipeline Company operates a natural gas transmission pipeline that runs north to south in Bonner County. The pipeline generally parallels US 95 except near Sandpoint where it is located west of the city and crosses the Pend Oreille River in Dover. Figure 4-8 shows the approximate locations where the pipeline crosses a major highway or railroad track. These locations are tabulated in Table 4-7.

Table 4-7: Natural Gas Pipeline Crossings with Transportation Routes

Map Designator	GPS Coordinates	Nearest Response Strategy Location	Highway or Rail Crossing
A	48.500889, -116.446502	No nearby strategies	Close proximity to US 95 and rail lines
B	48.470561, -116.465927	No nearby strategies	Close proximity to US 95 and two rail lines
C	48.4272, -116.4923	No nearby strategies	Crosses county road NF 280 Two rail lines nearby.
D	48.344051, -116.547256	US 95 480.44 approximately 4800 ft to the north	US 95
E	48.32875, -116.558449	US95 478.53	West Bronx Rd and rail line
F	48.320165, -116.562083	US 478.53 US95 479.99	Schweitzer Mountain Rd and rail line
G	48.252148, -116.622774	US2 24.33 US2 24.89	US Highway 2 and rail line.
H	48.190075, -116.587701	No nearby strategies	US 95 and rail lines
I	48.015311, -116.655924	No nearby strategies	US 95 and rail lines

In the event of a spill in any of these areas, the pipeline company should be notified that emergency action may be needed. See the contact sheet inside the front cover.

Figure 4-8: Pipeline Crossings with Highway or Railroad



4.10 Other Geographic Response Plans—Rosetta Stone

BNSF Railway and MRL have also drafted geographic response plans for the Lake Pend Oreille region. As of June 2017, those plans differ in their completeness, scope, and, in some cases, response strategy approach. Most notably, the site identification nomenclature differs between the various GRPs. This GRP uses highway milepost numbers as the key designator to help local emergency responders. In contrast, the railroad GRPs use rail milepost numbers as their designator, and each railroad has a different milepost system.

The multiple nomenclatures could lead to confusion between emergency response teams. Appendix G correlates all of the strategies in each of the three GRPs for the Lake Pend Oreille region.

5 Shoreline Countermeasures

Shoreline countermeasures following an oil spill are a critical element in determining the ultimate environmental impact and cost resulting from a spill. Local response organizations and agencies have developed mechanisms for identifying shorelines requiring treatment, establishing treatment priorities, monitoring the effectiveness and impacts of treatment, and resolving problems as the treatment progresses.

The intended audience of this section is responders responsible for assessing and/or removing oil from shorelines.

The Northwest Area Committee has developed a manual and a series of matrices as tools for shoreline countermeasure response. In addition to the following text, recent information on shoreline countermeasures can be found in the Northwest Area Shoreline Countermeasures Manual (NWACP Section 9420), available at http://www.rrt10nwac.com/NWACP/Default.aspx. Each section of the manual has been adapted to the specific environments, priorities, and treatment methods appropriate to the planning area. These elements provide the information needed to select cleanup methods for specific combinations of shoreline and oil types.

Additionally, the National Oceanic and Atmospheric Administration has developed and maintains a Shoreline Assessment Manual, which describes the Shoreline Cleanup Assessment Techniques (SCAT) process and composition, SCAT roles and responsibilities, the methods and process for conducting shoreline assessment, and how to use the results to make cleanup decisions at oil spills. More information on shoreline assessment and the manual can be obtained at http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/shoreline-assessment-manual.html.

5.1 Pend Oreille Shoreline Types

As of 2017, shoreline-type mapping has not been completed on Lake Pend Oreille or the Pend Oreille River. Until such an effort is undertaken, a series of photographs taken in the Pend Oreille region showing example shoreline types is included. These shoreline types can be matched with the shoreline countermeasures matrix to determine appropriate cleanup response. A full list of shoreline types is provided in Table 5-1, and selected examples are provided in the photos that follow.

The following text and photos are in draft form and are intended to serve as a training tool for countermeasure contingency planning and implementation for shoreline areas in EPA Region 10. Shoreline countermeasure processes evolve to reflect increasingly efficient treatment techniques. Accordingly, the following information will be altered as new information is added.

Table 5-1: Shoreline Types and Codes

Code	Lacustrine (Related to Lakes)	Riverine (Related to Rivers, Particularly Large Rivers)
1	Exposed rocky shores	Exposed rocky banks
1B	Exposed, solid human-made structures	Exposed, solid human-made structures
1C	Exposed rocky cliffs with boulder talus base	Exposed rocky cliffs with boulder talus base
2A	Shelving bedrock shores	Rocky shoals, bedrock ledges
3B	Eroding scarps in unconsolidated sediment	Exposed, eroding banks in unconsolidated sediments
4	Sand beaches	Sandy bars and gently sloping banks
5	Mixed sand and gravel beaches	Mixed sand and gravel bars and gently sloping banks
6A	Gravel beaches	Gravel bars and gently sloping banks
6B	Riprap	Riprap
7	Exposed tidal flats	N/A
8A	Sheltered scarps in bedrock, mud, or clay	N/A
8B	Sheltered, solid human-made structures	Sheltered, solid human-made structures
8C	Sheltered riprap	Sheltered riprap
8F	N/A	Vegetated, steeply sloping bluffs
9A	Sheltered sand/mud flats	N/A
9B	Vegetated low banks	Vegetated low banks
10B	Freshwater marshes	Freshwater marshes
10C	Swamps	Swamps
10D	Scrub-shrub wetlands	Scrub-shrub wetlands

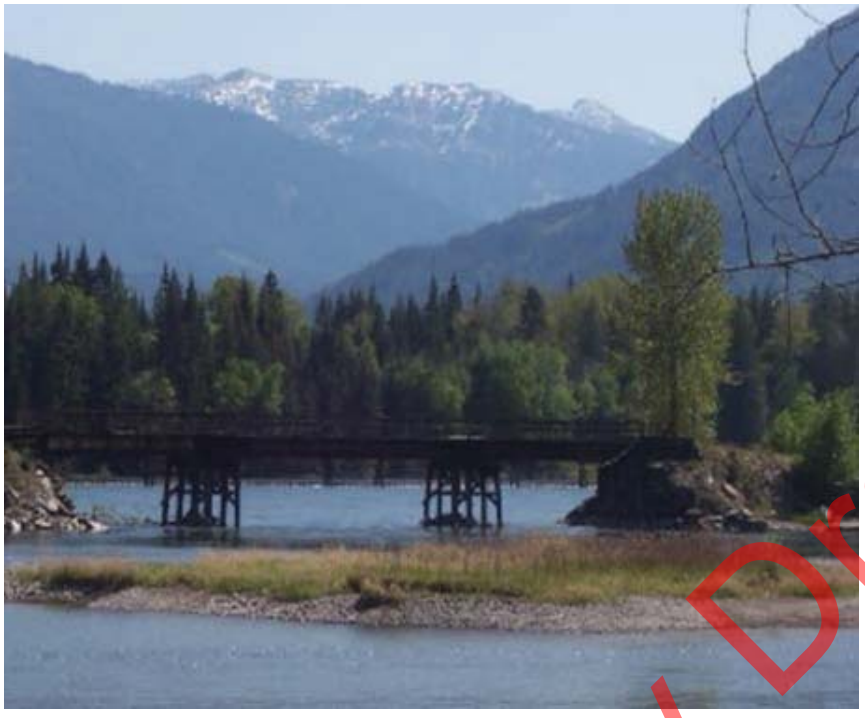
Photo	Description
	**Shoreline Type 1:** Exposed rocky banks
	**Shoreline Type 1:** Exposed rocky shores

Shoreline Type 1B:
Exposed, solid human-made structures

Shoreline Type 3B:
Exposed, eroding banks in unconsolidated sediments

Shoreline Type 5:
Mixed sand and gravel beaches

Shoreline Type 5:
Mixed sand and gravel beaches



Shoreline Type 6A:
Gravel bars and gently sloping banks

Shoreline Type 6A:
Gravel bars and gently sloping banks

Shoreline Type 6A:
Gravel bars and gently sloping banks

Shoreline Type 6B:
Riprap

Shoreline Type 6B:

Riprap

Shoreline Type 8C:
Sheltered riprap

Shoreline Type 8F:
Vegetated, steeply sloping bluff

Shoreline Type 9A:
Sheltered sand/mud flats

Shoreline Type 9B:
Vegetated low banks

Shoreline Type 9B:
Vegetated low banks

Shoreline Type 10B:
Freshwater marshes

6 Resources at Risk

The information presented in this section provides a summary of natural, cultural/historical, and economic resources at risk in the GRP coverage area and is intended to give responders enough detail to make them familiar with key resources that may need protection in the event of a spilled material release. Section 6 should not be considered a comprehensive list of natural, cultural, and economic resources in the GRP coverage area. EPA, USACE, USFS, U.S. Fish and Wildlife Service (USFWS), BLM, U.S. Bureau of Reclamation, U.S. Coast Guard, DEQ, IOEM, IDFG, Idaho Department of Water Resources, Idaho Department of Lands, Idaho Department of Health and Welfare, Kalispel Tribe, and Bonner County Emergency Management resource specialists and dam managers can provide additional information when contacted by responders.

6.1 Natural Resources

The GRP coverage area contains diverse landforms, waterbodies, and ecosystems heavily studied by a consortium of federal, state, tribal, local, and non-governmental entities. Description and manifest of each natural resource present, or potentially present, is outside the scope of this document. Additionally, natural resources, such as bull trout, westslope cutthroat trout, and seasonally migratory species, may be present in the GRP coverage area for portions of the year and absent during others.

The most ecologically productive areas on Lake Pend Oreille and Pend Oreille River are vegetated, shoreline habitats with complex morphology such as islands, marshes, and stream mouths. Notably, the Clark Fork and Pack River Deltas are considered high priority, sensitive areas to both fish and wildlife because the complex habitat that supports high biodiversity, multiple life stages, and is the funnel point for aquatic species migrating to and from the large watersheds feeding the deltas. These deltas continue to be the focus of multimillion dollar restoration efforts and furthermore provide public access for hunting, fishing, and recreation.

In the event of a spilled material release, emergency response managers are encouraged to engage biologists, entomologists, fisheries managers, and resource and technical specialists from federal, state, tribal, and county agencies to aid in determining which natural resources may be present and where, as well as which response efforts may warrant modification to increase sensitivity to a specific resource.

6.1.1 Fish Habitat Descriptions

Lake Pend Oreille contains a multitude of fish habitats. The shallow, nearshore waters most likely to be impacted by a spill provide spawning, nursery, and foraging habitats. Fisheries popular in these areas include bullhead (*Ameiurus melas*), crappie (*Pomoxis nigromaculatus*), perch (*Perca flavescens*), pumpkinseed (*Lepomis gibbosus*), largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), and cutthroat trout provide a popular fishery. Shoreline vegetation provides shade, water quality benefits, and insect prey. Submerged wood and rocks provide shelter from predators and additional benthic

invertebrates for food. Shoreline and tributary gravel beds provide spawning habitat for kokanee, an economically important sport fish and ecologically key prey base for larger species from bull trout to bald eagles.

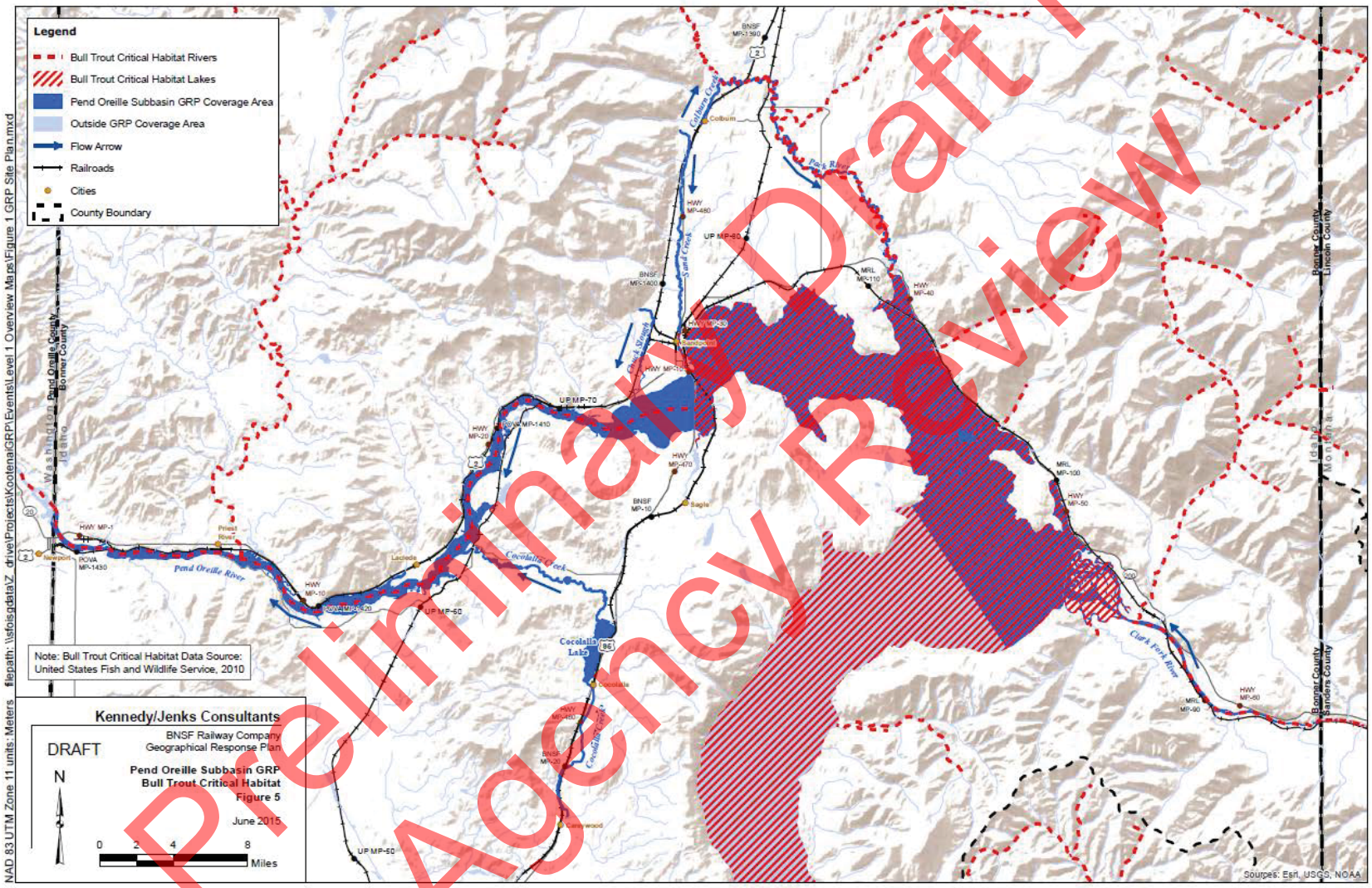
The 26-mile-long Pend Oreille River reach is a warm blackwater reservoir from June through September and cold, flowing river from October through May. Artificially high water from dam operations has eliminated the natural vegetative cover along the shoreline, causing severe erosion and losses to quality fish habitat. The lower portions of Sand and Schweitzer Creeks are similarly affected by dam operations, channelization, and shoreline armoring. River inundation has improved habitat conditions for warmwater gamefish such as bass and crappie. Rainbow, cutthroat, brown, and bull trout use these areas seasonally when the rivers are cold and flowing.

Pelagic (open-water) habitats contain deep, cold water refugia, a large prey base including mysid shrimp and zooplankton, and migratory corridors important for genetic dispersal.

Most Pend Oreille tributaries provide cold, well-oxygenated riverine habitat preferable to native species and introduced trout. Trestle Creek, Lightning Creek, and the Pack River and tributaries are currently considered the most productive tributaries for bull trout in the GRP coverage area. The Clark Fork River, Pend Oreille River, Lake Pend Oreille, and Priest River are also federally designated critical habitat for bull trout (Figure 6-1). Late summer through fall is a particularly vulnerable time for bull trout, when adults are staging at the mouths of Johnson Creek, Lightning Creek, Trestle Creek, Strong Creek, Priest River, and the Pack River.

Cocolalla Lake contains a mixed-bag fishery including trout, crappie, sunfish, bass, catfish, suckers, and bullhead. Cocolalla Creek is known to contain brown, rainbow, and cutthroat trout along with other nongame species.

Figure 6-1: Pend Oreille Sub-Area GRP Bull Trout Critical Habitat[2]



[2] Figure provided courtesy of BNSF Railway Company.

6.1.2 Fish

Anglers are estimated to spend over $24,000,000 per year in Bonner County (IDFG, 2003). Fish in the GRP area are important ecological components of the region's food web and are culturally important to local tribes and residents. Native salmonids are used as indicator species of clean, cold water.

This section addresses fish resources in the following areas: Lake Pend Oreille north of Granite Creek, Sand Creek from its confluence with Lake Pend Oreille upstream to its headwaters, Schweitzer Creek from its confluence with Sand Creek to North Boyer Road, and the Pend Oreille River from its confluence with Lake Pend Oreille downstream to the Albeni Falls Dam. Information included in this document is summarized from materials listed in the reference section.

No anadromous fish species are present in the Upper Pend Oreille Sub-Area due to hydroelectric facilities blocking fish passage. Native salmonids in the Pend Oreille watershed include bull trout (*Salvelinus confluentus*), westslope cutthroat trout (*Oncorhynchus clarkii*), pygmy whitefish (*Prosopium coulterii*), and mountain whitefish (*Prosopium williamsoni*) (BPA et al., 2014). The remaining native species are several types of minnow, sculpin, and suckers. The recreational fishery includes many additional non-native species like basses, perch, and bullheads.

Four species in the Pend Oreille system are actively managed by IDFG. These fish species consist of westslope cutthroat trout, rainbow trout, kokanee, and bull trout. These species represent sensitive salmonid species with significant research and management focus and are discussed further below.

6.1.2.1 Endangered Species Act (ESA)-Listed Fish Species

The USFWS identifies federally threatened, endangered, and candidate species that are important for protection because of their greater possibility of extinction. Specific Endangered Species Act-listed fish species are identified in Table 6-1.

Table 6-1: Federally Listed ESA Fish Species within the GRP Coverage Area

Common Name	Scientific Name	ESA Status
Bull Trout	*Salvelinus confluentus*	Threatened

(USFWS, 2015a)

6.1.2.2 Westslope Cutthroat Trout

Westslope cutthroat trout (*Oncorhynchus clarki)* are abundant throughout the Upper Pend Oreille Sub-Area. The westslope cutthroat trout is a federal species of special concern. Cutthroat trout found in Lake Pend Oreille are adfluvial, which means they reside in the lake environment after maturity but migrate to tributary streams to spawn. The young remain in streams for 2 to 5 years then return to the lake. Spawning takes place in the spring from April to May in small tributary streams. Redds are developed in gravel and spawning occurs during the

day or night. Fry emerge from the gravel in June and July. Juvenile westslope cutthroat mature between 4 and 7 years of age. Juvenile cutthroat trout rear in their native stream. As the fish mature, some will migrate to the Lake Pend Oreille (adfluvial) or stay near their natal stream (resident). Cutthroat in Lake Pend Oreille are believed to use shoreline habitat rather than open, deep water habitat where large, predatory bull trout and lake trout occur. Cutthroat trout will be most sensitive to spill risk during the spring (April to early June) when upstream migration to headwater spawning streams may be blocked.

6.1.2.3 Rainbow Trout

Although rainbow trout (*Oncorhynchus mykiss)* are native to Idaho and common to many of the state's streams and lakes, they are not native to the Pend Oreille system (IDFG, 2013). Rainbow trout in the GRP coverage area are hatchery origin fish. Rainbow trout spawn in streams from mid-April to late June. They use areas of gravel or cobble, depending on the size of the fish. The eggs hatch in early to mid-summer. Young fish may live in the stream a few months, several years, or their entire life. When they mature and are ready to spawn, they migrate back to where they were born. Most rainbow trout require 3 to 5 years to mature. Rainbow trout eat insects and zooplankton in the water or on the surface. They will also feed on small fish and fish eggs.

6.1.2.4 Kokanee

Kokanee (*Onchorhynchus nerka*), the landlocked variant of sockeye salmon, are found in large, deep lakes and reservoirs across Idaho, including Lake Pend Oreille. Kokanee provide a major recreational fishery on Lake Pend Oreille and provide a food base for larger species from bull trout to bald eagle. Eggs are laid in gravel low in the tributaries or along the nearshore in gravel beds. Given these spawning habitat preferences, kokanee have a high risk of being affected by a spill during spawning and incubation periods, September through June. Kokanee spawn in tributary streams or along the shore of the lake. Migration to streams takes place from September through December, where kokanee dig redds similar to other salmonids and die after spawning. Kokanee that remain in the lake spawn on the rocky bottom of the lake. In early spring, fry emerge from the gravel, with those emerging in tributary streams moving downstream to Lake Pend Oreille at night. Juvenile kokanee prefer habitat in the middle of the lake rather than near shoreline habitat. Kokanee feed primarily on zooplankton and occasionally eat aquatic insects. During the summer, they prefer deep water habitat in the lake until dusk.

6.1.2.5 Bull Trout

Bull trout (*Salvelinus confluentus*) are currently listed as a federal threatened species under the ESA. Native to Idaho, bull trout occur in most of the mountain creeks, rivers, and lakes of the Upper Pend Oreille Sub-Area. Most of the waterbodies within the GRP coverage area are designated as critical habitat for bull trout under the ESA (Figure 6-1). Although they are widely distributed, bull trout are not abundant. The USFWS Bull Trout Recovery Plan (USFWS, 2015c) identifies Lake Pend Oreille as a primary core area for bull trout recovery. Adult upstream migration of bull trout takes place in the fall. Bull trout typically spawn between September and late December, with the peak spawning occurring in October in streams with cool water and

good gravel. After spawning, adults move into lakes or deeper pools to rest. The eggs hatch in the winter and the small fish live in the gravel until early spring. The juveniles may remain in the stream or migrate back to Lake Pend Oreille. Juvenile bull trout feed on aquatic insects.

Once in the lake, the fish sexually mature within 4 to 6 years. Adults are predatory, eating primarily the fish eggs of other fish. Adult bull trout may spawn several times during their lives, but may not spawn each year. Bull trout are primarily threatened by habitat degradation and fragmentation, blockage of migratory corridors, poor water quality, the effects of climate change, and past fisheries management practices, including the introduction of nonnative species, such as brown, lake, and brook trout (USFWS, 2014).

6.1.3 Avian and Terrestrial Species

Within the GRP coverage area, sightings or known distributions of ESA-listed species or Idaho's species of greatest conservation need consist of North American wolverine, Canada lynx, southern Selkirk Mountain woodland caribou, and grizzly bear. Of these listed species, none are associated with Lake Pend Oreille year round.

6.1.3.1 ESA-Listed Terrestrial Species

The USFWS identifies federally threatened, endangered, and candidate species that are important for protection because of their greater possibility of extinction. ESA-listed terrestrial species in the GRP coverage area are listed in Table 6-2.

Table 6-2: Federally Listed ESA Avian and Terrestrial Species within the GRP Coverage Area

Common Name	Scientific Name	ESA Status
Canada lynx	*Lynx canadensis*	Threatened
Grizzly bear	*Ursus arctos horribilis*	Threatened
Southern Selkirk Mountains woodland caribou	*Rangifer tarandus caribou*	Endangered
North American wolverine	*Gulo gulo luscus*	Proposed threatened

(USFWS, 2015a)

The lynx, grizzly bear, caribou, and wolf may be present in the northern reaches of Bonner County, but sightings adjacent to the transportation corridors of Lake Pend Oreille or the Pend Oreille River are highly unusual. Bald eagle sightings are common throughout the GRP coverage area.

6.1.3.2 Bald Eagle

Historically, bald eagles occurred throughout the United State in large numbers. Bald eagles were once listed as endangered. Species recovery has been tracked through breeding-pair surveys, nest monitoring, and winter roost surveys. In Idaho surveys, a recovery zone in the vicinity of the Pend Oreille River and Lake Pend Oreille has shown that populations of bald eagles have increased in recent years (IDFG, 2017).

The Lake Pend Oreille basin is part of Eagle Recovery Zone 7, which includes the panhandle of Idaho. In 1996, a statewide nesting survey found eight nesting territories in the vicinity of Lake Pend Oreille and the Pend Oreille River. Four nesting territories located around Lake Pend Oreille include Fisherman Island, Eaton Lake, Warren Island, and Oden Bay. Nesting territories identified along the Pend Oreille River include Cocolalla Slough, Morton Slough, Springy Point, and Sheepherder Point. Seven of these nests were identified as occupied, and five were identified as successful in incubating eggs and fledging young.

Nests are located in the uppermost crotch of tall trees. Bald eagles incubate eggs for 45 days, and in about 8 weeks, young fledge from the nest. Eagles often migrate in the winter and roost and hunt in groups along waterways that have abundant food supplies, such as Lake Pend Oreille. Annually, large numbers of bald eagles migrate to Lake Pend Oreille to feed on spawned-out kokanee and waterfowl. The continued protection of bald eagle nesting areas and wintering habitat will allow for the continued recovery of bald eagle populations throughout Idaho, as well as the rest of the United States.

6.1.3.3 Canada Lynx

The Canada lynx is an ESA-listed threatened species and is on the Idaho list of species of greatest conservation need. Trapping and other data identify the lynx as occurring in Ferry, Pend Oreille, and Stevens Counties in Washington (Stinson, 2001). The lynx is also present in Idaho's Kootenai and Benewah Counties (IDFG, 2001) and is known to be present in the Selkirk and Cabinet mountain ranges and are known to migrate across the rail and highway corridors in Bonner County (personal communication from Kira Santari, IDFG).

The Canada lynx is closely associated with high-elevation forests, especially those dominated by lodge pole pine, subalpine fir, or Engelmann spruce (NPCC, 2005a). The lynx's key ecological function is consumer (predator) of herbivorous vertebrates, primarily snowshoe hare (NPCC, 2005a).

The Pend Oreille, San Poil, and Upper Columbia Subbasins overlap at least one of the six Lynx Management Zones (LMZs) or subsequent Lynx Analysis Units established by the Washington Department of Fish and Wildlife (Stinson, 2001). Even though LMZs do not encompass all areas potentially used by lynx, habitat management within these zones is expected to hold the greatest promise for supporting lynx populations (NPCC, 2005a).

Canada lynx habitat was not directly affected by construction of the Federal Columbia River Power System projects in the IMP. Indirect effects of the projects that have affected high-elevation forests include increased timber harvest, road development, and increased hunting and recreation pressure (NPCC, 2005a).

Lynx are affected by 1) prey availability—especially snowshoe hare—that is influenced by cyclic populations and habitat loss from timber harvest or insect infestation; 2) road development, which facilitates other carnivores and humans to reach formerly remote areas during winter; and 3) susceptibility to trapping, especially for kittens and yearlings (NPCC, 2005a).

6.1.3.4 Grizzly Bear

The grizzly bear is ESA-listed as threatened and is an Idaho species of greatest conservation need. Its historical range in North America extended from the mid-plains westward to the California coast and included the states of Idaho and Washington (NPCC, 2005a).

Currently, the grizzly is known to reside in the Selkirk and Cabinet-Yaak ecosystem (IGBC, 2017). Most of the Pend Oreille Subbasin is within the Selkirk Recovery Zone, and it also borders the Cabinet/Yaak Recovery Zone (NPCC, 2005a).

Federal recovery efforts in the Selkirk Recovery Zone include 1) population monitoring; 2) coordinated protection enforcement; 3) selective pest control; 4) reduction in human disturbance or habitat loss from timbering, livestock grazing, energy/mineral development, recreation, or land use zoning; and 5) public awareness. The primary limiting factors for grizzly bear recovery are accidental or purposeful human-caused mortality and loss of remaining habitat (NPCC, 2005a).

The grizzly provides at least six key ecological functions: 1) consumer or predator of herbivorous vertebrates, 2) consumer of carrion, 3) creator of large burrows used by other wildlife, 4) controller of terrestrial vertebrate populations via predation or displacement, 5) disperser of seeds/fruits via ingestion or caching, and 6) creator of feeding opportunities for other carnivores or scavengers. The bear has a strong and consistent relationship (direct consumer at specific stages in its life history or at specific seasons) with the spawning and carcass stages of salmonid life history (IBIS, 2003).

6.1.3.5 Woodland Caribou

The woodland caribou is listed as endangered by the federal government and is an Idaho species of greatest conservation need. Prior to 1900, this animal was distributed throughout much of Canada and the northern conterminous United States (NPCC, 2005a). The species occurred in Idaho as far south as the Salmon River (Evans, 1960). Presently, the last remaining woodland caribou population in the United States is restricted to the Selkirk Mountains of northeastern Washington, northern Idaho, and southeastern British Columbia (NPCC, 2005a). Though Southern Selkirk Mountains woodland caribou critical habitat does not include the GRP coverage area, U.S. counties in which the woodland caribou, Selkirk Mountain population, is known to or is believed to occur include Bonner County (USFWS, 2015b) but is not believed to occur near major transportation corridors.

The Southern Selkirk Mountains woodland caribou subpopulation was augmented between 1996 and 1998 with 43 caribou from British Columbia placed into Washington and immediately north of the border (Almack, 2001). Caribou recovery efforts are focused on maintaining two existing herds in the Selkirk ecosystem, establishing a third herd in Washington, and managing at least 443,000 acres of suitable and potential habitat (USFWS, 1993b). Managing human access, educating hunters, enforcing protective laws, and augmenting the population are also planned (NPCC, 2005a).

The caribou has a general association with wetland, riparian, and upland forest habitats, especially mature or old trees with abundant lichens, and provides at least four key ecological functions: 1) consumer of grasses, forbs, and woody leaves; 2) transporter of viable seeds, spores, plants, or animals; 3) disperser of lichens; and 4) creator of woody debris fragments (NPCC, 2005a).

Factors that limit caribou recovery are 1) excessive mortality—particularly for calves during their first few months—due to weather, predation, abandonment, poaching via road access, or accidents and 2) habitat fragmentation or loss, especially the continued availability of arboreal lichens (NPCC, 2005a).

6.1.3.6 Other Species of Interest

Though not ESA-listed within the GRP coverage area, the following terrestrial species may be of interest, either due to being ESA-listed in areas surrounding the GRP coverage area, recently de-listed, or having ecological, cultural, and/or recreational importance to the GRP coverage area itself.

Waterfowl are considered a flagship species in the GRP area. The waterfowl use of the GRP area typically peaks in November and December. Waterfowl numbers have been as high as 60,000 ducks, 15,000 Canada geese, and 2,000 tundra swans. Sites that typically support thousands of waterfowl during migration in the spring and fall include Morton Slough, Oden Bay, the Pack River Delta, Denton Slough, and the Clark Fork River Delta.

Waterfowl are important game and cultural species and are closely tied to emergent wetlands and open water habitats in Lake Pend Oreille and the Pend Oreille River. Approximately 40 species of waterfowl are associated with these waterbodies. Over 30 species of greatest conservation need have been identified in the Okanogan Highlands Ecological Section, which includes the GRP coverage area. Loons, grebes, cormorants, mergansers, ducks, geese, and tundra swans are among the many migratory waterfowl that are common within the Upper Pend Oreille Sub-Area.

The northern Idaho ground squirrel (*Spermophilis brunneus brunneus*) and the yellow-billed cuckoo (*Coccyzus americanus*) are federally listed as threatened in Idaho but are not known to occur within the GRP coverage area (USFWS, 2015b).

Other species of interest include the pygmy rabbit (*Brachylagus idahoensis*), American white pelican (*Pelecanusery throrhynchos*), ferruginous hawk (*Buteo regalis*), fisher (*Martes pennanti*), northern leopard frog (*Rana pipiens*), peregrine falcon (*Falco peregrines*), sage grouse (*Centrocercus urophasianus*), sandhill crane (*Grus canadensis tabida*), Columbian sharp-tailed grouse (*Tympanuchus phasianellus columbianus*), and upland sandpiper (*Bartramia longicauda*) (Kennedy/Jenks, 2015).

Big game may be present in the GRP coverage area, particularly in the Wildlife Management Areas (WMAs) and agricultural fields. White-tailed deer, moose, elk, black bear, and mountain lion are highly valued by hunters and prioritized for management by IDFG biologists. Furbearers

including beaver, muskrat, river otter, bobcats, and raccoons are likely to utilize wetland habitats in the GRP coverage area.

6.1.3.7 Species most likely to be effected by a spill

The species of greatest conservation need most likely to be affected by a spill (based on habitat preferences) include the following aquatic, semi-aquatic, and riparian associated species: western toad, northern leopard frog, harlequin duck, common loon, western grebe, American bittern, black tern, olive-sided flycatcher, western pearlshell mussel, California floater, ridged mussel, and a mayfly (*Ephemeralla alleni*).

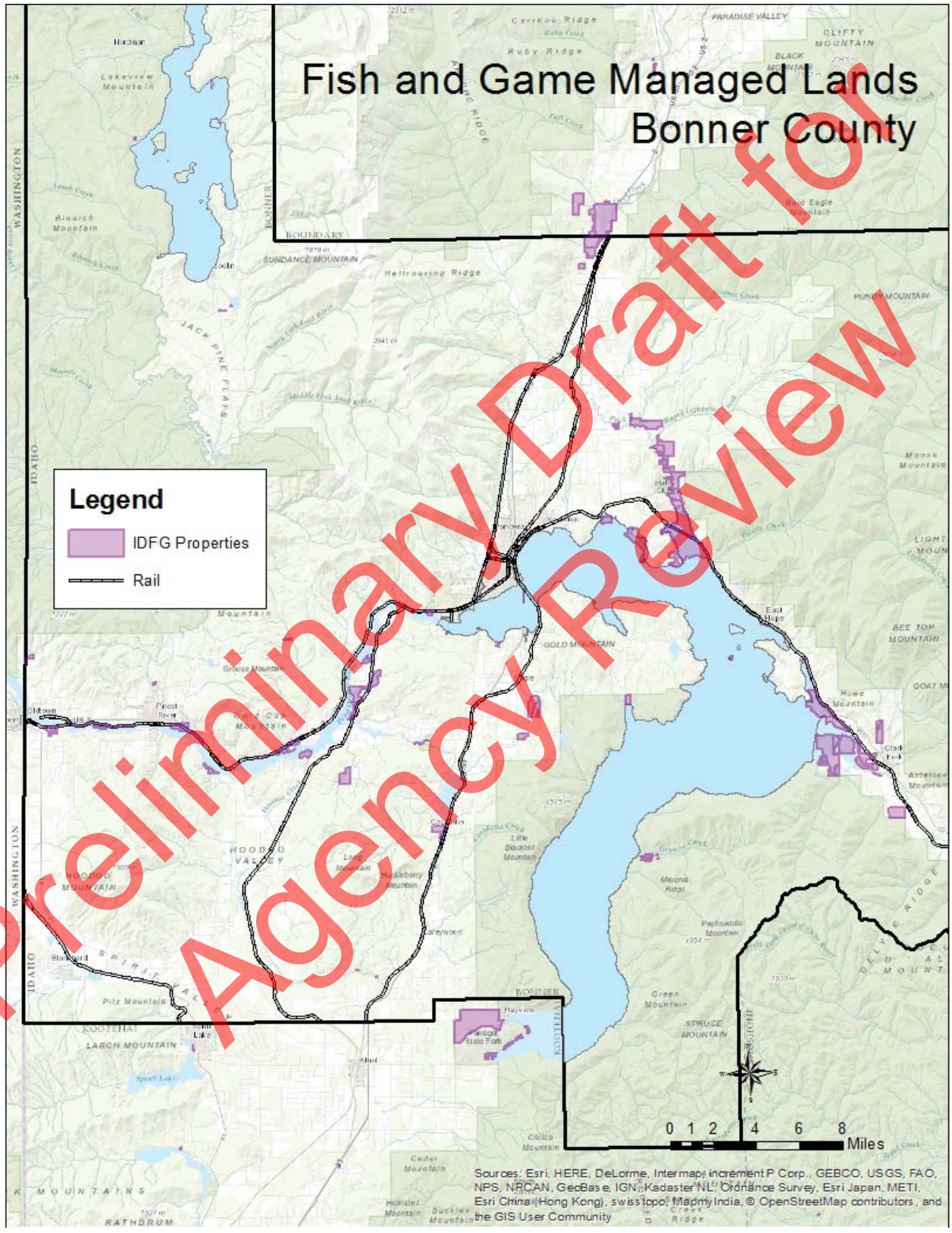
6.1.4 Wildlife Management and Protected Habitat Areas

6.1.4.1 Pend Oreille Wildlife Management Area

The Pend Oreille WMA is managed by IDFG and includes numerous sub-parcels scattered throughout the GRP coverage area. Figure 6-2 shows the approximate location of lands within the GRP coverage area that are managed by IDFG. IDFG manages approximately 6,000 acres along Lake Pend Oreille, the Pend Oreille River, the lower Pack River and the Clark Fork River. The majority of the sub-parcels have surface water connectivity to the GRP coverage area waterbodies.

The Pend Oreille WMA supports migrating and wintering waterfowl in large numbers. Tundra swans, Canada geese, American widgeon, redheads, mallards, common mergansers, common goldeneye, bufflehead, and ring-necked ducks are common. Areas of particular interest include Denton Slough for western grebe courtship displays and the Clark Fork River Delta for common loon watching (IDFG, 2015a).

Figure 6-2: Fish and Game Managed Lands, Bonner County



6.1.4.2 National Wildlife Refuges

No national wildlife refuges are present within the GRP coverage area.

6.1.4.3 Albeni Falls Wildlife Mitigation Project

The Albeni Falls Wildlife Mitigation Project was developed to protect, enhance, and maintain the long-term quality of wetland and riparian wildlife habitat in the Lake Pend Oreille vicinity as ongoing mitigation for construction of Albeni Falls Dam. The long-term conservation potential for the project is primarily protecting existing high-quality wetland habitat but also includes protecting habitat with high restoration potential (NPCC, 2005a).

Albeni Falls Interagency Work Group members include the IDFG, Coeur d'Alene Tribe, Kalispel Tribe of Indians, Kootenai Tribe of Idaho, USFWS, USACE, Natural Resources Conservation Services, and USFS. The work group established priority mitigation focus areas by considering in-place/in-kind opportunities, the threat to wetland plant communities in the primary areas of impact, juxtaposition to other management areas, and availability of protection opportunities. The work group implements the Albeni Falls Wildlife Mitigation Project by way of formal agreement and implements projects in the Upper Pend Oreille, Lower Pend Oreille, Priest River, Kootenai, and Coeur d'Alene subbasins (NPCC, 2005a).

Using Bonneville Power Administration (BPA) funds, the IDFG, in coordination with the work group, developed the Albeni Falls Wildlife Protection, Mitigation, and Enhancement Plan (Martin et al., 1988). The plan not only identifies the wildlife habitat benefits and impacts associated with the construction and operation of Albeni Falls Dam, but it also identifies potential areas to mitigate wildlife habitat losses. The BPA completed the Albeni Falls Wildlife Management Plan Environmental Assessment in 1996 (BPA, 1996). The plan is a programmatic guide to developing wildlife mitigation projects in the Upper Pend Oreille, Lower Pend Oreille, Priest River, Kootenai, and Coeur d'Alene subbasins (NPCC, 2005a).

6.1.4.4 Pack River Delta Restoration

The Pack River Delta is a unique wetland feature feeding into the north shore of Lake Pend Oreille. The Ducks Unlimited organization has been instrumental in coordinating its restoration. The following information was obtained from their website (Ducks Unlimited, 2017):

> The Pack River is the second largest tributary to Lake Pend Oreille and drains more than 185,000 acres into what was once a large and diverse mosaic of forested islands, oxbow lakes, lush wetlands and braided river channels. The hope is that lessons learned from the Pack River project can be applied to restore the larger Clark Fork River delta. The Clark Fork River is the lake's largest tributary.
>
> With the construction of Albeni Falls dam in 1955, much of the nearly 1,444-acre Pack River delta became submerged under several feet of water for much of the summer, dramatically changing the environment in the lower delta. In total, it is estimated that the construction of the dam resulted in the loss of 6,617 acres of wetland habitat and the inundation of 8,900 acres of deep-water marsh on the lake, impacting many resident and migrating birds, particularly waterfowl. One of the hardest hit was the wintering redhead duck population, which numbers in the tens of thousands.
>
> The goal of the restoration project was to increase the height and stability of a portion of the summertime submerged islands to improve their ability to support high-value habitat for numerous species of

waterfowl and wildlife year-round. The first step was to reconstruct the islands and other physical features that once supported a system of intertwined wetlands and riparian habitats. This required moving large quantities of soil within the delta using excavators and dump trucks in sometimes challenging conditions.

Some of the native vegetation that once occupied these sites was then replanted in the form of seeds, plugs and cuttings. Emergent aquatic vegetation such as cattail and bulrush were planted along the island shorelines, while the islands were planted with thousands of willow, cottonwood, western red cedar and red-osier dogwood. To encourage settling of river sediments in the project area, some side channels were plugged with logs and stumps to replicate this important physical process. In time, this may cause the constructed islands to expand in size and additional islands to form naturally.

The project took place on lands owned by USACE and managed by IDFG. The project was completed in 2009. The lessons learned from the Pack River project were applied to restore the larger Clark Fork River Delta.

6.1.4.5 IDFG Clark Fork River Delta Restoration Project

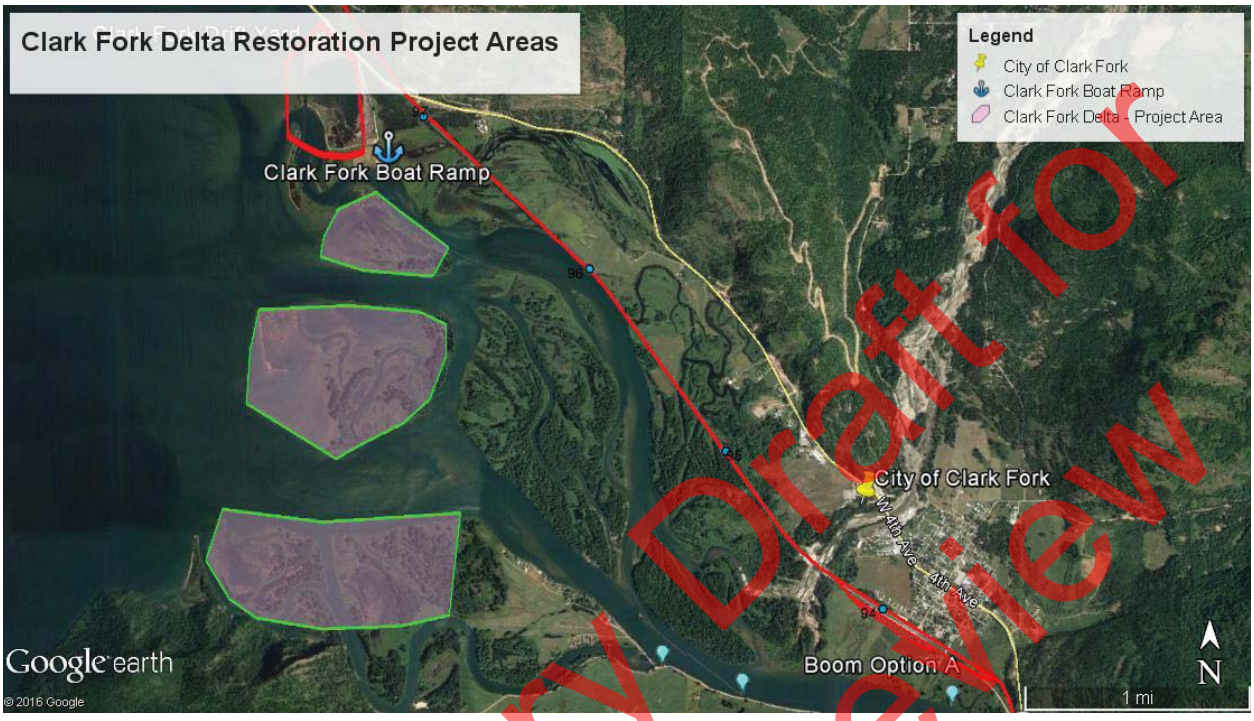
The Clark Fork River is the principal tributary to Lake Pend Oreille, and the Clark Fork River Delta is the largest area of contiguous wetland complex in the Pend Oreille system. The delta forms where the Clark Fork River enters Lake Pend Oreille, about 3 miles west of Clark Fork, Idaho. The delta extends roughly 4 miles downriver from the town of Clark Fork and is approximately 3 miles wide where the delta meets the lake. About 80% of all water entering Lake Pend Oreille is from the Clark Fork River (Clark Fork Delta Restoration Project, 2016).

Shoreline erosion of the delta began with the operation of Albeni Falls Dam downstream and the two upstream dams at Cabinet Gorge and Noxon Rapids.

In conjunction with many partners and funding sources, IDFG began installing shoreline erosion control measures, installing structures to redirect local water flow, raising islands, deepening channels, establishing vegetation, and controlling weeds at the Clark Fork River Delta. The restoration is ongoing and is expected to reduce rates of erosion, reclaim wetland habitats, and improve habitat quality for fish, wildlife, and vegetation (BPA et al., 2014). Project work locations are indicated on Figure 6-3.

Additional discussion regarding the wetland qualities of the Clark Fork Delta are provided in Section 6.1.5.2 below.

Figure 6-3: Clark Fork Delta Restoration Project Areas



6.1.5 Wetlands

The Lake Pend Oreille region has numerous wetlands that provide critical habitat to many residential and migratory species. In addition, wetlands help maintain groundwater and stream flows, store flood runoff, and nurture and sustain critical ecosystems. Wetlands are highly prized by the citizens of Idaho for their inherent habitat value as well as their recreational opportunities.

In 2005, IDFG conducted a detailed assessment of the state's wetlands. The assessment evaluated the wetland type, function and value, and threat from various pollutants and human activities. The study produced a ranking of Idaho's wetlands. Ten of the over 200 wetlands evaluated are located in the Lake Pend Oreille region, and three of those were ranked in the state's top 10 wetlands (IDFG, 2005).

Figure 6-4 and Table 6-3 describe many of the wetlands in the Lake Pend Oreille region. The following paragraphs, extracted from the 2005 report, describe two of the key Lake Pend Oreille region's wetlands.

6.1.5.1 Hoodoo Lakes / Lambertson Lake / Kelso Lake

This wetland is located in the zone of glacial moraine deposits between the trench of Lake Pend Oreille and the outwash plains of the Rathdrum Prairie. This extensive chain of wetlands is situated in a landscape managed primarily for timber and hay production, along with extensive agricultural lands and roads. Wetlands are associated with glacial kettles, including at least six lakes, broad sedge and rush meadows (some of which are hayed), and streamside riparian

areas. Although the hydrology of the wetland is altered by drainage, forested swamps and extensive peatlands are still present. These wetlands support 14 rare species, including one of only a few bristly sedge occurrences in Idaho (at Hoodoo Lake), six rare communities, and seven ecological systems. Within the site, Lambertson Lake, a kettle lake, has the most extensive peatland and well-developed aquatic communities. Beaver, Round[3], Granite, and Kelso Lakes are also included in the site because of their hydrologic connectivity and the presence of fen communities surrounding the lakes. The area has many recreational opportunities.

6.1.5.2 Clark Fork River Delta

The Clark Fork River forms a delta where it enters Lake Pend Oreille in a broad valley at the south end of the Cabinet Mountains and north end of the Coeur d'Alene Mountains. The numerous islands support mature western red cedar and grand fir forest, black cottonwood bottomland forest, willow and red-osier dogwood riparian shrub lands, and wet meadows. The wettest areas are dominated by marsh, while reed canarygrass (an invasive species) dominates many meadows, particularly when water levels have been manipulated. The wetlands support 15 rare species, 3 rare plant communities, and 6 ecological systems. Large numbers of migrating and wintering waterfowl (counts as high as 60,000 ducks [including 20,000 redheads], 15,000 Canada geese, and 2,000 tundra swans, as well as numerous grebe species and loons) utilize this area. Lake Pend Oreille is an important wintering area for bald eagles migrating south from Canada, with over 300 present in the delta by early December. Lake Pend Oreille is also an important nesting area for ospreys, with the greatest densities occurring in the Clark Fork River Delta. There is a high concentration of colonial nesting birds. Globally rare plant species are supported. The area has very high recreation opportunities. Agriculture as well as roads and water quality impairments are prevalent.

[3] This Round lake is just east of Kelso Lake and should not be confused with Round Lake State Park which is located about 11 miles north-north east.

Figure 6-4: Priority Wetland Areas in the Lake Pend Oreille Region

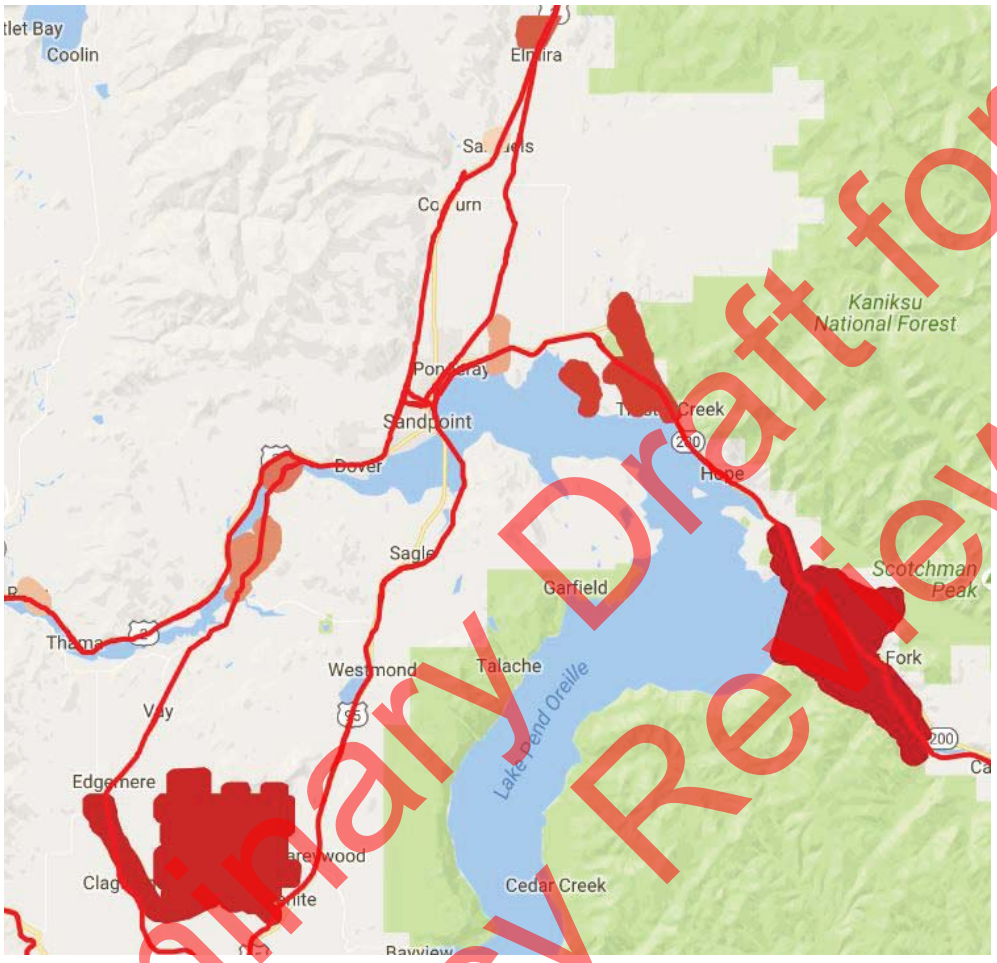


Table 6-3: Significant Wetlands in the Lake Pend Oreille Region

Wetland	General Location	Latitude	Longitude	Nearest Strategy Location
Clark Fork River Delta	Northwest of Clark Fork city	48.147750°	-116.189944°	See Section 4.3.1
Hoodoo Lake / Lambertson Lake / Kelso Lake Wetlands	North of SR 54, West of US 95	48.039325°	-116.749796°	None
Pack River	SR 200, 9 miles east of Sandpoint	48.301086°	-116.370692°	SR200 38.69 SR200 40.78
McArthur Lake	US 95, 13 miles north of Sandpoint	48.493628°	-116.463793°	None
Muskrat Lake	South side of Pend Oreille river, near UP Railroad bridge	48.247045°	-116.674878°	None
Morton Slough	South side of Pend Oreille River, northeast of Laclede	48.199635°	-116.698657°	US2 17.12
Boyer Slough	North shore of Lake Pend Oreille, 4 miles Northeast of Sandpoint	48.314240°	-116.491722°	SR200 33.15
Keyser's Slough	East of Priest River and Pend Oreille River confluence	48.177593°	-116.880588°	US2 7.59
Walsh Lake	West side of US 95, 9 miles north of Sandpoint	48.431866°	-116.496188°	None
Colburn Creek	West side of US 95, 8.2 miles north of Sandpoint	48.397705°	-116.536237°	US95 484.17
Cocolalla Lake	South end of Cocolalla Lake adjacent to BNSF line	48.1065°	-116.619°	US95 461.32

6.1.6 Rathdrum Prairie Aquifer

The Rathdrum Prairie Aquifer (RPA) is a deposit largely made up of sand, gravel, cobbles, and boulders. The RPA covers an area of approximately 211 square miles in Idaho and extends from the southern tip of Lake Pend Oreille south to Coeur d'Alene and Post Falls and then west to the Idaho-Washington border. The aquifer extends into Washington and becomes part of the larger

Spokane Valley-Rathdrum Prairie Aquifer. As shown in Figure 6-5, the northern area of the aquifer lies at the southern end of Bonner County.

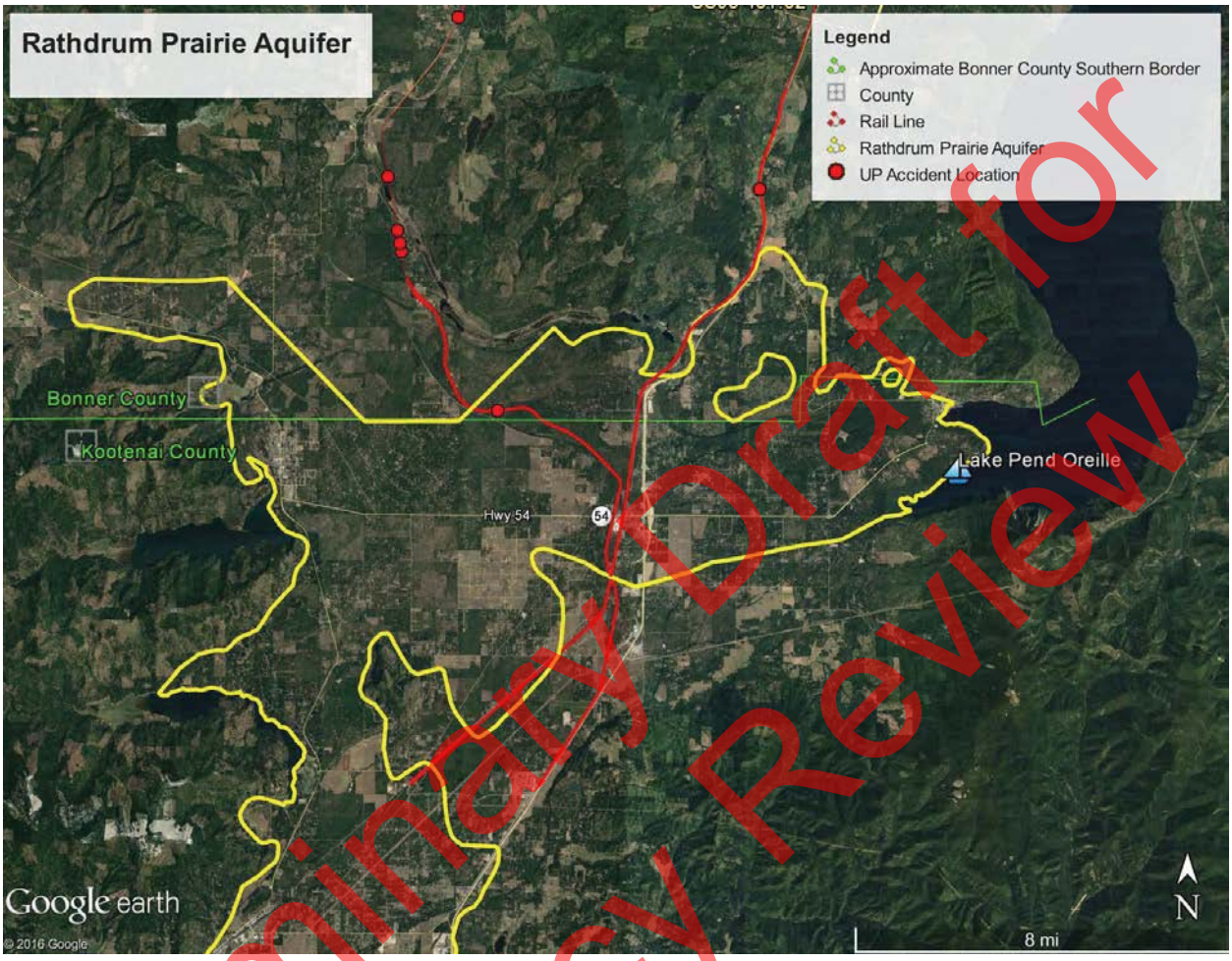
Water recharges the RPA through precipitation, runoff from the surrounding upland areas, and leakage from surrounding lakes, most notably, Lake Pend Oreille and Spirit Lake. The water table is at an elevation of about 2,060 ft above msl near Lake Pend Oreille and about 1,980 ft above msl at the Idaho-Washington state line.

The larger Spokane Valley-Rathdrum Prairie Aquifer supplies drinking water to approximately 100,000 people in Kootenai County, Idaho, and another 400,000 people in Spokane County, Washington.

DEQ has classified the RPA as a sensitive resource aquifer. Because of this classification, all activities that could impact the water quality of the RPA must be carried out so they maintain or improve existing quality of the groundwater. Additionally, EPA classifies the Spokane Valley-Rathdrum Prairie Aquifer as a "sole-source aquifer" (Stevens et al., 2015).

Although this GRP document focuses attention on response to hazardous material spills to surface waters, one must not forget the critical importance of protecting the Spokane Valley-Rathdrum Prairie aquifer. Remediating an oil spill to an underground resource can be significantly more complex than remediating above-ground contamination.

Figure 6-5: Rathdrum Prairie Aquifer



6.2 Cultural/Historical Resources

Research indicates humans have inhabited areas adjacent to the lower Clark Fork River for more than 7,000 years. Artifacts and evidence remaining on the shorelines provide a wealth of information about early inhabitants from Native American and prehistoric times to early-day fur trading and development of transportation (Avista Utilities, 2011).

Multiple federal, state, and tribal agencies, as well as non-governmental entities, support identification and protection of cultural resources within the GRP coverage area. Entities such as the National Register of Historic Places, SHPO, and USGS Geographic Names Information System have developed and/or provide resources such as cultural resources surveys, which can be used as an early indication of the presence or absence of listed cultural resources in or near a spill location. At this time, it is not known how many sites of historic or cultural importance exist in the Lake Pend Oreille and Pend Oreille River system (NWAC, 2005). This document does not locate sites specifically. However, due to fluctuating lake levels, there are known seasonal differences in sensitivity to cultural resources in the GRP coverage area.

To address the potential presence of cultural resources, it is recommended a representative of the Idaho SHPO be notified before spill cleanup commences. The SHPO may provide monitors to be present during cleanup operations (NWAC, 2005). Resource specialists—such as archeologists, anthropological historians, and object conservators—may be consulted, as appropriate, during spilled material releases to aid in determining which cultural resources may be present and in which areas, as well as which response efforts may warrant modification due to a specific cultural resource. Both the SHPO and the Kootenai Tribe should be contacted (see contact sheet).

6.2.1 Procedures for the Finding of Human Skeletal Remains

Any human remains, burial sites, or burial-related materials that are discovered during responses will be treated with respect at all times.

- If the SHPO monitor or any member of the response work force believes that he or she has encountered human skeletal remains, all work will be stopped immediately and the incident commander notified.
- The incident commander will be responsible for taking appropriate steps to protect the discovery. At a minimum, the immediate area of discovery will be flagged and vehicles and equipment will not be permitted to traverse the discovery site. In no case will further disturbance be performed prior to consultation, and no exposed human remains will be left unattended.
- The incident commander or representative will immediately contact SHPO and the Bonner County medical examiner. The medical examiner will determine whether the discovery is a crime scene or human burial.
- If the remains are determined to be Native American and not to be connected with criminal activity, the Idaho state archaeologist and incident command will confer on a treatment plan for the remains.
- If the remains are determined to be non-Native American or connected with criminal activity, the medical examiner will take charge.

6.2.2 Procedures for the Discovery of Cultural Resources

If the SHPO monitor or any member of the response work force believes that he or she has encountered cultural resources, all work will stop and the incident commander will be notified immediately. The area of work stoppage will be adequate to provide for the security, protection, and integrity of the materials. Prehistoric cultural resources may include the following:

- Lithic debitage (stone chips and other tool-making byproducts)
- Flaked or ground stone tools
- Exotic rocks and minerals
- Concentrations of organically stained sediments, charcoal, or ash
- Fire-modified rock
- Bone (burned, modified, or in association with other bone, artifacts, or features)

- Shell

Historic (i.e., over 50 years old) cultural material may include the following:

- Bottles or other glass
- Cans
- Ceramics
- Milled wood, brick, concrete, metal, or other building material

If the SHPO monitor believes that the discovery is a cultural resource, the incident commander will take appropriate steps to protect the discovery site. At a minimum, the immediate area of the discovery site will be flagged and vehicles and equipment will not be permitted to enter the discovery site. Work in the immediate area will not resume until treatment of the discovery has been completed.

- The incident commander or representative will contact the Idaho state archaeologist and arrange for the discovery to be evaluated by a professional archaeologist. The archaeologist will determine whether the discovery is potentially eligible for listing on the National Register of Historic Places (NRHP). Criteria and integrity requirements for listing on the NRHP (36 CFR 60.4) will provide the standards for identifying and evaluating the significance of cultural material.
- The archaeologist will consult with the Idaho state archaeologist regarding the NRHP eligibility of the discovery. If the SHPO determines that the discovery is eligible, they will consult with incident command to determine appropriate treatment of the discovery.

If adverse project impacts to an eligible site cannot be avoided, a treatment plan will be developed and implemented. The Secretary of the Interior's *Standards for Archaeological Documentation* will apply, including provisions for a research design, reporting, and curation of recovered material and samples (U.S. National Park Service, 2017).

The particular data recovery measures applied to any given historic property will depend on the development of research questions and design of excavation strategies to acquire the data needed to answer those questions. Field notes, maps, plans, profiles, and photographs will document the process. The final report will follow style guidelines of the professional archaeological journal *American Antiquity*; it will synthesize the data collected and address the research questions posed.

6.3 Economic Resources

For more than a century, Bonner County's economy depended almost entirely on logging and lumber mills. Over the past 20 years, the local economic base has shifted to a mixture of tourism, manufacturing, retail, and services.

Bonner County's recreational opportunities and quality of life have attracted thousands of new residents since the mid-1980s. Population growth spurred growth in the construction industry, retail stores, health care providers, public schools, service organizations, and government

agencies. The construction, finance, insurance, and real estate industries in Bonner County are nearly three times larger than they would be in most counties of its size due to the county's exceptionally strong population growth, the large number of vacation homes built, and the high level of commercial and industrial development over the last decade.

Tourism also grew rapidly in the late 1980s and early 1990s. Sandpoint's reputation as a haven for the arts also contributed to the growth of tourism, and the 1990 expansion of Schweitzer Mountain Resort boosted winter recreation.

More than a dozen manufacturers have relocated to the county since 2000. Between 2001 and 2004, Bonner County gained 500 jobs, experiencing growth of 36% in manufacturing jobs. The county's largest manufacturers that do not produce lumber or other wood products include Litehouse, Unicep Packaging, Encoder Products, Cygnus, Thorne Research Products, Diedrich Roasters, Quest Aircraft, Tamarack Aerospace Group, and Aerocet, Inc.

Over half (55 percent) of the Upper Pend Oreille Sub-Area is privately owned. The remaining land is managed by the USFS (25%), the state (7%), and BLM (1.6%). Major land uses in the sub-area include agricultural and timber production and recreational development. Only 12% of the drainage is open water (NPCC, 2005b). Near the lake and on its shore, private lands account for more than half of the ownership (NWAC, 2005). The east side of Lake Pend Oreille is predominantly USFS land.

Major economic resources in the Upper Pend Oreille Sub-Area that could be impacted by a spill are listed below. From upstream to downstream, the following major economic resources are present in the GRP coverage area.

6.3.1 Cabinet Gorge Dam and Reservoir

The Cabinet Gorge Dam and Reservoir is located on the Clark Fork River, 0.25 miles west of the Idaho-Montana state line and 20 miles downstream of the larger Noxon Rapids Dam. Operated by Avista Utilities for hydroelectric power generation (20,000 kilowatts), Cabinet Gorge lies 7.5 miles upstream of the town of Clark Fork and 11 miles upstream of Lake Pend Oreille. Cabinet Gorge impounds a 20-mile long reservoir containing approximately 105,000 acre-ft of storage at full pool elevation (2,175 ft) (Bonner County, 2010b).

The dam, a 395-foot concrete arch between two concrete abutments, is 208 ft tall at its highest point (Bonner County, 2010b). The dam/reservoir complex is designed to generate electricity and is not intended to provide significant floodwater storage or detainment (Avista Utilities, 2011). The spillway is controlled by eight vertical lift spill gates, each 40 ft wide by 35 ft high (Bonner County, 2010b). Dam outfalls cannot be turned completely off as a means to contain (soluble or entrained) spilled materials or slow their dispersal. In addition, operating requirements contained in the FERC licenses for these dams mandate minimum discharges (Avista Utilities, 2011). Since the dam outfalls are designed and operated in an underflow discharge configuration, with the exception of two small trash/debris gates, floating spilled materials could be captured, contained, and collected in the weir pool by temporarily closing the debris gates.

From a hydrologic perspective, this reservoir functions as a flowing section of river, with slow flow rates (less than 1 ft per second) in most places (Avista Utilities, 2011).

Response strategies MP 62.95 have been developed to address potential spilled material impacts to this resource.

6.3.2 Cabinet Gorge Fish Hatchery/Avista Utilities Fish Rearing Facility

Cabinet Gorge Fish Hatchery/Avista Utilities Fish Rearing Facility is located on the southern side of the Clark Fork River, approximately 8 miles southeast of Clark Fork. The hatchery was constructed in 1985 to mitigate for fish losses caused by the construction of hydroelectric dams on the Pend Oreille River system. The project was co-funded by Avista Utilities, BPA, and the IDFG. Water for fish rearing at the hatchery is supplied by six ground water well pumps. A total of 10,995 gallons per minute of water is supplied by these pumps and routed to 64 individual raceways. Each raceway can hold 250,000 two-inch kokanee salmon. The primary species of fish reared is kokanee salmon. The hatchery also houses the westslope cutthroat trout bloodstock for the state. Other species of fish raised are rainbow trout and fall Chinook salmon (IDFG, 2015b).

A notification and collection strategy at MP 61.63 has been developed as a means to notify the hatchery in the event of a spill and potentially collect spilled material.

6.3.3 Lake Pend Oreille

Lake Pend Oreille supports a significant sport fishery. In 1991, anglers expended an estimated 465,000 hours fishing the lake with approximately 65% of the effort targeting trout and 35% of the effort targeting kokanee (Paragamian and Ellis, 1994). The world record bull trout, 14.5 kilograms (kg) (32 pounds), and the world record rainbow trout, 16.8 kg (37 pounds), were taken from Lake Pend Oreille in 1949 and 1947, respectively. Current and planned fisheries management direction in Lake Pend Oreille emphasizes kokanee as a keystone species with bull trout and rainbow trout managed for a trophy fishery. Westslope cutthroat trout are managed primarily as a wild trout fishery with restrictive regulations (NPCC, 2005b).

6.3.4 Sandpoint Public Water System

The Sandpoint Public Water System is operated by the Sandpoint Public Works Department and supplies water to approximately 10,000 residents through approximately 4,500 service connections. From September through November each year, this system is supplied by water from Lake Pend Oreille through a submerged intake structure approximately 1,500 ft offshore near the Sandpoint City Beach. Normal water demand is met during the remainder of the year through their primary water supply intake on Little Sand Creek, which cannot be directly impacted by a rail-related spilled materials release due to its location at a higher elevation than the rail corridor. When Lake Pend Oreille is used as a water source, the system retains approximately 4 million gallons of water in reserve, which would last approximately 2 days if use restrictions are imposed (personal communication from Cody VanDyke, Public Works Director, Sandpoint).

Response strategy US95 473.84 has been developed to address potential spilled material impacts to this resource.

6.3.5 Sandpoint City Beach

Sandpoint City Beach, located at the eastern end of Bridge Street, is one of the oldest and best known parks in Sandpoint. The 18-acre park was donated to Sandpoint in 1922 by the Northern Pacific Railroad and is now one of the focal points of Sandpoint. It has been developed over the years by volunteer labor, donations, and city, county, state, and federal funds. The city beach is the busiest park in the city park system and is used for several community special events including a large arts and crafts fair hosted by Pend Oreille Arts Council and the Lion's Club 4th of July Fireworks.

Response strategy US95 473.9 has been developed to address potential spilled material impacts to this resource.

6.3.6 City of Dover Public Water System

The City of Dover Public Water System is operated by the City of Dover Water Department and supplies water to approximately 230 residents through 177 service connections. This system is supplied by water from the Pend Oreille River from a submerged intake structure located approximately 3,500 ft upstream of the Dover Bay Marina boat launch and approximately 250 ft offshore. The system retains approximately 400,000 gallons of water in reserve, which would last approximately 6 days during peak demand with no use restrictions imposed (personal communication from William C. Strand, PhD, System Manager, Dover).

Response strategy US2 25.63 has been developed to address potential spilled material impacts to this resource.

6.3.7 City of Laclede Public Water System

The City of Laclede Public Water System is operated by the Laclede Water District and supplies water to approximately 915 residents through approximately 340 service connections. This system is supplied by water from the Pend Oreille River from a submerged intake structure located approximately 160 ft offshore near the Laclede public boat launch (DEQ, 2001).

Response strategy US2 14.37 has been developed to address potential spilled material impacts to this resource.

6.3.8 Priest River Public Water Supply

Priest River Public Water Supply is operated by the Priest River Public Works Department and supplies water to approximately 2,150 residents through approximately 932 service connections. This system is supplied by water from the Pend Oreille River from a submerged intake structure located approximately 230 ft offshore near the Priest River public boat launch (DEQ, 2012).

Response strategy US2 6.38 has been developed to address potential spilled material impacts to this resource.

6.3.9 Waterlife Discovery Center

The Waterlife Discovery Center, previously known as the Sandpoint State Fish Hatchery, was built in 1909 by the IDFG, with partial funding from the local sportsmen's association.

The facility is located on a small bluff on the shores of the Pend Oreille River on Lakeshore Drive in Sandpoint. Spring water from a neighboring property is piped underground to supply water for the hatchery tanks and fish runway. However, because the water is too cold for successful aquaculture, the hatchery has been used primarily as a summer redistribution facility for rainbow trout (Sandpoint, 2015). The facility now houses a small museum and is used as an environmental educational facility for schools and conservation groups.

6.3.10 Albeni Falls Dam

Albeni Falls Dam is located on the Pend Oreille River approximately 6 miles west of Priest River. The 65-foot-high concrete dam was completed in 1952. It is owned by the USACE and operated for hydroelectric power (42,600 kilowatts). The dam also reduces the maximum lake level for flood control. The reservoir has a storage capacity of 1.56-million acre-ft of water and provides recreational areas for visitors (Bonner County, 2010b).

Since the dam outfalls are designed and operated in an underflow discharge configuration, with the exception of small trash/debris gates, low density spilled materials floating near the surface could be captured, contained, and collected in the weir pool by temporarily closing the debris gates.

Response strategies US2 2.21 and US2 2.19 have been developed to address potential spilled material impacts to this resource.

6.3.11 Seasonal/Private/Non-Municipal Water Systems

Seasonal/private/non-municipal water systems using Lake Pend Oreille as a water source include Island View Resort, Kullyspell Estates, Red Fir Resort, Sunnyside, Oden Bay, and Sourdough Point. Notification strategies have been developed to address these known seasonal/private/non-municipal water systems within the GRP coverage area. See additional discussion in Section 4.5.

6.3.12 Marinas

Lake Pend Oreille and the Pend Oreille River have six marinas that serve the boating needs of sport fisherman and recreational boaters. Four of those marinas can supply fuel. Appendix F highlights the marinas and indicates which ones provide services in addition to boat parking.

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8 Appendices

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Appendix A Responding to Releases

Responding to Petroleum Releases

Short-Term Actions

- Identify and mitigate fire, explosion, and vapor hazards. Some situations may require you to immediately notify your local fire department.
- Take immediate action to prevent any further release of petroleum into the environment.
- Report the release to the Idaho Department of Environmental Quality (DEQ) within 24 hours.
- Handle contaminated materials, including soil and water, in a responsible manner. This may require safely storing contaminated materials until proper disposal or treatment can be accomplished. Always avoid contaminating previously uncontaminated areas.
- Additional guidance may be obtained from IDEQ regional offices.
- Begin removing free product floating on ground water or in excavations as soon as possible.

Reporting Requirements for Petroleum Releases

Owners and operators of petroleum storage tank (PST) systems must report to DEQ within 24 hours if any of the following conditions occur.

Underground Releases

- A discovery by owners and operators or others of a petroleum release at the PST site or surrounding area. Discovery can include the presence of free product or dissolved product in nearby surface water or ground water or vapors in soils, basements, and sewer or utility lines.
- Unusual operating conditions observed by owners and operators. These conditions include erratic behavior of product dispensing equipment, sudden loss of product from the PST system or an unexplained presence of water in the PST system. However, no reporting is required if the PST system equipment is found to be defective but not leaking and is immediately repaired or replaced.
- Monitoring results from a release detection method that indicate a release may have occurred. However, no reporting is required if the monitoring device is found to be defective and is immediately repaired, recalibrated or replaced, and additional monitoring does not confirm a release or, in the case of inventory control, a second consecutive month of data does not confirm a release.

Above-Ground Spills and Overfills

- An above-ground spill or overfill of petroleum that results in a release to the environment which exceeds 25 gallons or causes a sheen on nearby surface water must be reported to DEQ within 24 hours.

- An above-ground spill or overfill of petroleum which is less than 25 gallons and does not cause a sheen on nearby surface water need only be reported to DEQ if cleanup cannot be completed within 24 hours.
- For specific reporting and release requirements from dielectric oil (mineral insulating oil) releases from electric equipment, see the Idaho Water Quality Standards & Wastewater Treatment Requirements (IDAPA 58.01.02.849).

To report a petroleum release to DEQ during regular business hours, contact the appropriate regional office at the number provided at the end of this information sheet.

Federal Reporting Requirements

Any person or organization responsible for a release or spill is also required to notify the federal government when the amount reaches a federally determined limit. Please go to the following U.S. Environmental Protection Agency web link to determine if a release requires federal reporting:

https://www.epa.gov/emergency-response/when-are-you-required-report-oil-spill-and-hazardous-substance-release

Responding to Hazardous Material Spills

DEQ rules define hazardous material as a material or combination of materials that, when discharged in any quantity into state waters, presents a substantial present or potential hazard to human health, the public health, or the environment.

Short-Term Actions

In the case of an unauthorized release of hazardous materials to state waters or to land such that there is a likelihood that it will enter state waters, the responsible persons in charge must:

- Make every reasonable effort to abate and stop a continuing spill
- Make every reasonable effort to contain spilled material in such a manner that it will not reach surface or ground waters of the state
- Collect, remove, and dispose of the spilled material in a manner approved by DEQ

Reporting Requirements for Hazardous Materials Spills

All Hazardous Material Releases

In the case of an unauthorized release of hazardous materials to state waters or to land such that there is likelihood that it will enter state waters, the responsible persons in charge must immediately notify DEQ or designated agent of the spills. This requirement applies regardless of any additional reporting done under the below requirements (IDAPA 58.01.02.850).

Releases Exceeding Reportable Quantity (Within a 24-Hour Period)

In the case of a release from a facility into the environment of a hazardous substance in excess of its reportable quantity (within a 24-hour period), the facility must immediately notify the National Response Center (NRC) or State Communications Center (StateComm) within a 24-hour period. Reportable Quantities for chemicals and hazardous wastes are found in 40 CFR §302.4.

Releases from LQGs and TSDFs

In the case of a Large Quantity Generators (LQGs) and Treatment, Storage, and Disposal Facilities (TSDFs), if the emergency coordinator (or designee) determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment outside the facility, the coordinator must: 1) notify appropriate local authorities if evacuation of local areas may be necessary and 2) notify the NRC and StateComm of the incident.

In addition, within 15 days of the incident, the LQG or TSDF must submit a written follow-up report to DEQ which includes the name, address, and telephone number of the owner/operator and the facility; the date, time and type of incident; the name and quantity of material(s) involved; the extent of any injuries, if any; an assessment of actual or potential hazards to human health or the environment; and estimated quantity and disposition of recovered material that resulted from the incident.

Releases from Hazardous Waste Tank Systems

If a facility has a release of hazardous waste from a tank system to the environment, they are required to notify the Department within 24 hours. If the release has been reported pursuant to 40 CFR Part 302 as noted above, that report will satisfy this requirement. Releases that are less than 1 pound and immediately contained and cleaned up are exempt from this reporting requirement.

In addition, within 30 days of detection of a release of hazardous waste from a tank system, a written follow-up report must be submitted to DEQ describing the likely route of migration of the release; the characteristics of the surrounding soil; results of any monitoring or sampling conducted in connection to the release; proximity to down gradient drinking water, surface water, and population areas; and a description of the actions taken or planned.

To report a spill or release to DEQ during regular business hours, contact the appropriate regional office at the number provided at the end of this information sheet.

Federal Reporting Requirements

Any person or organization responsible for a release or spill is also required to notify the federal government when the amount reaches a federally-determined limit. Please go to the following EPA web link to determine if a release requires federal reporting:

https://www.epa.gov/emergency-response/when-are-you-required-report-oil-spill-and-hazardous-substance-release

Release Reporting Phone Numbers

Idaho State Communication Center:

(800) 632-8000 (Calls from outside Idaho)

(208) 846-7610 (Calls from within Idaho)

National Response Center:

(800) 424-8802

Idaho Department of Environmental Quality:

DEQ State Office
1410 N. Hilton
Boise, ID 83706
ph: (208) 373-0502
toll-free: (866) 790-4337

DEQ Boise Regional Office
1445 N. Orchard St.
Boise, ID 83706
ph: (208) 373-0550
fx: (208) 373-0287
toll-free: (888) 800-3480

DEQ Lewiston Regional Office
1118 F St.
Lewiston, ID 83501
ph: (208) 799-4370
fx: (208) 799-3451
toll-free: (877) 541-3304

DEQ Coeur d'Alene Regional Office
2110 Ironwood Parkway
Coeur d'Alene, ID 83814
ph: (208) 769-1422
fx: (208) 769-1404
toll-free: (877) 370-0017

DEQ Pocatello Regional Office
444 Hospital Way, #300
Pocatello, ID 83201
ph: (208) 236-6160
fx: (208) 236-6168
toll-free: (888) 655-6160

DEQ Idaho Falls Regional Office
900 N. Skyline Drive, Suite B
Idaho Falls, ID 83402
ph: (208) 528-2650
fx: (208) 528-2695
toll-free: (800) 232-4635

DEQ Twin Falls Regional Office
650 Addison Ave. West, Suite 110
Twin Falls, ID 83301
ph: (208) 736-2190
fx: (208) 736-2194
toll-free: (800) 270-1663

NOTE: For non-emergency petroleum releases that are immediately contained and do not present an imminent threat to human health or the environment that are discovered on weekends, holidays or after normal business hours, notification may be postponed until the next business day. Otherwise, afterhours petroleum releases should be reported to StateComm.

Appendix B Strategy Reports

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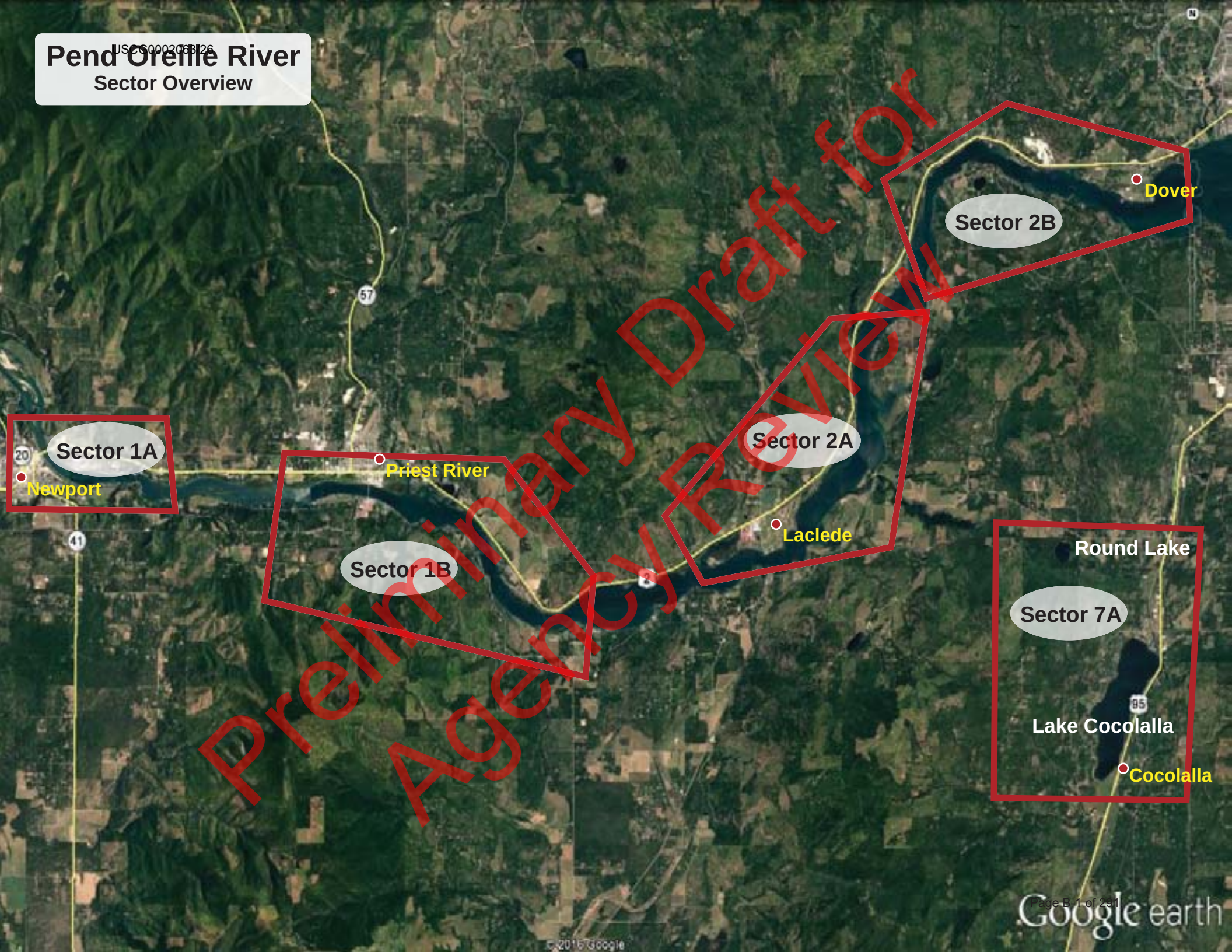
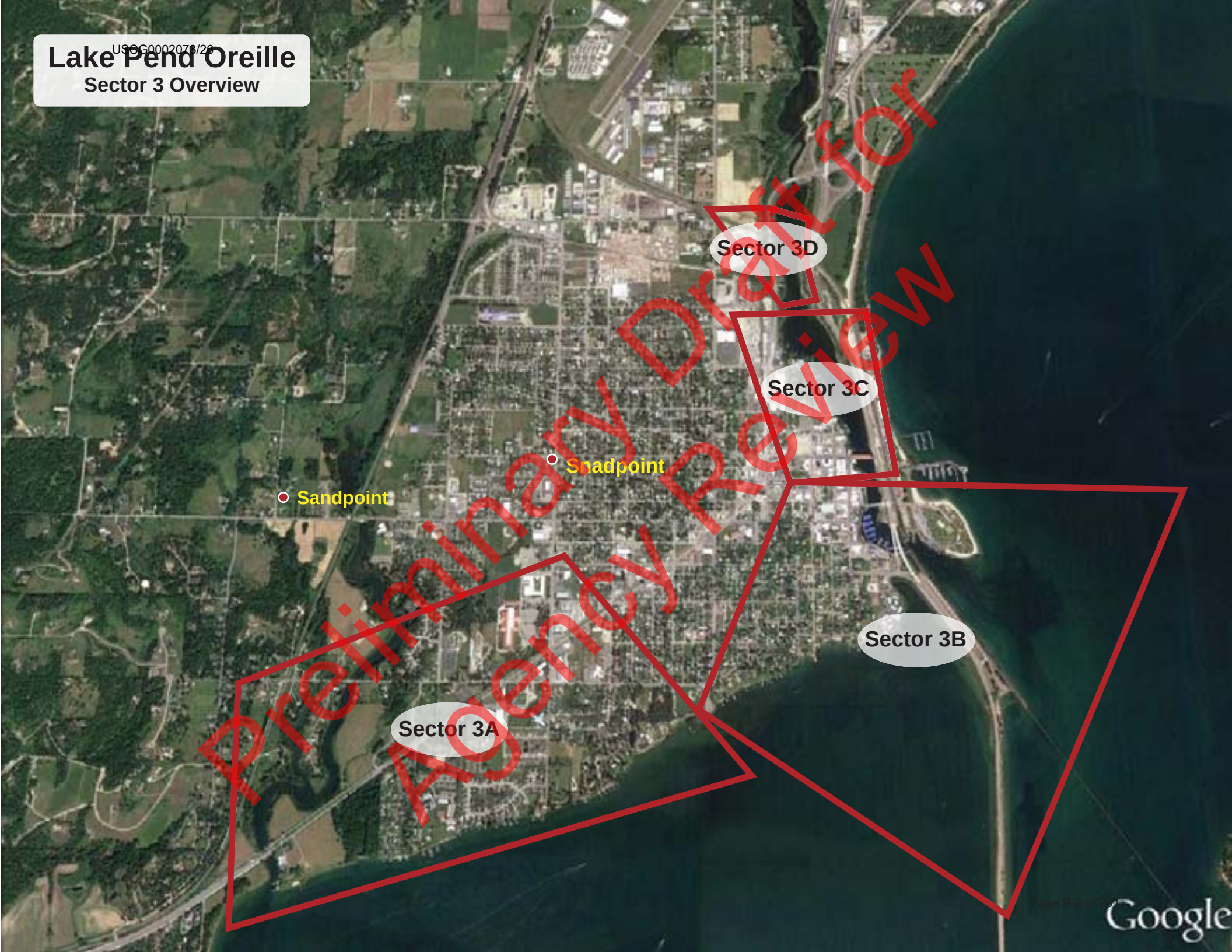
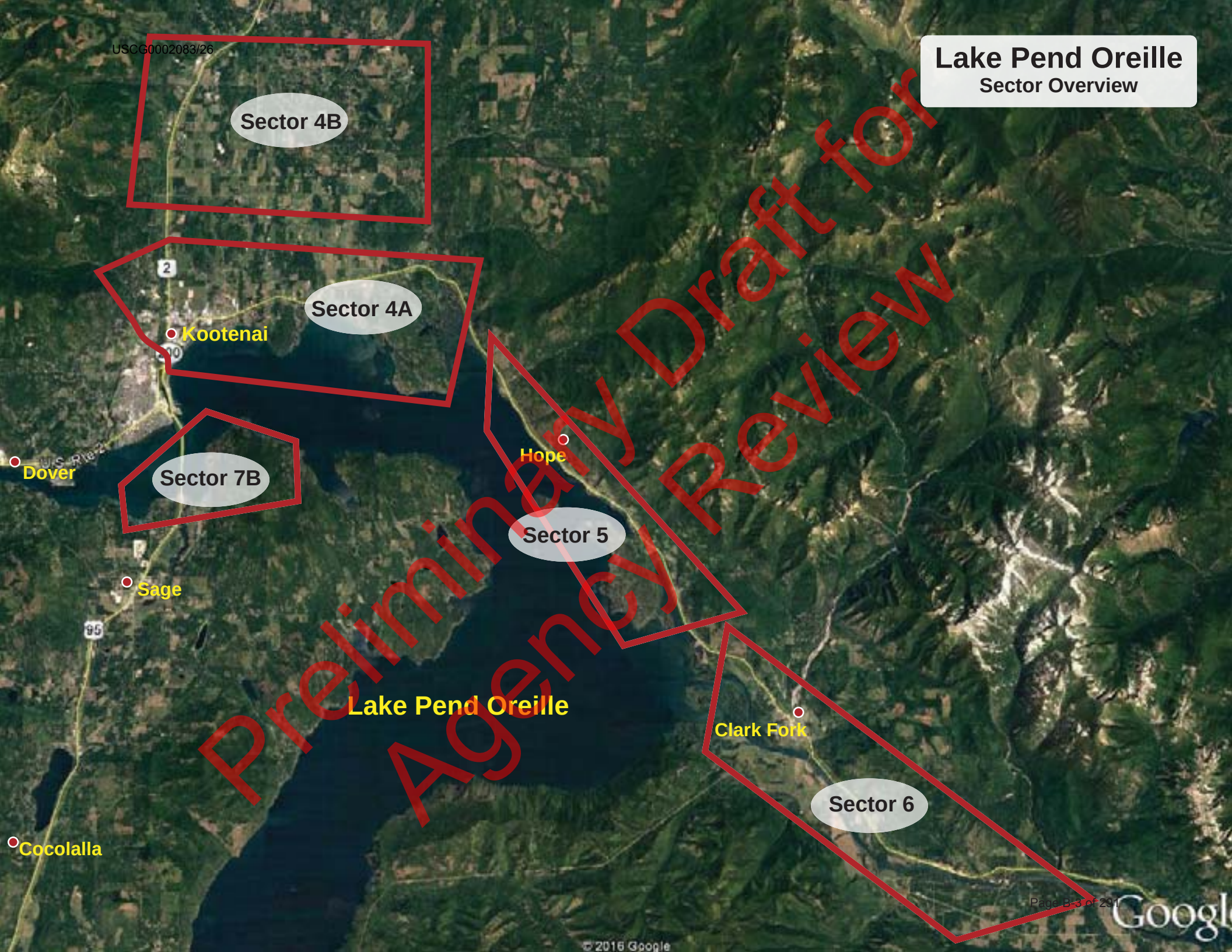

Pend Oreille River
Sector Overview
USCG0002068126
Sector 1A
Newport
Priest River
Sector 1B
Sector 2A
Laclede
Sector 2B
Dover
Round Lake
Sector 7A
Lake Cocolalla
Cocolalla
Preliminary Draft for Agency Review
Google earth


Lake Pend Oreille
Sector 3 Overview
USGG0002078/20
Sector 3D
Sector 3C
Snadpoint
Sandpoint
Sector 3B
Sector 3A
Preliminary Draft for Agency Review
Google


USCG0002083/26
Lake Pend Oreille
Sector Overview
Sector 4B
Sector 4A
Kootenai
Sector 7B
Dover
Hope
Sector 5
Sage
Lake Pend Oreille
Clark Fork
Sector 6
Cocolalla
Preliminary Draft for Agency Review
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Sector & Map	Site ID & Highway Milepost	Railroad Milepost	Site Name	Accessible by boat at Low Water?	Nearest Boat Ramp or Staging Area
Sector 1A West Pend Oreille	US2 0.30	POVA 1430.86	Oldtown Boat Launch	Yes	US2 0.30
	US2 2.0	POVA 1428.7	Albeni Falls Dam	Uncertain	US2 2.0
	US2 2.21	POVA 1428.66	Albeni Cove Recreation Area	No	US2 2.21
Sector 1B West Pend Oreille Fire District	US2 5.73	POVA 1424.79	10th St Surface Water	Uncertain	US2 6.87
	US2 6.2	POVA 1424.31	Priest River- South	No	US2 6.38
	US2 6.38	POVA 1424.13	Priest River City Water Intake	Yes	US2 6.38
	US2 6.87	POVA 1423.64	Priest River Mouth	Yes	US2 6.87
	US2 7.59	POVA 1423.0	Priest River Mouth Slough	Unlikely	US2 6.87
	US2 10.19	POVA 1420.46	Carey Creek Game Management Area	Unlikely	US2 6.87
	US2 10.52	POVA 1420.12	Baylor Lane Slough	No	US2 13.49

Sector & Map	Site ID & Highway Milepost	Railroad Milepost		Accessible by boat at Low Water?	Nearest Boat Ramp or Staging Area
Sector 2A Westside Fire District	US2 13.3	POVA 1417.28	Riley Creek Slough	No	US2 13.49
	US2 13.49	POVA 1417.06	Riley Creek Recreation Area	No	US2 13.49
	US2 14.37	POVA 1416.24	Laclede Public Water Supply	Yes	US2 14.37
	US2 16.06	UP Spokane RR 62.78	Cocolalla Creek Mouth	Unlikely	US2 14.37
	US2 16.29	UP Spokane RR 63.14	Morton Slough Boat Launch	No	US2 16.29
	US2 17.12	POVA 1413.35	Morton Slough Game Management Area	No	US2 14.37
Sector 2B Westside Fire District	US2 20.71	POVA 1409.86	Bay near Muskrat Lake	No	US95 470.21
	US2 24.89	BNSF Newport 71.01	Dover Bay Slough	No	US2 25.15
	US2 25.16	BNSF Newport 71.31	Dover Bay Marina	No	US2 25.15
	US2 25.63	BSF Newport 71.87	Dover Bay Water Intake	Yes	US2 25.15

Sector & Map	Site ID & Highway Milepost	Railroad Milepost	Site Name	Accessible by boat at Low Water?	Nearest Boat Ramp or Staging Area
Sector 3A Sandpoint	US2 26.68	BNSF Newport 72.79	Chuck Slough	No	US2 25.15
	US2 27.07	BNSF Newport 73.29	Ontario St West	No	US2 25.15
	US2 27.17	BNSF Newport 73.33	Ontario St East	No	US2 25.15
	US2 27.74	BNSF Spokane 3.32	S. Ella Ave Culvert	No	US95 473.87
Sector 3B Sandpoint	US2 28.02	BNSF Spokane 3.33	Memorial Park Culvert	No	US95 473.87
	US2 28.17	BNSF Spokane 3.35	S Euclid Ave Culvert	No	US95 473.87
	US2 28.31	BNSF Spokane 3.37	S 4th Ave Culvert	No	US95 473.87
	US2 28.36	BNSF Spokane 3.38	S 3rd Ave Culvert	No	US95 473.87
	US95 472.85	BNSF Spokane 4.28	Long Bridge	Yes	US95 471.08
	US95 473.84	BNSF Spokane 3.4	Sandpoint Public Works Water Intake	Yes	US95 473.87
	US95 473.9	BNSF Spokane 3.17	Sandpoint City Beach and Marina	Yes	US95 473.87
	US95 473.91	BNSF Spokane 3.29	Mouth of Sand Creek	Yes	US95 473.87
	US95 474.31	BNSF Spokane 3.13	Lower Sand Creek	No	US95 473.87

Sector & Map	Site ID & Highway Milepost	Railroad Milepost	Site Name	Accessible by boat at Low Water?	Nearest Boat Ramp or Staging Area
Sector 3C Sandpoint	US95 474.41	BNSF Spokane 3.02	E. Cedar St Culvert # 1	No	US95 473.87
	US95 474.45	BNSF Spokane 2.98	E. Cedar St Culvert # 2	No	US95 473.87
	US95 474.46	BNSF Spokane 2.97	E. Cedar St Culvert # 3	No	US95 473.87
	US95 474.78	BNSF Spokane 2.9	Alder St Culvert	No	US95 473.87
	US95 475.09	BNSF Kootenai 1402.96	N. 5th Ave Surface Water Outflow #1	No	US95 473.87
Sector 3D Sandpoint	US95 475.21	BNSF Kootenai 1402.75	N. 5th Ave Surface Water Outflow #2	No	US95 473.87
	US95 475.22	BNSF Kootenai 1402.74	N. 5th Ave Surface Water Outflow #3	No	US95 473.87
	US95 475.3	BNSF Kootenai 1402.66	Sand Creek Trestle	No	US95 473.87
	US95 475.32	BNSF Kootenai 1402.63	Visitor Center Culvert #1	No	US95 473.87
	US95 475.34	BNSF Kootenai 1402.6	Visitor Center Culvert #2	No	US95 473.87
	US95 475.4	BNSF Kootenai 1402.58	Visitor's Center Culvert # 3	No	US95 473.87
	US95 475.41	BNSF Kootenai 1402.55	Visitor's Center Culvert # 4	No	US95 473.87
	US95 475.42	BNSF Kootenai 1402.57	Baldy Mountain Rd Surface Water Outflow #2	No	US95 473.87
	US95 475.5	BNSF Kootenai 1402.53	Baldy Mountain Rd Surface Water Outflow #1	No	US95 473.87
	US95 475.53	BNSF Kootenai 1402.33	N. Boyer Ave and Baldy Mountain Rd.	No	US95 473.87

Sector & Map	Site ID & Highway Milepost	Railroad Milepost	Site Name	Accessible by boat at Low Water?	Nearest Boat Ramp or Staging Area
Sector 4A Northside- (Lakeshore)	US95 478.53	BNSF Kootenai 1399.09	Bronx Rd	No	US95 473.87
	US95 479.99	BNSF Kootenai 1399.67	Sand Creek Water Treatment Plant	No	Not applicable
	SR200 33.15	MRL4 114.92	Boyer Slough	No	none
	SR200 34.53	MRL4 113.5	Oden Water Assn Water Intake	Yes	SR200 42.59
	SR200 34.98	MRL4 113.0	Culver Slough	Unlikely	US95 473.87
	SR200 36.39	MRL4 109.77	Pend Orielle State Wildlife Management Area	Unlikely	uncertain
	SR200 38.69	MRL4 109.93	Pack River Bridge	No	SR200 42.59
	SR200 41.28	MRL4 107.49	Sunnyside Water Intake	Yes	SR200 41.38
Sector 4B Northside- (Selle Valley)	US95 480.44	BNSF Kootenai 1397.09	West Selle Rd	No	no boat access
	US95 484.17	BNSF Kootenai 1393.33	East Colburn	No	US95 473.87
	US95 485.77	BNSF Kootenai 1391.75	Lower Pack River	No	no boat access
	SR200 37.78	MRL4 111.05	Rapid Lightning Road Bridge	No	no boat access

Sector & Map	Site ID & Highway Milepost	Railroad Milepost	Site Name	Accessible by boat at Low Water?	Nearest Boat Ramp or Staging Area
Sector 5 Sam Owen	SR200 40.78	MRL4 107.95	Pack River Trestle	Uncertain	SR200 42.59
	SR200 42.09	MRL4 106.71	Trestle Creek	Unlikely	SR200 42.59
	SR200 46.4	MRL4 102.4	Red Fir Resort Water Intake	Yes	SR200 47.9
	SR200 48.08	MRL4 100.86	Islandview Resort Water Intake	Yes	Sr200 47.9
	SR200 49.45	MRL4 99.36	Kullyspell Estates Water Intake	Yes	SR200 47.38 or SR200 49.46
	SR200 50.19	MRL4 98.52	David Thompson Wildlife Preserve	Unlikley	SR200 47.38
	SR200 50.4	MRL4 98.43	Denton Slough	Unlikely	SR200 51.69
Sector 6 Clark Fork	SR200 54.83	MRL4 94.47	Johnson Creek Trestle	Unlikely	SR200 54.83
	SR200 56.05	MRL4 92.92	Clark Fork Bridge	Yes	SR200 57.07
	SR200 57.12	MRL4 91.79	Lower Fish Hatchery Slough	Uncertain	SR200 57.07
	SR200 58.62	MRL4 90.45	Upper Fish Hatchery Slough	Uncertain	uncertain
	SR200 60.79	MRL4 87.66	Clark for River Access	Yes	SR200 60.79
	SR200 61.63	MRL4 86.81	Cabinet Gorge Fish Hatchery	Yes	on site
	SR200 62.95	MRL4 85.35	Cabinet Gorge Dam	Yes	on site

Sector & Map	Site ID & Highway Milepost	Railroad Milepost	Site Name	Accessible by boat at Low Water?	Nearest Boat Ramp or Staging Area
Sector 7A Sagle (South)	US95 461.32	BNSF Spokane 16.94	Cocolalla Creek Trestle	No	US95 463.62
	US95 463.82	BNSF Spokane 14.22	Cocolalla Creek Outlet	No	US95 473.87
	US95 463.95	BNSF Spokane 14.07	Cocolalla Loop Rd Bridge	No	US95 473.87
	US95 465.11	BNSF Spokane 13.43	Round Lake	Yes	US95 465.12
Sector 7B Sagle (North)	US95 471.08	BNSF Spokane 6.7	Bottle Bay Bridge	No	on site
	US95 472.98	MRL4 4.89	Sourdough Point Water Intake	Yes	US95 472.98

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Sector 1

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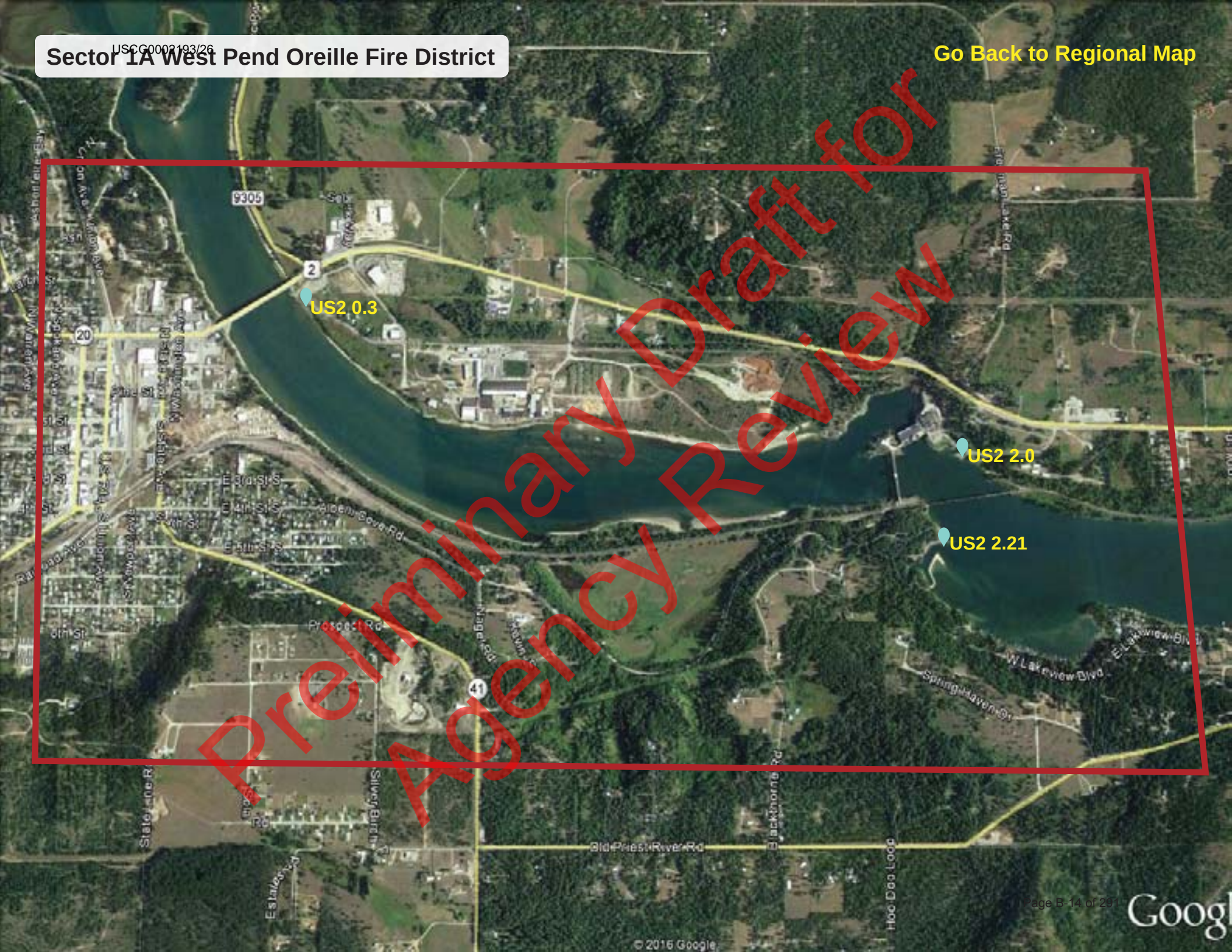
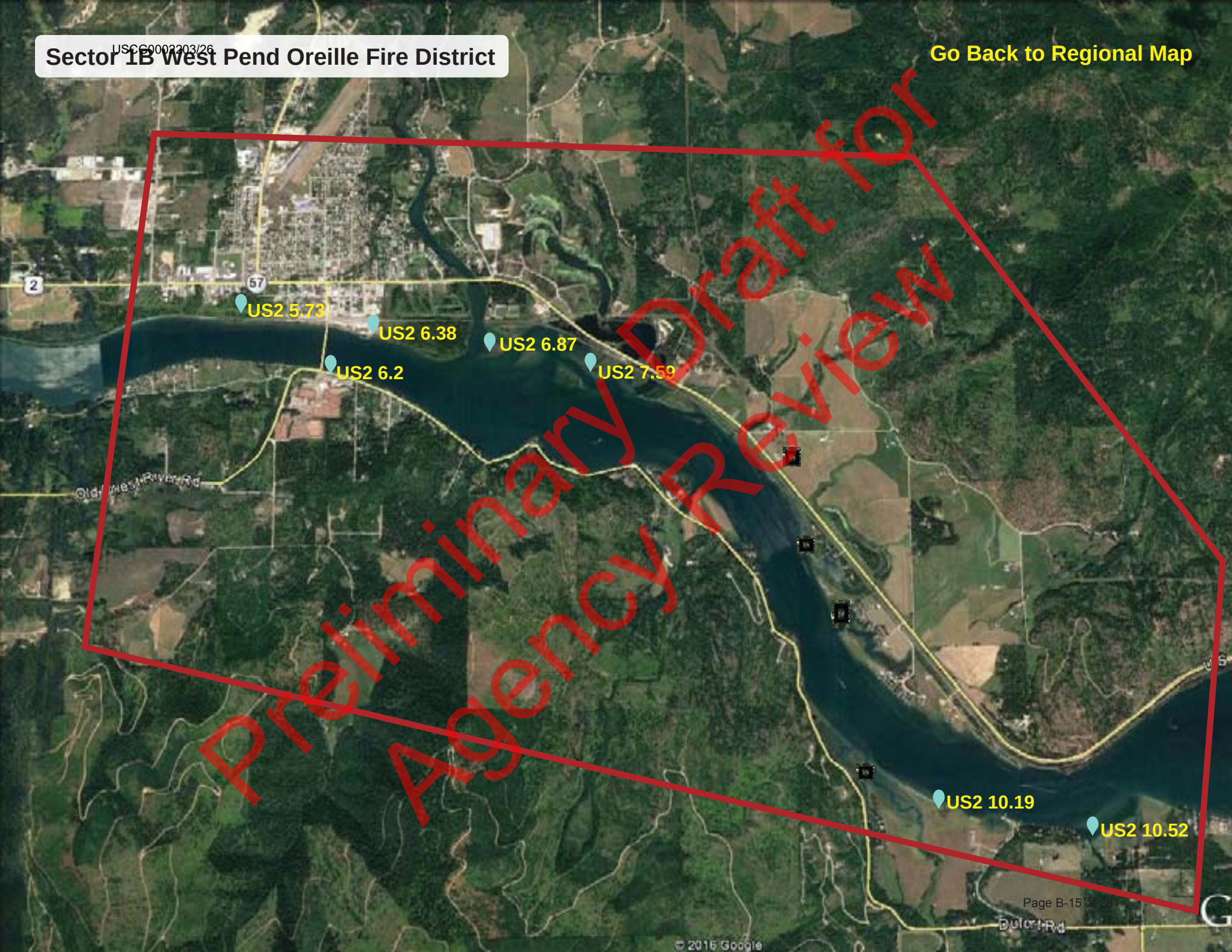
Sector & Map	Site ID & Highway Milepost	Railroad Milepost	Site Name	Accessible by boat at Low Water?	Nearest Boat Ramp or Staging Area
Sector 1A West Pend Oreille	US2 0.3 0	POVA 1430.86	Oldtown Boat Launch	Yes	US2 0.37
	US2 2.0	POVA 1428.59	Albeni Falls Dam	Uncertain	US2 0.37
	US2 2.21	POVA 1428.66	Albeni Cove Recreation Area	No	US2 2.21
Sector 1B West Pend Oreille Fire District	US2 5.73	POVA 1424.79	10th St Surface Water	Uncertain	US2 6.87
	US2 6.2	POVA 1424.31	Priest River- South	No	US2 6.38
	US2 6.38	POVA 1424.13	Priest River City Water Intake	Yes	US2 6.38
	US2 6.87	POVA 1423.64	Priest River Mouth	Yes	US2 6.87
	US2 7.59	POVA 1423.0	Priest River Mouth Slough	Unlikely	US2 6.87
	US2 10.19	POVA 1420.46	Carey Creek Game Management Area	Unlikely	US2 6.38
	US2 10.52	POVA 1420.12	Baylor Lane Slough	No	US2 13.49

Sector 1A West Pend Oreille Fire District

Go Back to Regional Map




Sector 1B West Pend Oreille Fire District
USCG0002203/26
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US2 5.73
US2 6.38
US2 6.87
US2 6.2
US2 7.59
US2 10.19
US2 10.52
Preliminary Draft for Agency Review
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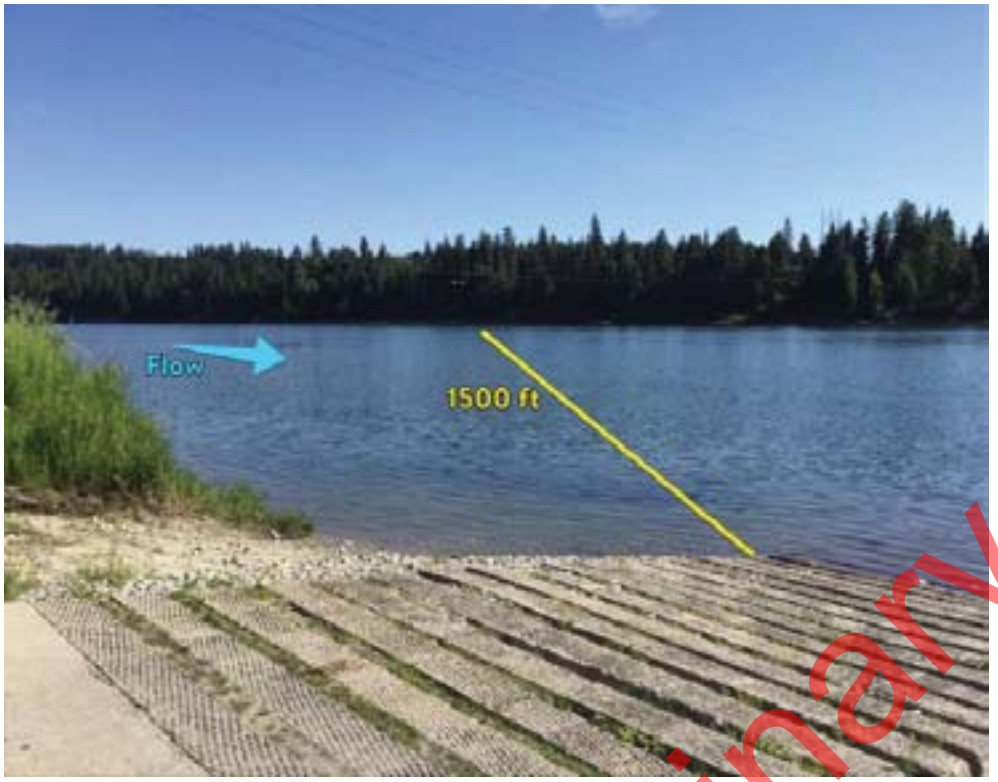
Site Lat Long:	48.185324 -117.031909 (http://www.google.com/maps/place/48.185324,-117.031909)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Pend Oreille River flow direction is to the northwest. Deploy collection boom and initiate contaminant recovery at Oldtown. Secure upstream end of boom River Left to tree. Secure downstream end of boom River Right to steel post. Vacuum truck access is good. Notify City of Oldtown.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is large. Large parking area for vehicles and equipment adjacent to boat ramp. Concrete boat launch. Oldtown boat launch is on site.
Field Notes:	• 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Bull Trout Critical Habitat, downstream municipal and irrigation water supplies, wildlife habitat, recreation.
Watercourse:	Lake Pend Oreille: gradient is low; substrate is sand; approx. width is 1000 ft.; approx. depth is 10 to 20 feet; channelized; slow moving.

Suggested Equipment	
Quantity	Description
1500 ft.	Curtain Boom Tow Bridles
As Appropriate	Portable Skimmer; Vacuum Truck
2000 ft.	Polypropylene Line
9	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
3	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (27.8 miles)
Second Cache: Bonners (61.2 miles)

Nearest Address: 68 Rd Old Diamond Mill
Oldtown ID 83822

Site-Specific Points of Contact

Site Access

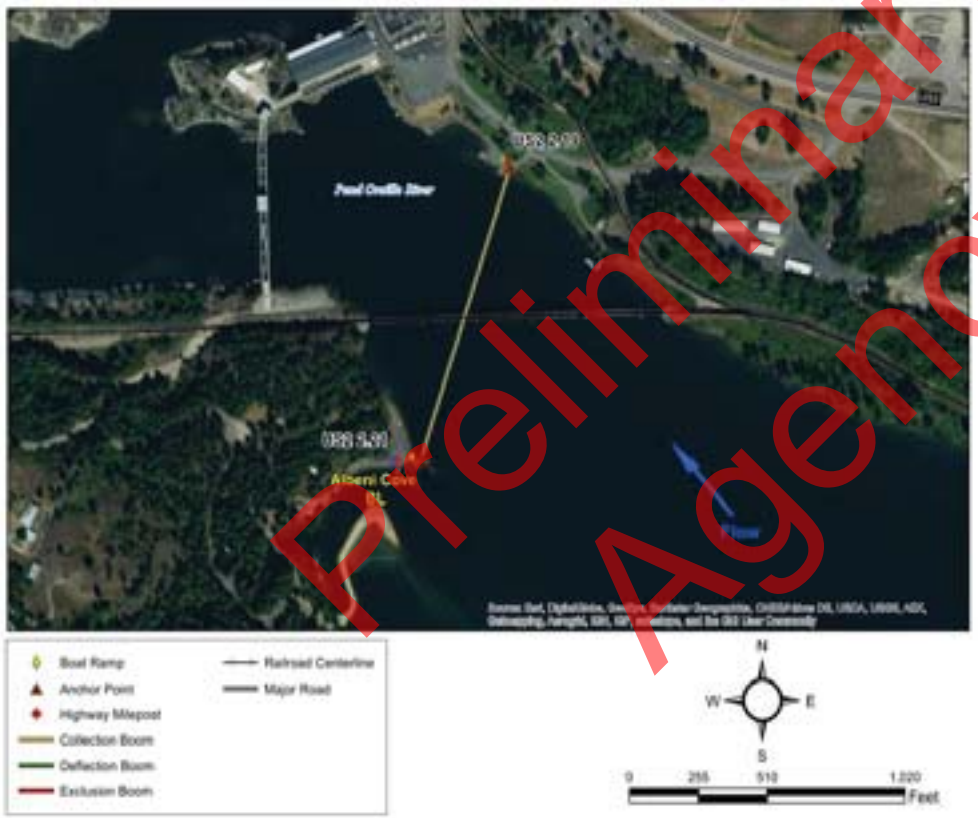
Sandpoint, Idaho

1. Head south on N Fifth Ave toward Cedar St. - 0.2 mi
2. Turn right onto US 2 W/Pine St - 27.8 mi
3. Turn left at Selkirk Way - 151 ft
4. Turn right onto Old Diamond Mill Rd - 0.3 mi

View from boat ramp and collection point looking upstream toward River left anchor.

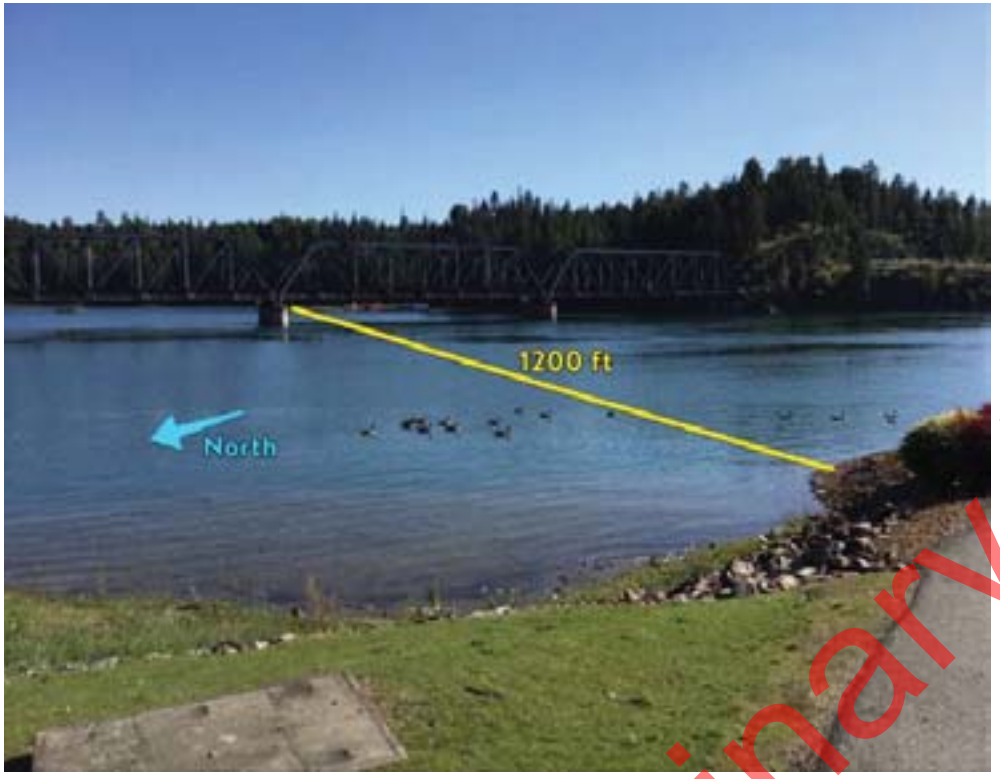
Boat ramp.

Site Lat Long:	48.179406 -116.996052 (http://www.google.com/maps/place/48.179406,-116.996052)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Pend Oreille RIver flow direction is to the west. Deploy collection boom and initiate contaminant recovery at Albeni Falls Dam. Secure upstream end of boom River Left to steel post. Secure downstream end of boom River Right to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is large. Large parking area near dam ranger station for vehicles and equipment. No boat ramp onsite. No boat launch facilities. Oldtown boat launch is 2.3 miles away.
Field Notes:	• Use Albeni Cove Recreation Area Boat Ramp to implement strategy. • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Albeni Falls Dam, Bull Trout Critical Habitat, downstream municipal and irrigation water supplies, wildlife habitat, recreation.
Watercourse:	Lake Pend Oreille: gradient is low; substrate is mud; approx. width is 1000 ft.; approx. depth is 10 to 20 feet; channelized; slow moving.



Suggested Equipment	
Quantity	Description
1200 ft.	Curtain Boom Tow Bridles
As Appropriate	Portable Skimmer; Vacuum Truck
1500 ft.	Polypropylene Line
12	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
3	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (26.0 miles)
Second Cache: Bonners (59.4 miles)

Nearest Address: 2289 Highway 2
Oldtown ID 83822

Site-Specific Points of Contact

Site Access

Sandpoint, ID

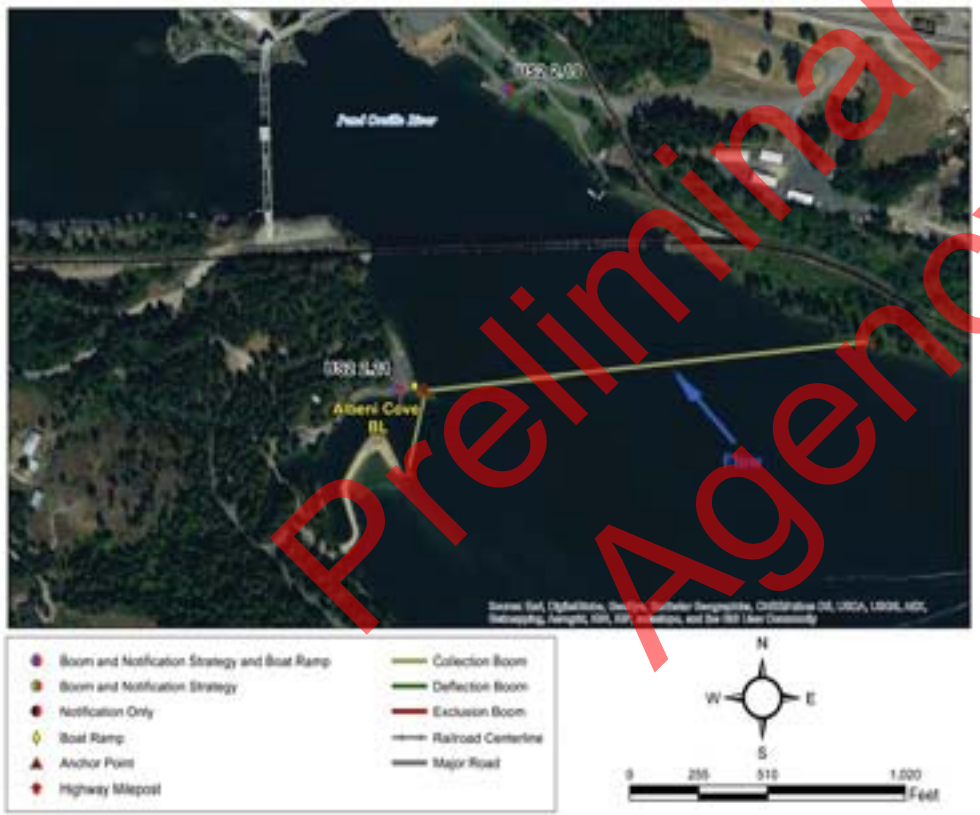
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn right onto US-2 W/Pine St - 26.0 mi
3. Turn left 0.3 mi

Albeni Falls Dam, Idaho

Looking upstream towards River left anchors from collection point.

View of lower parking area with good vac truck access.

Site Lat Long:	48.176484 -116.997298 (http://www.google.com/maps/place/48.176484,-116.997298)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Lake Pend Oreille flow direction is to the west. Deploy collection boom and initiate contaminant recovery at Albeni Cove Recreation Area. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is large. Large paved parking area for vehicles and equipment adjacent to boat ramp. Onsite boat ramp. Concrete boat launch. Albeni Cove boat launch is on site.
Field Notes:	• Recreation area gate locked from 2200-0700. Sheriff Deputies and Campground Host have keys. • Seasonal Boat Ramp • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **YES**
Resources Targeted:	Albeni Falls Dam, Bull Trout Critical Habitat, downstream municipal and irrigation water supplies, recreation, wildlife habitat.
Watercourse:	Lake Pend Oreille: gradient is low; substrate is sand; approx. width is 1000 ft.; approx. depth is 10 to 20 feet; channelized; slow moving.



Suggested Equipment	
Quantity	Description
2200 ft.	Curtain Boom Tow Bridles
As Appropriate	Portable Skimmer; Vacuum Truck
2800 ft.	Polypropylene Line
24	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
4	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (28.7 miles)
Second Cache: Bonners (62.1 miles)

Nearest Address: 741 Blackthorn Rd
Oldtown ID 83822

Site-Specific Points of Contact

Need phone number for on-Site recreation manager.

Site Access

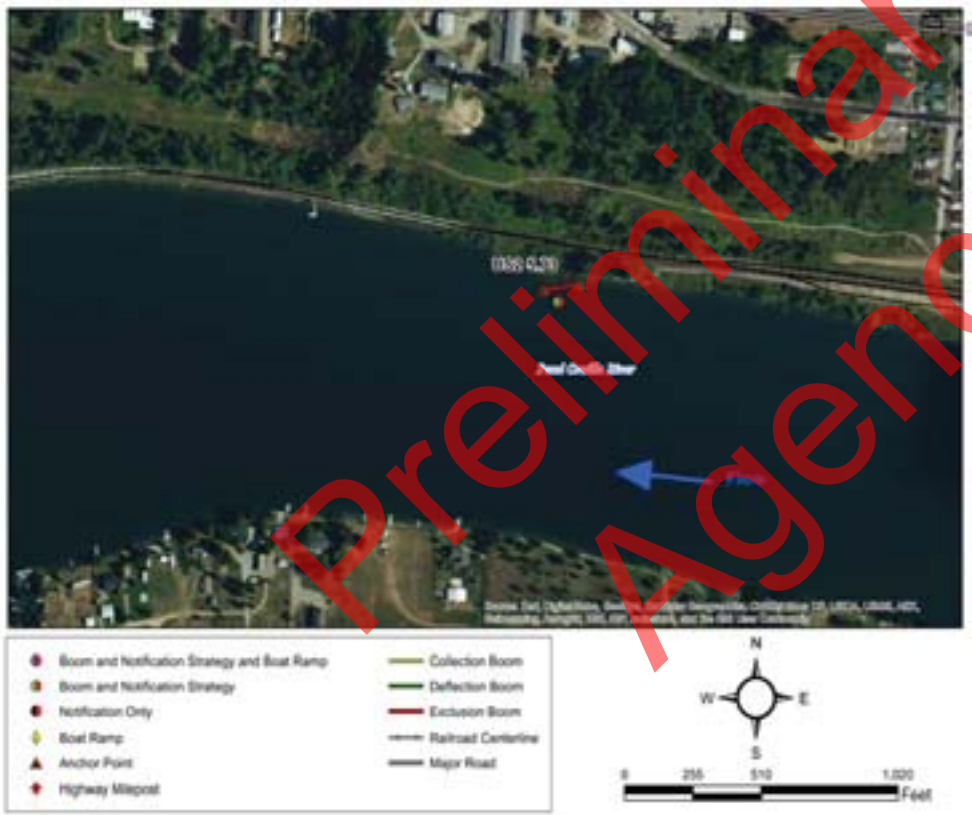
Sandpoint, Idaho

1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn right onto US-2 W/Pine St - 22.2 mi
3. Turn left onto Wisconsin St - 0.4 mi
4. Turn right onto OId Priest River Rd - 5.0 mi
5. Turn right onto Blackthorne Rd - 0.8 mi
6. Turn left to stay on Blackthorne Rd - 459 ft
7. Continue straight onto Albeni Cove Rd - 0.3 mi
8. Sharp left - 161 ft

Looking east toward upstream anchor from collection point near boat ramp.

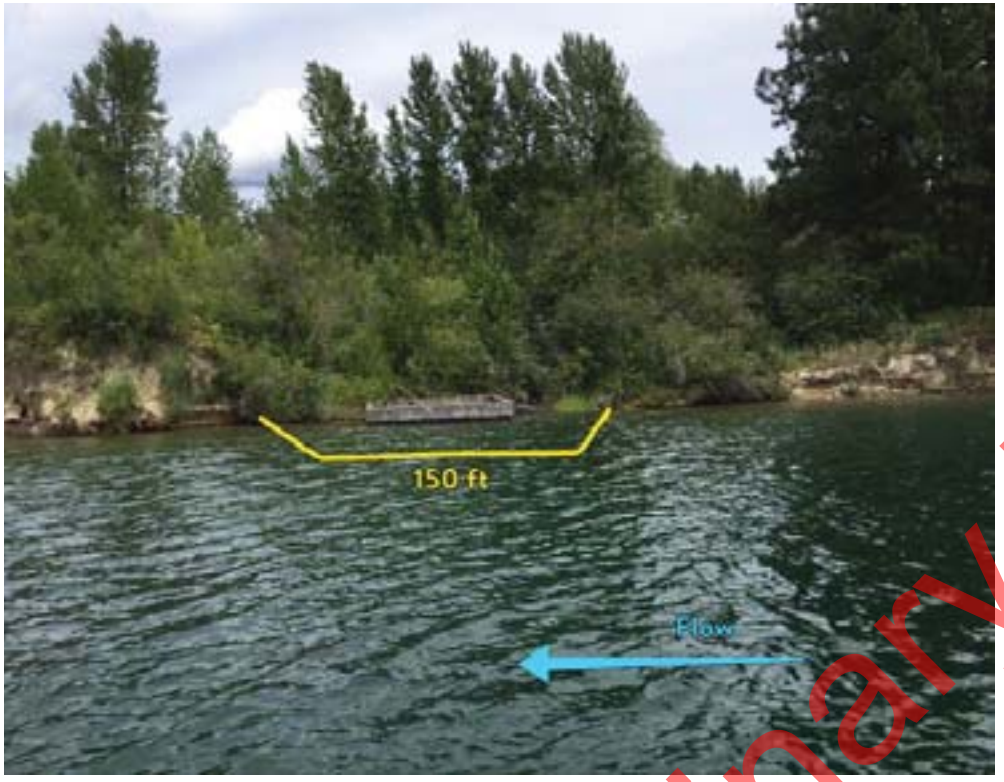
View of the boat ramp and parking area.

Site Lat Long:	48.177608 -116.918308 (http://www.google.com/maps/place/48.177608,-116.918308)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at 10th St Surface Water.
Implementation:	Prevent contaminant from impacting sensitive area at 10th St Surface Water. Secure upstream end of boom River Right to tree. Secure downstream end of boom River Right to tree.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Boat access only. No boat launch facilities. Priest River Mouth boat launch is 1.3 miles away.
Field Notes:	• 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Town drain pipe.
Watercourse:	Pend Oreille: gradient is low; substrate is sand; approx. width is 1125 ft.; approx. depth is 10 to 20 feet; channelized; slow moving.



Suggested Equipment	
Quantity	Description
150 ft.	Curtain Boom Tow Bridles
As Appropriate	
200 ft.	Polypropylene Line
24	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
1	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (22.5 miles)
Second Cache: Bonners (55.9 miles)

Nearest Address: 5678 US 2
Priest River ID 83856

Site-Specific Points of Contact

Site Access

Sandpoint, Idaho

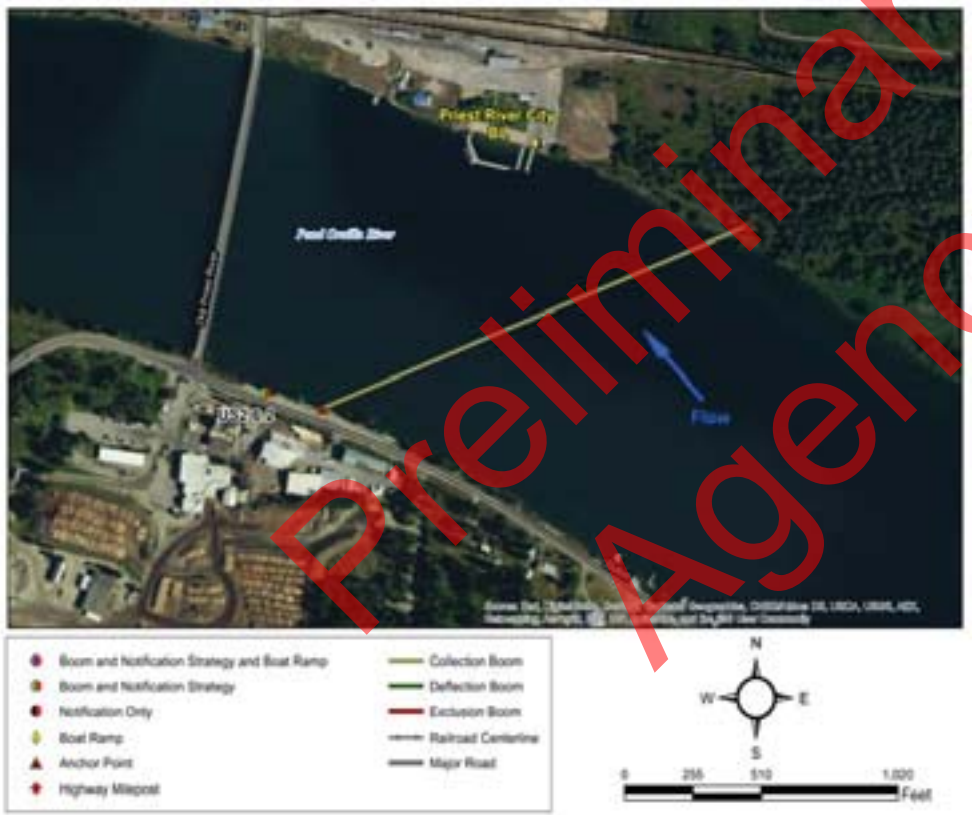
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn right onto US-2 W/Pine St - 22.2 mi
3. Turn left onto Wisconsin St - 0.2 mi
4. Turn left onto Railroad Ave - 394 ft

Railroad Avenue, Priest River, Idaho

Looking downriver at exclusion point, facing Northwest.

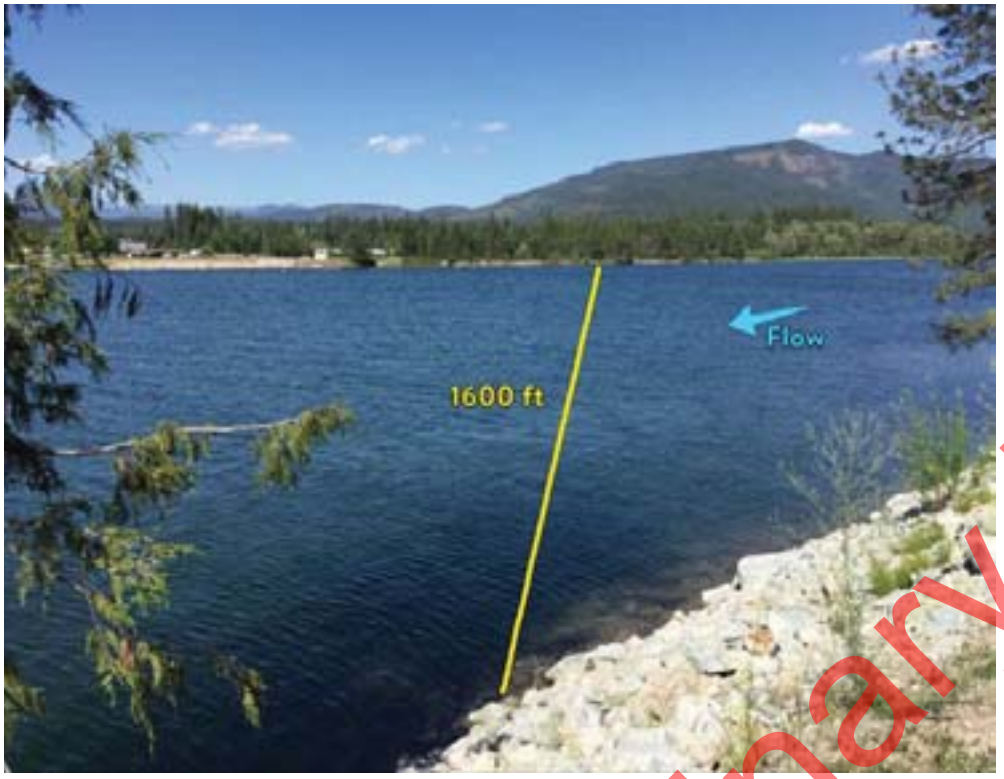
Looking at the exclusion point facing North.

Site Lat Long:	48.174342 -116.908027 (http://www.google.com/maps/place/48.174342,-116.908027
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Lake Pend Oreille flow direction is to the west. Deploy collection boom and initiate contaminant recovery at Priest River Alternate. Secure upstream end of boom River Right to steel post. Secure downstream end of boom River Left to rock. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is small. Small pullout on north side of road on river left. Limited parking on narrow shoulder. No boat launch facilities. Priest River City boat launch is 0.5 miles away.
Field Notes:	• Use Priest River Boat Ramp for strategy placement. • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Bull Trout critical habitat, Albeni Falls Dam, wildlife habitat, municipal and irrigation water supplies, recreation.
Watercourse:	Lake Pend Oreille: gradient is low; substrate is sand; approx. width is 1125 ft.; approx. depth is 10 to 20 feet; channelized; slow moving.



Suggested Equipment	
Quantity	Description
1600 ft.	Curtain Boom Tow Bridles
As Appropriate	Vacuum Truck; Portable Skimmer
2000 ft.	Polypropylene Line
12	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
3	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (22.4 miles)
Second Cache: Bonners (55.9 miles)

Nearest Address: 17728 Dufort Road
Priest River ID 83856

Site-Specific Points of Contact

Site Access

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn right onto US-2 W/Pine St- 22.2 mi
3. Turn left onto Wisconsin St- 0.4 mi
4. Turn right onto Dufort Rd- 276 ft

Priest River, Idaho

Looking upstream from River left collection point. Note the 20 foot rock bank down to water level.

Looking at the exclusion point facing North.

Site Lat Long:	48.176514 -116.904111 (http://www.google.com/maps/place/48.176514,-116.904111)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Priest River City Water Intake .
Implementation:	Pend Oreille river flow direction is to the west. Secure upstream end of boom North Shoreline to steel post. Secure downstream end of boom Midstream to buoy. Vacuum truck access is good. Notify Priest River Intake.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is large. Large city park with large parking area and turnaround. Concrete boat launch. Priest River City boat launch is at site.
Field Notes:	• Popular recreation site during summer months. • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Public water supply
Watercourse:	Lake Pend Oreille: gradient is low; substrate is gravel; approx. depth is over 20 feet; slow moving

Suggested Equipment	
Quantity	Description
550 ft.	Curtain Boom Tow Bridles
As Appropriate	
700 ft.	Polypropylene Line
4	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
1	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (22.4 miles)
Second Cache: Bonners (55.8 miles)

Nearest Address: Railroad Avenue
Priest River ID 83856

Site-Specific Points of Contact

Chris Carr (208) 448-2123

Site Access

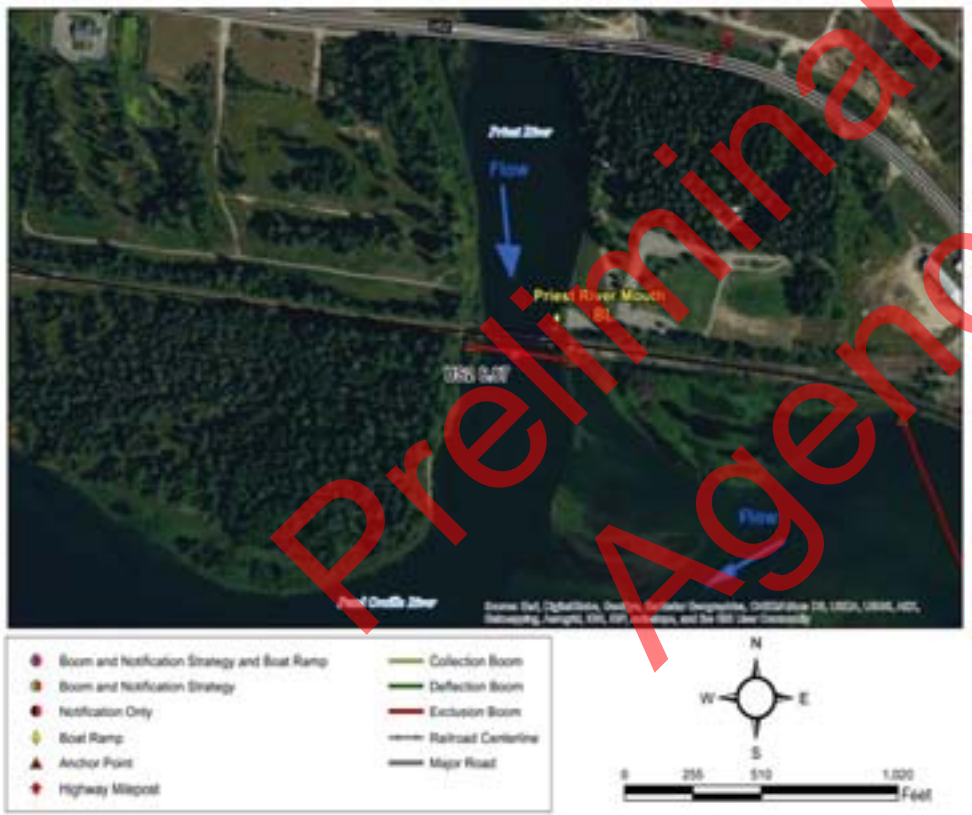
Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn right onto US-2 W/Pine St - 22.2 mi
3. Turn left onto Wisconsin St - 0.2 mi
4. Turn left onto Railroad Ave - 394 ft

Railroad Avenue, Priest River, Idaho

Looking North at boat ramp

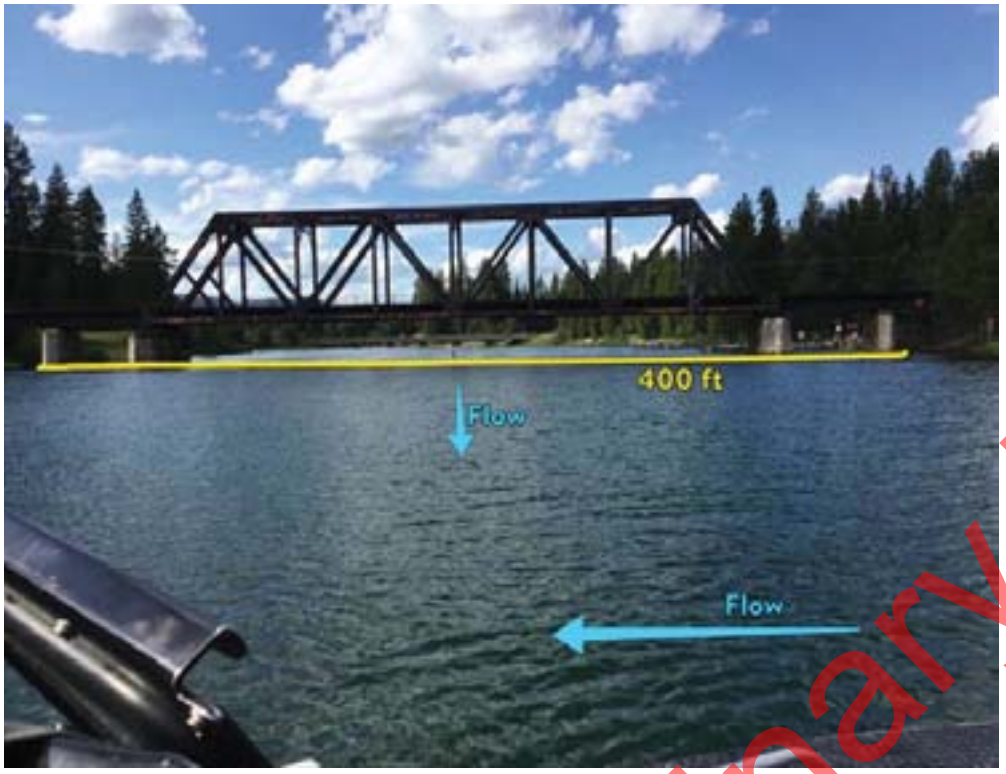
Looking south at staging area

Site Lat Long:	48.177538 -116.893301 (http://www.google.com/maps/place/48.177538,-116.893301)
Strategy Objective:	Notification and exclusion. Prevent contaminant from highway spill entering storm system and Pend Oreille River.
Implementation:	Priest River flow direction is to the south. Secure upstream end of boom River Left to bridge piling. Secure downstream end of boom River Right to bridge piling.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is large. Concrete parking lot, boat ramp, and grass field. Priest River Mouth boat launch is at site.
Field Notes:	• 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Recreation, Threatened and Endangered Species
Watercourse:	Priest River: gradient is low; substrate is sand; approx. width is 295 ft.; approx. depth is over 20 feet; slow moving



Suggested Equipment	
Quantity	Description
400 ft.	Curtain Boom Tow Bridles
As Appropriate	
500 ft.	Polypropylene Line
None	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (21.3 miles)
Second Cache: Bonners (54.7 miles)

Nearest Address: 6552 Highway 2
Priest River ID 83856

Site-Specific Points of Contact

Site Access

Sandpoint, Idaho

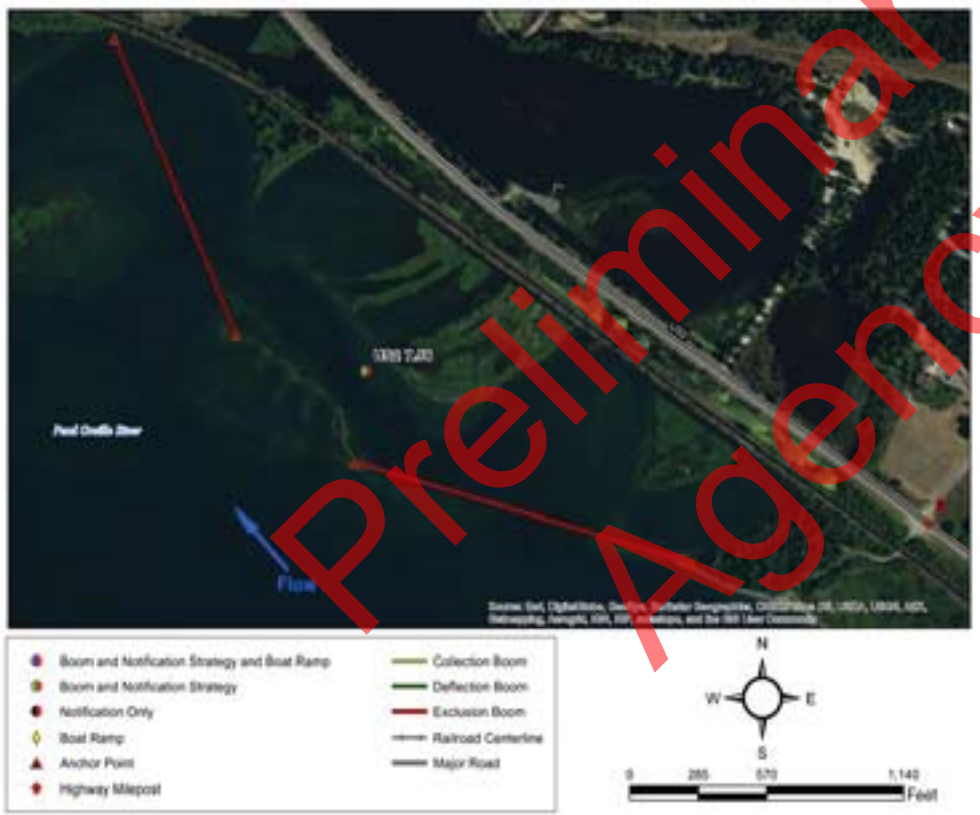
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn right onto US-2 W/Pine St - 21.4 mi
3. Destination will be on the left (look for signs for Priest River Park and Campground)

Priest River Park/Campground

Mouth of the Priest River from the Pend Oreille River looking north

Looking at the staging area from the east

Site Lat Long:	48.174057 -116.882533 (http://www.google.com/maps/place/48.174057,-116.882533)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Priest River Mouth Slough.
Implementation:	Lake Pend Oreille flow direction is to the west. Use two segments of boom to protect sensitive area. Secure upstream end of boom East Shoreline to steel post. Secure downstream end of boom West Shoreline to steel post. Secure upstream end of second boom East Shoreline to steel post. Secure downstream end of second boom West Shoreline to steel post.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Priest River Mouth boat launch is 0.7 miles away.
Field Notes:	• Site is only accessible from Priest River boat launch • 4WD Access: **NO** • Seasonal Access Only: **Yes** • Locked Gate: **NO**
Resources Targeted:	Threatened and Endangered Species, Recreation
Watercourse:	Lake Pend Oreille: gradient is low; substrate is mud; approx. depth is 10 to 20 feet; slow moving



Suggested Equipment	
Quantity	Description
2800 ft.	Curtain Boom Tow Bridles
As Appropriate	
3500 ft.	Polypropylene Line
16	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
7 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (20.6 miles)
Second Cache: Bonners (54.0 miles)

Nearest Address: 6552 Highway 2
Priest River ID 83856

Site-Specific Points of Contact

Site Access - Boat access, Use Priest River Mouth boat launch, directions below

Sandpoint, Idaho

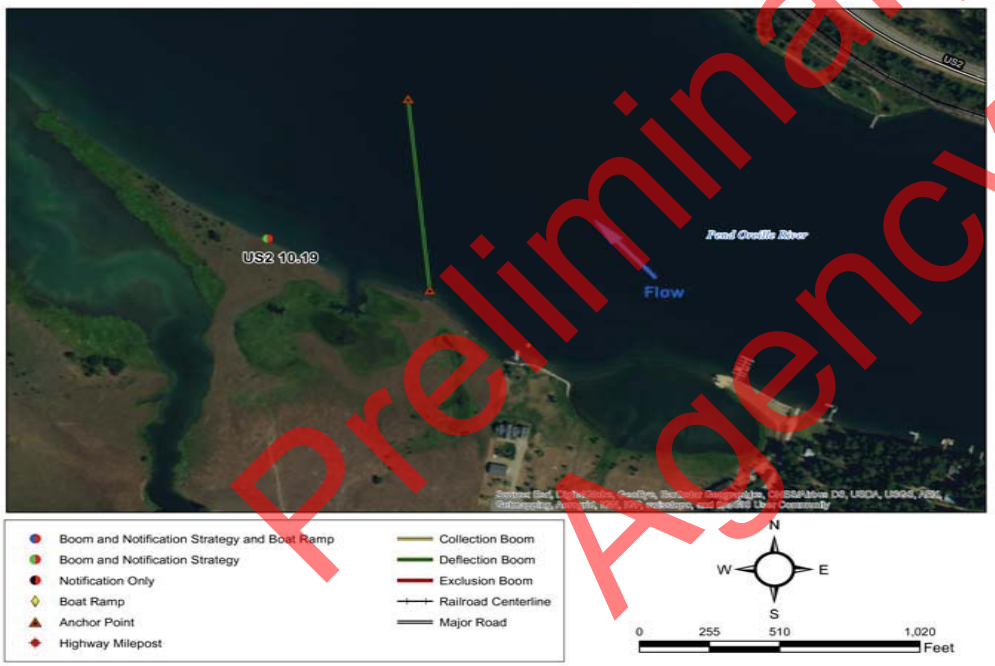
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn right onto US-2 W/Pine St - 22.2 mi
3. In the town of Priest River, ID, Turn left onto Wisconsin St- 0.2 mi
4. Turn left onto Railroad Ave

Priest River Park

Looking upstream from island (anchor point 1A)toward anchor point 1B

Looking from the island (anchor point 2A) toward river right. (anchor point 2B)

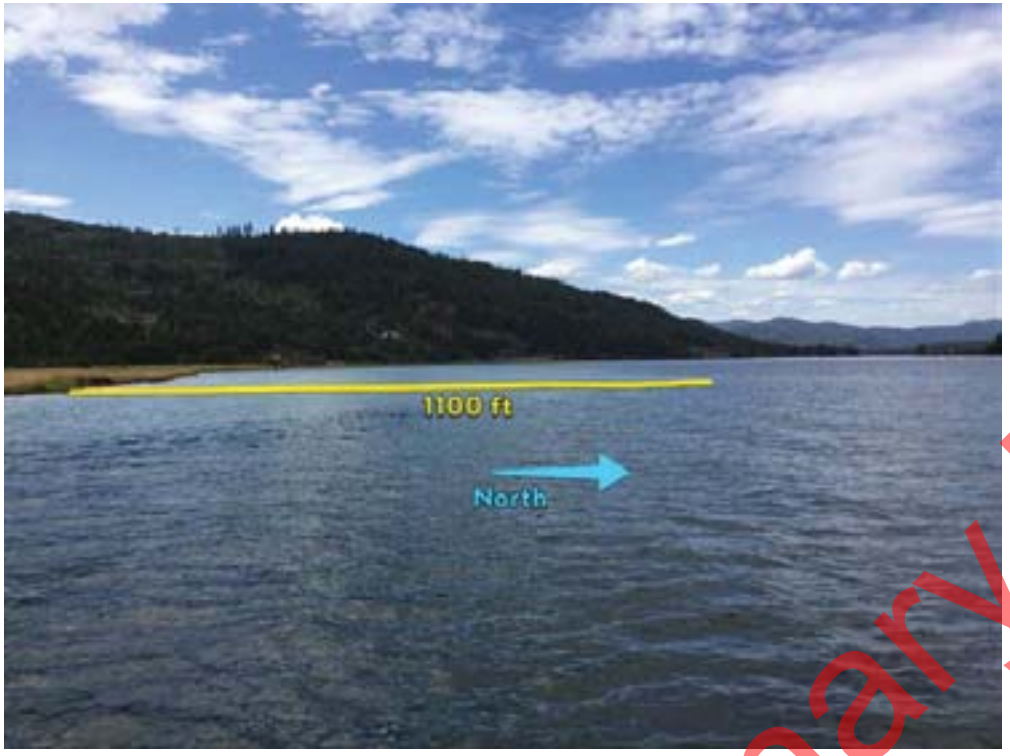
Site Lat Long:	48.145506 -116.849023 (http://www.google.com/maps/place/48.145506,-116.849023)
Strategy Objective:	Notification and deflection away from shoreline.
Implementation:	Lake Pend Oreille flow direction is to the west. Deflect contaminant moving downstream away from shoreline at Carey Creek Game Management Area. Secure upstream end of boom River Left to steel post. Secure downstream end of boom Midstream to buoy.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Priest River City boat launch is 4.4 miles away.
Field Notes:	• Only accessible by boat from Priest River boat launch • 4WD Access: **None** Seasonal Access Only: **YES** Locked Gate: **None**
Resources Targeted:	Threatened and Endangered Species
Watercourse:	Lake Pend Oreille: gradient is low; substrate is mud; approx. depth is 10 to 20 feet; slow moving



Suggested Equipment	
Quantity	Description
1100 ft.	Curtain Boom Tow Bridles
As Appropriate	
1500 ft.	Polypropylene Line
4	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
1	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / None	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Visited on 2016-07-03



Nearest Cache: Sandpoint (26.4 miles)
Second Cache: Bonners (59.8 miles)

Nearest Address: 13943 Dufort Rd
Priest River ID 83856

Site-Specific Points of Contact

Site Access - Boat access, Use Priest River Mouth boat launch, directions below

Sandpoint, Idaho

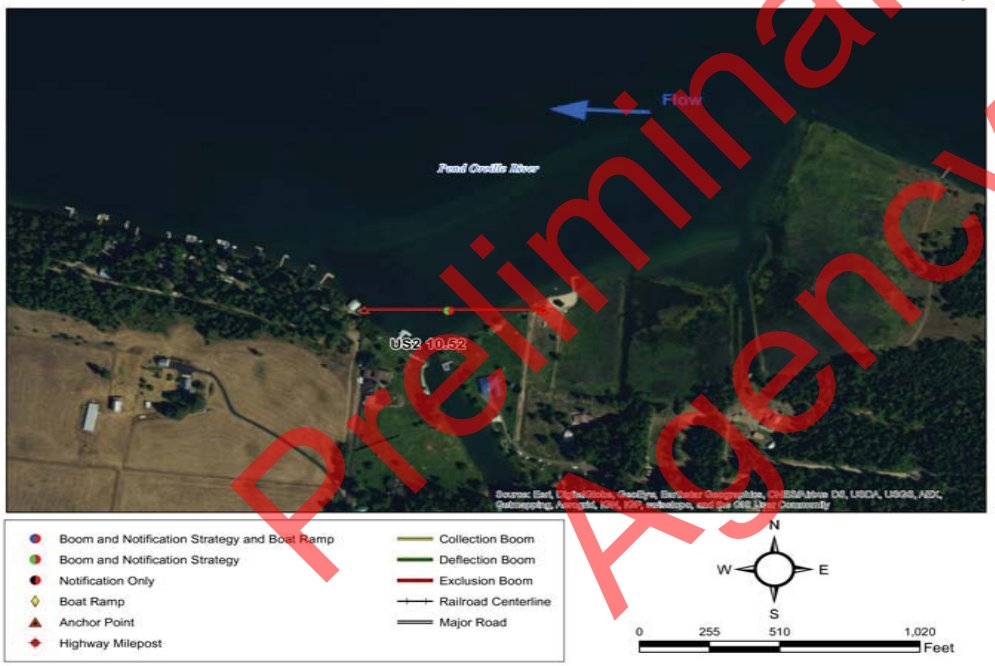
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn right onto US-2 W/Pine St - 22.2 mi
3. In the town of Priest River, ID, Turn left onto Wisconsin St- 0.2 mi
4. Turn left onto Railroad Ave

Priest River Park

Looking southwest from the Pend Orellie River toward River left at the Carey Creek Wild life management Area

None

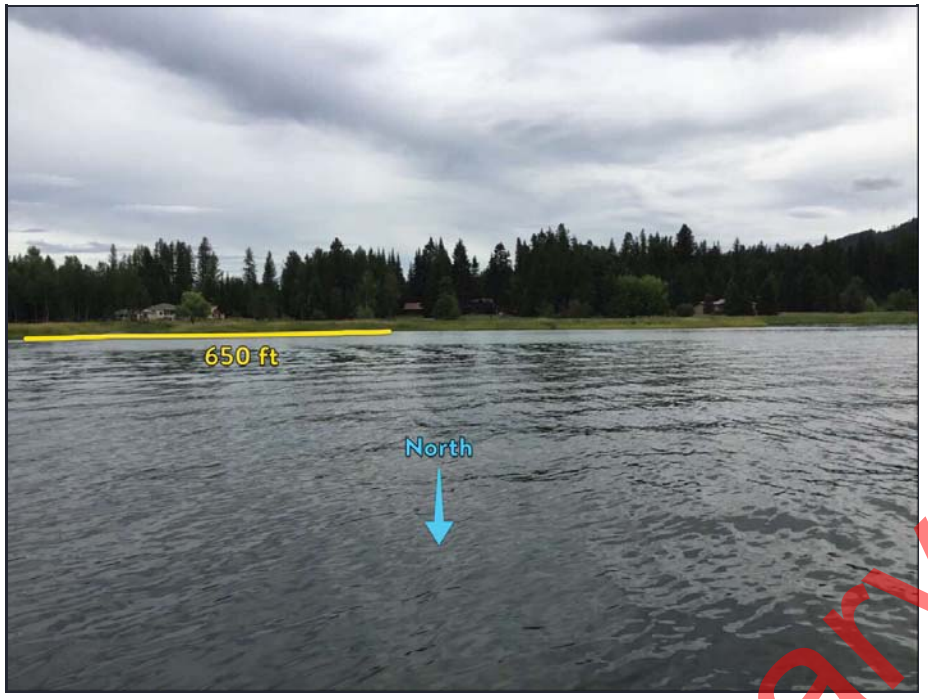
Site Lat Long:	48.143044 -116.833326 (http://www.google.com/maps/place/48.143044,-116.833326)
Strategy Objective:	Notification and exclusion. Option A: deflect contamination in PO river from reaching banks. Option B: prevent Dufort Rd contamination from reaching river.
Implementation:	Lake Pend Oreille flow direction is to the west. Secure upstream end of boom River Left to steel post. Secure downstream end of boom River Left to steel post. Notify private land owner.
Site Safety Note:	Complete Job Safety Analysis. Probably inaccessible in low water.
Staging Area:	On site staging is large. Grass and sand lot west of the slough. No boat launch facilities. Priest River City boat launch is 6.1 miles away.
Field Notes:	• Private staging area see additional contacts in in notification box. • 4WD Access: **NO** Seasonal Access Only: **NO** Locked Gate: **NO**
Resources Targeted:	Baylor Ln. Slough wetlands
Watercourse:	Lake Pend Oreille: gradient is low; substrate is mud; approx. depth is 10 to 20 feet; slow moving



Suggested Equipment	
Quantity	Description
650 ft.	Curtain Boom Tow Bridles
As Appropriate	
800 ft.	Polypropylene Line
8	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
2	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Visited on 2016-07-02



Nearest Cache: Sandpoint (28.1 miles)
Second Cache: Bonners (56.8 miles)

Nearest Address: 365 Baylor Ln
Priest River ID 83856

Site-Specific Points of Contact

Glenna Merrill, Land owner 208 437 3873

Site Access

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn left onto Pine St - 0.3 mi
3. Turn right onto S 1st Ave - 0.2 mi
4. Turn left onto E Superior St - 0.5 mi
5. Merge onto US-95 S - 8.0 mi
6. Turn right onto Dufort Rd - 12.9 mi
7. Turn right onto Baylor Ln - 0.2 mi

Baylor Lane, Priest River, Idaho

Baylor Ln Slough looking south from Pend Prielle River

Baylor Ln Slough staging area

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Sector 2

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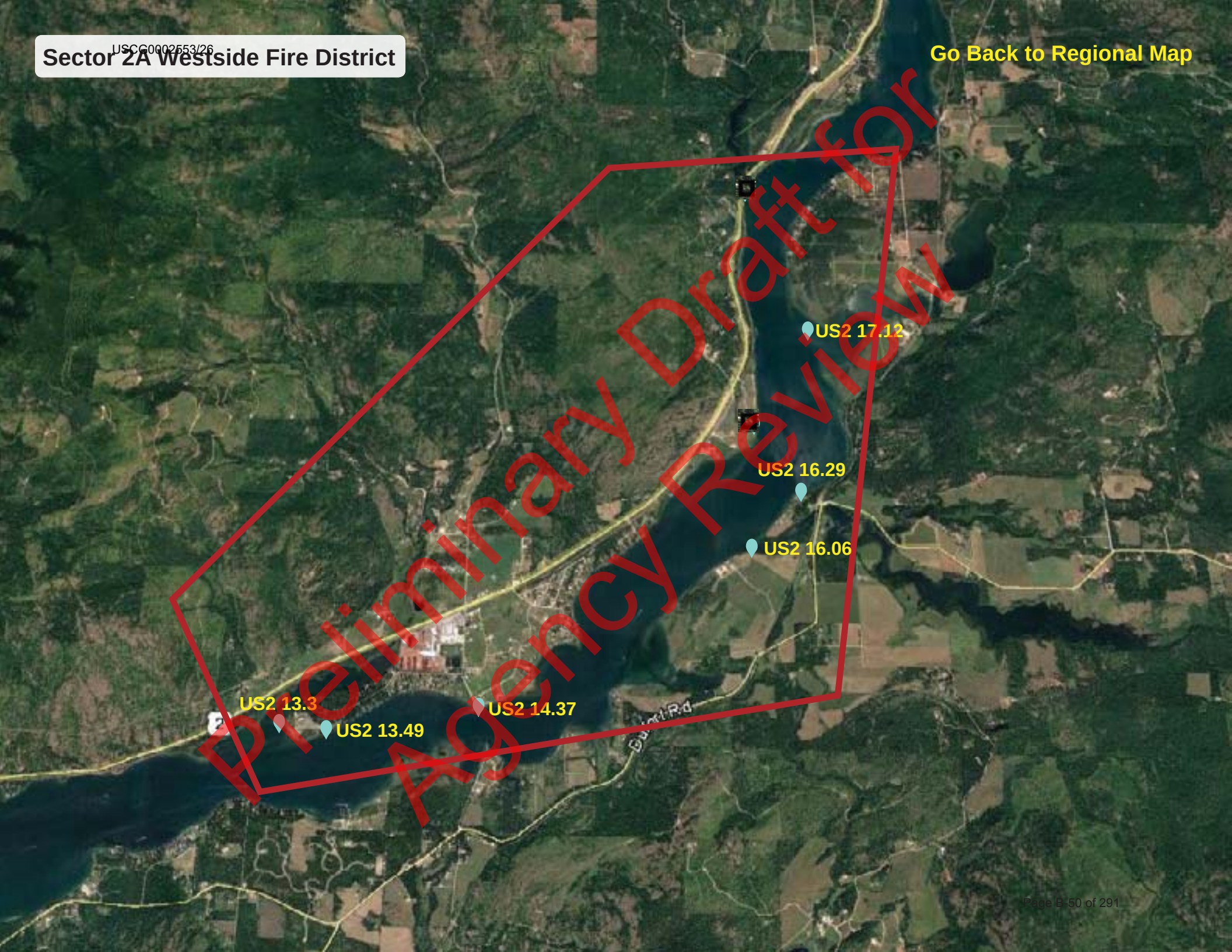
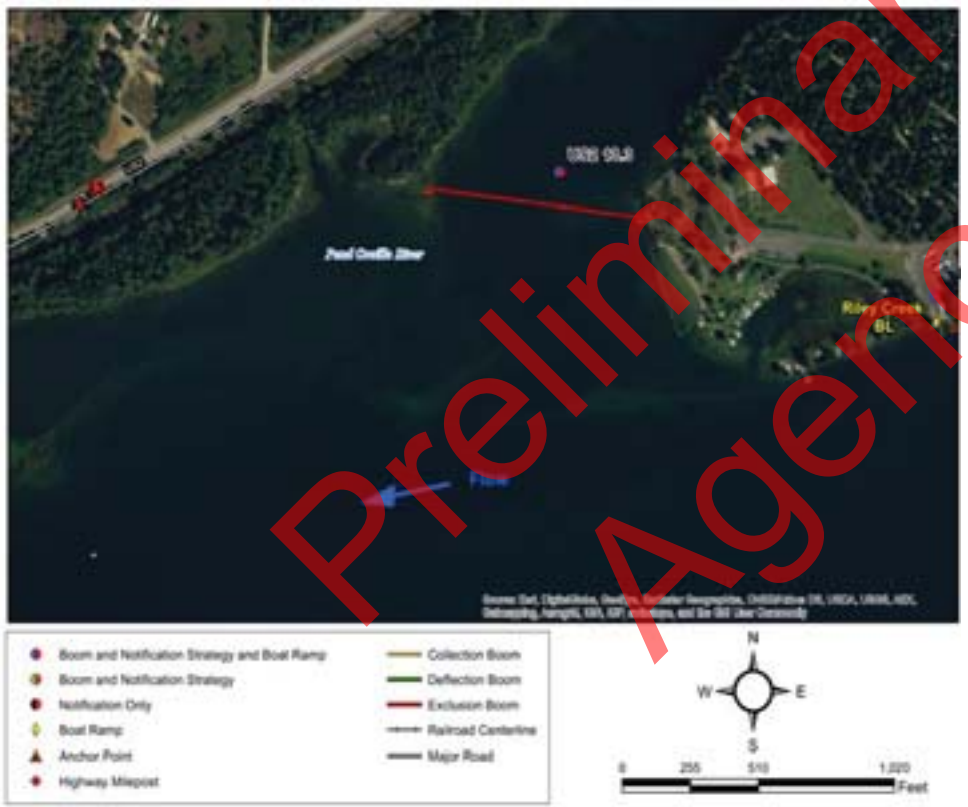
Sector & Map	Site ID & Highway Milepost	Railroad Milepost		Accessible at Low Water?	Nearest Boat Ramp or Staging Area
Sector 2A Westside Fire District	US2 13.3	POVA 1417.28	Riley Creek Slough	No	US2 13.49
	US2 13.49	POVA 1417.06	Riley Creek Recreation Area	No	US2 13.49
	US2 14.37	POVA 1416.24	Laclede Public Water Supply	Yes	US2 14.37
	US2 16.06	UP Spokane RR 62.78	Cocolalla Creek Mouth	Unlikely	US2 14.37
	US2 16.29	UP Spokane RR 63.14	Morton Slough Boat Launch	No	US2 16.29
	US2 17.12	POVA 1413.35	Morton Slough Game Management Area	No	US2 14.37
Sector 2B Westside Fire District	US2 20.71	POVA 1409.86	Bay near Muskrat Lake	No	US95 470.21
	US2 24.89	BNSF Newport 71.01	Dover Bay Slough	No	US2 25.15
	US2 25.16	BNSF Newport 71.31	Dover Bay Marina	No	US2 25.15
	US2 25.63	BSF Newport 71.87	Dover Bay Water Intake	Yes	US2 25.15


Sector 2A Westside Fire District
USCG0002553/26
Go Back to Regional Map
US2 17.12
US2 16.29
US2 16.06
US2 14.37
US2 13.3
US2 13.49
Preliminary Draft for Agency Review

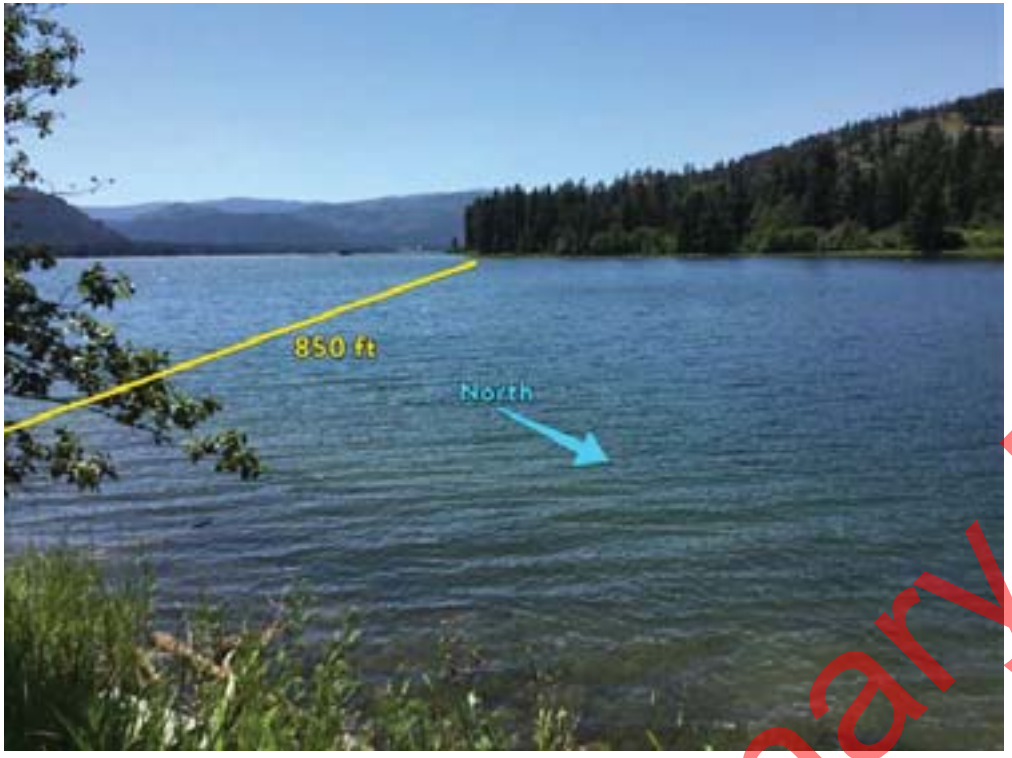

Sector 2B Westside Fire District
USCG0002563/26
Go Back to Regional Map
Preliminary Draft for Agency Review
US2 24.89
US2 25.16
US2 25.63
US2 20.71
US-Rte 2
2
© 2016 Google

Site Lat Long:	48.160032 -116.778168 (http://www.google.com/maps/place/48.160032,-116.778168)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Lake Pend Oreille flow direction is to the west. Deploy collection boom and initiate contaminant recovery at Riley Creek. Secure upstream end of boom to west shoreline. Secure downstream end of boom East Shoreline to steel post.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Riley Creek boat launch is 0.2 miles away.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: YES • Locked Gate: NO
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	Lake Pend Oreille: gradient is low; substrate is mud; approx. depth is over 20 feet; slow moving



Suggested Equipment	
Quantity	Description
850 ft.	Curtain Boom Tow Bridles
As Appropriate	
1000 ft.	Polypropylene Line
No	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (15.1 miles)
Second Cache: Bonners (48.5 miles)

Nearest Address: 125 Willow Crk Rd
Priest River ID 83856

Site-Specific Points of Contact

Site Access

Sandpoint, Idaho

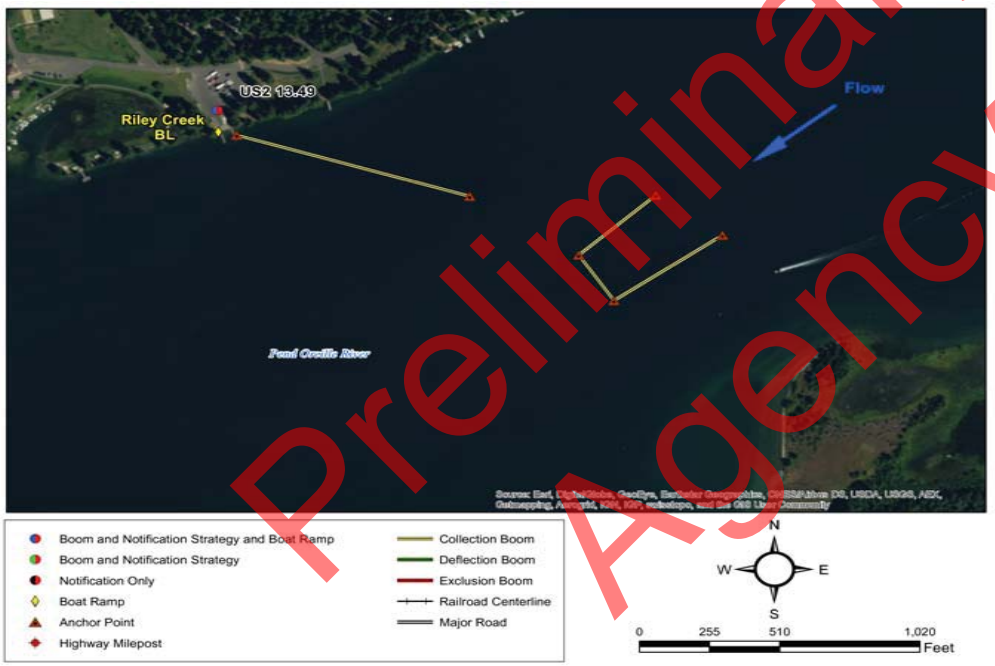
1. Head south on N Fifth Ave toward Cedar St. - 0.2 mi
2. Turn right onto US-2 W/Pine St - 13.8 mi
3. Turn left onto Riley Creek Rd - 0.4 mi
4. Turn right onto Riley Creek Park Rd - 0.8 mi

Riley Creek Park Drive, Priest River, Idaho

Looking West at slough

None

Site Lat Long:	48.159216 -116.772256 (http://www.google.com/maps/place/48.159216,-116.772256)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Lake Pend Oreille flow direction is to the west. Deploy collection boom and initiate contaminant recovery at Riley Creek Recreation Area. Secure upstream end of boom Midstream to buoy. Secure downstream end of boom North Shoreline to steel post. Secure upstream end of second boom Midstream to boat. Secure downstream end of second boom Midstream to boat. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is large. Large asphalt parking lot with large staging area. Concrete boat launch. Riley Creek boat launch is at site.
Field Notes:	• 4WD Access: **NO** Seasonal Access Only: **NO** Locked Gate: **NO**
Resources Targeted:	Recreation, Reservoir, Threatened and Endangered Species
Watercourse:	Lake Pend Oreille: gradient is low; substrate is mud; approx. depth is over 20 feet; slow moving



Suggested Equipment	
Quantity	Description
1000 ft.	Curtain Boom Tow Bridles
As Appropriate	Portable Skimmer; Vacuum Truck; Absorbent Boom
1250 ft.	Polypropylene Line
4	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
3	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
2 / 2	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Visited on 2016-06-30

Nearest Cache: Sandpoint (14.9 miles)
Second Cache: Bonners (48.3 miles)

Nearest Address: 1097 Riley Crk Pk Dr
Priest River ID 83856

Site-Specific Points of Contact

Site Access

Sandpoint, ID

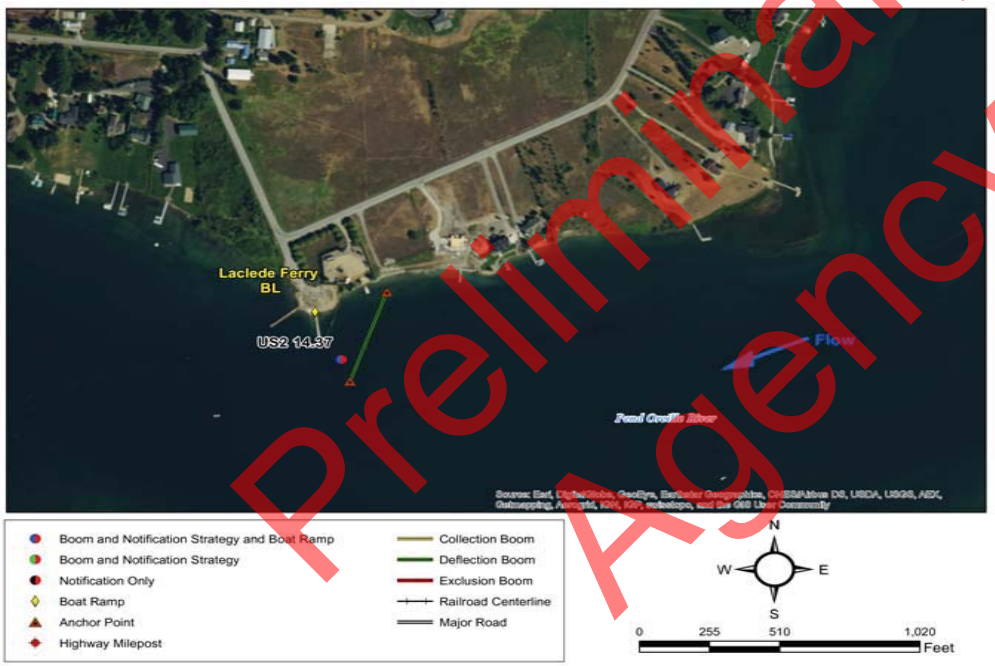
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn right onto US-2 W/Pine St - 13.8 mi
3. Turn left onto Riley Creek Rd - 0.4 mi
4. Turn right onto Riley Creek Park Rd - 1.0 mi

Riley Creek Recreation Area, Laclede, Idaho

Riley Creek Recreation Area boat launch

Riley Creek Recreation Area staging area

Site Lat Long:	48.160811 -116.753563 (http://www.google.com/maps/place/48.160811,-116.753563)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Laclede boat launch.
Implementation:	Secure upstream end of boom North Shoreline to steel post. Secure downstream end of boom Midstream to buoy. Vacuum truck access is good. Notify Laclede Water Intake.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is large. Large turn around with ample parking. Concrete boat launch. Laclede Ferry boat launch is at site.
Field Notes:	• 4WD Access: **NO** Seasonal Access Only: **YES** Locked Gate: **NO**
Resources Targeted:	Public water supply
Watercourse:	slow moving



Suggested Equipment	
Quantity	Description
400 ft.	Curtain Boom Tow Bridles
As Appropriate	
500 ft.	Polypropylene Line
4	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
1	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Visited on 2016-06-30

Nearest Cache: Sandpoint (14.2 miles)
Second Cache: Bonners (47.6 miles)

Nearest Address: 705 River Run Dr
Laclede ID 83841

Site-Specific Points of Contact

Site Access

Sandpoint, ID

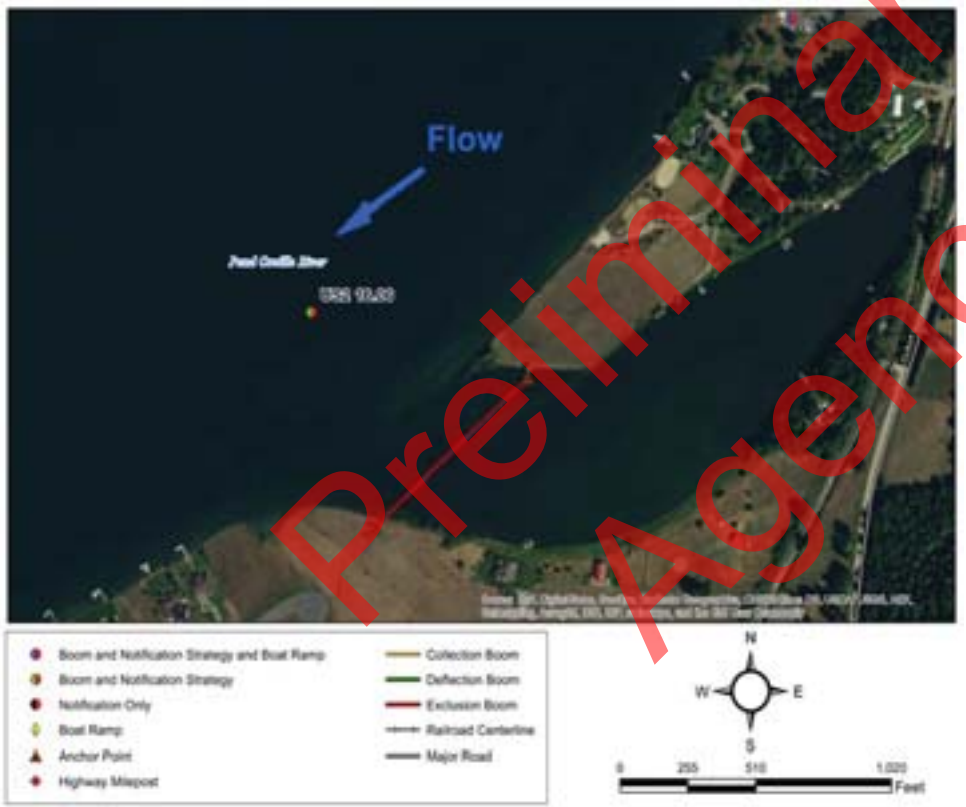
1. Head south on N Fifth Ave Toward Cedar St - 0.2 mi
2. Turn right onto US-2 W/Pine St - 13. 8 mi
3. Turn left onto Riley Creek Rd - 0.4 mi
4. Continue onto Laclede Ferry Rd - 0.2 mi

Laclede Ferry Road, Laclede, Idaho

From Laclete boat launch looking south

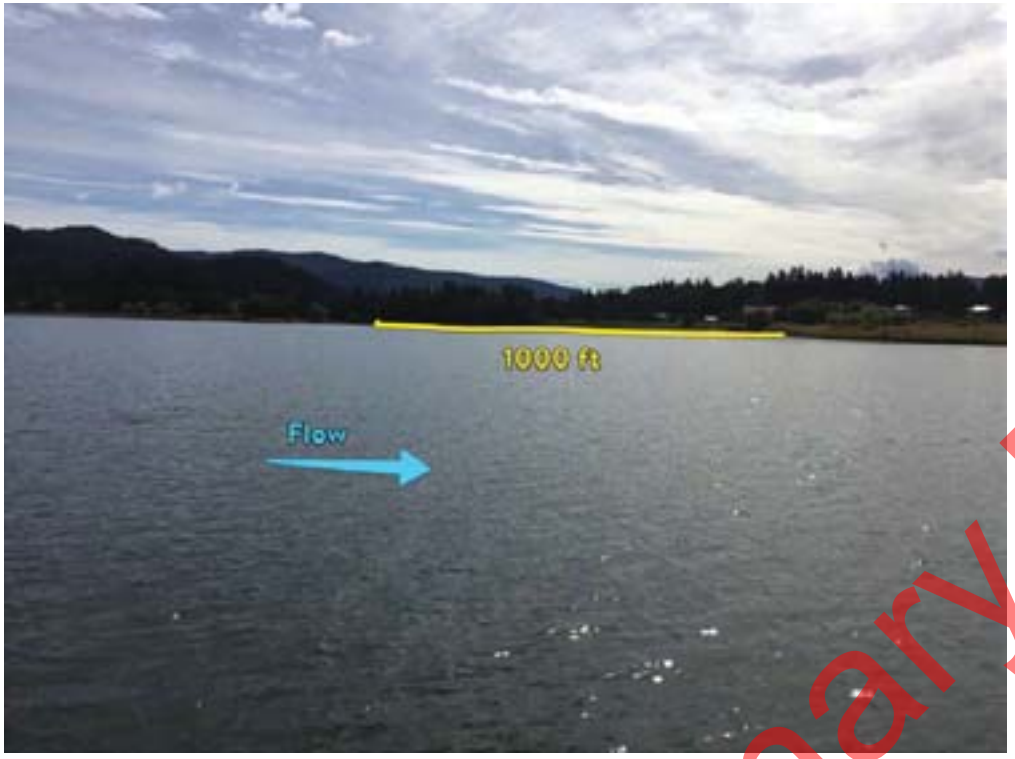
Laclete boat launch staging area

Site Lat Long:	48.17539 -116.720867 (http://www.google.com/maps/place/48.17539,-116.720867)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at at Morton Slough or from reaching Pend Oreille river from slough.
Implementation:	Lake Pend Oreille flow direction is to the southwest. Secure upstream end of boom River Left to steel post. Secure downstream end of boom River Left to steel post. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Use boat ramp upstream at Morton Slough Boat Ramp for access and staging. No boat launch facilities. Morton Slough boat launch is 1.9 miles away.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Morton slough, wildlife habitat, recreation
Watercourse:	Lake Pend Oreille: gradient is low; substrate is sand; approx. width is 800 ft.; approx. depth is 10 to 20 feet; channelized; slow moving



Suggested Equipment	
Quantity	Description
1000 ft.	Curtain Boom Tow Bridles
As Appropriate	
1000 ft.	Polypropylene Line
10	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
1	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (16.8 miles)
Second Cache: Bonners (49.1 miles)

Nearest Address: 157 Wild Rose Ln
Sagle ID 83860

Site-Specific Points of Contact

Site Access

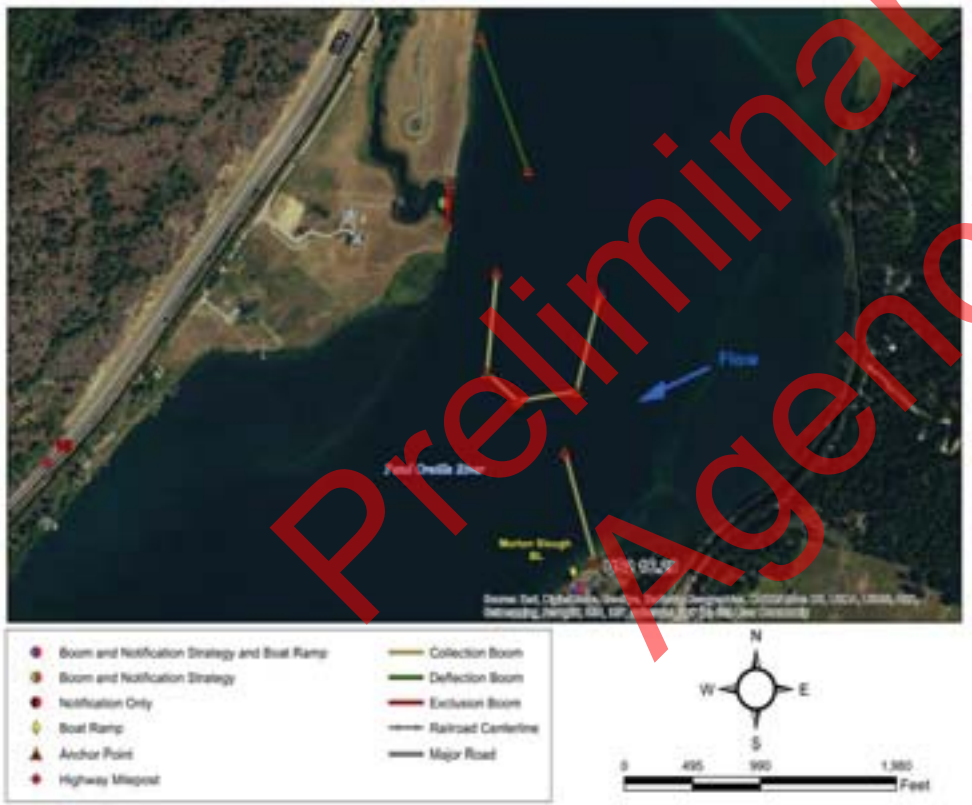
Sandpoint, ID
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn left onto Pine St - 0.3 mi
3. Turn right onto S 1st Ave - 0.2 mi
4. Turn eft onto E Superior St - 0.5 mi
5. Merge onto US-95 S - 8.0 mi
6. Turn right onto Dufort Rd - 5.7 mi
7. Turn right onto Lakeshore Dr - 52 ft
8. Turn left onto Wild Rose Ln - 194 ft

Wild Rose Lane, Sagle, Idaho

Looking north across the mouth of the slough.

Looking South towards Morton's slough, nearest upstream anchor site.

Site Lat Long:	48.180406 -116.714421 (http://www.google.com/maps/place/48.180406,-116.714421)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Lake Pend Oreille flow direction is to the southwest. Deploy collection boom and initiate contaminant recovey at Morton Slough Boat Launch. Secure upstream end of boom River Right to tree. Secure downstream end of boom River Left to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is large. Large parking area for vehicles and equipment adjacent to boat ramp. Concrete boat launch. Morton Slough boat launch is at the site.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Bull Trout critical habitat, downstream municipal and irrigation water supplies, recreation, wildlife habitat
Watercourse:	Lake Pend Oreille: gradient is low; approx. width is 3000 ft.; approx. depth is 10 to 20 feet; channelized; slow moving



Suggested Equipment	
Quantity	Description
3700 ft.	Curtain Boom Tow Bridles
As Appropriate	
4500 ft.	Polypropylene Line
10	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
7	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
2 / 2	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (15.0 miles)
Second Cache: Bonners (47.3 miles)

Nearest Address: 6898 Dufort Rd
Sagle ID 83860

Site-Specific Points of Contact

Site Access

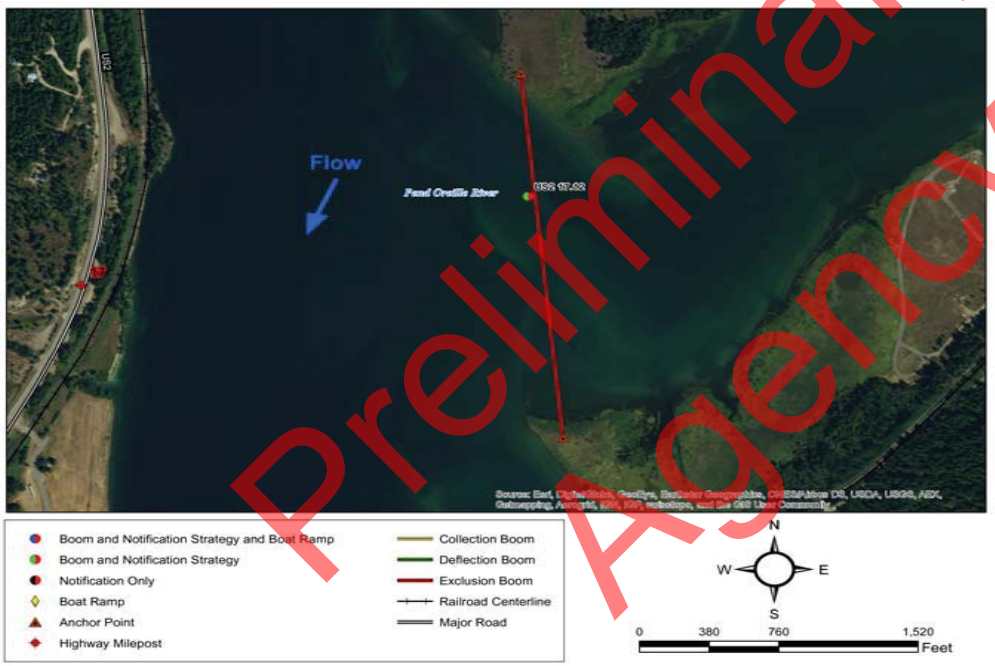
Sandpoint, ID
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn left onto Pine St - 0.3 mi
3. Turn right onto S 1st Ave - 0.2 mi
4. Turn eft onto E Superior St - 0.5 mi
5. Merge onto US-95 S - 8.0 mi
6. Turn right onto Dufort Rd - 5.7 mi
7. Turn right onto Lakeshore Dr - 52 ft
8. Turn left onto Wild Rose Ln - 194 ft

Wild Rose Lane, Sagle, Idaho

View from River left collection point upstream towards River right anchor.

View from boat ramp of parking area.

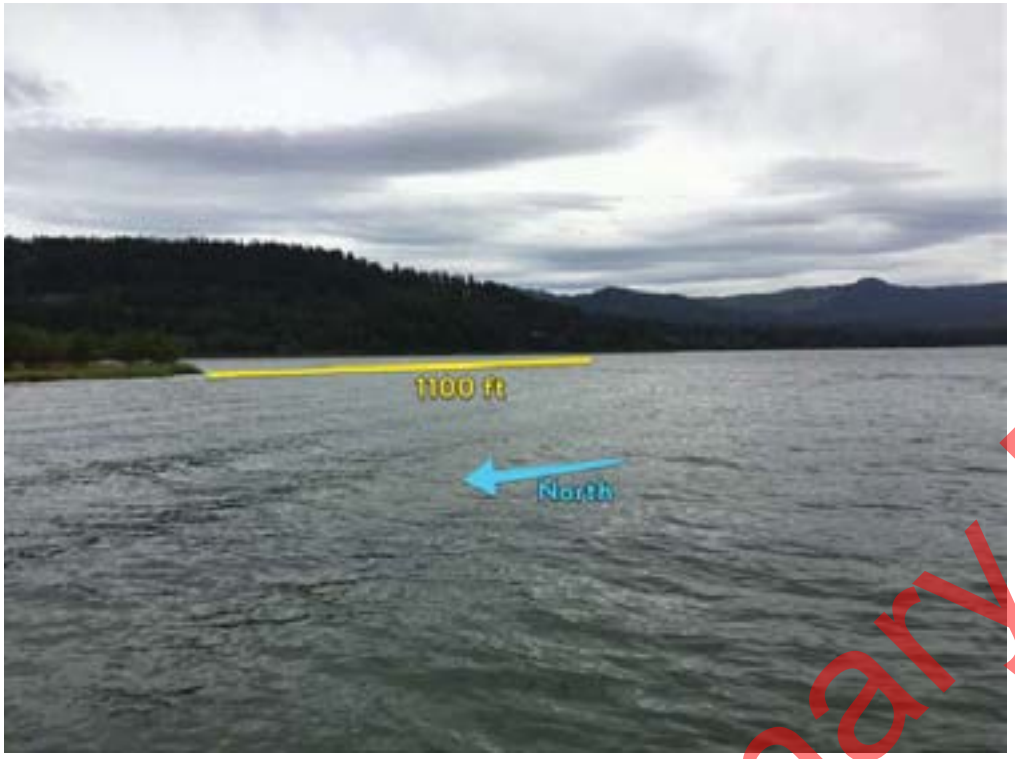
Site Lat Long:	48.196842 -116.710277 (http://www.google.com/maps/place/48.196842,-116.710277)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Upper Morton Slough.
Implementation:	Lake Pend Oreille flow direction is to the south. Secure upstream end of boom North Shoreline to steel post. Secure downstream end of boom South Shoreline to steel post.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Laclede Ferry boat launch is 3.2 miles away.
Field Notes:	• Only accessible by boat from Morton Slough boat launch • 4WD Access: **None** Seasonal Access Only: **YES** Locked Gate: **None**
Resources Targeted:	Recreation, Threatened and Endangered Species
Watercourse:	Lake Pend Oreille: gradient is low; substrate is mud; approx. depth is over 20 feet; slow moving



Suggested Equipment	
Quantity	Description
2500 ft.	Curtain Boom Tow Bridles
As Appropriate	
3000 ft.	Polypropylene Line
8	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
7 / None	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Visited on 2016-07-02



Nearest Cache: Sandpoint (11.0 miles)
Second Cache: Bonners (44.4 miles)

Nearest Address: 5761 Wild Rose Lane
Sagle ID 83860

Site-Specific Points of Contact

Site Access

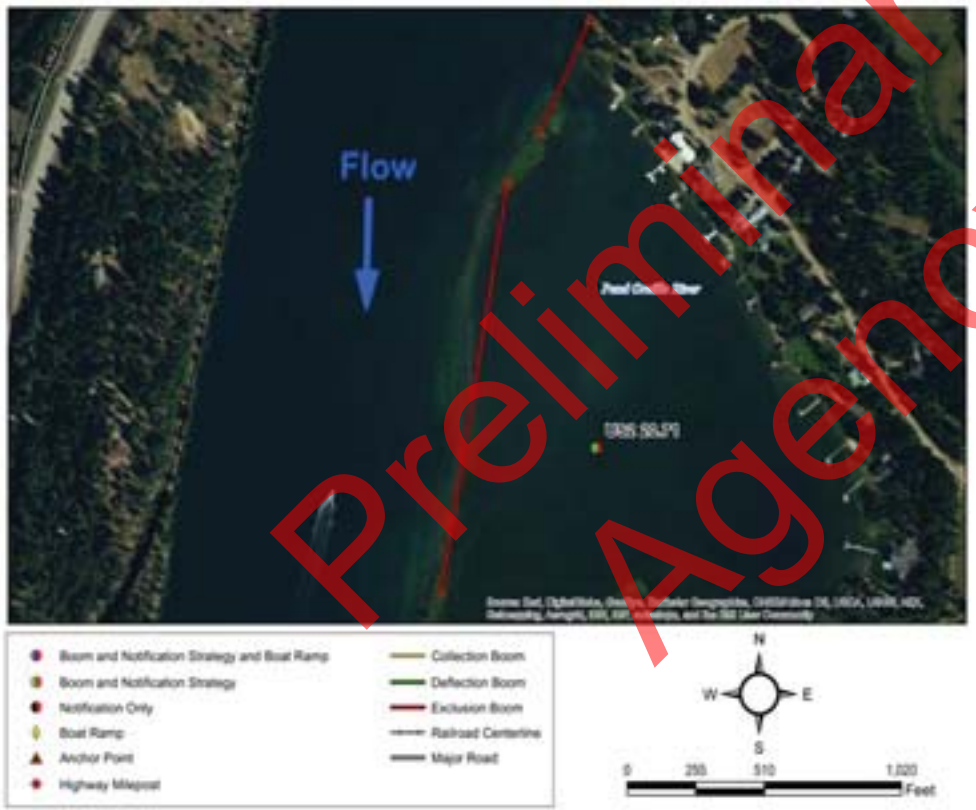
Sandpoint, ID
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn left onto Pine St - 0.3 mi
3. Turn right onto S 1st Ave - 0.2 mi
4. Turn eft onto E Superior St - 0.5 mi
5. Merge onto US-95 S - 8.0 mi
6. Turn right onto Dufort Rd - 5.7 mi
7. Turn right onto Lakeshore Dr - 52 ft
8. Turn left onto Wild Rose Ln - 194 ft

Wild Rose Lane, Sagle, Idaho

Mouth of Upper Morton Slough from the Pend Oreille River looking south from the northern point.

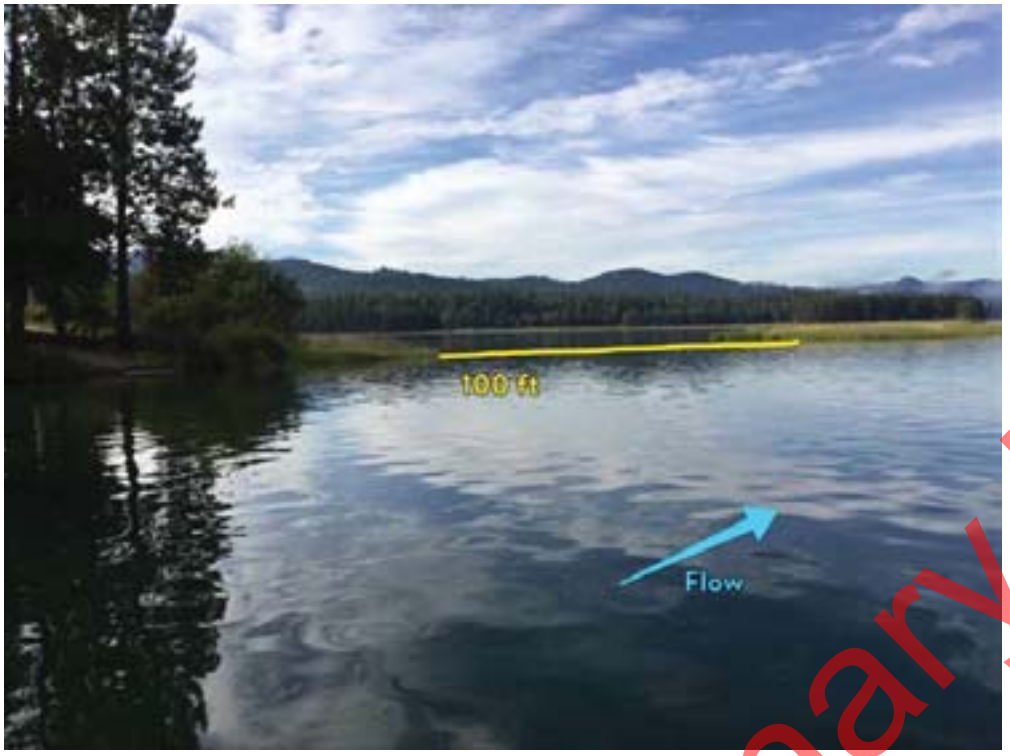
Looking from an upstream point down on the mouth of Upper Morton Slough, facing southeast.

Site Lat Long:	48.242393 -116.686122 (http://www.google.com/maps/place/48.242393,-116.686122)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Bay near Muskrat Lake.
Implementation:	Use two boom segments to protect sensitive area. Secure upstream end of boom River Left to tree. Secure downstream end of boom River Left to steel post. Secure upstream end of second boom River Left to steel post. Secure downstream end of second boom River Left to steel post.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. No boat launch facilities. Springy Point boat launch is 6.6 miles away.
Field Notes:	• Change in water levels looks like it can greatly effect the status of the island and points that define this bay. A possibility of using a post on the River left side of the main channel as a midpoint anchor (it is visible in some of the pictures). • 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Wildlife, Recreation
Watercourse:	Lake Pend Oreille:



Suggested Equipment	
Quantity	Description
2200 ft.	Curtain Boom Tow Bridles
As Appropriate	
2750 ft.	Polypropylene Line
9	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
2	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
2	Booming Team Leader
1	Safety Representative
6 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (12.8 miles)
Second Cache: Bonners (45.1 miles)

Nearest Address: 5 Swan Shores Dr
Sagle ID 83860

Site-Specific Points of Contact

Site Access

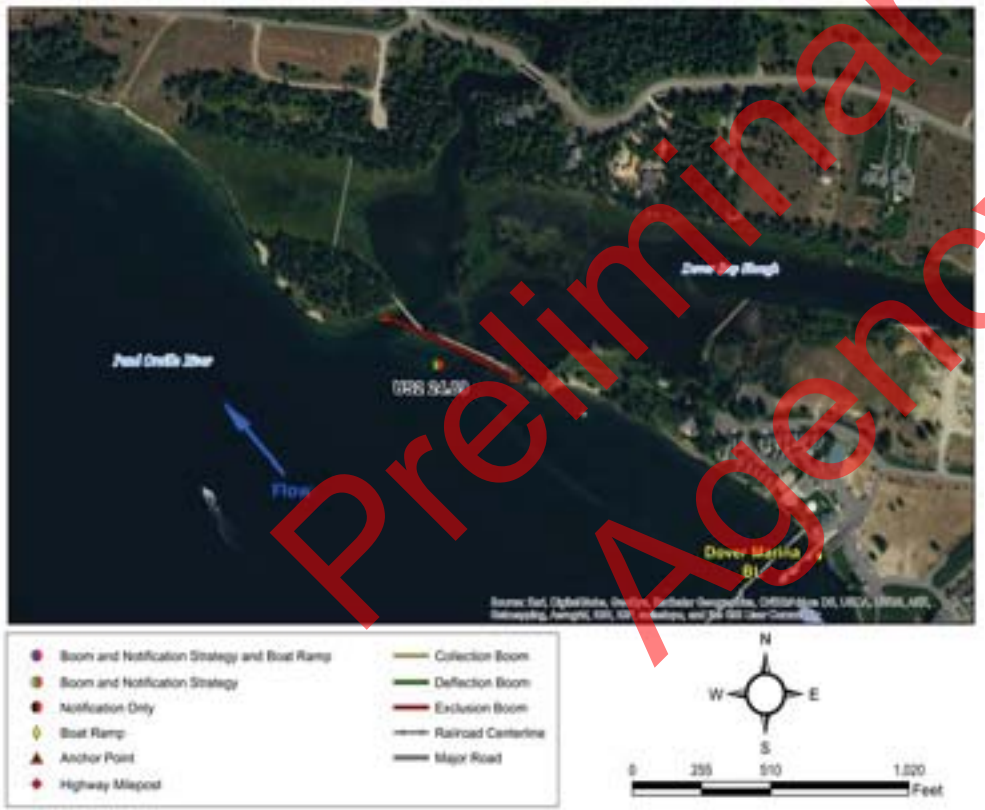
Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn left onto Pine St - 0.3 mi
3. Turn right onto S 1st Ave - 0.2 mi
4. Turn left onto E Superior St - 0.5 mi
5. Merge onto US-95 S - 1.9 mi
6. Turn right onto Lakeshore Dr - 3.1 mi
7. Turn right onto Springy Point - 292 ft

Springy Point, Sagle, Idaho

Looking at the upstream or northern entrance to the Bay near Muskrat lake, facing east.

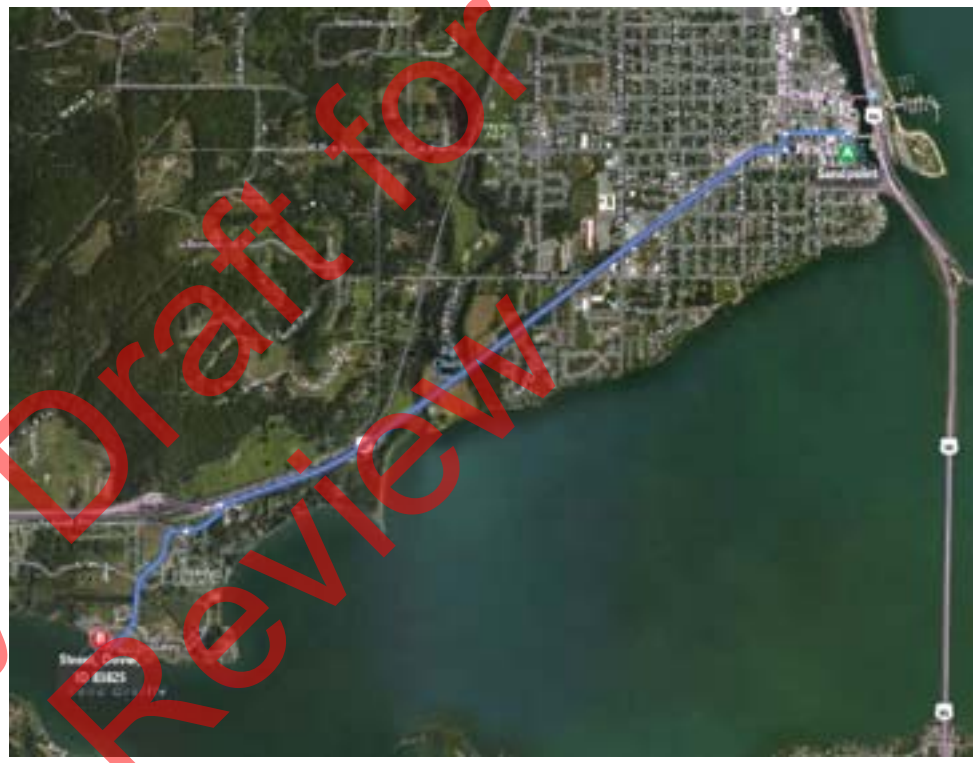
Looking towards the Bay near Muskrat Lake, so that both entrances to the Bay are visible, facing east.

Site Lat Long:	48.246394 -116.620663 (http://www.google.com/maps/place/48.246394,-116.620663)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Dover Bay Slough.
Implementation:	Lake Pend Oreille flow direction is to the west. Secure upstream end of boom East Shoreline to tree. Secure downstream end of boom West Shoreline to steel post. Notify Dover and Dover Bay Marina.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is large. Grass field on peninsula east of Dover Bay Slough. Dover Marina boat launch is 1 mile away.
Field Notes:	• Use bridge across slough to deploy the Boom • 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Threatened and Endangered Species, Recreation
Watercourse:	Lake Pend Oreille: gradient is low; substrate is mud; approx. depth is 5 to 10 feet



Suggested Equipment	
Quantity	Description
550 ft.	Curtain Boom Tow Bridles
As Appropriate	
700 ft.	Polypropylene Line
3	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
0 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (3.7 miles)
Second Cache: Bonners (37.1 miles)

Nearest Address: 699 Lakeshore Ave
Dover ID 83825

Site-Specific Points of Contact

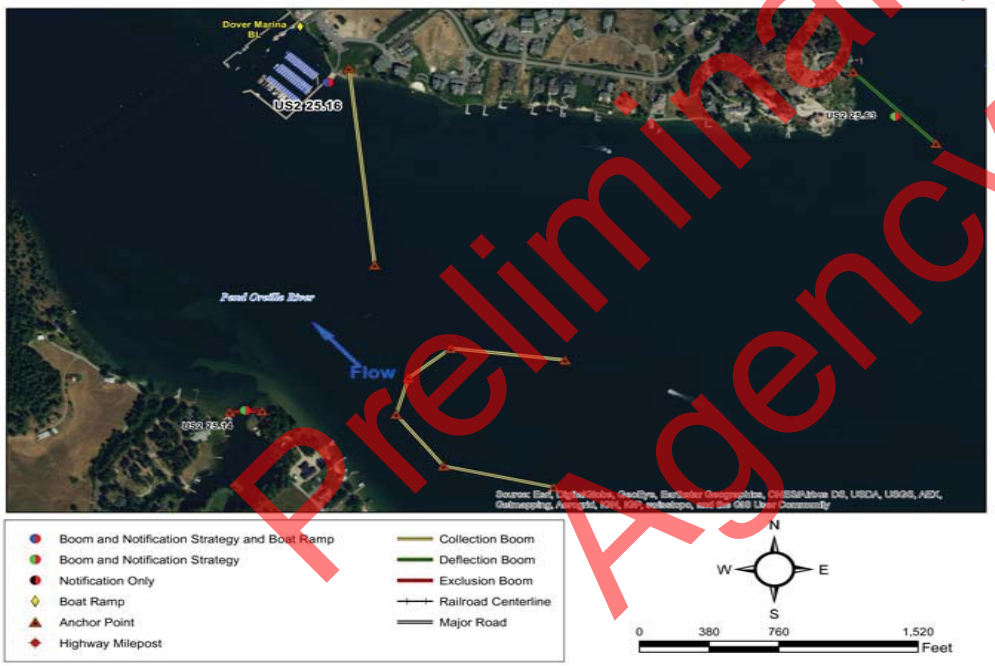
Site Access - Boat access, use Dover Bay Marina, directions below

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn right onto US-2 W/Pine St - 2.7
3. Turn left onto Old Hwy U.S. 2- 0.2 mi
4. Continue onto Dover Bay Blvd- 0.3 mi
5. Continue onto Dover Bay Pkwy- 0.2 mi
6. Turn right onto Lakeshore Avenue- 492 ft
7. Turn left to reach destination

Dover Bay Slough From Lake Pend Oreille looking North

Staging area from play ground looking west

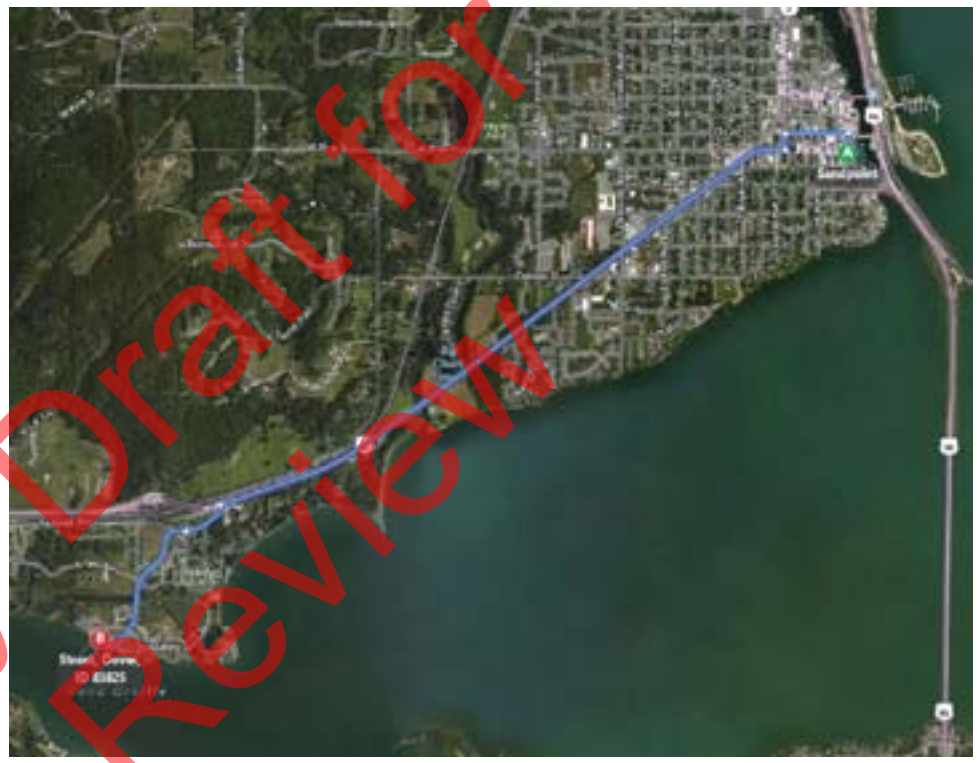
Site Lat Long:	48.244013 -116.61391 (http://www.google.com/maps/place/48.244013,-116.61391)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Lake Pend Oreille flow direction is to the west. Deploy collection boom and initiate contaminant recovery at Dover Bay Marina. Secure upstream end of boom Midstream to buoy. Secure downstream end of boom North Shoreline to steel post. Secure upstream end of second boom Midstream to boat. Secure downstream end of second boom Midstream to boat. Vacuum truck access is good. Notify Dover Bay Marina.
Site Safety Note:	Complete Job Safety Analysis. Be cautious of public traffic.
Staging Area:	On site staging is large. Large parking lot on the north shore, between the condominiums and the club pool. Concrete boat launch. Dover Marina boat launch is 0.1 miles away.
Field Notes:	• Exclusion boom around the marina. Private property • 4WD Access: **NO** Seasonal Access Only: **NO** Locked Gate: **NO**
Resources Targeted:	Recreation, Reservoir, Marina, Threatened and Endangered Species
Watercourse:	Lake Pend Oreille: gradient is low; substrate is mud; slow moving



Suggested Equipment	
Quantity	Description
1000 ft.	Curtain Boom Tow Bridles
As Appropriate	Portable Skimmer; Vacuum Truck; Absorbent Boom
1250 ft.	Polypropylene Line
4	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
3	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
2	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
2 / 2	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Visited on 2016-06-30



Nearest Cache: Sandpoint (3.4 miles)
Second Cache: Bonners (36.8 miles)

Nearest Address: 675 Lakeshore Ave
Dover ID 83825

Site-Specific Points of Contact

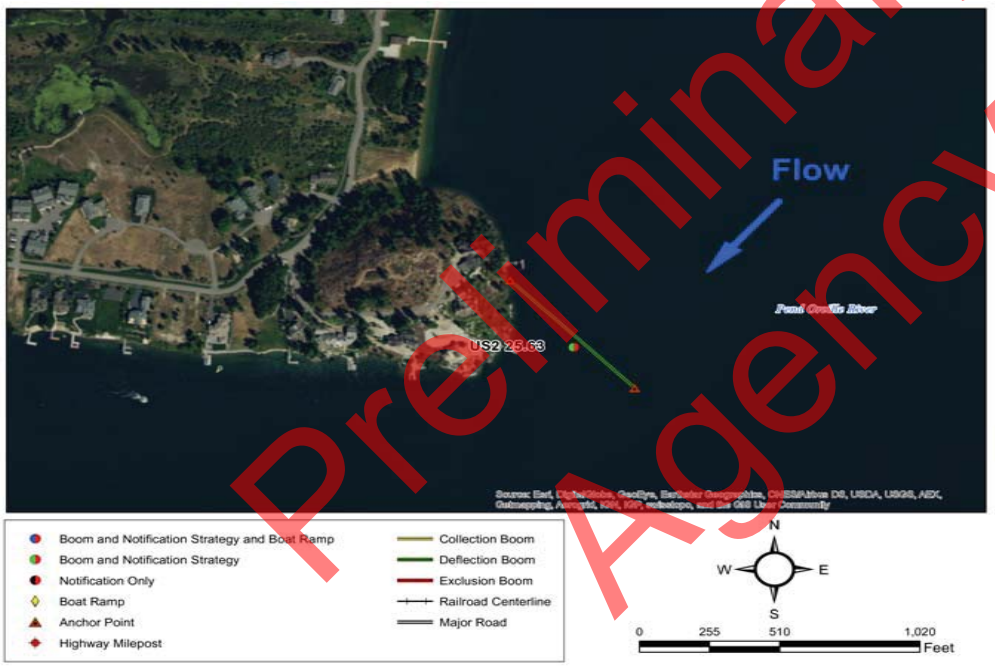
Site Access

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn right onto US-2 W/Pine St- 2.7
3. Turn left onto Old Hwy U.S. 2- 0.2 mi
4. Continue onto Dover Bay Blvd- 0.3 mi
5. Continue onto Dover Bay Pkwy- 0.2 mi
6. Turn right onto Lakeshore Avenue- 492 ft
7. Turn left to reach destination

Dover Bay Marina staging area looking north

Lake Pend Oreille from the north shore looking south

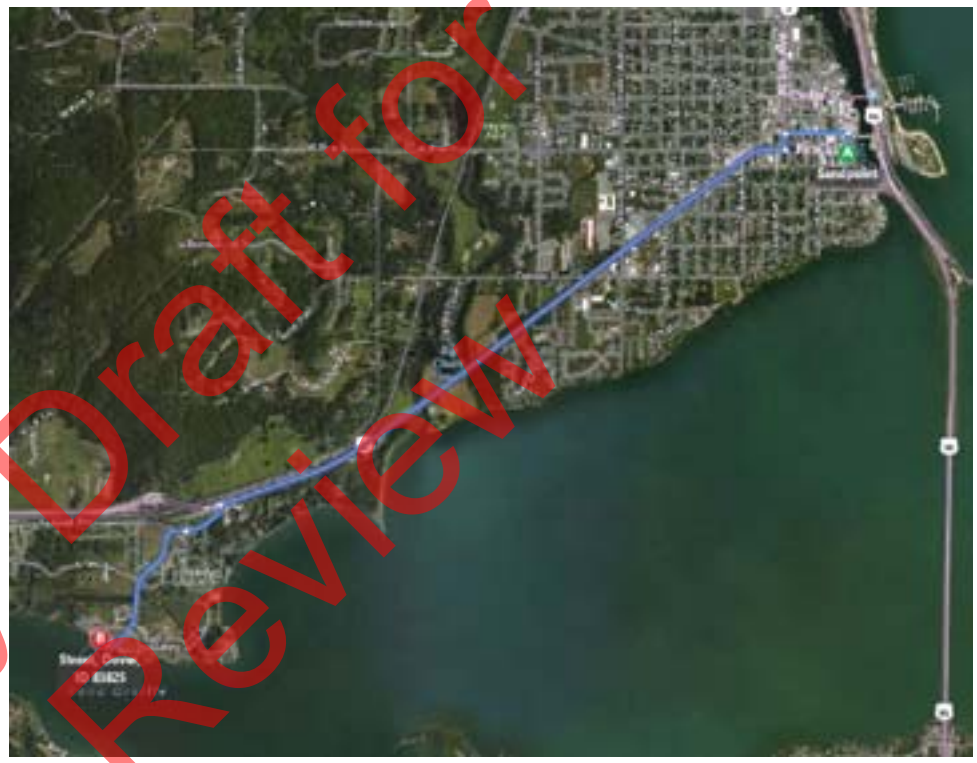
Site Lat Long:	48.244195 -116.601173 (http://www.google.com/maps/place/48.244195,-116.601173)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Dover Bay Water Intake.
Implementation:	Secure upstream end of boom West Shoreline to steel post. Secure downstream end of boom Midstream to buoy. Notify City of Dover.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Private boat launch at Dover Bay Marina. No boat launch facilities. Dover Marina boat launch is 0.7 miles away.
Field Notes:	• Surface water supply for Dover. Intake on bottom of lake. Notify City of Dover Water operator (208)-263-4633 to stop drawing water. • 4WD Access: **NO** Seasonal Access Only: **YES** Locked Gate: **NO**
Resources Targeted:	Public water supply
Watercourse:	Lake Pend Oreille:



Suggested Equipment	
Quantity	Description
800 ft.	Curtain Boom Tow Bridles
As Appropriate	
1000 ft.	Polypropylene Line
4	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
1	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Visited on 2016-07-02



Nearest Cache: Sandpoint (3.3 miles)
Second Cache: Bonners (36.7 miles)

Nearest Address: 105 Shannon Ln
Dover ID 83825

Site-Specific Points of Contact

Site Access

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn right onto US-2 W/Pine St - 2.7 mi
3. Turn left onto Old Hwy U.S. 2 - 0.1 mi
4. Turn left onto 3rd St - 0.2 mi
5. Turn left onto Jackson Ave - 190 ft
6. Turn right onto Lakeshore Avenue - 0.3 mi
7. Turn left onto Shannon Ln - 0.1 mi

Shannon Lane, Sagle, Idaho

Potential Dover Bay Water Intake from lake Pend Orellie looking north west

None

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Cardboard Sector 3A and 3B

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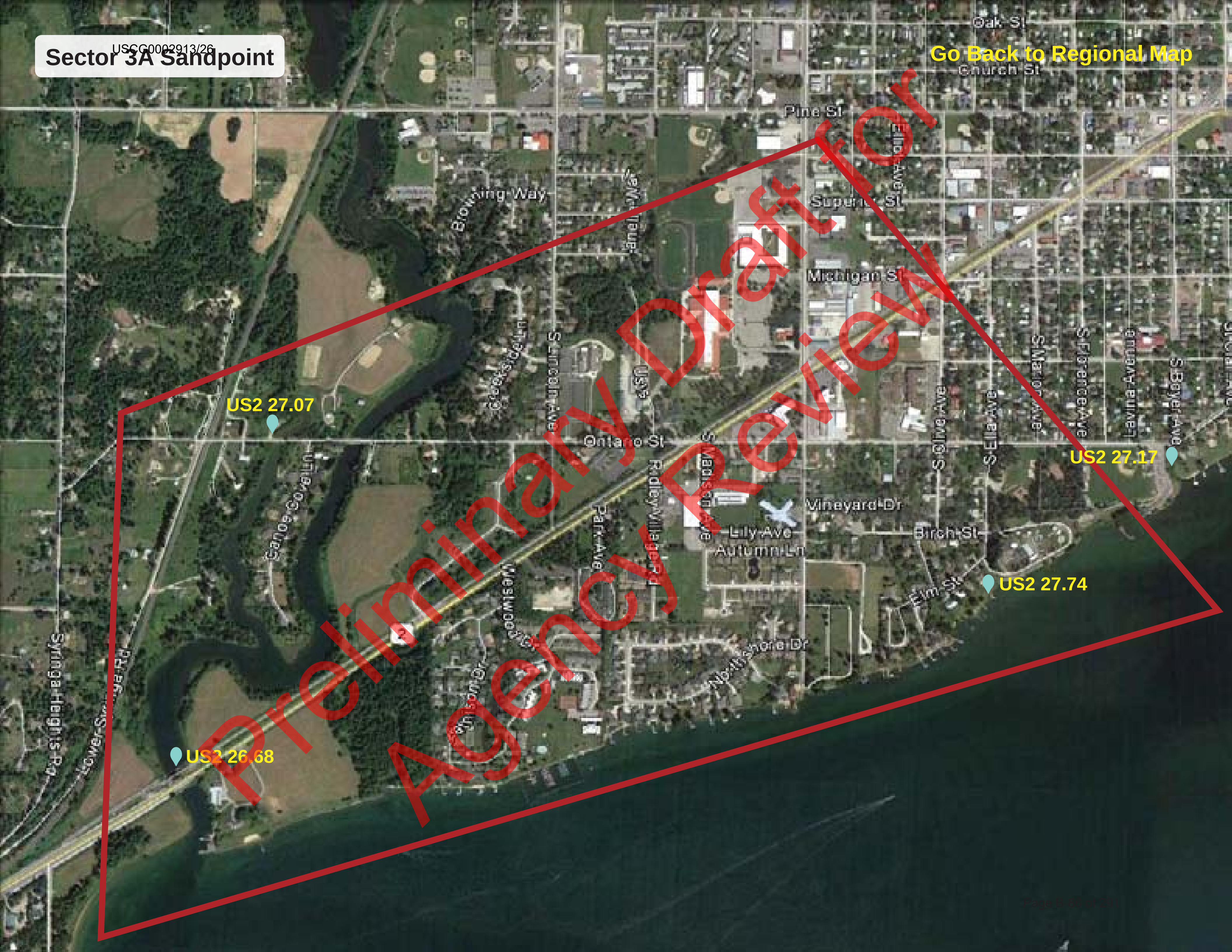
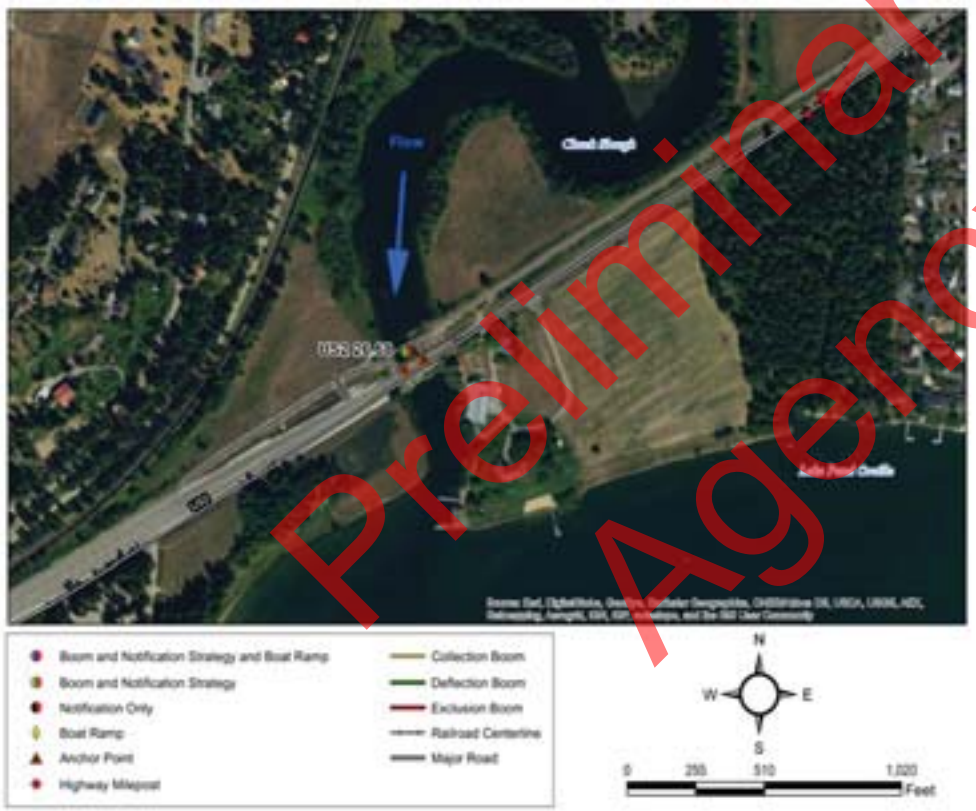
Sector & Map	Site ID & Highway Milepost	Railroad Milepost	Site Name	Accessible ny boat at Low Water?	Nearest Boat Ramp or Staging Area
Sector 3A Sandpoint	US2 26.68	BNSF Newport 72.79	Chuck Slough	No	US2 25.15
	US2 27.07	BNSF Newport 73.29	Ontario St West	No	US2 25.15
	US2 27.17	BNSF Newport 73.33	Ontario St East	No	US2 25.15
	US2 27.74	BNSF Spokane 3.32	S. Ella Ave Culvert	No	US95 473.87
Sector 3B Sandpoint	US2 28.02	BNSF Spokane 3.33	Memorial Park Culvert	No	US95 473.87
	US2 28.17	BNSF Spokane 3.35	S Euclid Ave Culvert	No	US95 473.87
	US2 28.31	BNSF Spokane 3.37	S 4th Ave Culvert	No	US95 473.87
	US2 28.36	BNSF Spokane 3.38	S 3rd Ave Culvert	No	US95 473.87
	US95 472.85	BNSF Spokane 4.28	Long Bridge	Yes	US95 471.08
	US95 473.84	BNSF Spokane 3.4	Sandpoint Public Works Water Intake	Yes	US95 473.87
	US95 473.9	BNSF Spokane 3.17	Sandpoint City Beach and Marina	Yes	US95 473.87
	US95 473.91	BNSF Spokane 3.29	Mouth of Sand Creek	Yes	US95 473.87
	US95 474.31	BNSF Spokane 3.13	Lower Sand Creek	No	US95 473.87



USCG0002913/26
Sector 3A Sandpoint
Go Back to Regional Map
Preliminary Draft for Agency Review
US2 27.07
US2 27.17
US2 27.74
US2 26.68
Oak St
Church St
Pine St
Superior St
Michigan St
Ontario St
Vineyard Dr
Lily Ave
Autumn Ln
Birch St
Elm St
Browning Way
Syringa Heights Rd
Canoe Cove Ln
Park Ave
S Ella Ave
S Olive Ave
S Marion Ave
S Florence Ave

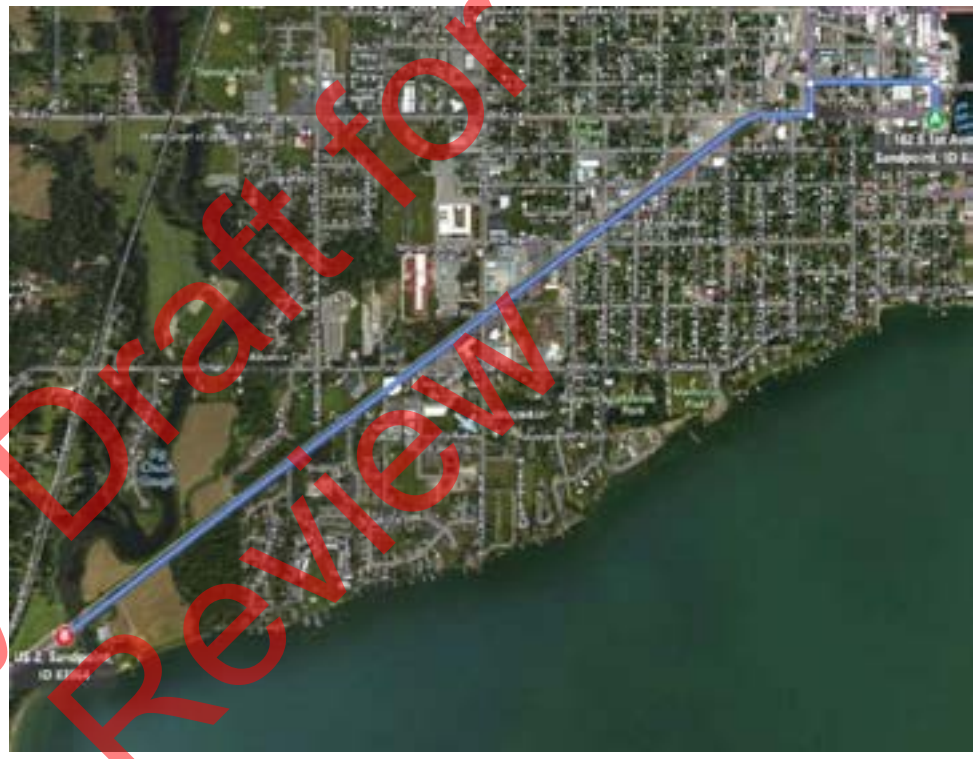

Sector 3B Sandpoint
USCG0002923/26
Go Back to Regional Map
US95 474.31
US95 473.9
US95 473.84
US95 473.91
US2 28.36
US2 28.31
US2 28.17
US2 28.02
US95 472.85
Preliminary Draft for Agency Review
Bridge St
Lake St
E Superior St
Michigan St
Idaho St
Antone St
Pacific St
Pine St
95
2

Site Lat Long:	48.258596 -116.586053 (http://www.google.com/maps/place/48.258596,-116.586053)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Chuck Slough flow direction is to the south. Deploy collection boom and initiate contaminant recovery at Chuck Slough. Secure upstream end of boom River Left to steel post. Secure downstream end of boom River Right to steel post. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis. Traffic control on highway is necessary.
Staging Area:	No staging area. Use small pullout on west side of bridge for parking. Access river by steep, rocky trails. Dover Marina boat launch is 1.8 miles away.
Field Notes:	• Site is a natural exclusion area at full pool with culvert submerged. At lower flows booming is necessary to prevent oil from entering culvert and reservoir. • Site could be used for spill to chuck slough but will naturally collect oil at summer lake levels.
Resources Targeted:	Reservoir
Watercourse:	Chuck Slough: gradient is low; substrate is gravel; approx. width is 84 ft.; approx. depth is 5 to 10 feet; slow moving



Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	
70 ft.	Polypropylene Line
8	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
0 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (1.6 miles)
Second Cache: Bonners (35.0 miles)

Nearest Address: 26808 Highway 2
Sandpoint ID 83864

Site-Specific Points of Contact

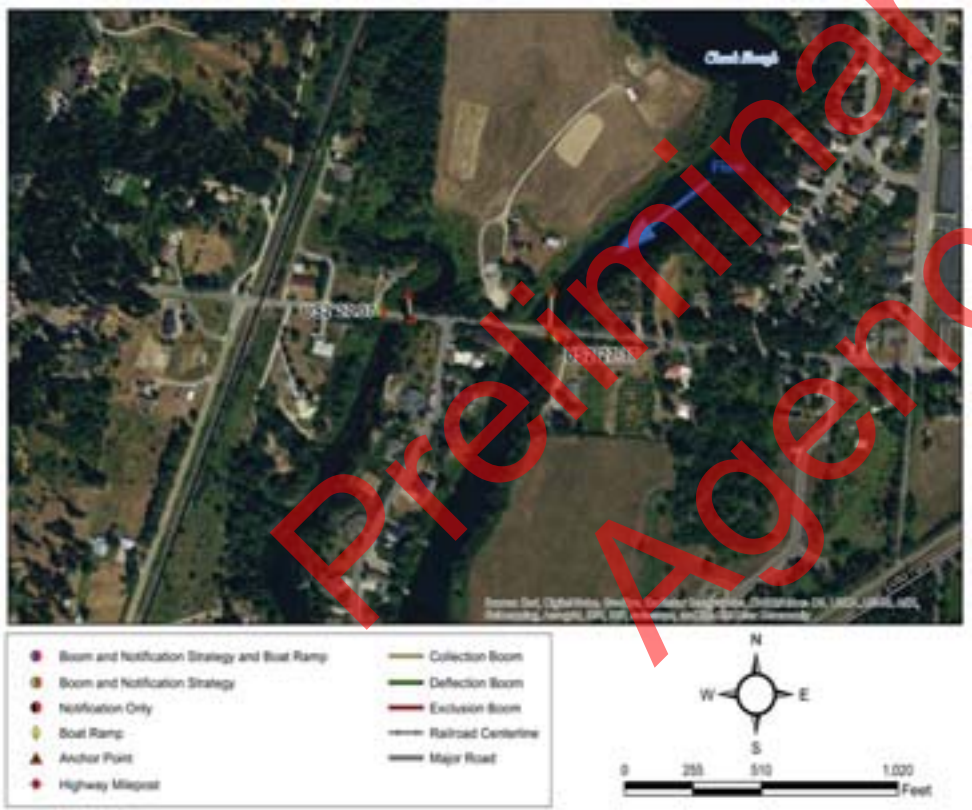
Site Access

Sandpoint, ID
1. Head south on N Fifth Ave toward Cedar St- 0.2 mi
2. Turn right onto US-2 W/Pine St- 1.8 mi

Looking south from walking bridge

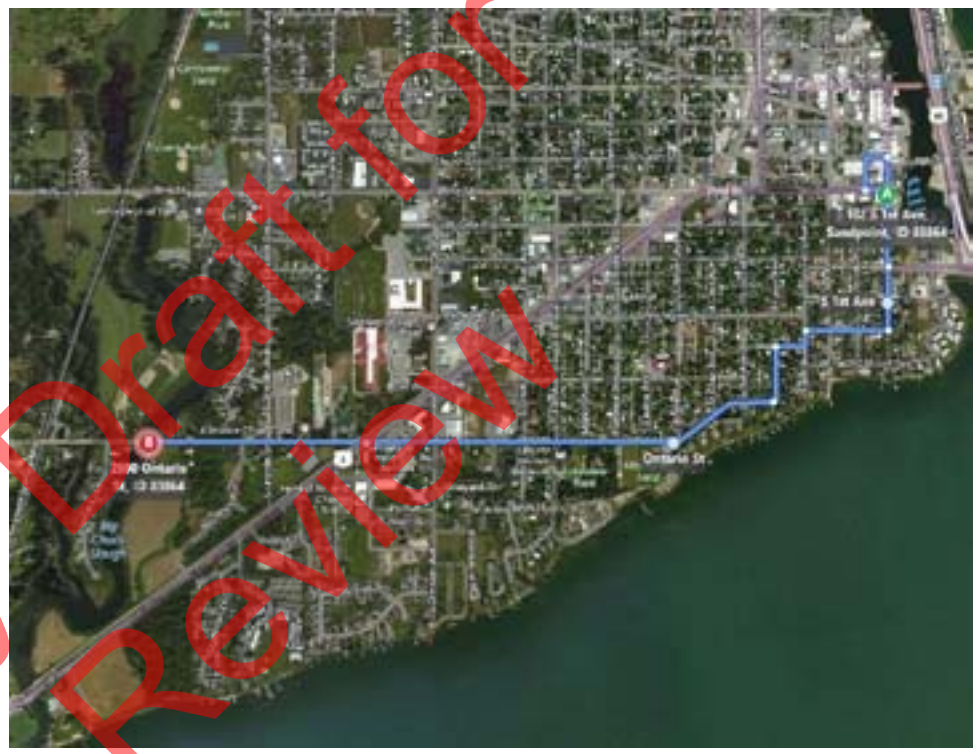
Small pullout on west side of bridge.

Site Lat Long:	48.265836 -116.583495 (http://www.google.com/maps/place/48.265836,-116.583495)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Chuck Slough flow direction is to the south. Deploy collection boom and initiate contaminant recovery at Ontario St West. Secure upstream end of boom River Right to steel post. Secure downstream end of boom River Left to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis. Poor river access due to dense vegetation and steep slope.
Staging Area:	No staging area. Vacuum truck access from narrow road. No other staging options. Dover Marina boat launch is 2.3 miles away.
Field Notes:	• Access to upstream anchor is difficult due to private land and dense vegetation. Small inflatable boat would be advised. • 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Recreation, Reservoir, Threatened and Endangered Species
Watercourse:	Chuck Slough: gradient is low; substrate is mud; approx. width is 150 ft., approx. depth is 5 to 10 feet; slow moving



Suggested Equipment	
Quantity	Description
100 ft.	Curtain Boom Tow Bridles
As Appropriate	
125 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 2	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (1.3 miles)
Second Cache: Bonners (34.8 miles)

Nearest Address: 2690 Ontario St
Dover ID 83825

Site-Specific Points of Contact

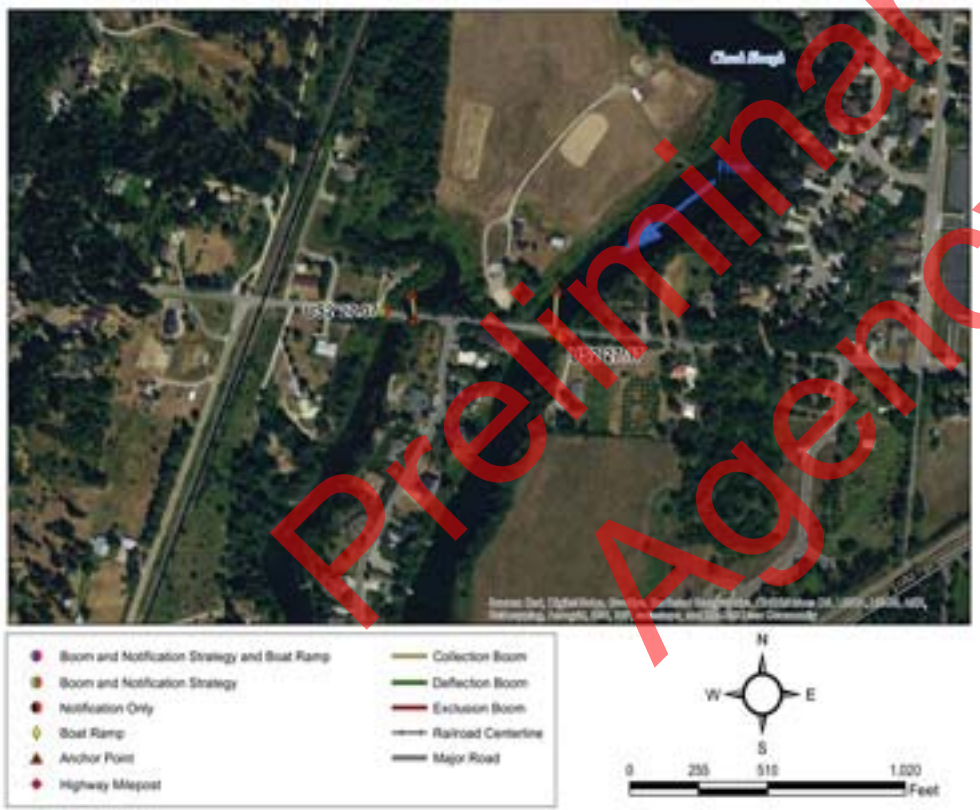
Site Access

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn right onto US-2 W/Pine St - 1.0 mi
3. Turn right onto Ontario St - 0.5 mi
2690 West Ontario Street, Sandpoint, Idaho

Looking east at Ontario st.

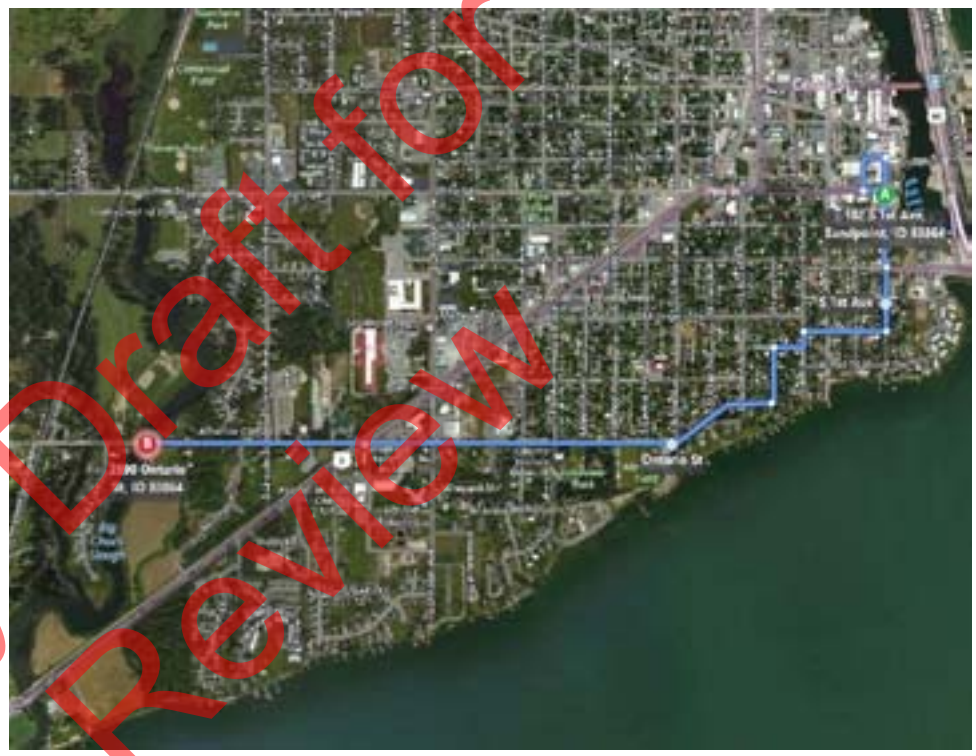
Looking north at Chuck Slough

Site Lat Long:	48.265752 -116.580771 (http://www.google.com/maps/place/48.265752,-116.580771)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Chuck Slough flow direction is to the south. Deploy collection boom and initiate contaminant recovery at Ontario St East. Secure upstream end of boom River Right to steel post. Secure downstream end of boom River Left to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Narrow two lane road with culvert underpass for slough. Dover Marina boat launch is 3.1 miles away.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Recreation, Threatened and Endangered Species
Watercourse:	Chuck Slough: gradient is low; substrate is mud; approx. width is 150 ft., approx. depth is 5 to 10 feet; slow moving



Suggested Equipment	
Quantity	Description
150 ft.	Curtain Boom Tow Bridles
As Appropriate	
200 ft.	Polypropylene Line
8	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
0 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (1.2 miles)
Second Cache: Bonners (34.6 miles)

Nearest Address: 2355 Ontario St
Dover ID 83825

Site-Specific Points of Contact

Site Access

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn right onto US-2 W/Pine St - 1.0 mi
3. Turn right onto Ontario St - 0.3 mi
2355 Ontario St, Sandpoint, Idaho

Looking east at Ontario st.

Looking north at Chuck Slough

Site Lat Long:	48.262676 -116.562306 (http://www.google.com/maps/place/48.262676,-116.562306)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Deploy collection boom and initiate contaminant recovey at S. Ella Ave Culvert. Secure upstream end of boom North Shoreline to steel post. Secure downstream end of boom North Shoreline to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is large. Private Property.No boat launch facilities. Sandpoint City Beach boat launch is 1.6 miles away.
Field Notes:	• Private Property • 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	Lake Pend Oreille:

Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	
75 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
0 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (0.8 miles)
Second Cache: Bonners (34.2 miles)

Nearest Address: 1101 Elm St
Sandpoint ID 83864

Site-Specific Points of Contact

Site Access

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn right onto US-2 W/Pine St - 0.5 mi
3. Turn left onto S Ella Ave - 0.4 mi
4. Continue onto Elm St - 3 ft
1101 Elm St, Sandpoint, Idaho

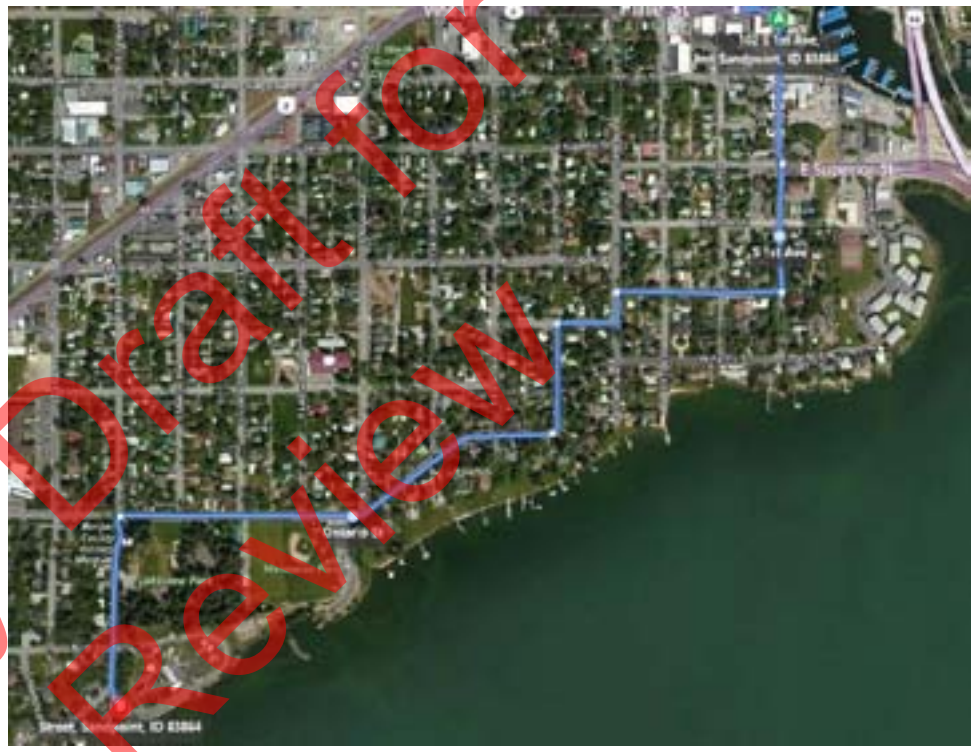
Picture taken facing water treatment plant.

None

Site Lat Long:	48.265041 -116.556933 (http://www.google.com/maps/place/48.265041,-116.556933)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Deploy collection boom and initiate contaminant recovery at Memorial Park Outflow. Secure upstream end of boom North Shoreline to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Adjacent parking lot should be utilized. No boat launch facilities. Sandpoint City Beach boat launch is 1.4 miles away.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	Lake Pend Oreille:

Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	
75 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
0 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (0.7 miles)
Second Cache: Bonners (33.9 miles)

Nearest Address: 631 Lakeview Blvd
Sandpoint ID 83864

Site-Specific Points of Contact

Site Access

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn right onto Pine St - 220 ft
3. Turn let onto Euclid Ave - 0.4 mi
4. Turn right onto Lakeview Blvd - 0.1 mi

View of culvert. Currently underwater, but fluctuates with lake level from dam use.

View of culvert.

Site Lat Long:	48.265975 -116.553976 (http://www.google.com/maps/place/48.265975,-116.553976)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Deploy collection boom and initiate contaminant recovery at S Euclid Ave Outflow. Secure upstream end of boom North Shoreline to steel post. Secure downstream end of boom North Shoreline to fixed anchor. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is medium. Private Property.No boat launch facilities. Sandpoint City Beach boat launch is 1.1 miles away.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	

Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	
65 ft.	Polypropylene Line
3	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
0 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (0.7 miles)
Second Cache: Bonners (33.9 miles)

Nearest Address: 601 Euclid Ave
Sandpoint ID 83864

Site-Specific Points of Contact

Site Access

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn right onto Pine St - 220 ft
3. Turn let onto Euclid Ave - 0.4 mi

Site Lat Long:	48.266921 -116.551305 (http://www.google.com/maps/place/48.266921,-116.551305)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Deploy collection boom and initiate contaminant recovery at S 4th Ave Outflow. Secure upstream end of boom North Shoreline to steel post. Secure downstream end of boom North Shoreline to fixed anchor. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is medium. No boat launch facilities. Sandpoint City Beach boat launch is 1.0 miles away.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	

Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	
65 ft.	Polypropylene Line
3	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
0 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (0.8 miles)
Second Cache: Bonners (34.0 miles)

Nearest Address: 527 S 4th Ave
Sandpoint ID 83864

Site-Specific Points of Contact

Site Access

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn left onto Pine St - 495 ft
3. Turn right onto S 4th Ave - 0.4 mi

Image of concrete submerged culvert.

Proposed boom area facing south.

Site Lat Long:	48.267283 -116.550304 (http://www.google.com/maps/place/48.267283,-116.550304)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Deploy collection boom and initiate contaminant recovery at S 3rd Ave Outflow. Secure upstream end of boom North Shoreline to fixed anchor. Secure downstream end of boom North Shoreline to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is small. No boat launch facilities. Sandpoint City Beach boat launch is 0.9 miles away.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	

Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	
65 ft.	Polypropylene Line
3	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
0 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (0.9 miles)
Second Cache: Bonners (34.0 miles)

Nearest Address: 600-616 South 3rd Ave
Sandpoint ID 83864

Site-Specific Points of Contact

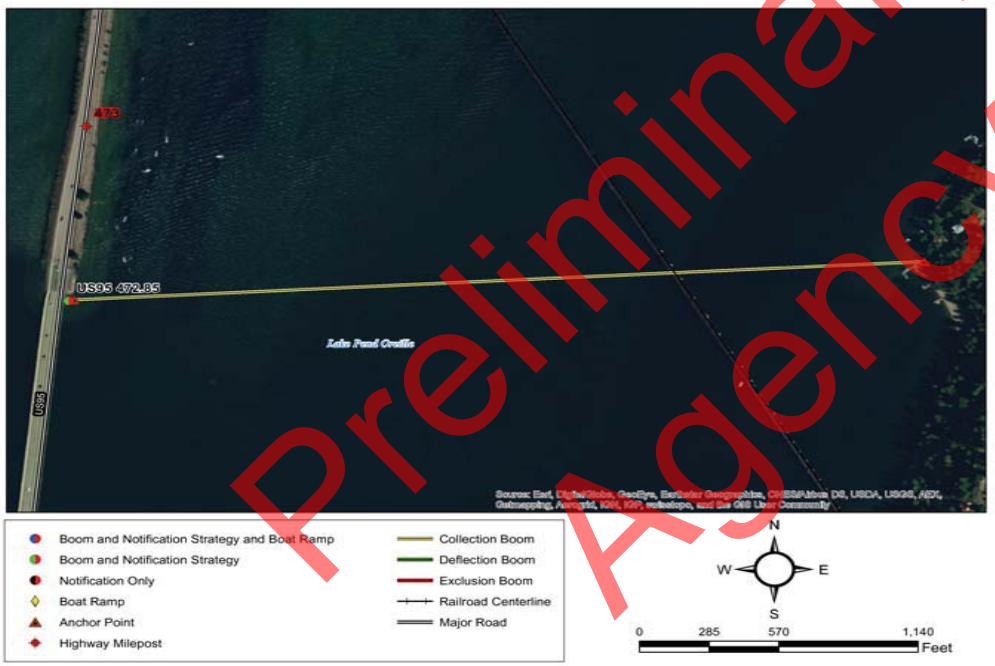
Site Access

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn left onto Pine St - 495 ft
3. Turn right onto S 4th Ave - 0.4 mi
4. Turn left onto Pacfic St - 236 ft
5. Turn right at the 1st cross street onto S 3rd Ave - 197 ft

View looking south from north of culvert.

View of area to be boomed between a fixed dock anchor and tree.

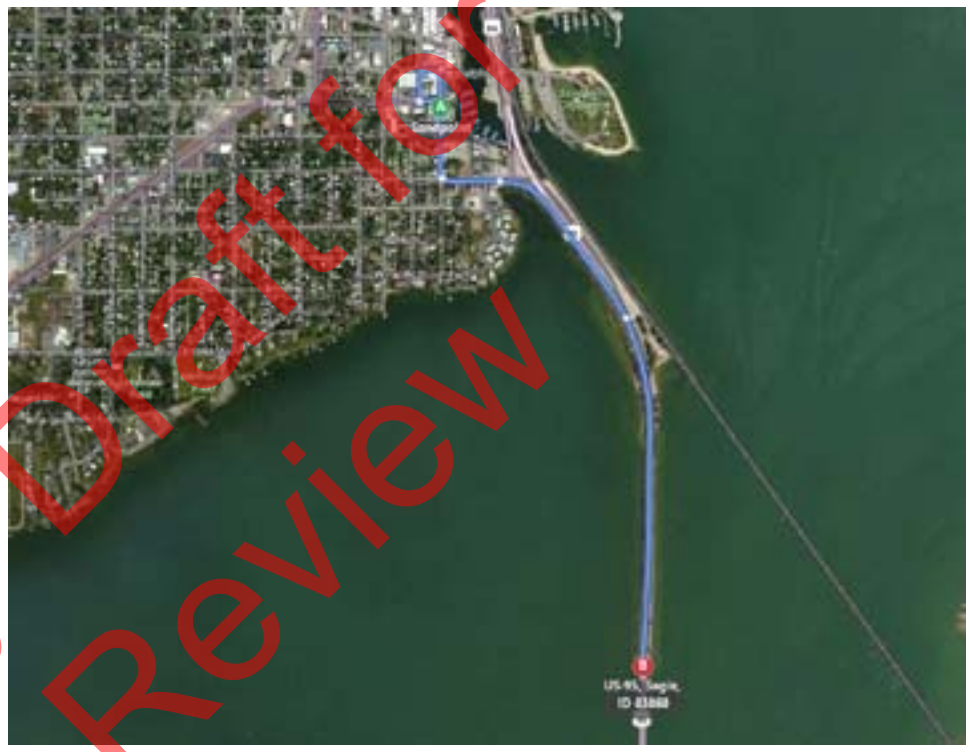
Site Lat Long:	48.256623 -116.53849 (http://www.google.com/maps/place/48.256623,-116.53849)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Deploy collection boom and initiate contaminant recovey at Long Bridge. Secure upstream end of boom East Shoreline to steel post. Secure downstream end of boom West Shoreline to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is medium. Use US 95 bridge as staging and recovery area. Equipment and vehicle parking area adjacent to lake at the collection point. No boat launch facilities. Bottle Bay Bridge boat launch is 2.0 miles away.
Field Notes:	• Last collection point on Lake Pend Oreille before Pend Oreille River. Wind conditions may make this site unsuitable for collection. • 4WD Access: **NO** Seasonal Access Only: **NO** Locked Gate: **NO**
Resources Targeted:	Public water supply, Recreation, Reservoir, Threatened and Endangered Species
Watercourse:	Lake Pend Oreille: substrate is gravel



Suggested Equipment	
Quantity	Description
3500 ft.	Curtain Boom Tow Bridles
As Appropriate	Portable Skimmer; Vacuum Truck; Absorbent Boom
4375 ft.	Polypropylene Line
8	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
4 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Visited on 2016-07-16



Nearest Cache: Sandpoint (2.0 miles)
Second Cache: Bonners (34.3 miles)

Nearest Address: 175 Glen Eden Rd
Sagle ID 83860

Site-Specific Points of Contact

Site Access

Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 361 ft
3. Take the ramp onto US-95N - .7 mi
472001 U.S. 95, Sandpoint, Idaho

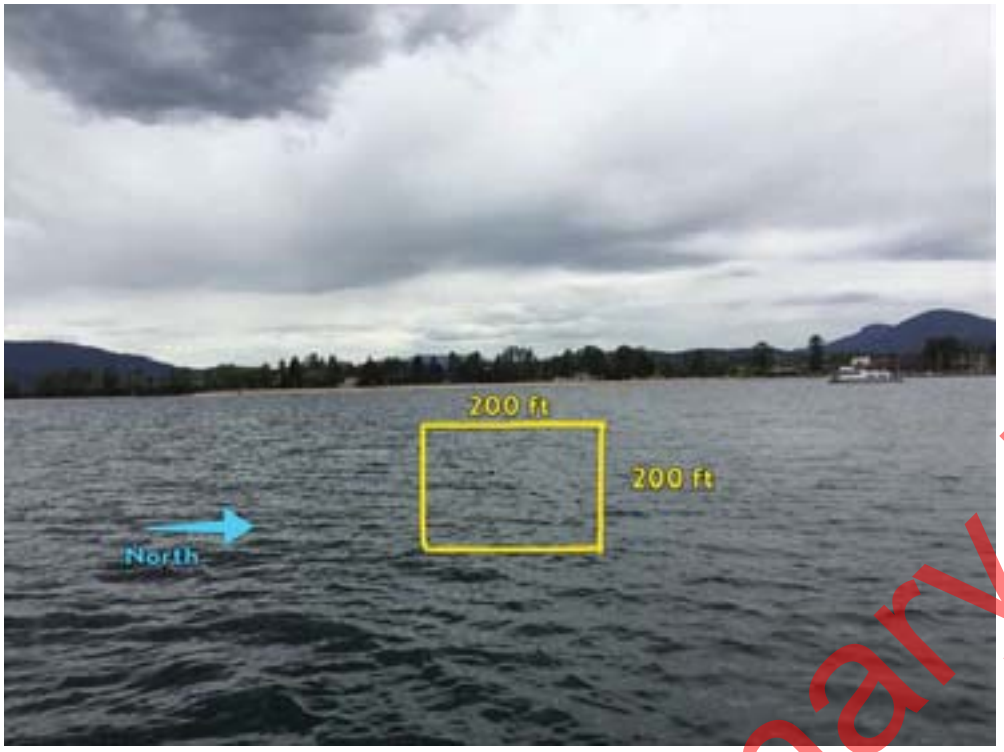
Looking South

Looking South from bike path

Site Lat Long:	48.274217 -116.534885 (http://www.google.com/maps/place/48.274217,-116.534885)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Sandpoint Public Works surface water intake.
Implementation:	Use boom to exclude Public Water Supply. Notify City of Sandpoint Water Treament Plant.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Only accessible by boat, but very close to Sandpoint City Park boat launch. No boat launch facilities. Sandpoint City Beach boat launch is 0.5 miles away.
Field Notes:	• Contact David Pafundi, with City of Sandpoint Water Treatment Plant, at 208-263-3440 to shut off intake. • Boat Ramp may be unusable in winter • 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Municipal Water Intake
Watercourse:	Lake Pend Oreille; substrate is mud; approx. depth is greater than 20 feet; slow moving; shoals

Suggested Equipment	
Quantity	Description
800 ft.	Curtain Boom Tow Bridles
As Appropriate	
1000 ft.	Polypropylene Line
0	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
6	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (1.3 miles)
Second Cache: Bonners (34.1 miles)

Nearest Address: 54 Bridge St
Sandpoint ID 83864

Site-Specific Points of Contact

David Pafundi 208 263 3440
Ryan Luttman 208 263 3407

Site Access - Use Sandpoint City Beach boat launch, directions below

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 171 ft
2. Turn left onto Pine St 0.3 mi
3. Pine St turns left and becomes N First Ave 246 ft
4. Turn right onto Bridge St 0.2 mi
5. Turn right

Photo taken from estimated point of where water intake should be, looking back at the city beach.

None

Site Lat Long:	48.273909 -116.541436 (http://www.google.com/maps/place/48.273909,-116.541436)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Deploy collection boom and initiate contaminant recovery at S 4th Ave Outflow. Secure upstream end of boom North Shoreline to steel post. Secure downstream end of boom North Shoreline to fixed anchor. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is large. Large parking area at city beach with boat ramp. Concrete boat launch. Sandpoint City Beach boat launch is 0.3 miles away.
Field Notes:	• Boat Ramp may be unusable in winter • 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Sandpoint City Beach and Marina, recreation
Watercourse:	Lake Pend Oreille; substrate is sand; approx. depth is over 20 feet

Suggested Equipment	
Quantity	Description
2000 ft.	Curtain Boom Tow Bridles
As Appropriate	
2500 ft.	Polypropylene Line
0	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
4	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (1.1 miles)
Second Cache: Bonners (33.9 miles)

Nearest Address: 54 Bridge St
Sandpoint ID 83864

Site-Specific Points of Contact

Site Access

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 171 ft
2. Turn left onto Pine St 0.3 mi
3. Pine St turns left and becomes N First Ave 246 ft
4. Turn right onto Bridge St 0.2 mi
5. Turn right

City beach

Large staging area

Site Lat Long:	48.272248 -116.542879 (http://www.google.com/maps/place/48.272248,-116.542879)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Sand Creek flow direction is to the south. Deploy collection boom and initiate contaminant recovery at Mouth of Sand Creek. Secure upstream end of boom River Right to rock. Secure downstream end of boom River Left to fixed anchor. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	OOn site staging is large. Large parking area for vehicles and equipment at Sandpoint City Beach parking area. Boat ramp on site. Concrete boat launch. Sandpoint City Beach boat launch is 0.1 miles away.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Lake Pend Orielle, Sandpoint City Beach, Marina, fish habitat, recreation
Watercourse:	Sand Creek: gradient is low; substrate is mud; approx. width is 360 ft.; approx. depth is 5 to 10 feet; channelized; slow moving

Suggested Equipment	
Quantity	Description
360 ft.	Curtain Boom Tow Bridles
As Appropriate	
450 ft.	Polypropylene Line
0	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
0	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (1.2 miles)
Second Cache: Bonners (34.0 miles)

Nearest Address: 120 E Lake St
Sandpoint ID 83864

Site-Specific Points of Contact

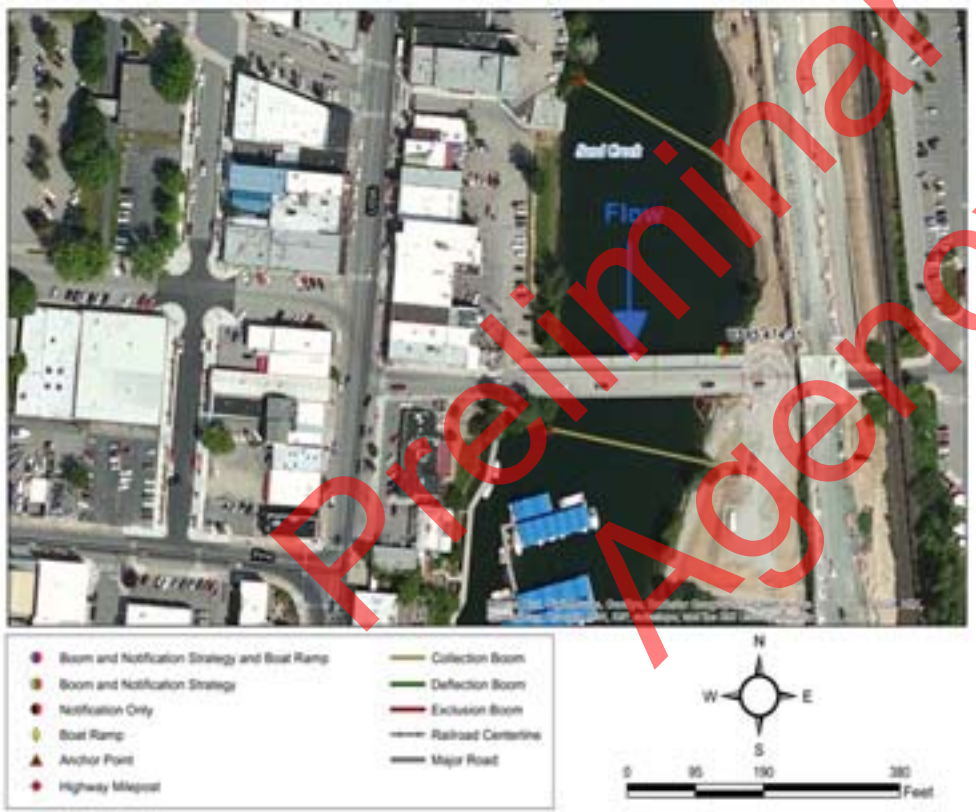
Site Access

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 171 ft
2. Turn left onto Pine St 0.3 mi
3. Pine St turns left and becomes N First Ave 246 ft
4. Turn right onto Bridge St 0.2 mi
5. Turn right

view of Sandpoint City Beach boat launch from the Lake, facing east.

Parking area.

Site Lat Long:	48.274021 -116.545732 (http://www.google.com/maps/place/48.274021,-116.545732)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Sand Creek flow direction is to the south. Deploy collection boom and initiate contaminant recovery at Lower Sand Creek. Secure upstream end of boom River Right to fixed anchor. Secure downstream end of boom River Left to steel post. Secure upstream end of second boom River Right to fixed anchor. Secure downstream end of second boom River Left to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is small. Parking available for vehicles and equipment on bike path along River left. Many public parking areas also in the area, but with limited space. No boat launch facilities. Sandpoint City Beach boat launch is 0.3 miles away.
Field Notes:	• Contact City of Sandpoint for access to bike path. First boom location is upstream of city beach access road bridge. Second boom location is downstream of the bridge. Both locations need equal amounts of boom (350 ft). • 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Sand Creek, Sandpoint City Beach and Marina, fish habitat, recreation area
Watercourse:	Sand Creek: gradient is low; substrate is mud; approx. width is 290 ft.; approx. depth is 5 to 10 feet; channelized; slow moving



Suggested Equipment	
Quantity	Description
700 ft.	Curtain Boom Tow Bridles
As Appropriate	
500 ft.	Polypropylene Line
5	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (0.9 miles)
Second Cache: Bonners (33.7 miles)

Nearest Address: 106 Bridge St
Sandpoint ID 83864

Site-Specific Points of Contact

Site Access

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 171 ft
2. Turn left onto Pine St 0.3 mi
3. Pine St turns left and becomes N First Ave 246 ft
4. Turn right onto Bridge St 0.1 mi
5. Take immediate right after crossing over the bridge

Looking from river left collection point towards upstream anchor.

View of the bike path. Note the locked pillar in the center of path.

Cardboard Insert for

Sector 3C and 3D

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Sector & Map	Site ID & Highway Milepost	Railroad Milepost	Site Name	Accessible by boat at Low Water?	Nearest Boat Ramp or Staging Area
Sector 3C Sandpoint	US95 474.41	BNSF Spokane 3.02	E. Cedar St Culvert # 1	No	US95 473.87
	US95 474.45	BNSF Spokane 2.98	E. Cedar St Culvert # 2	No	US95 473.87
	US95 474.46	BNSF Spokane 2.97	E. Cedar St Culvert # 3	No	US95 473.87
	US95 474.78	BNSF Spokane 2.9	Alder St Culvert	No	US95 473.87
	US95 475.09	BNSF Kootenai 1402.96	N. 5th Ave Surface Water Outflow #1	No	US95 473.87
Sector 3D Sandpoint	US95 475.21	BNSF Kootenai 1402.75	N. 5th Ave Surface Water Outflow #2	No	US95 473.87
	US95 475.22	BNSF Kootenai 1402.74	N. 5th Ave Surface Water Outflow #3	No	US95 473.87
	US95 475.3	BNSF Kootenai 1402.66	Sand Creek Trestle	No	US95 473.87
	US95 475.32	BNSF Kootenai 1402.63	Visitor Center Culvert #1	No	US95 473.87
	US95 475.34	BNSF Kootenai 1402.6	Visitor Center Culvert #2	No	US95 473.87
	US95 475.4	BNSF Kootenai 1402.58	Visitor's Center Culvert # 3	No	US95 473.87
	US95 475.41	BNSF Kootenai 1402.55	Visitor's Center Culvert # 4	No	US95 473.87
	US95 475.42	BNSF Kootenai 1402.57	Baldy Mountain Rd Surface Water Outflow #2	No	US95 473.87
	US95 475.5	BNSF Kootenai 1402.53	Baldy Mountain Rd Surface Water Outflow #1	No	US95 473.87
	US95 475.53	BNSF Kootenai 1402.33	N. Boyer Ave and Baldy Mountain Rd.	No	US95 473.87


Sector 3C Sandpoint
USCG0003353/26
Go Back to Regional Map
US95 475.09
US95 474.78
US2 474.46
US2 474.45
US2 474.41
Preliminary Draft for Agency Review
Larch St
Fir St
Poplar St
Alder St
Main St
Cedar St
Oak St
Church St
Sherlock Ave
N 1st Ave
N 2nd Ave
N 3rd Ave
Cummings Alley
Page B-130 of 291

Sector 3D Sandpoint

USCG0003363/26

Go Back to Regional Map

Site Lat Long:	48.275492 -116.546815 (http://www.google.com/maps/place/48.275492,-116.546815)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Deploy collection boom and initiate contaminant recovery at E. Cedar St Culvert # 1. Secure upstream end of boom West Shoreline to tree. Secure downstream end of boom West Shoreline to tree. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. No boat launch facilities. Sandpoint City Beach boat launch is 0.4 miles away.
Field Notes:	• 4WD Access: **NO** Seasonal Access Only: **NO** Locked Gate: **NO**
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	Lake Pend Oreille:

Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	Absorbent Boom
65 ft.	Polypropylene Line
None	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / None	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Visited on 2016-08-01

Nearest Cache: Sandpoint (1.1 miles)
Second Cache: Bonners (33.6 miles)

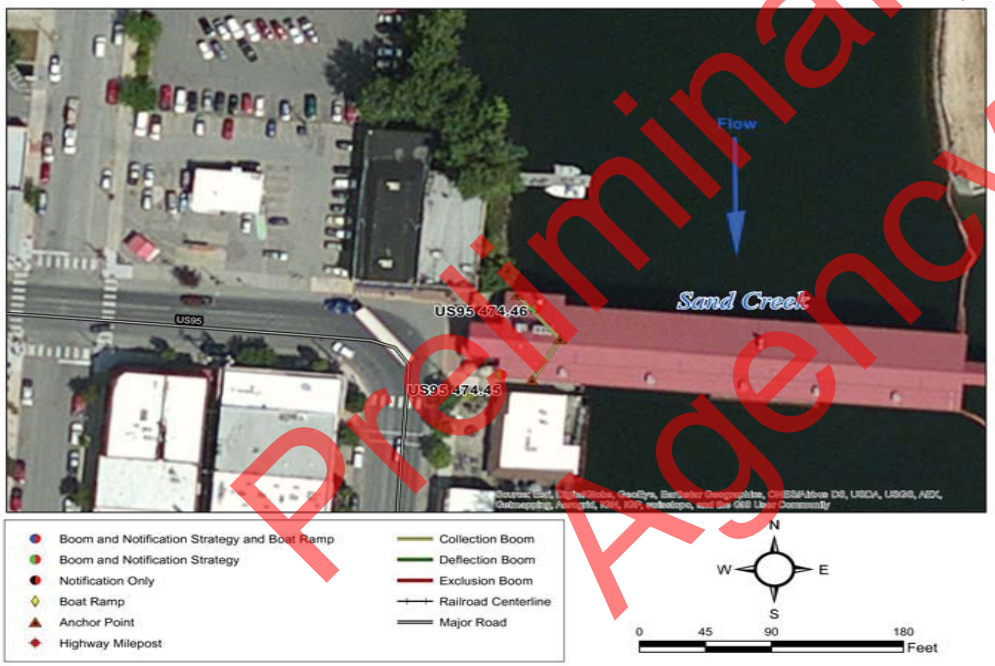
Nearest Address: 334 N. Fifth Ave
Sandpoint ID 83864

Site-Specific Points of Contact

Site Access

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 171 ft
2. Turn left onto Cedar St - 0.3 mi
3. Turn right onto N First Ave - 322 ft

Site Lat Long:	48.27606 -116.547529 (http://www.google.com/maps/place/48.27606,-116.547529)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Deploy collection boom and initiate contaminant recovery at E. Cedar St Culvert # 2. Secure upstream end of boom West Shoreline to fixed anchor. Secure downstream end of boom West Shoreline to fixed anchor. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. No boat launch facilities. Sandpoint City Beach boat launch is 0.7 miles away.
Field Notes:	• 4WD Access: **NO** Seasonal Access Only: **NO** Locked Gate: **NO**
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	Lake Pend Oreille:



Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	Absorbent Boom
65 ft.	Polypropylene Line
None	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / None	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Visited on 2016-08-01

Nearest Cache: Sandpoint (0.9 miles)
Second Cache: Bonners (33.5 miles)

rest Address: 334 N 1St Ave
Sandpoint ID 83864

Site-Specific Points of Contact

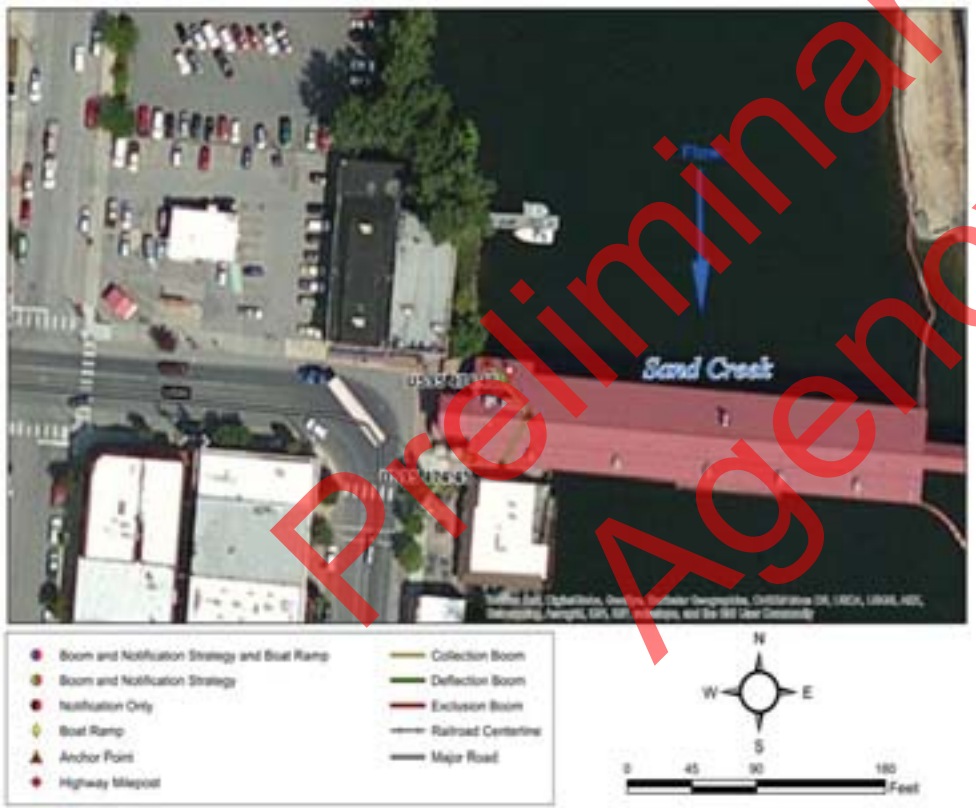
Site Access

Sandpoint, Idaho
2. Turn left onto Pine St 0.3 mi
3. Pine St turns left and becomes N First Ave
4. Destination will be on the right just before Ceder St

View of the southern culvert under bridge/restaurant.

View from south of both culverts facing north.

Site Lat Long:	48.276208 -116.547452 (http://www.google.com/maps/place/48.276208,-116.547452)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Deploy collection boom and initiate contaminant recovery at E. Cedar St Culvert # 3. Secure upstream end of boom West Shoreline to bridge piling. Secure downstream end of boom West Shoreline to bridge piling. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. No boat launch facilities. Sandpoint City Beach boat launch is 0.7 miles away.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	Lake Pend Oreille:



Suggested Equipment	
Quantity	Description
None	Curtain Boom Tow Bridles
As Appropriate	
	Polypropylene Line
None	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (0.9 miles)
Second Cache: Bonners (33.5 miles)

Nearest Address: 334 N 1St Ave
Sandpoint ID 83864

Site-Specific Points of Contact

Site Access

Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Turn left onto Pine St 0.3 mi
3. Pine St turns left and becomes N First Ave
4. Destinat

Image of concrete submerged culvert.

None

Site Lat Long:	48.277149 -116.547759 (http://www.google.com/maps/place/48.277149,-116.547759)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Deploy collection boom and initiate contaminant recovery at Alder St Culvert. Secure upstream end of boom to West Shoreline to steel post. Secure downstream end of boom to West Shoreline to steel post. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. No boat launch facilities. Sandpoint City Beach boat launch is 0.8 miles away.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	Lake Pend Oreille:

Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	
65 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (1.0 miles)
Second Cache: Bonners (33.4 miles)

Nearest Address: 502 North 2nd Avenue
Sandpoint ID 83864

Site-Specific Points of Contact

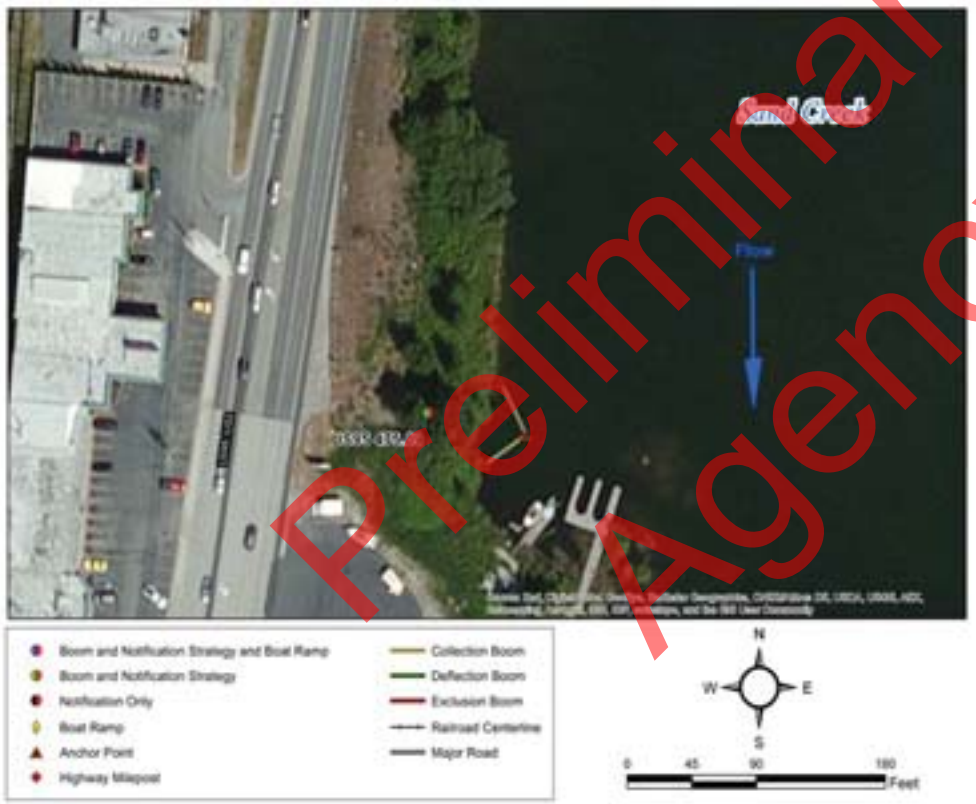
Site Access

Sandpoint, Idaho
1. Head east on Pine St toward S 1st Ave- 141 ft
2. Pine St turns left and becomes N First Ave- 0.2 mi
3. N First Ave turns left and becomes Cedar St- 220 ft
4. Turn right onto N 2nd Ave- 253 ft
5. Turn right- 184 ft
6. Turn left to reach destination

View from south facing north.

View from north of culverts facing south.

Site Lat Long:	48.281625 -116.552419 (http://www.google.com/maps/place/48.281625-116.552419)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Sand Creek flow direction is to the southeast. Deploy collection boom and initiate contaminant recovery at Culvert just North of Gas n Go, North of Larch St. on Hwy 2/200. Secure upstream end of boom River Right to tree. Secure downstream end of boom River Right to tree. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis. Steep embankment with loose screen.
Staging Area:	On site staging is large. Large parking lot of Gas n Go. No boat launch facilities. Sandpoint City Beach boat launch is 1.3 miles away.
Field Notes:	In 2015, this area was investigated by ID DEQ for petroleum products seeping into Sandcreek from an adjacent gasoline station. ● 4WD Access: NO ● Seasonal Access Only: NO ● Locked Gate: NO
Resources Targeted:	Sand Creek and wetlands
Watercourse:	Sand Creek: gradient is low; substrate is gravel; approx. width is 840 ft.; approx. depth is 5 to 10 feet; slow moving; channelized



Suggested Equipment	
Quantity	Description
None	Curtain Boom Tow Bridles
As Appropriate	
100 ft.	Polypropylene Line
None	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
1	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (1.1 miles)
Second Cache: Bonners (32.8 miles)

Nearest Address: 830 5th Ave
Sandpoint ID 83864

Site-Specific Points of Contact

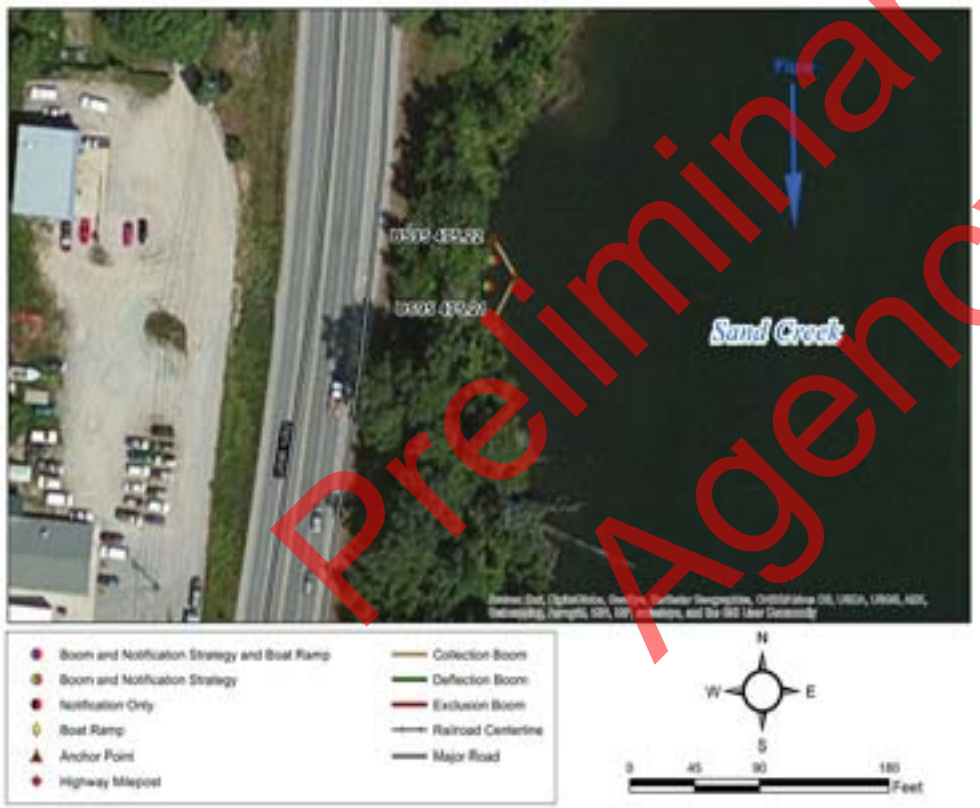
Site Access

Sandpoint, Idaho
1. Head north on N Fifth Ave toward Alder St - 0.3 mi
830 North Fifth Avenue, Sandpoint, Idaho

Looking Southwest towards outflow area of culvert, closer view.

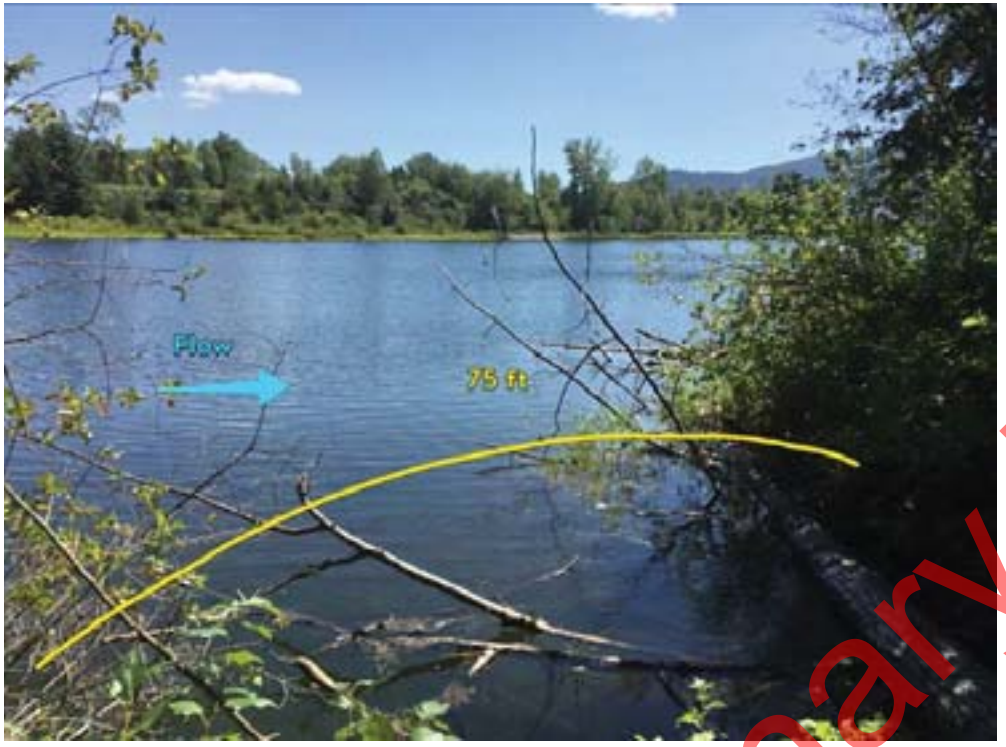
Looking Southwest towards outflow area of culvert.

Site Lat Long:	48.283483 -116.552268 (http://www.google.com/maps/place/48.283483,-116.552268)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Sand Creek flow direction is to the south. Deploy collection boom and initiate contaminant recovery at Sandpoint Visitor Center. Secure upstream end of boom River Right to tree. Secure downstream end of boom River Right to tree. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Visitor Center Parking Area. No boat launch facilities. Sandpoint City Beach boat launch is 1.4 miles away.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO Work this strategy in conjunction with the adjacent US95 475.22
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	Sand Creek: gradient is low; substrate is gravel; approx. width is 450 ft.; approx. depth is 5 to 10 feet



Suggested Equipment	
Quantity	Description
None	Curtain Boom Tow Bridles
As Appropriate	
	Polypropylene Line
None	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (1.2 miles)
Second Cache: Bonners (32.7 miles)

Nearest Address: 915 5Th Ave
Sandpoint ID 83864

Site-Specific Points of Contact

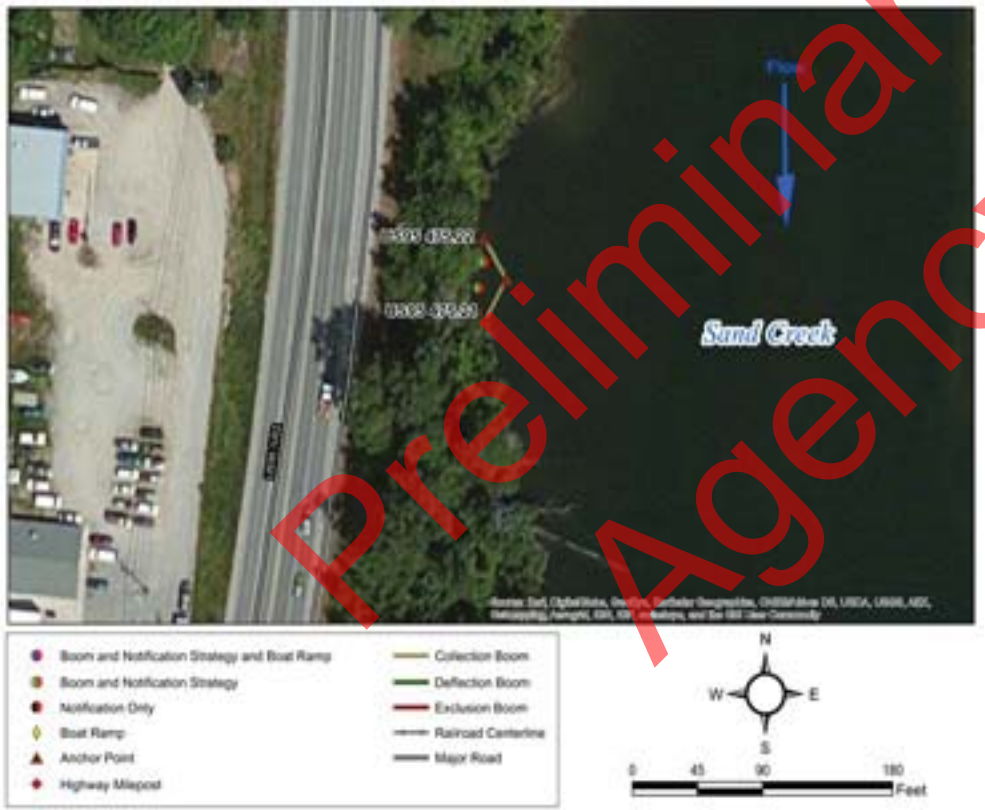
Site Access

Sandpoint, Idaho
1. Head north on N Fifth Ave toward Alder St - 0.4 mi
2. Turn left to stay on N Fifth Ave - 16 ft
1005 North Fifth Avenue, Sandpoint, Idaho

Metal pipe culvert 10+ ft from shore up embankment. Pipe diameter 8 inches.

Concrete culvert on shoreline of river, but still difficult to access from water. Closest to Visitor Center.

Site Lat Long:	48.28353 -116.552259 (http://www.google.com/maps/place/48.28353,-116.552259)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Sand Creek flow direction is to the south. Deploy collection boom and initiate contaminant recovery at Surface Water Outflow. Secure upstream end of boom River Right to tree. Secure downstream end of boom River Right to tree. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Steep embankment next to highway. Staging area minimum to none. Gravel boat launch. Sandpoint City Beach boat launch is 1.4 miles away.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO Work this strategy in conjunction with the adjacent US95 475.21
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	Sand Creek: gradient is low; substrate is gravel; approx. width is 450 ft.; approx. depth is 5 to 10 feet; slow moving



Suggested Equipment	
Quantity	Description
100 ft.	Curtain Boom Tow Bridles
As Appropriate	
125 ft.	Polypropylene Line
None	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (1.2 miles)
Second Cache: Bonners (32.7 miles)

Nearest Address: 915 5Th Ave
Sandpoint ID 83864

Site-Specific Points of Contact

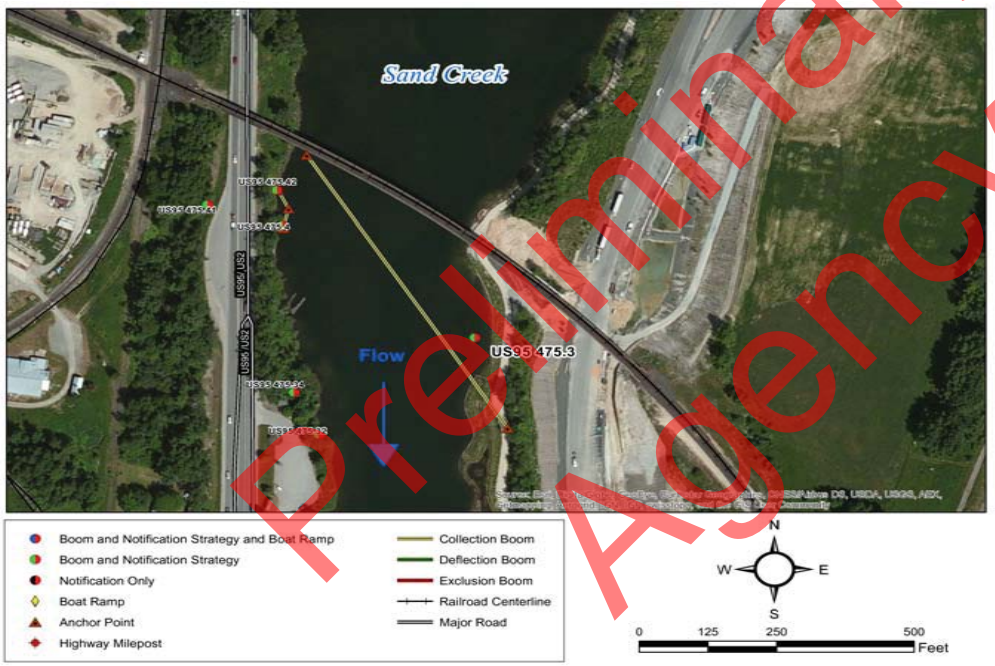
Site Access

Sandpoint, Idaho
1. Head north on N Fifth Ave toward Alder St - 0.4 mi
2. Turn left to stay on N Fifth Ave - 16 ft
1005 North Fifth Avenue, Sandpoint, Idaho

Smaller metal pipe culvert, closer to parking lot.

Picture oriented viewing east/south east.

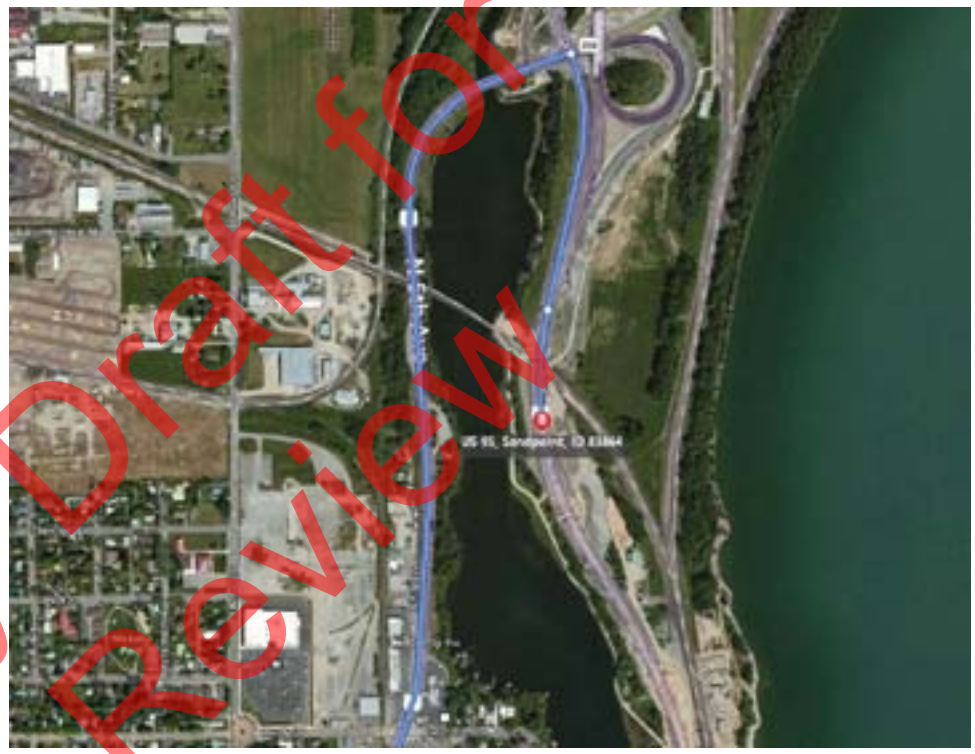
Site Lat Long:	48.285618 -116.551169 (http://www.google.com/maps/place/48.285618,-116.551169)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Sand Creek flow direction is to the south. Deploy collection boom and initiate contaminant recovery at Sand Creek Trestle. Secure upstream end of boom River Right to tree. Secure downstream end of boom River Left to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is medium. Parking for vehicles and equipment along walking path on River left below the trestle. Additional parking on River right at the Sandpoint Visitors Center. No boat launch facilities. Sandpoint City Beach boat launch is 1.5 miles away.
Field Notes:	• Use Sandpoint City Beach boat ramp for access or Sand Creek Bike trail at intersection with US95 • 4WD Access: **NO** Seasonal Access Only: **NO** Locked Gate: **YES**
Resources Targeted:	Sand Creek, Sandpoint City Beach and Marina, fish habitat, recreation
Watercourse:	Sand Creek: gradient is low; substrate is mud; approx. width is 250 ft.; approx. depth is 5 to 10 feet; channelized; slow moving



Suggested Equipment	
Quantity	Description
750 ft.	Curtain Boom Tow Bridles
As Appropriate	Vacuum Truck; Portable Skimmer
1000 ft.	Polypropylene Line
5	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Visited on 2016-06-30



Nearest Cache: Sandpoint (1.3 miles)
Second Cache: Bonners (32.6 miles)

Nearest Address: 1125 5th Ave
Sandpoint ID 83864

Site-Specific Points of Contact

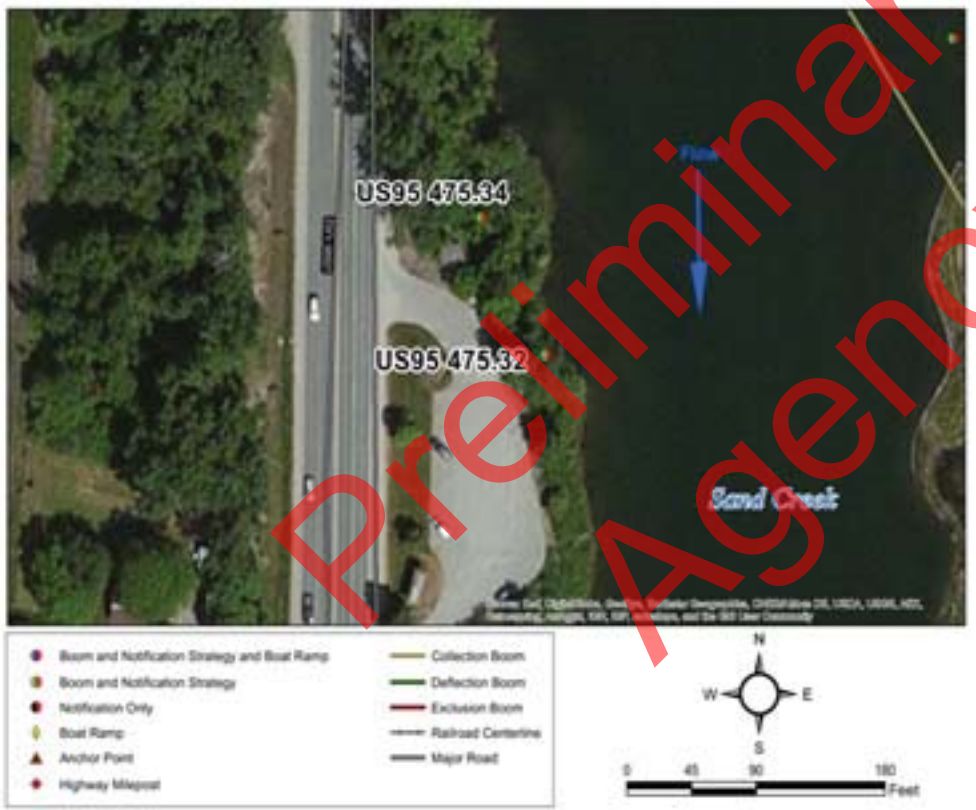
Site Access

Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St
2. Continue to follow US-2 E- 1.0 mi
3. Turn right onto the US-95 S ramp- 0.3 mi
4. Merge onto US-95/Sandpoint

Looking north from River right towards the trestle.

Looking at River left and city bike path.

Site Lat Long:	48.284992 -116.552249 (http://www.google.com/maps/place/48.284992,-116.552249)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Sand Creek flow direction is to the south. Deploy collection boom and initiate contaminant recovery at Visitor Center Culvert. Secure upstream end of boom River Right to tree. Secure downstream end of boom River Right to tree. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Visitor's Center Parking Area. No boat launch facilities. Sandpoint City Beach boat launch is 1.5 miles away.
Field Notes:	• Below informational signs at Visitor's Center. • Marshy shoreline; densely vegetated. • 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	Sand Creek: gradient is low; substrate is gravel; approx. width is 270 ft.; approx. depth is 5 to 10 feet; slow moving



Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	
75 ft.	Polypropylene Line
None	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (1.3 miles)
Second Cache: Bonners (32.6 miles)

Nearest Address: 1125 5th Ave
Sandpoint ID 83864

Site-Specific Points of Contact

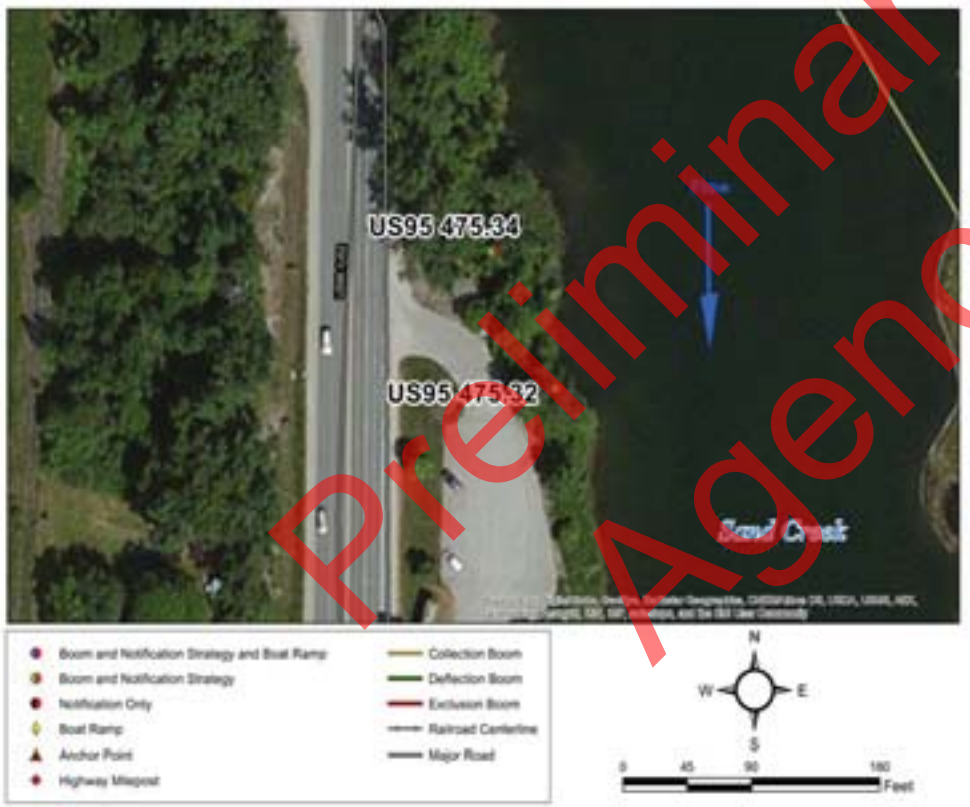
Site Access

Sandpoint, Idaho
1. Head orth on N fifth Ave toward Alder St - 0.4 mi
2. Turn left to stay on N Fifth Ave - 358 ft
1125 North Fifth Avenue, Sanpoint, Idaho

14 inch diameter metal pipe culvert, roughly 10+ ft from shoreline.

View from directly in front of culvert on shoreline overlooking potential boom containment site.

Site Lat Long:	48.285224 -116.552465 (http://www.google.com/maps/place/48.285224,-116.552465)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Sand Creek flow direction is to the south. Deploy collection boom and initiate contaminant recovery at Visitor Center Culvert 24 inch pipe and seep. Secure upstream end of boom River Right to tree. Secure downstream end of boom River Right to tree. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is medium. Visitor's Center Parking area, steep embankments and marshy shoreline. No boat launch facilities. Sandpoint City Beach boat launch is 1.5 miles away.
Field Notes:	• Seep located 20 guard rail posts until inline with wooden weirs and 15+ from shoreline. • 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	Sand Creek: gradient is low; substrate is gravel; approx. width is 270 ft.; approx. depth is 5 to 10 feet; slow moving



Suggested Equipment	
Quantity	Description
None	Curtain Boom Tow Bridles
As Appropriate	
	Polypropylene Line
None	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
1 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (1.3 miles)
Second Cache: Bonners (32.6 miles)

Nearest Address: 1125 5th Ave
Sandpoint ID 83864

Site-Specific Points of Contact

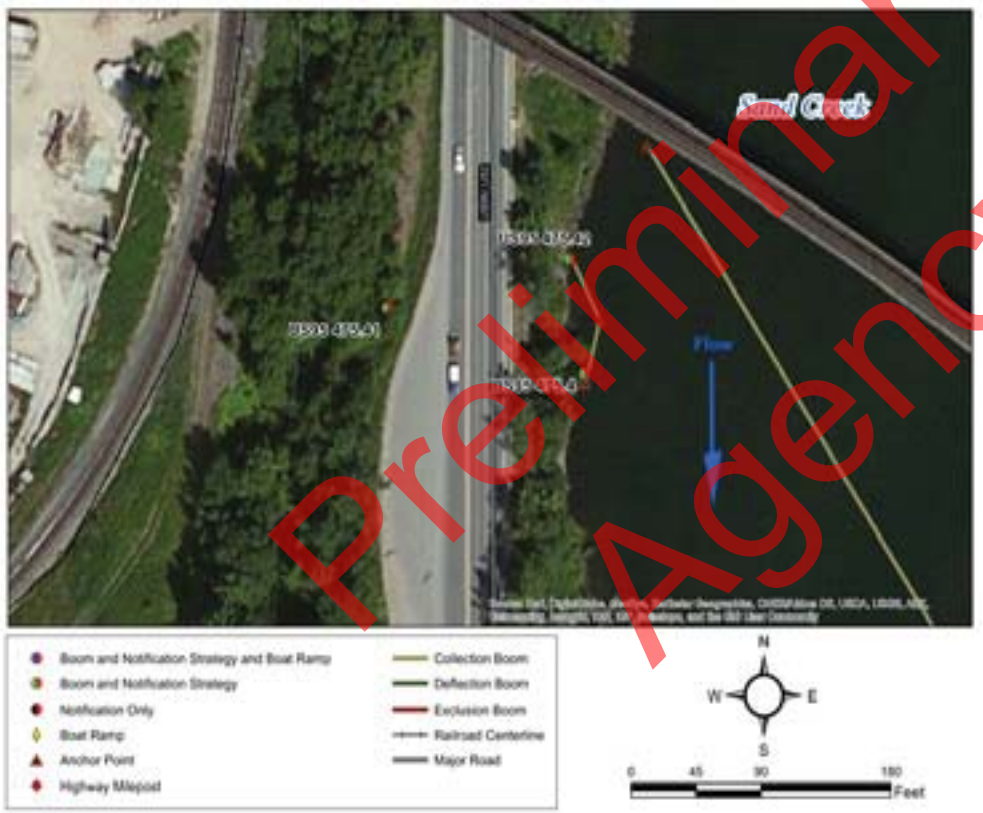
Site Access

Sandpoint, Idaho
1. Head orth on N fifth Ave toward Alder St - 0.4 mi
2. Turn left to stay on N Fifth Ave - 358 ft
1125 North Fifth Avenue, Sandpoint, Idaho

24 inch metal pipe culvert below gazebo, 15+ ft from shore.

Photo taken from embankment overlooking step. Montana rail link bridge in background for orientation.

Site Lat Long:	48.28618 -116.552678 (http://www.google.com/maps/place/48.28618,-116.552678)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Sand Creek flow direction is to the south. Deploy collection boom and initiate contaminant recovery at Cluster South of Visitor's Center. Secure upstream end of boom River Right to tree. Secure downstream end of boom River Right to tree.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Sandpoint City Beach boat launch is 1.6 miles away.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	Sand Creek: gradient is low; substrate is gravel; approx. width is 275 ft.; approx. depth is 5 to 10 feet; slow moving



Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	
75 ft.	Polypropylene Line
None	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (1.4 miles)
Second Cache: Bonners (32.5 miles)

Nearest Address: 1125 5th Ave
Sandpoint ID 83864

Site-Specific Points of Contact

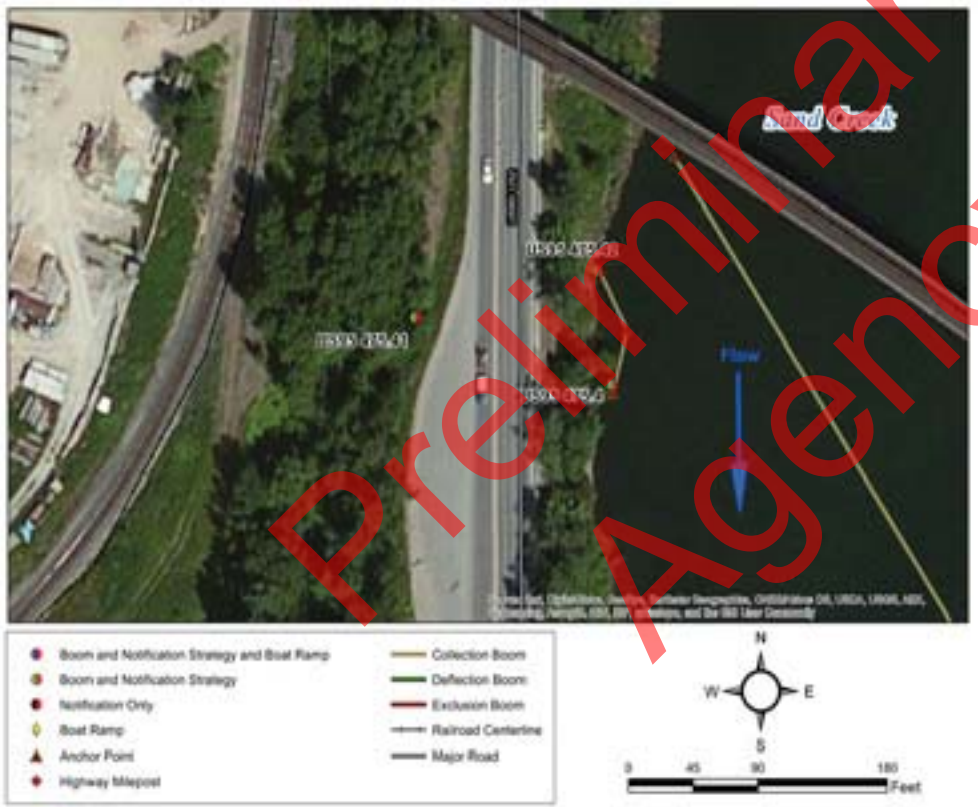
Site Access

Sandpoint, Idaho
1. Head north on N Fifth Ave toward Alder St - 0.7 mi

14 inch culvert South of railroad trestle.

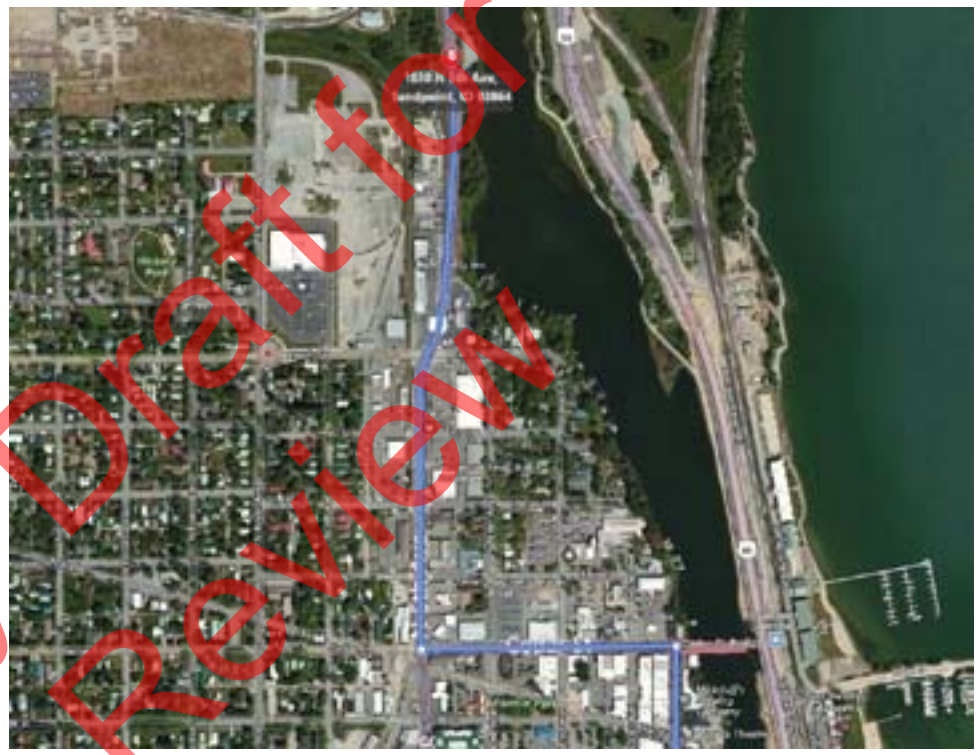
24 culvert South of railroad trestle, just below and downstream of 14 inch culvert.

Site Lat Long:	48.286264 -116.553254 (http://www.google.com/maps/place/48.286264,-116.553254)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Deploy collection boom and initiate contaminant recovery at Visitor's Center Culvert # 4. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is small. No boat launch facilities. Sandpoint City Beach boat launch is 1.6 miles away.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	



Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	
75 ft.	Polypropylene Line
None	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
0 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (1.4 miles)
Second Cache: Bonners (32.5 miles)

Nearest Address: 1125 5th Ave
Sandpoint ID 83864

Site-Specific Points of Contact

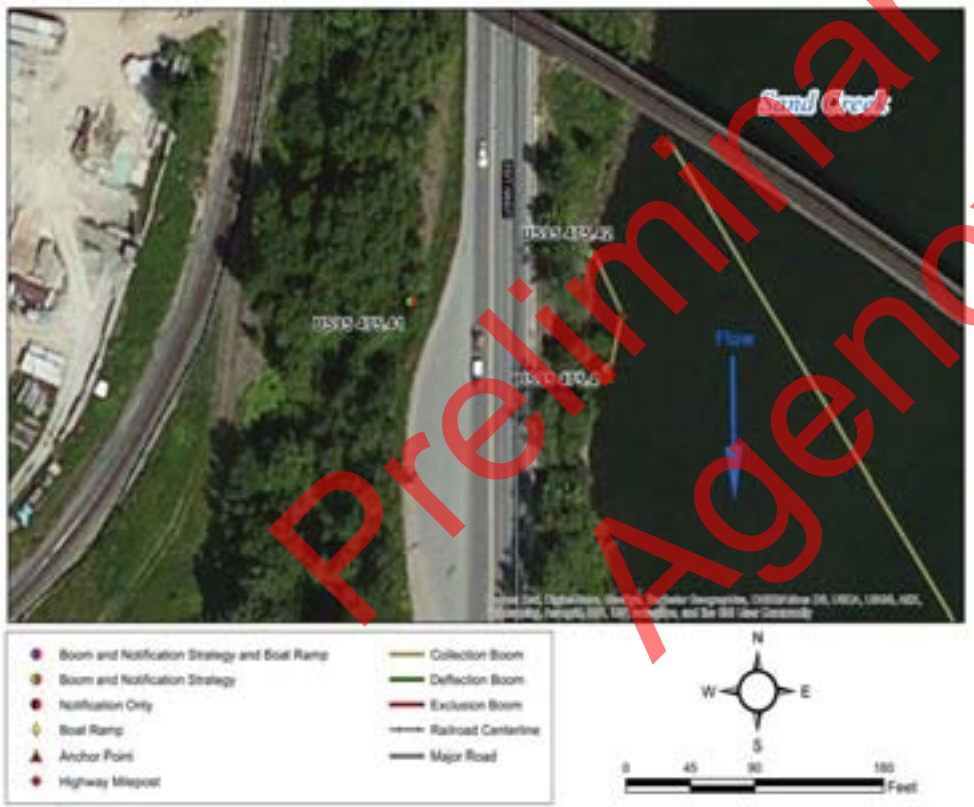
Site Access

Sandpoint, Idaho
1. Head north on N Fifth Ave toward Alder St - 0.5 mi

From turn off facing north with sign for orientation, culvert is central in frame.

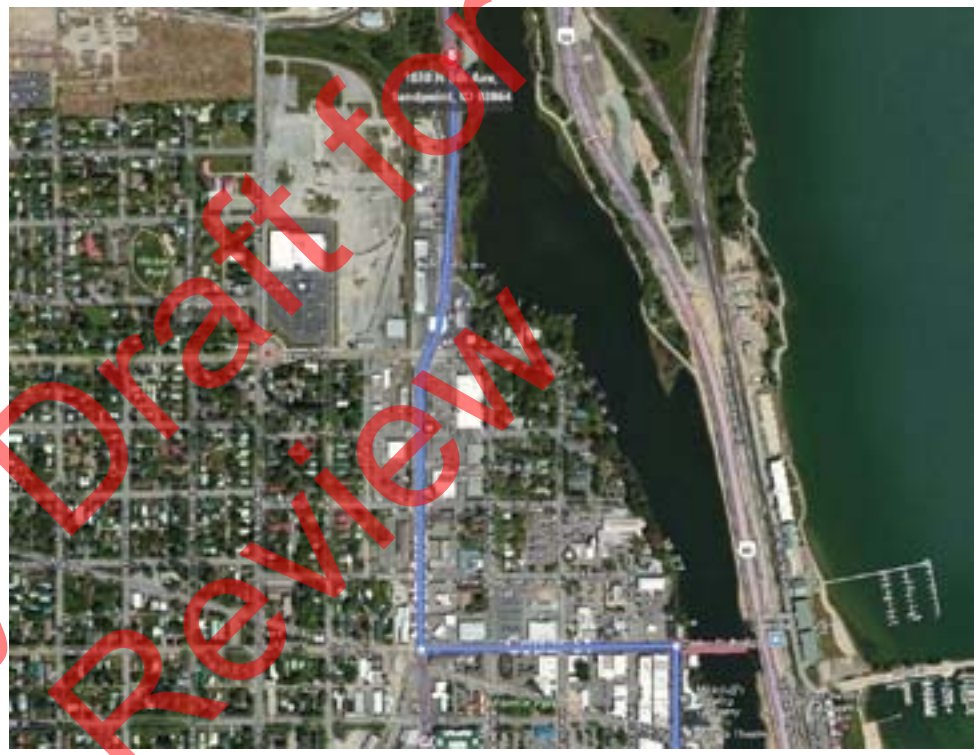
Facing east directly in front of culvert.

Site Lat Long:	48.286379 -116.552747 (http://www.google.com/maps/place/48.286379,-116.552747)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Sand Creek flow direction is to the south. Deploy collection boom and initiate contaminant recovery at Surface Water Outflow. Secure upstream end of boom River Right to tree. Secure downstream end of boom River Right to tree. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Turn off across highway could be used as a good small to medium staging area. No boat launch facilities. Sandpoint City Beach boat launch is 1.6 miles away.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	Sand Creek: gradient is low; substrate is gravel; approx. depth is 5 to 10 feet; slow moving



Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	
75 ft.	Polypropylene Line
None	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (1.4 miles)
Second Cache: Bonners (32.5 miles)

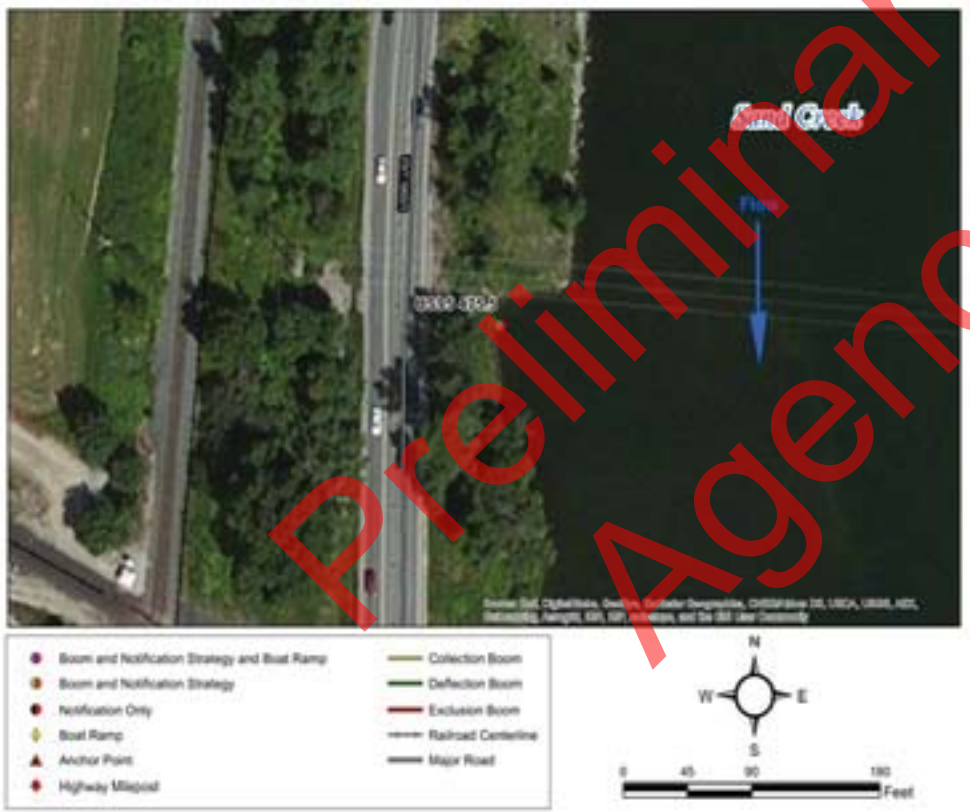
Nearest Address: 1125 5th Ave
Sandpoint ID 83864

Site-Specific Points of Contact

Site Access

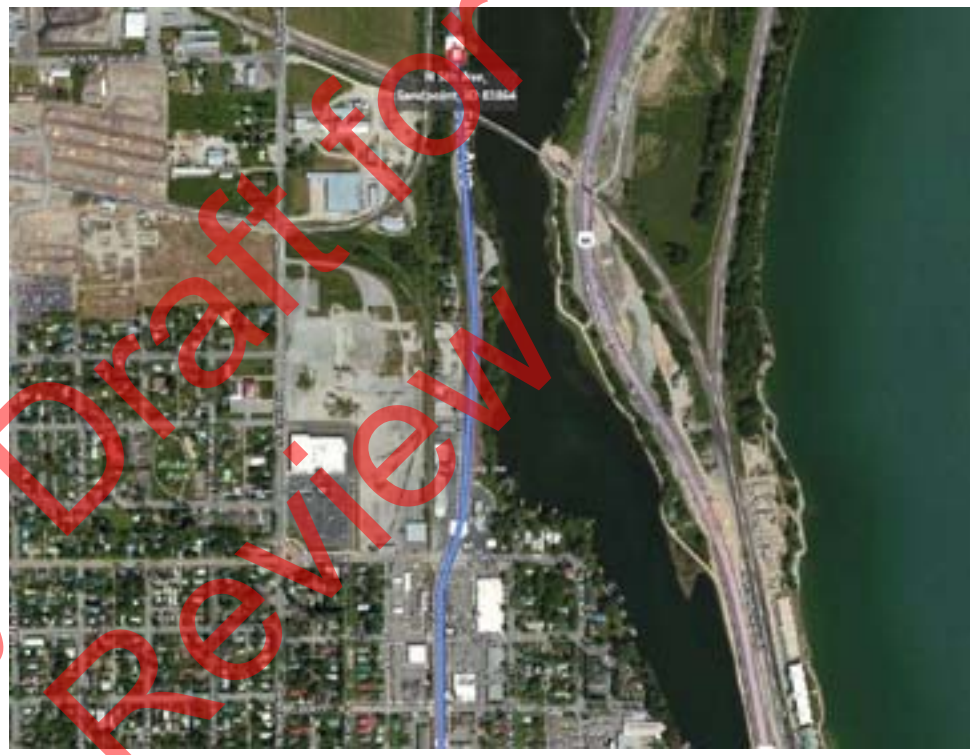
Sandpoint, Idaho
1. Head north on N Fifth Ave toward Alder St - 0.5 mi
1307 North Fifth Avenue, Sandpoint, Idaho

Site Lat Long:	48.287579 -116.552849 (http://www.google.com/maps/place/48.287579,-116.552849)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Sand Creek flow direction is to the south. Deploy collection boom and initiate contaminant recovery at Surface Water Outflow. Secure upstream end of boom River Right to tree. Secure downstream end of boom River Right to tree. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Shoulder of highway on inside turn. No boat launch facilities.Sandpoint City boat launch is 1.7 miles away.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	Sand Creek: gradient is low; substrate is gravel; approx. width is 615 ft.; approx. depth is 5 to 10 feet; slow moving



Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	
75 ft.	Polypropylene Line
None	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (1.5 miles)
Second Cache: Bonners (32.4 miles)

Nearest Address: 1500 N. Fifth Ave
Ponderay ID 83852

Site-Specific Points of Contact

Site Access

Sandpoint, Idaho
1. Head north on N Fifth Ave toward Alder St - 0.5 mi

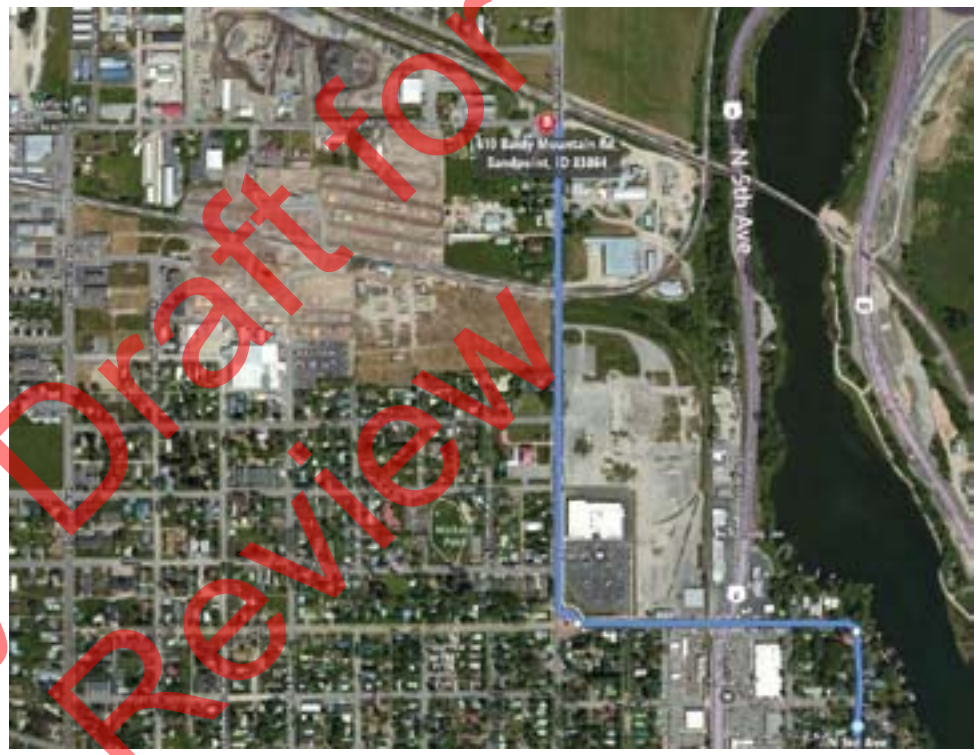
Picture taken from culvert facing upstream, rail link bridge in background for orientation.

Picture of culvert facing downriver.

Site Lat Long:	48.28779 -116.557571 (http://www.google.com/maps/place/48.28779,-116.557571)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Deploy collection boom and initiate contaminant recovey at West Boyer Rd crossing, corner of N Boyer Ave and Baldy Mt Rd. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is medium. Medium sized parking area adjacent to West Boyer railroad crossing. No boat launch facilities. Sandpoint City Beach boat launch is 1.9 miles away.
Field Notes:	• 4WD Access: NO • Seasonal Access Only: NO • Locked Gate: NO
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	

Suggested Equipment	
Quantity	Description
None	Curtain Boom Tow Bridles
As Appropriate	
	Polypropylene Line
12	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
0 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (1.4 miles)
Second Cache: Bonners (32.4 miles)

Nearest Address: 600-902 Baldy Mountain RD
Sandpoint ID 83864

Site-Specific Points of Contact

Site Access

Sandpoint, Idaho
1.Head north on N Fifth Ave toward Alder St- 0.3 mi
2. Turn left onto Larch St- 0.2 mi
3. At the traffic circle, take the 1st exit onto N Boyer Ave- 0.5 mi
4. Turn left onto Baldy Mountain Rd, destination will be on the right- 128 ft

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Cardboard
Sector 4

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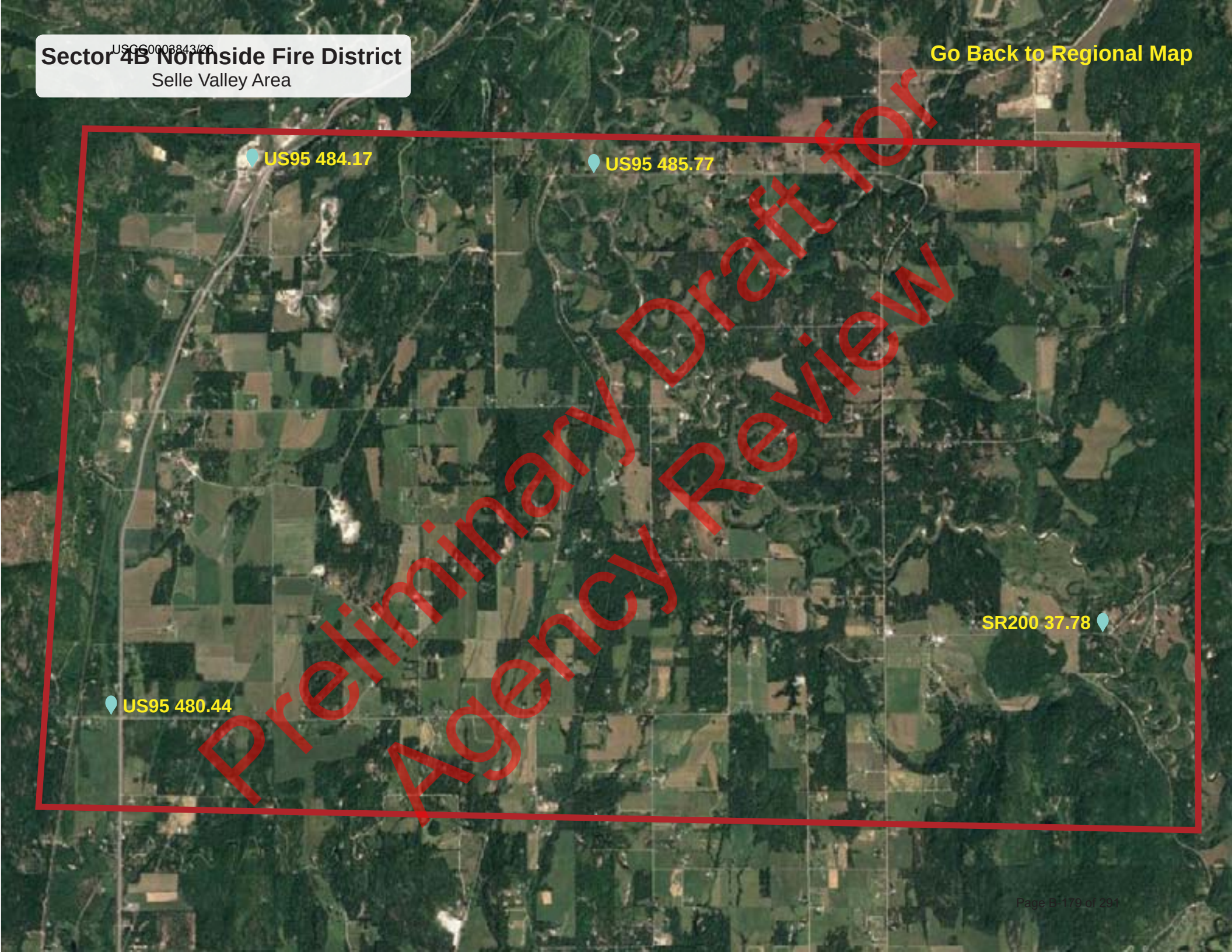
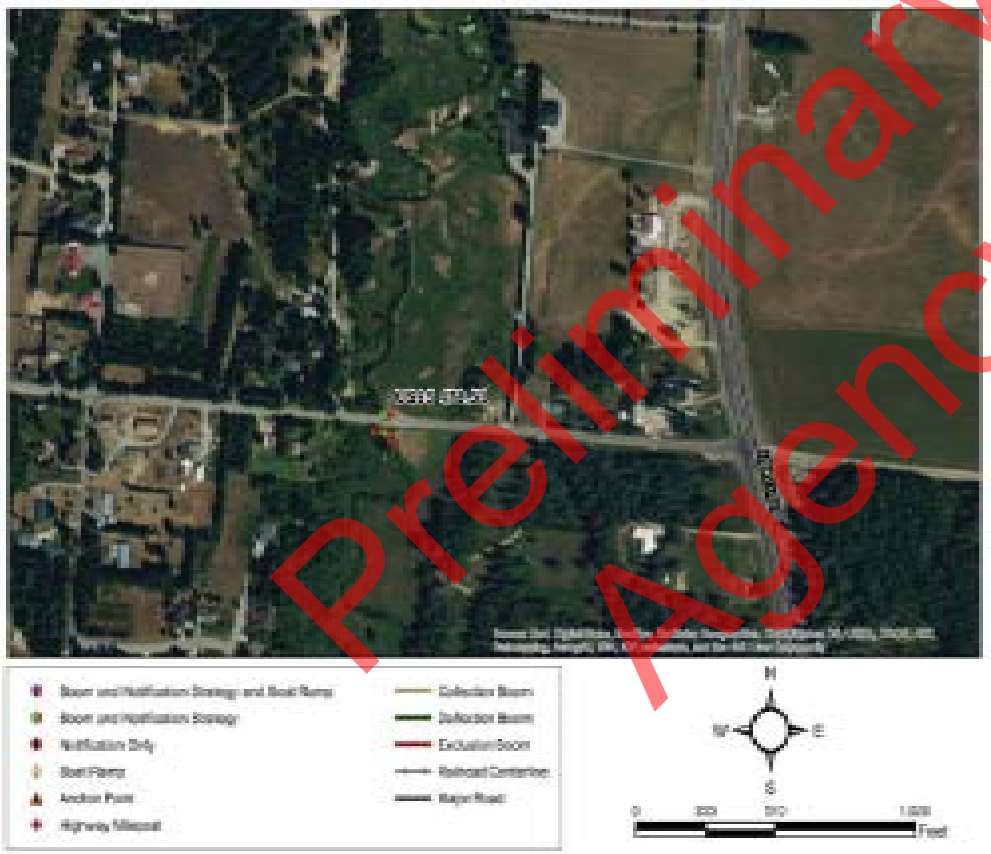
Sector & Map	Site ID & Highway Milepost	Railroad Milepost	Site Name	Accessible by boat at Low Water?	Nearest Boat Ramp or Staging Area
Sector 4A Northside- (Lakeshore)	US95 478.53	BNSF Kootenai 1399.09	Bronx Rd	No	US95 473.87
	US95 479.99	BNSF Kootenai 1399.67	Sand Creek Water Treatment Plant	No	none
	SR200 33.15	MRL4 114.92	Boyer Slough	No	none
	SR200 34.53	MRL4 113.5	Oden Water Assn Water Intake	Yes	SR200 42.59
	SR200 34.98	MRL4 113.0	Culver Slough	Unlikely	US95 473.87
	SR200 36.39	MRL4 109.77	Pend Orielle State Wildlife Management Area	Unlikely	US95 473.87
	SR200 38.69	MRL4 109.93	Pack River Bridge	No	SR200 42.59
	SR200 41.28	MRL4 107.49	Sunnyside Water Intake	Yes	SR200 41.38
Sector 4B Northside- (Selle Valley)	US95 480.44	BNSF Kootenai 1397.09	West Selle Rd	No	uncertain
	US95 484.17	BNSF Kootenai 1393.33	East Colburn	No	US95 473.87
	US95 485.77	BNSF Kootenai 1391.75	Lower Pack River	No	none
	SR200 37.78	MRL4 111.05	Rapid Lightning Road Bridge	No	none


Sector 4A Northside Fire District
Lakeshore Area
USCG000833/26
Go Back to Regional Map
US95 478.53
US95 479.99
SR200 38.69
SR200 34.98
SR200 33.15
SR200 36.39
SR200 34.53
SR200 41.28
Preliminary Draft for Agency Review

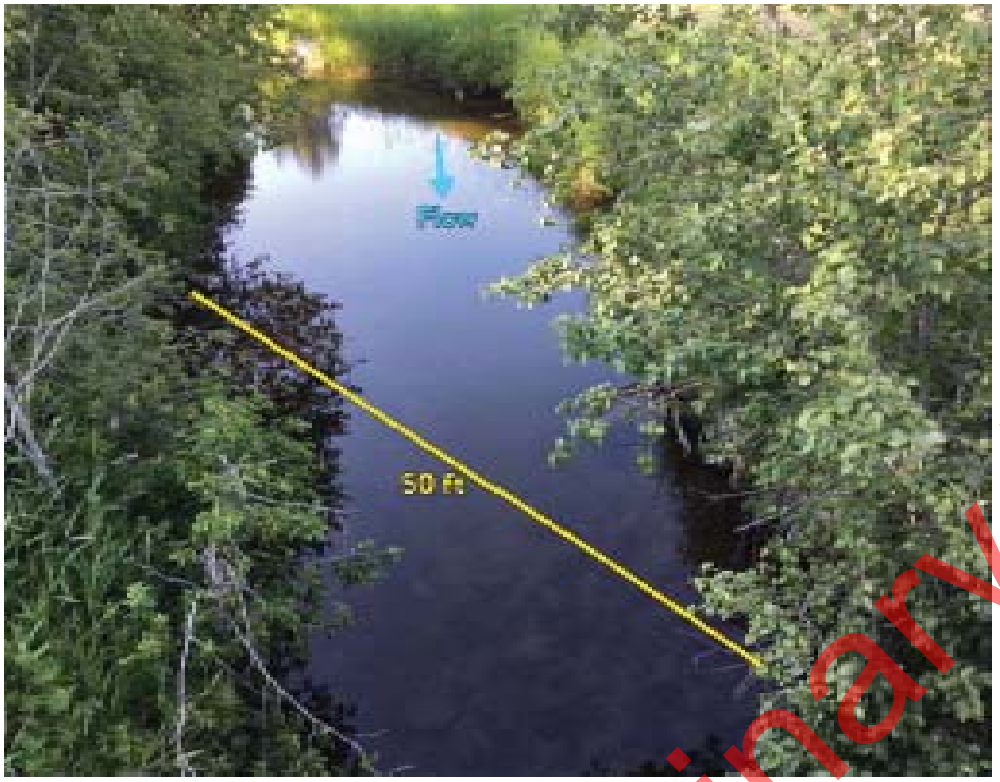

Sector 4B Northside Fire District
Selle Valley Area
USCG0003843/26
Go Back to Regional Map
US95 484.17
US95 485.77
SR200 37.78
US95 480.44
Preliminary Draft for Agency Review

Site Lat Long:	48.09251 -116.096934 (http://www.google.com/maps/place/48.328199,-116.552754)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Sand Creek flow direction is to the south. Deploy collection boom and initiate contaminant recovery at Bronx Rd recovery location on Sand Creek. Secure upstream end of boom River Right to tree. Secure downstream end of boom River Left to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis. Dense Vegetation River right and narrow county road.
Staging Area:	No staging area. Small to no staging area. Very narrow bridge. Sandpoint City Beach boat launch is 5.0 miles away. Sandpoint Ciboat launch Beach BL is 5.0 miles away.
Field Notes:	• Private property • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Recreation, Reservoir, Threatened and Endangered Species.
Watercourse:	Sand Creek: gradient is low; substrate is sand; approx. width is 24 ft.; approx. depth is 1 to 5 feet; fast moving.



Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	Portable Skimmer; Vacuum Truck; Absorbent Boom
75 ft.	Polypropylene Line
3	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 2	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
/	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (4.6 miles)
Second Cache: Bonners (29.5 mile)

Nearest Address: 334 W Bronx Rd.
Sandpoint ID 83864

Site-Specific Points of Contact

Site Access

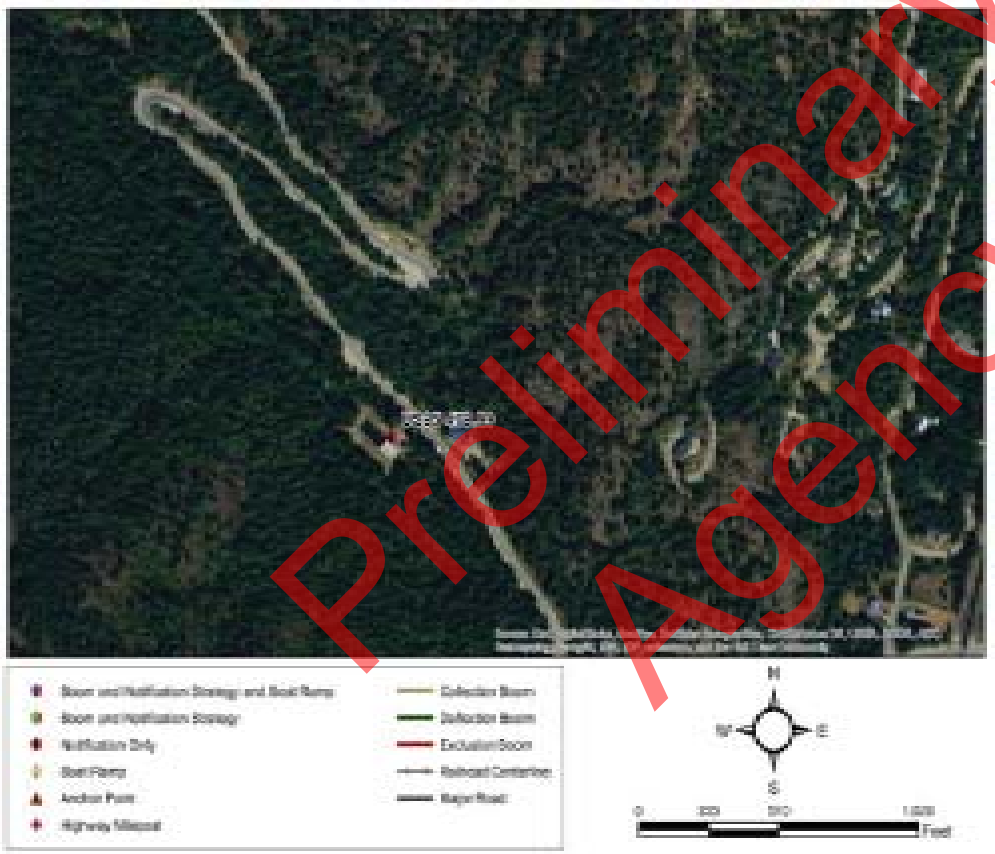
Sandpoint, Idaho

1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 361 ft
3. Take the ramp onto US-95 N 2.9 mi
4. Turn left onto W Bronx Rd - 0.2 mi

Bridge looking east.

Sand creek looking north.

Site Lat Long:	48.321576 -116.571611 (http://www.google.com/maps/place/48.321576,-116.571611)
Strategy Objective:	Notification Only.
Implementation:	Notify Sand Creek Water Treatment Plant - contact David Pafundi at 208-263-3440 to shut off water intake on Sand Creek.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Bottle Bay Bridge boat launch is 7.8 miles away.
Field Notes:	• 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake.
Watercourse:	



Suggested Equipment	
Quantity	Description
None	Curtain Boom Tow Bridles
As Appropriate	
	Polypropylene Line
None	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
	Booming Team Leader
	Safety Supervisor
/ None	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
/	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (4.1 miles)
Second Cache: Bonners (31.1 mile)

Nearest Address: 785 Rd Schweitzer Mtn.
Sandpoint ID 83864

Site-Specific Points of Contact

David Pafundi - (208) 263-3440

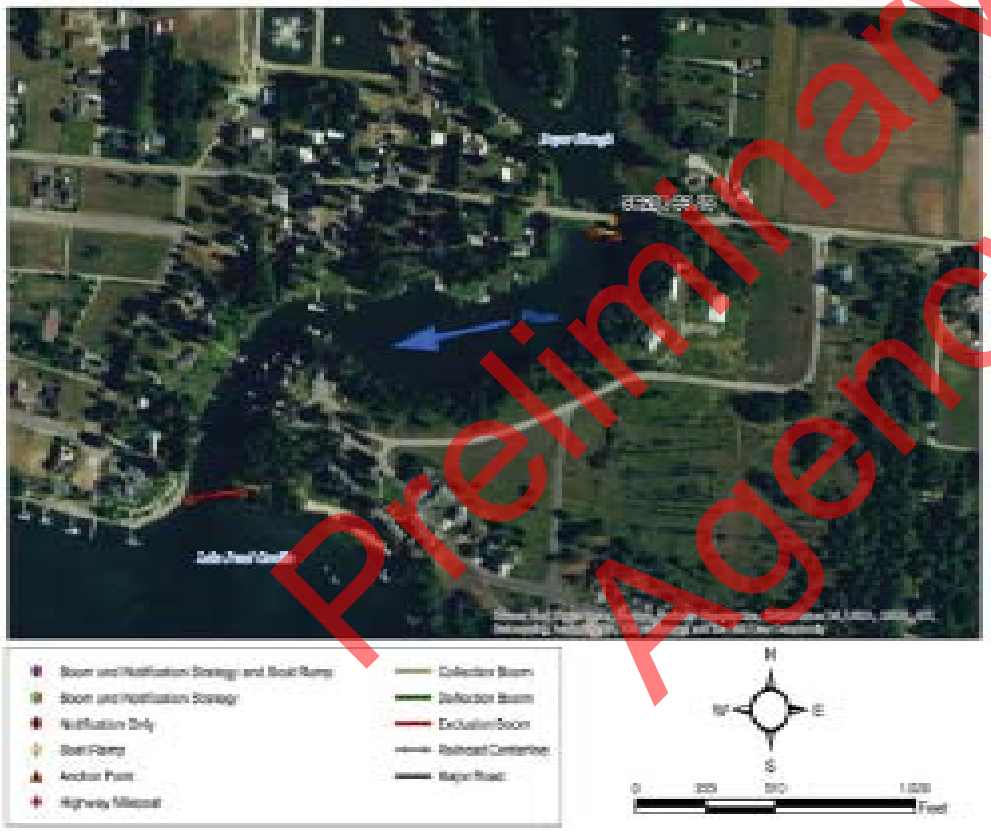
Ryan Luttman - (208) 263-3407

Site Access

Sandpoint, Idaho

1. Head north on N Fifth Ave toward Alder St - 0.3 mi
2. Turn left onto Larch St - 0.2 mi
3. At the traffic circle, take the 1st exit onto N Boyer Ave - 2.1 mi
4. Turn left onto Schweitzer Mountain Rd - 1.2 mi
5. Turn right onto Boyer Rd. - 0.8 mi
6. Turn left onto Schweitzer Mountain Rd - 1.2 mi

Site Lat Long:	48.309266 -11.491667 (http://www.google.com/maps/place/48.309266,-116.491667)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	River flow direction is to the south. Deploy collection boom and initiate contaminant recovery at Boyer Slough. Secure upstream end of boom River Right to fixed anchor. Secure downstream end of boom River Left to fixed anchor. Vacuum truck access is good. Secure upstream end of boom River Right to steel post. Secure downstream end of boom River Left to steel post.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is small. Parking for vehicles and equipment on Whiskey Jack Rd near bridge over the slough. No boat ramp. Narrow shoulder. No boat launch facilities. Bottle Bay Bridge boat launch is 7.9 miles away.
Field Notes:	• Use wooden pillars in slough to anchor boom at bridge. Second boom at mouth of slough anchored with steel posts to create containment or exclusion. • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Boyer slough, fish habitat, wetlands habitat, and community recreational use
Watercourse:	Gradient is low; substrate is mud; approx. width is 40 ft.; approx. depth is 5 to 10 feet; braided channels; shoals; slow moving.



Suggested Equipment	
Quantity	Description
200 ft.	Curtain Boom Tow Bridles
As Appropriate	Portable Skimmer; Vacuum Truck
300 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 2	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
/	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (5.2 miles)
Second Cache: Cabinet Gorge Dam (31.5 miles)

Nearest Address: 467-735 Whiskey Jack Rd
Sandpoint ID 83864

Site-Specific Points of Contact

Site Access

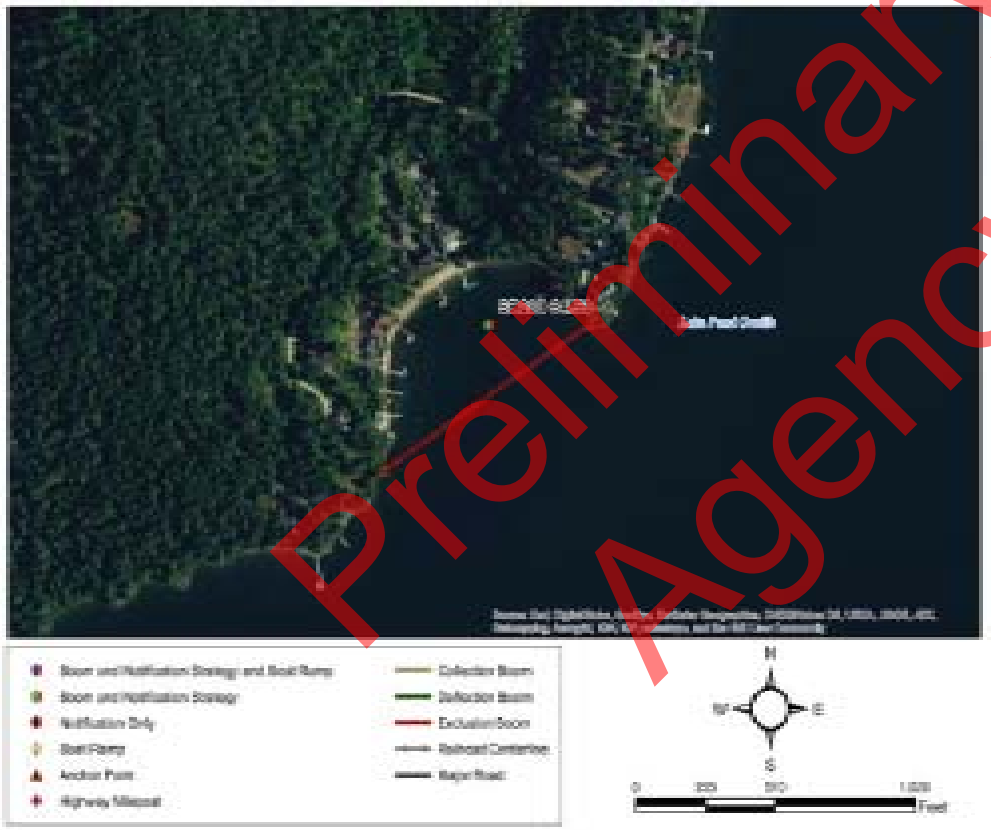
Sandpoint, Idaho

1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 2.7 mi
3. Turn right onto Kootenai Bay Rd - 387 ft
4. Turn left onto Whiskey Jack Rd - 0.8 mi

Downstream view of slough from the east side of bridge.

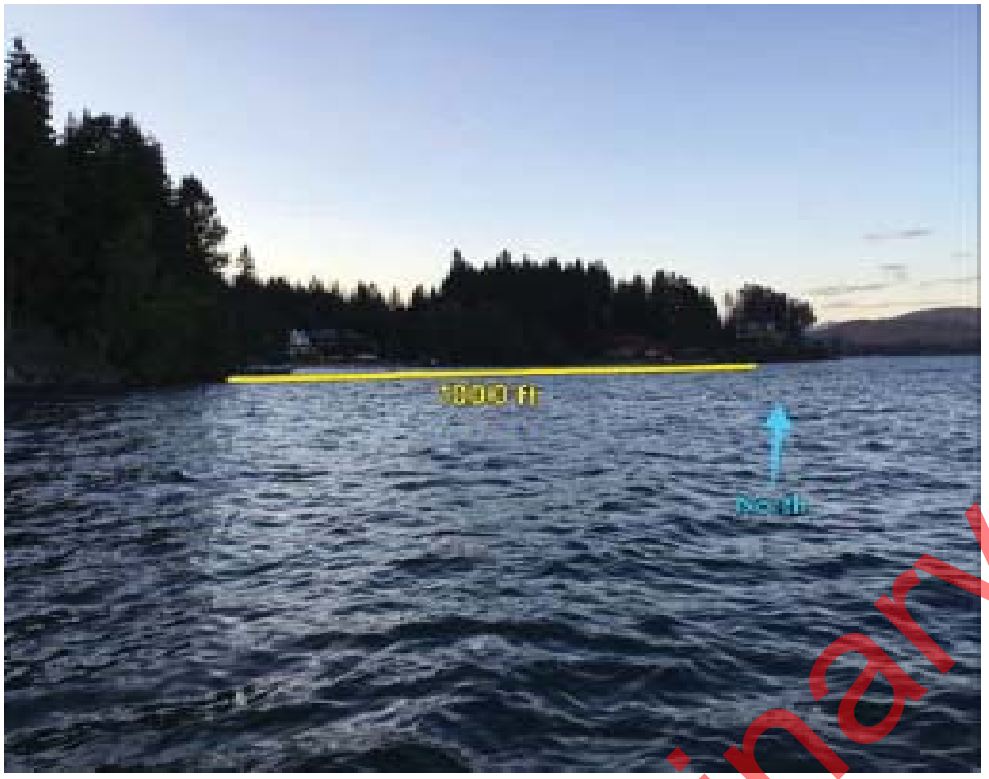
East view of bridge and small parking area.

Site Lat Long:	48.298221 -116.85555 (http://www.google.com/maps/place/48.298221,-116.472555)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Oden Water Assn Water Intake.
Implementation:	Secure upstream end of boom to North Shoreline to steel post. Secure downstream end of boom to South Shoreline to steel post. Vacuum truck access is poor. Notify Oden Water Association.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is none. Private community. Access from boat only. Trestle Creek boat launch is 9.4 miles away.
Field Notes:	• No road access • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Community water intake
Watercourse:	Lake Pend Oreille; approx. depth is 10 to 20 feet



Suggested Equipment	
Quantity	Description
1000 ft.	Curtain Boom Tow Bridles
As Appropriate	
1250 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (7.1 miles)
Second Cache: Cabinet Gorge Dam (28.2 miles)

Nearest Address: 55 Ideal Dr.
Sandpoint ID 83864

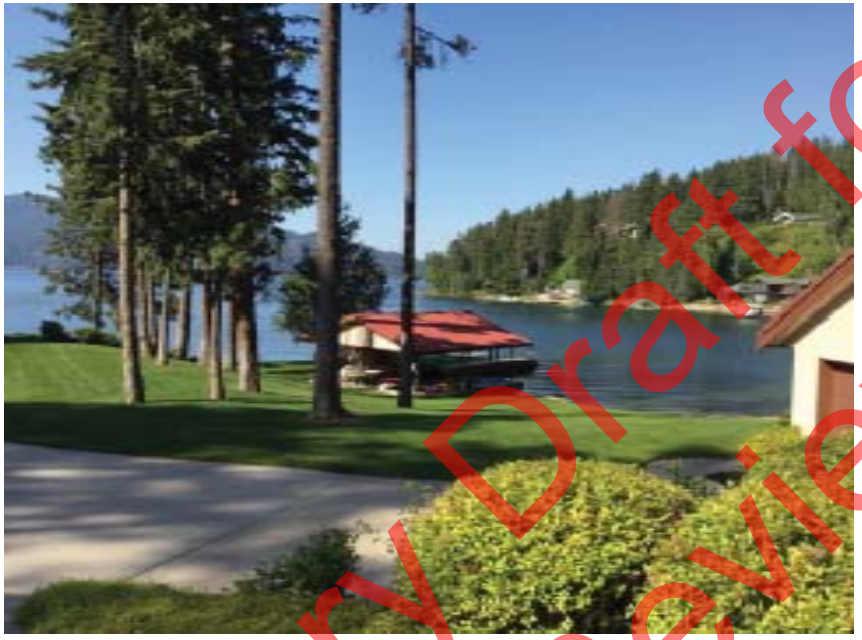
Site-Specific Points of Contact

Carla Poelstra, Intake Manager (208) 255-4001

Site Access - use Sandpoint City Beach boat launch, directions below

Sandpoint, Idaho

1. Head south on N Fifth Ave toward Cedar St - 171 ft
2. Turn left onto Pine St 0.3 mi
3. Pine St turns left and becomes N First Ave 246 ft
4. Turn right onto Bridge St 0.2 mi
5. Turn right



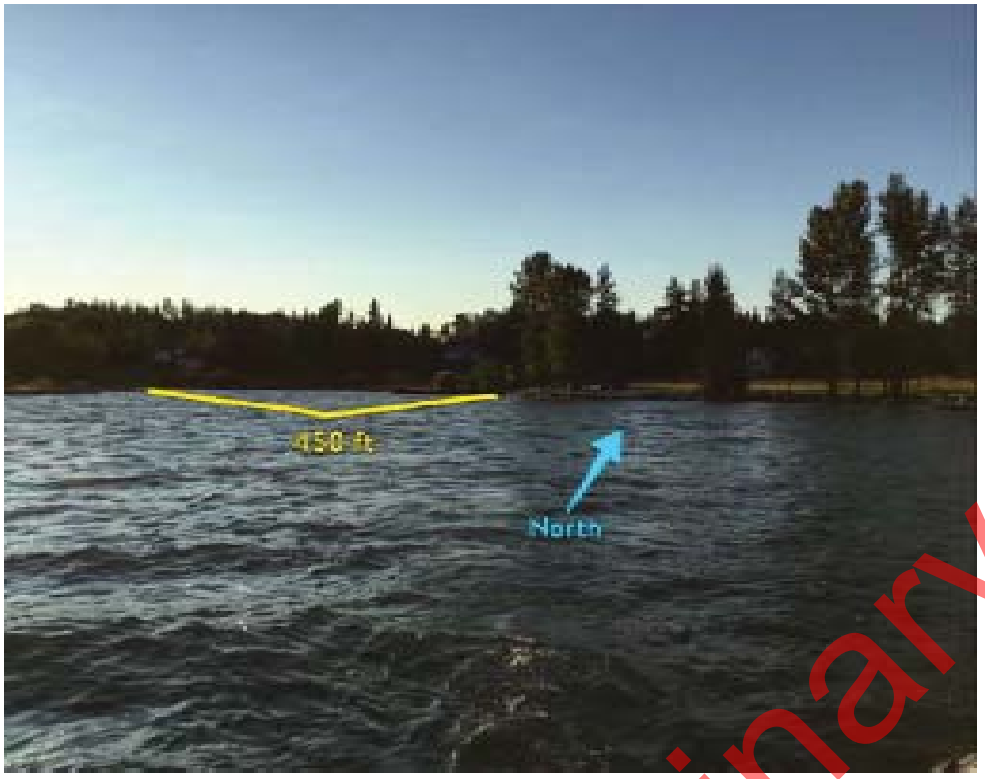
View of water intake area from private residence east of the bay.

View of the Oden water intake cover, looking northwest.

Site Lat Long:	48.316028 -116.455518 (http://www.google.com/maps/place/48.316028,-116.455518)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Culver Slough.
Implementation:	Secure upstream end of boom River Right to steel post. Secure downstream end of boom River Left to steel post. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. No boat launch facilities. Use Sandpoint City Beach boat launch. Trestle Creek boat launch is 7.6 miles away.
Field Notes:	• 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Culver Slough, fish habitat, wetlands, recreation.
Watercourse:	Lake Pend Oreille; substrate is mud; approx. depth is 5 to 10 feet; slow moving; shoals.

Suggested Equipment	
Quantity	Description
450 ft.	Curtain Boom Tow Bridles
As Appropriate	
525 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
1	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (7.1 miles)
Second Cache: Cabinet Gorge Dam (28.2 miles)

Nearest Address: 224 Sunnyside Rd.
Sandpoint ID 83864

Site-Specific Points of Contact

Site Access - use Sandpoint City Beach boat launch, directions below

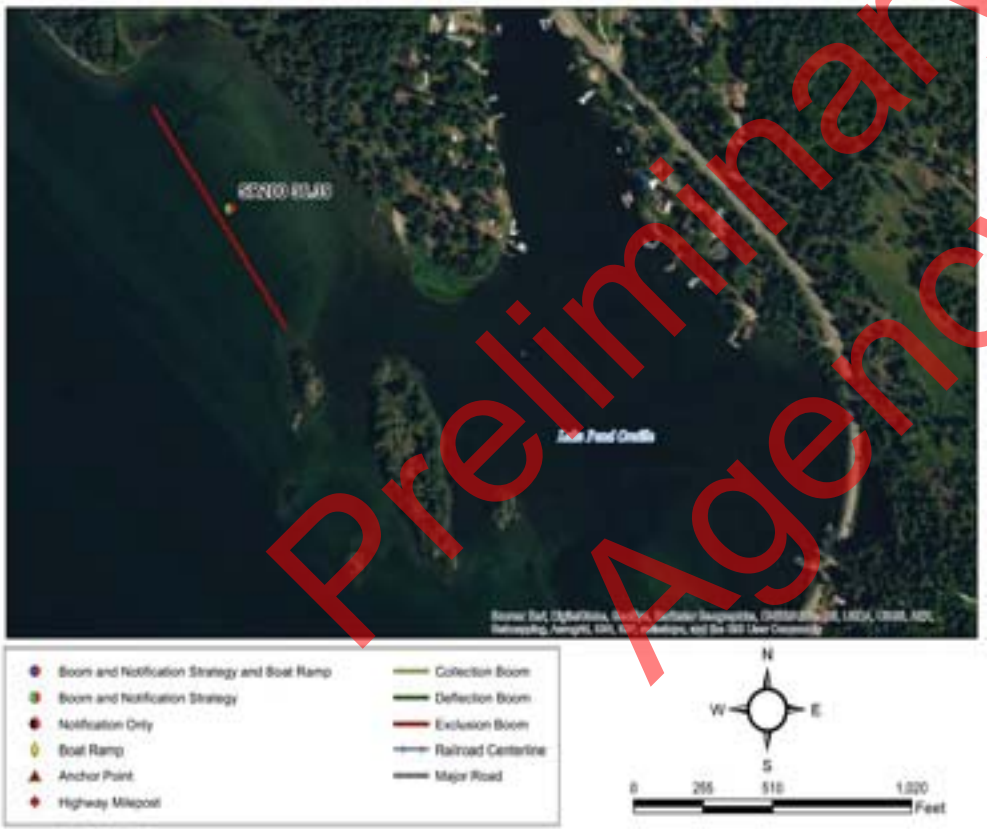
Sandpoint, Idaho

1. Head south on N Fifth Ave toward Cedar St - 171 ft
2. Turn left onto Pine St 0.3 mi
3. Pine St turns left and becomes N First Ave 246 ft
4. Turn right onto Bridge St 0.2 mi
5. Turn right

Culver slough seen from the Kaniksu Estates road.

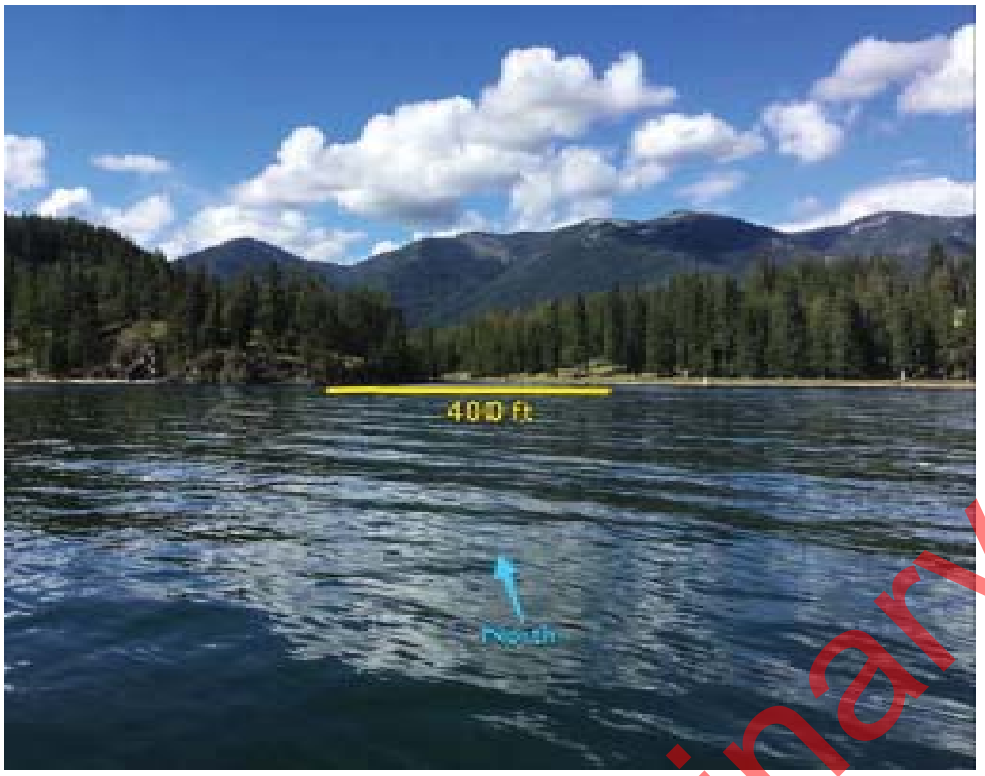
Culver Slough from lake Pend Orellie looking northwest.

Site Lat Long:	48.29857 -116.423699 (http://www.google.com/maps/place/48.29857,-116.423699)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Pend Orielle state wildlife management area upper.
Implementation:	Lake Pend Oreille flow direction is to the west. Secure upstream end of boom East Shoreline to tree. Secure downstream end of boom West Shoreline to tree.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. No boat launch facilities. Hawkin's Point boat launch is 3.6 miles away.
Field Notes:	• 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Wildlife management area
Watercourse:	Lake Pend Oreille: gradient is low; substrate is mud; approx. depth is over 20 feet.



Suggested Equipment	
Quantity	Description
0 ft.	Curtain Boom Tow Bridles
As Appropriate	
	Polypropylene Line
None	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
2	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
4 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (10.4 miles)
Second Cache: Cabinet Gorge Dam (29.2 mile)

Nearest Address: 2766-3426 Sunnyside Rd
Kootenai ID 83840

Site-Specific Points of Contact

Site Access -
Sandpoint, Idaho

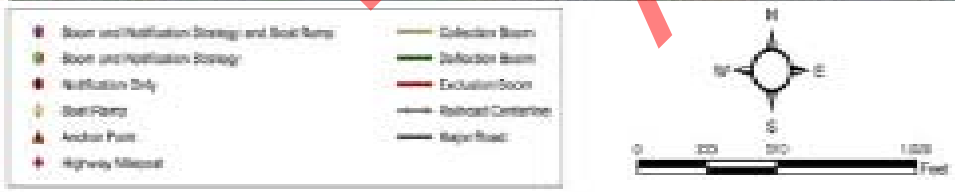
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 6.4 mi
3. Turn right onto Sunnyside Cut Off Rd - 1.2 mi
4. Turn left onto Sunnyside Rd for 2.1 mi
5. Slight right to stay on Sunnyside Rd

Destination will be on the right

Looking north towards upper management area.

None

Site Lat Long:	48.323983 -116.385015 (http://www.google.com/maps/place/48.323983,-116.385015)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Pack River Bridge.
Implementation:	Pack River flow direction is to the south. Deploy boom across three separate channels under the highway. Secure upstream end of boom River Right to steel post. Secure downstream end of boom River Left to steel post. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Limited parking along SR200. No boat launch facilities. Trestle Creek boat launch is 3.9 miles away. Trestle Creek BL is 3.9 miles away.
Field Notes:	• 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Pack River delta, fish habitat, wetlands, recreation
Watercourse:	Pack River: gradient is low; substrate is mud; approx. width is 100 ft.; approx. depth is 5 to 10 feet; braided channels; slow moving.



Suggested Equipment	
Quantity	Description
700 ft.	Curtain Boom Tow Bridles
As Appropriate	
900 ft.	Polypropylene Line
18	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
/	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (10.6 miles)
Second Cache: Cabinet Gorge Dam (24.5 mile)

Nearest Address: 3800 Highway 200
Sandpoint ID 83864

Site-Specific Points of Contact

Site Access -

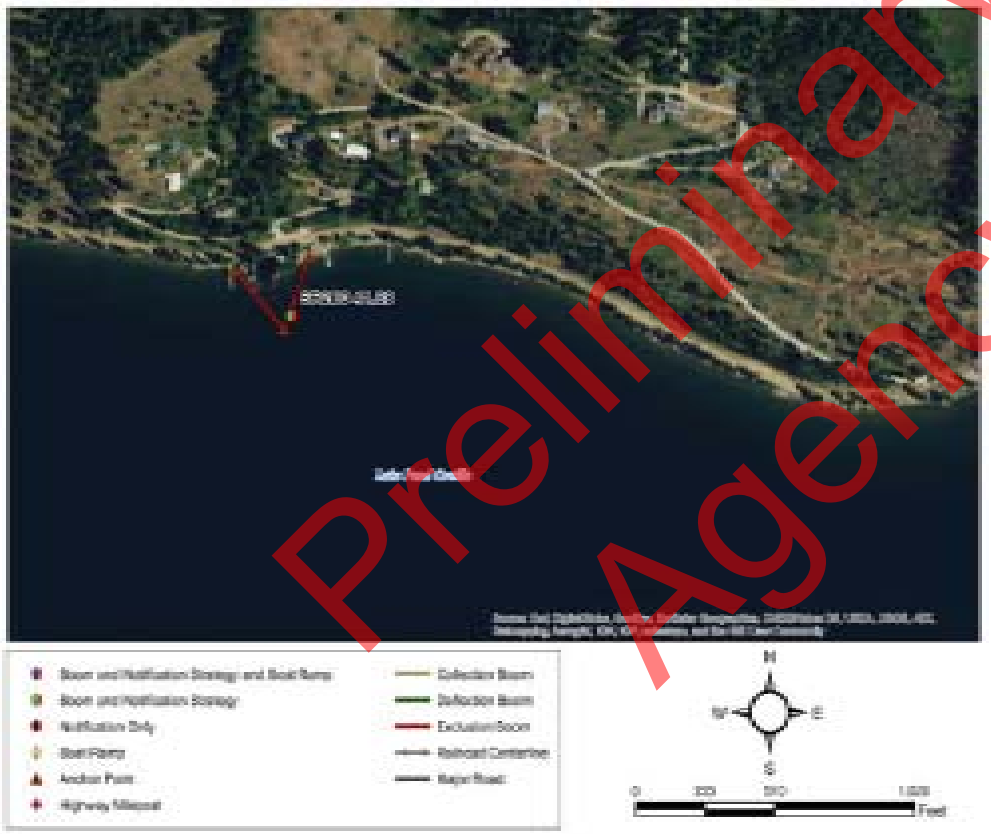
Sandpoint, Idaho

1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 8.0 mi

Pack River bridge from SR200 east bound.

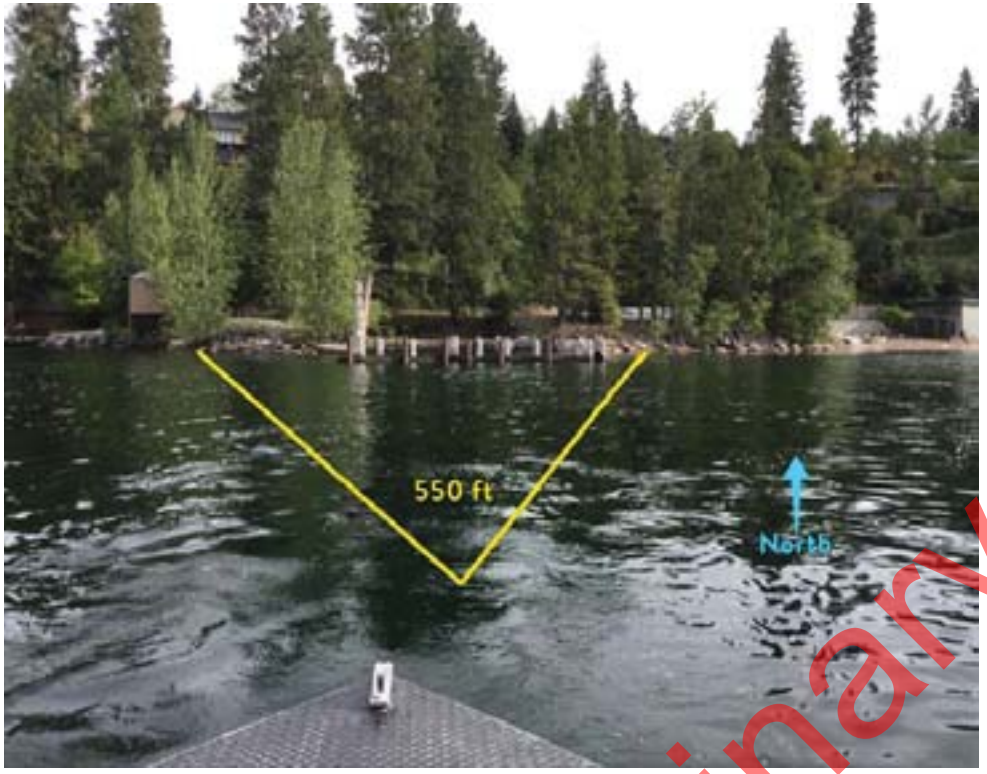
Pack River bridge from SR200 west bound.

Site Lat Long:	48.279969 -116.39325 (http://www.google.com/maps/place/48.279969,-116.39325)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Sunnyside water intake.
Implementation:	Lake Pend Oreille flow direction is to the west. Secure upstream end of boom East Shoreline to tree. Secure downstream end of boom West Shoreline to tree. Vacuum truck access is good. Notify Sunnyside Water Intake.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is medium. Private road with room for parking and equipment staging. No boat launch facilities. Hawkin's Point boat launch is 0.8 miles away.
Field Notes:	• Buoy anchor for mid point boom set • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Water intake
Watercourse:	Lake Pend Oreille: gradient is low; substrate is mud; approx. depth is over 20 feet.



Suggested Equipment	
Quantity	Description
550 ft.	Curtain Boom Tow Bridles
As Appropriate	
650 ft.	Polypropylene Line
0	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
1	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (12.8 miles)
Second Cache: Cabinet Gorge Dam (31.6 miles)

Nearest Address: 210 Steamwhistle Way
Sandpoint ID 83864

Site-Specific Points of Contact

Bob Hansen, Intake Manger (208) 265-4270

Site Access -

Sandpoint, Idaho

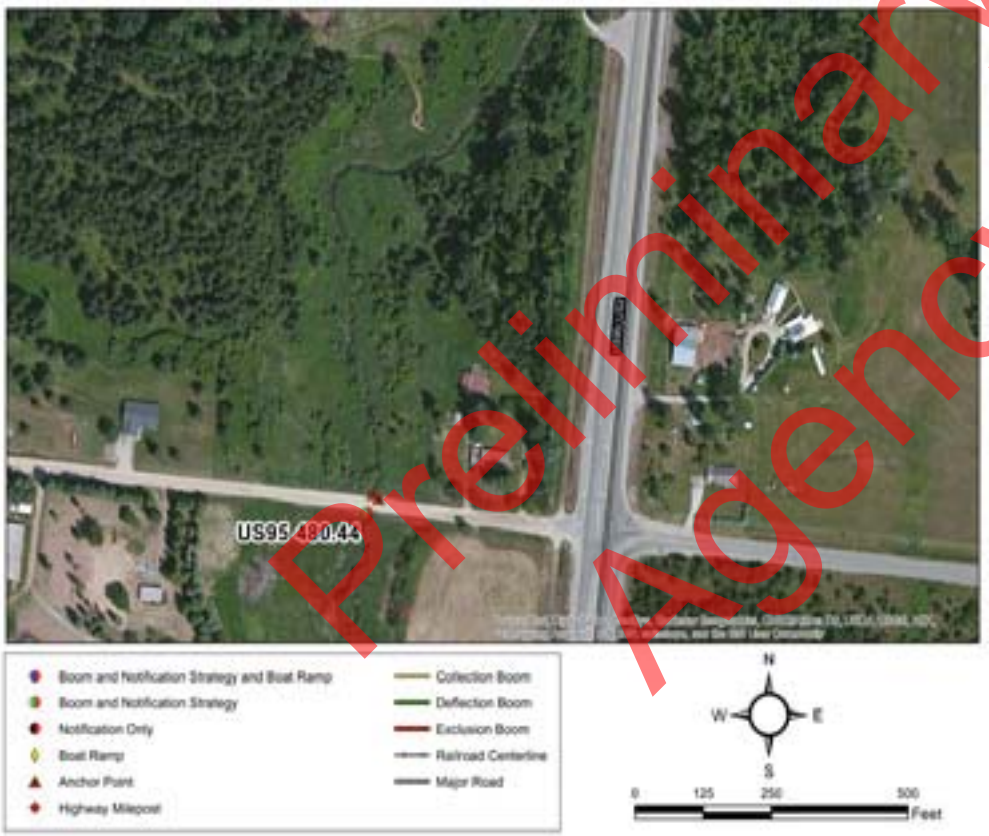
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 6.4 mi
3. Turn right onto Sunnyside Cut Off Rd - 1.2 mi
4. Turn left onto Sunnyside Rd - 2.1 mi
5. Slight right to stay on Sunnyside Rd - 1.3 mi

4787 Sunnyside Road, Sandpoint, Idaho

Looking north at water intake and anchor locations.

Staging area looking west.

Site Lat Long:	448.357166 -116.549228 (http://www.google.com/maps/place/48.357166,-116.549228)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	River flow direction is to the north. Deploy collection boom and initiate contaminant recovery at W Selle Rd. Secure upstream end of boom River Right to steel post. Secure downstream end of boom River Left to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Limited parking available on roadside. No boat launch facilities. Sandpoint City Beach boat launch is 7.1 miles away.
Field Notes:	• 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Colburn creek, wildlife habitat
Watercourse:	Gradient is low; substrate is gravel; approx. width is 10 ft.; approx. depth is 1 to 5 feet; channelized; slow moving



Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	
50 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
0 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (6.5 miles)
Second Cache: Bonners (27.3 miles)

Nearest Address: 37 W Selle Rd
Sandpoint ID 83864

Site-Specific Points of Contact

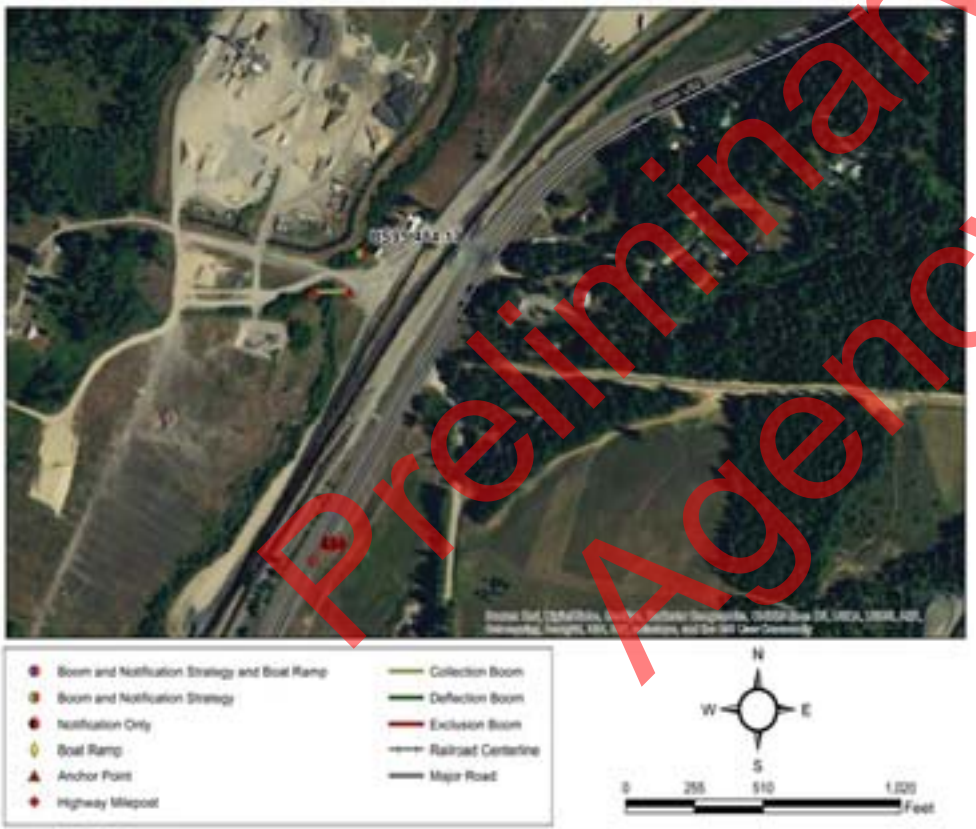
Site Access -

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 171 ft
2. Turn right onto Cedar St - 0.2 mi
3. Turn right onto N Boyer Ave - 0.3 mi
4. At the traffic circle, take the 2nd exit and stay on N Boyer Ave - 2.1 mi
5. Turn right onto Schweitzer Cutoff Rd - 0.2 mi
6. Turn left at the 1st cross street onto US2 E/US-95 N - 3.3 mi
7. Turn left onto W Selle Rd - 187 ft

Looking west at the upstream end of culvert and strategy area.

Looking east across bridge.

Site Lat Long:	48.408283 -116.527569 (http://www.google.com/maps/place/48.408283,-116.527569)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	River flow direction is to the north. Deploy collection boom and initiate contaminant recovery at East Colburn. Secure upstream end of boom River Right to steel post. Secure downstream end of boom River Left to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is small. Small parking area available along road shoulder adjacent to Colburn creek culvert. No boat launch facilities. Sandpoint City Beach boat launch is 10.6 miles away.
Field Notes:	• 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Sand creek, Sandpoint municipal water supply, wildlife habitat
Watercourse:	Gradient is low; substrate is gravel; approx. width is 15 ft.; approx. depth is 1 to 5 feet; channelized; slow moving



Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	
50 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
0 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (10.3 miles)
Second Cache: Bonners (23.5 miles)

Nearest Address: 1-499 Browns Rd
Sandpoint ID 83864

Site-Specific Points of Contact

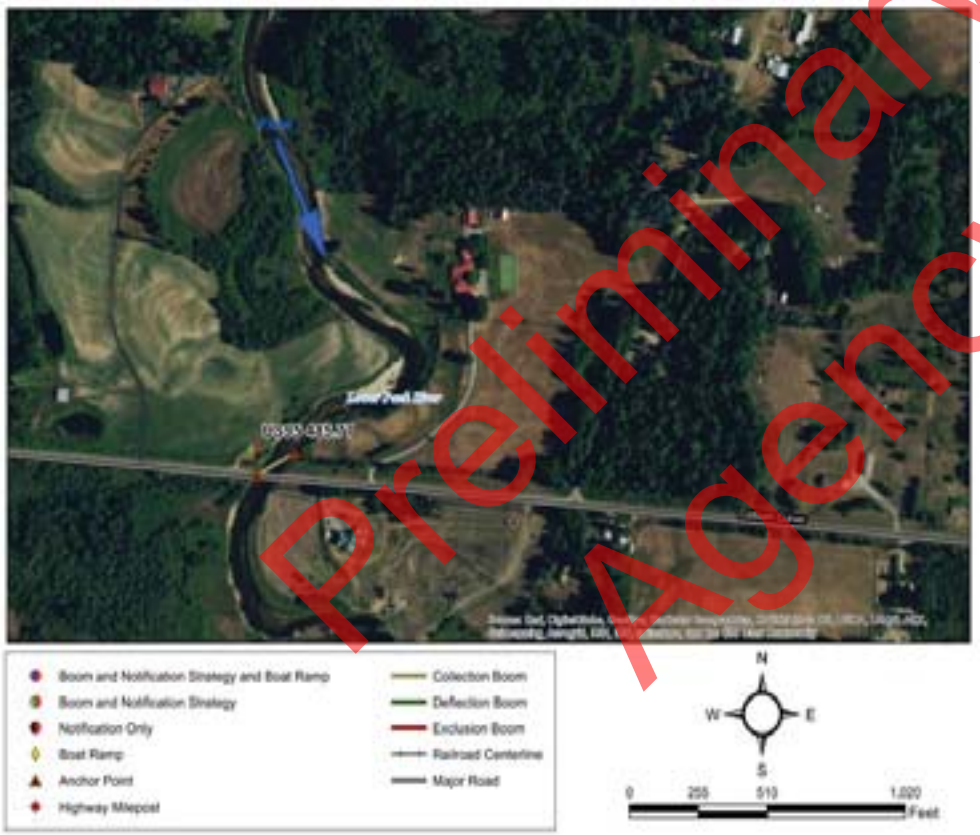
Site Access -

Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 361 ft
3. Take the ramp onto US-95N - 8.7 mi
4. Turn left onto Browns Rd - 203 ft
5. Turn left to stay on Browns Rd - 246 ft

Looking south at upstream end of culvert and collection point.

None

Site Lat Long:	48.407838 -116.478474 (http://www.google.com/maps/place/48.407838,-116.478474)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Pack River flow direction is to the south. Deploy collection boom and initiate contaminant recovery at Lower Pack River Collection Point. Secure upstream end of boom River Left to steel post. Secure downstream end of boom River Right to steel post. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is small. Small grass parking area on west side of bridge, north of bridge. No boat launch facilities. Trestle Creek boat launch is 14.5 miles away.
Field Notes:	• 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Pack River, wildlife habitat, recreation
Watercourse:	Pack River: gradient is low; substrate is sand; approx. width is 90 ft.; approx. depth is 1 to 5 feet; channelized; slow moving



Suggested Equipment	
Quantity	Description
150 ft.	Curtain Boom Tow Bridles
As Appropriate	
225 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
0 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (12.4 miles)
Second Cache: Bonners (26.9 miles)

Nearest Address: 2771 Rd Colburn Culver
Sandpoint ID 83864

Site-Specific Points of Contact

Site Access -

Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 361 ft
3. Take the ramp onto US-95N - 8.1 mi
4. Turn right onto Colburn Culver Rd - 2.9 mi

Looking north from collection point on River right to upstream anchor on River left.

Looking west from river bank to staging area.

Site Lat Long:	48.364336 -116.408388 (http://www.google.com/maps/place/48.364336,-116.408388)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Pack River flow direction is to the south. Deploy collection boom and initiate contaminant recovery at Rapid Lightning Rd Bridge. Secure upstream end of boom River Right to steel post. Secure downstream end of boom River Left to steel post. Vacuum truck access is good. Notify Northside Fire District.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is small. Small sandy parking area south of bridge near collection point. No boat launch facilities. Trestle Creek boat launch is 8.2 miles away.
Field Notes:	• 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Pack River, reservoir, wildlife habitat, recreation
Watercourse:	Pack River: gradient is low; substrate is sand; approx. width is 70 ft.; approx. depth is 5 to 10 feet; channelized; slow moving

Suggested Equipment	
Quantity	Description
150 ft.	Curtain Boom Tow Bridles
As Appropriate	
200 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
0 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (12.3 miles)
Second Cache: Cabinet Gorge Dam (28.8 miles)

Nearest Address: 1572 Rd Rapid Lightning
Sandpoint ID 86864

Site-Specific Points of Contact

Brad Midden, Fire Chief (208) 255-6868

Site Access -

Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 6.2 mi
3. Turn left onto Colburn Culver Rd - 2.8 mi
4. Turn right onto Rapid Lightning Rd/Rapid Lightning Creek Rd
1572 Rapid Lightning Creek Road

Looking north from collection point on River right to upstream anchor on River left.

Looking east from shore into staging area.

Cardboard
Sector 5

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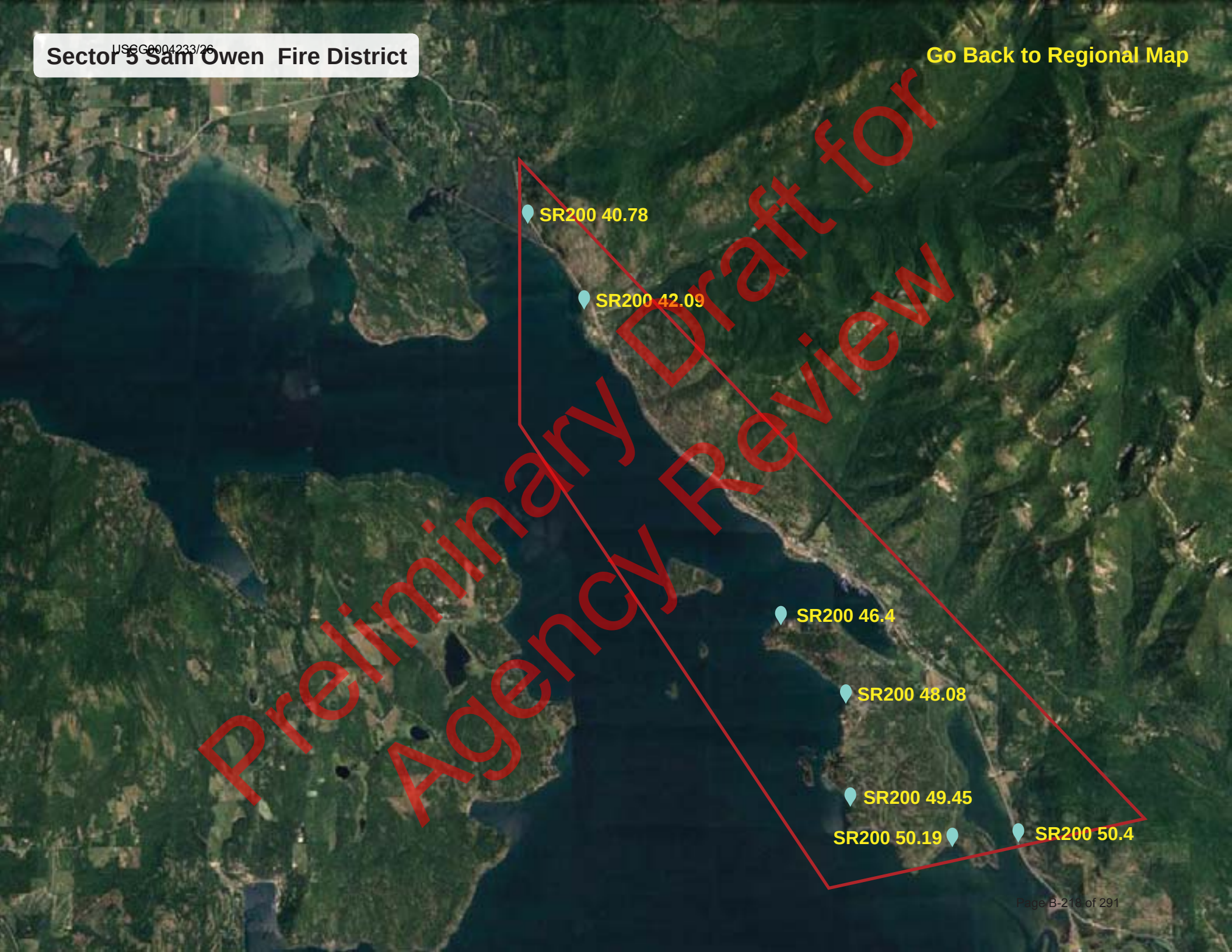
Sector & Map	Site ID & Highway Milepost	Railroad Milepost	Site Name	Accessible by boat at Low Water?	Nearest Boat Ramp or Staging Area
	SR200 40.78	MRL4 107.95	Pack River Trestle	Uncertain	SR200 42.59
	SR200 42.09	MRL4 106.71	Trestle Creek	Unlikely	SR200 42.59
	SR200 46.4	MRL4 102.4	Red Fir Resort Water Intake	Yes	SR200 47.9
Sector 5 Sam Owen	SR200 48.08	MRL4 100.86	Islandview Resort Water Intake	Yes	SR200 47.38
	SR200 49.45	MRL4 99.36	Kullyspell Estates Water Intake	Yes	SR200 47.38 or SR200 49.46
	SR200 50.19	MRL4 98.52	David Thompson Wildlife Preserve	Unlikely	SR200 47.38
	SR200 50.4	MRL4 98.43	Denton Slough	Unlikely	SR200 51.69


Sector 5 Sam Owen Fire District
USGG0004233/26
Go Back to Regional Map
SR200 40.78
SR200 42.09
SR200 46.4
SR200 48.08
SR200 49.45
SR200 50.19
SR200 50.4
Preliminary Draft for Agency Review

Site Lat Long:	48.29822 -116.36682 (http://www.google.com/maps/place/48.29822,-116.36682)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Pack River Trestle.
Implementation:	Pack River flow direction is to the south. Secure upstream end of boom to East Shoreline to steel post. Secure downstream end of boom to West Shoreline to steel post. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is small. Use Trestle Creek boat ramp to deploy boom at Pack River Trestle. Small parking area adjacent to trestle for vehicle parking if needed. No boat launch facilities. Trestle Creek boat launch is 1.8 miles away.
Field Notes:	• Exclusion boom on either side of trestle depending on which side of track spill occurs. • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	Pack River: gradient is low; substrate is sand; approx. width is 900 ft.; approx. depth is over 20 feet; slow moving; channelized

Suggested Equipment	
Quantity	Description
300 ft.	Curtain Boom Tow Bridles
As Appropriate	
450 ft.	Polypropylene Line
10	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (12.7 miles)
Second Cache: Cabinet Gorge Dam (22.3 miles)

Nearest Address: 41159 Highway

Site-Specific Points of Contact

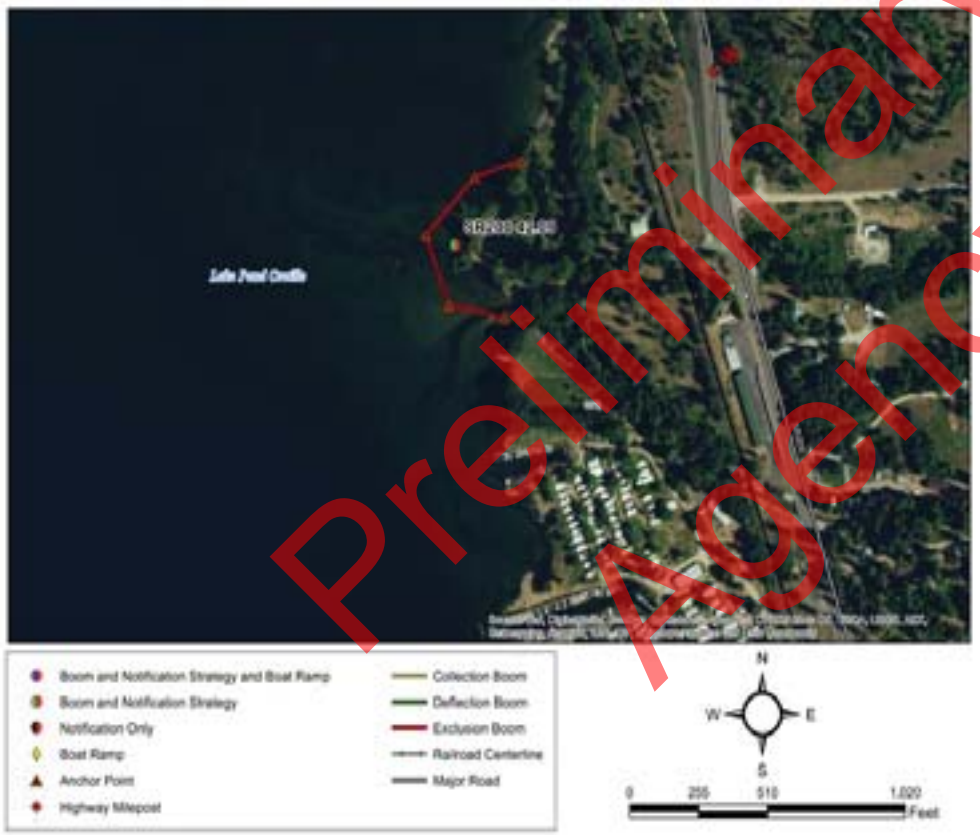
Site Access -

Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 17.5 mi
Trestle Creek Boat Launch

Looking south from SR200 toward Pack River Trestle.

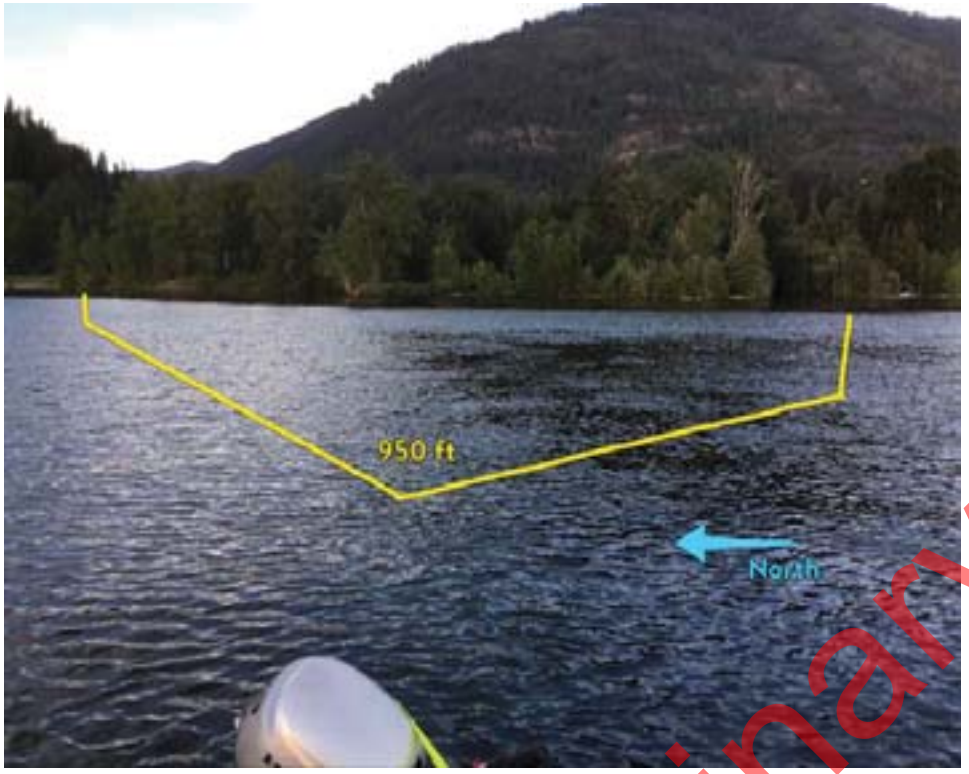
None

Site Lat Long:	48.28316 -116.35418 (http://www.google.com/maps/place/48.28316,-116.35418)
Strategy Objective:	Prevent contaminant from impacting sensitive area at Trestle Creek.
Implementation:	Lake Pend Oreille flow direction is to the west. Secure upstream end of boom North Shoreline to steel post. Secure downstream end of boom South Shoreline to steel post.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Trestle Creek boat launch is 0.5 miles away.
Field Notes:	• Use buoys as midpoint anchors for boom set • Only accessible by boat from Trestle Creek boat launch • 4WD Access: **NO** • Seasonal Access Only: **YES** • Locked Gate: **NO**
Resources Targeted:	Threatened and Endangered Species
Watercourse:	Lake Pend Oreille: gradient is low; substrate is mud; approx. depth is 1 to 5 feet



Suggested Equipment	
Quantity	Description
950 ft.	Curtain Boom Tow Bridles
As Appropriate	
1250 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
3	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (14.1 miles)
Second Cache: Cabinet Gorge Dam (21.1 miles)

Nearest Address: 88 N Park Rd
Hope ID 83836

Site-Specific Points of Contact

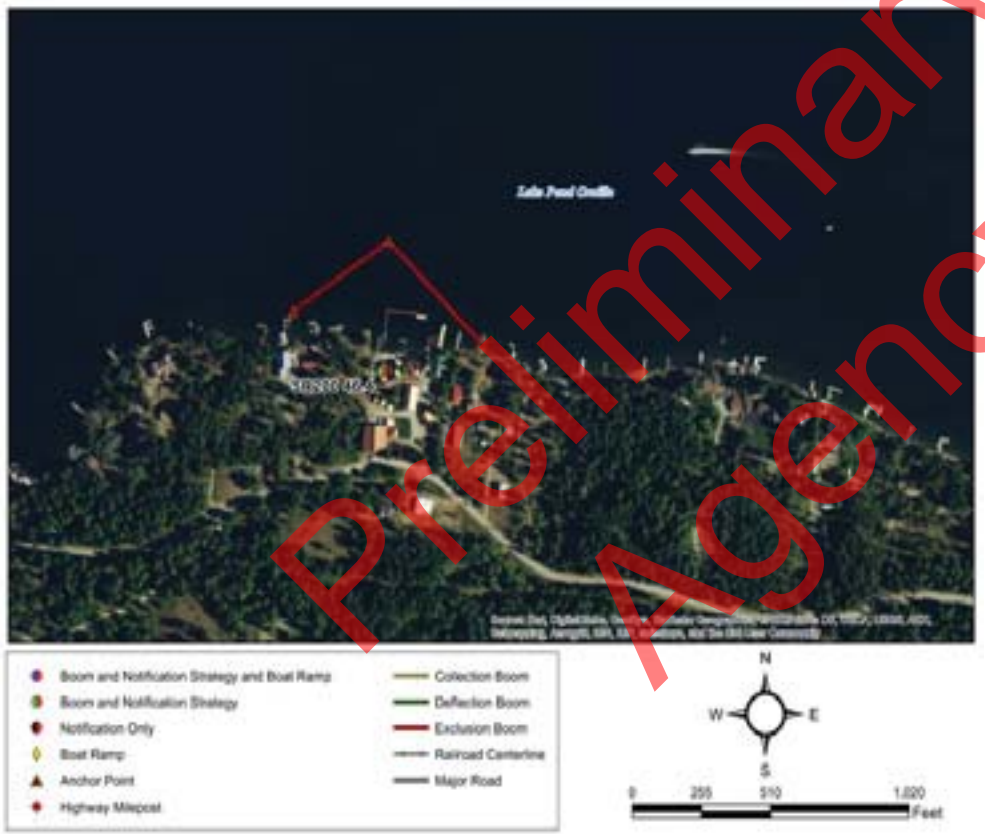
Site Access -

Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 17.5 mi
Trestle Creek Boat Launch

Trestle Creek looking north from Lake Pend Orellie

None

Site Lat Long:	48.228764 -116.301167 (http://www.google.com/maps/place/48.228764,-116.301167)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Red Fir Resort water intake.
Implementation:	Secure upstream end of boom East Shoreline to steel post. Secure downstream end of boom West Shoreline to steel post. Vacuum truck access is poor. Notify Red Fir Water Intake.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is small. Limited staging area and parking available at resort. No boat launch facilities. Beyond Hope Resort boat launch is 1.8 miles away.
Field Notes:	• 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Municipal water intake
Watercourse:	Lake Pend Oreille: approx. depth is 10 to 20 feet



Suggested Equipment	
Quantity	Description
900 ft.	Curtain Boom Tow Bridles
As Appropriate	
1100 ft.	Polypropylene Line
8	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
3	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Cabinet Gorge Dam (17.0 miles)
Second Cache: Sandpoint (21.9 miles)

Nearest Address: 1147 Red Fir Rd
Hope ID 83836

Site-Specific Points of Contact

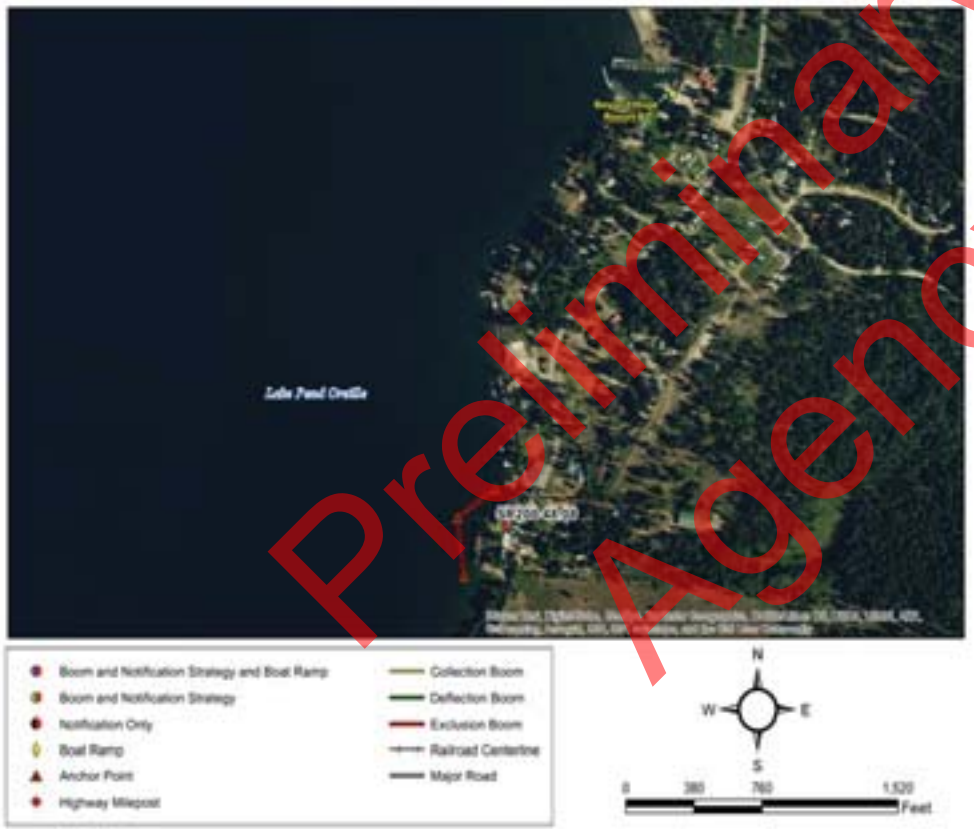
Site Access -

Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 18.3 mi
3. Turn right onto Hope Peninsula Rd/NF-1002/Peninsula Rd
4. Continue onto Red Fir Rd - 1.3 mi
1147 Red Fir Road, Hope, Idaho

Water intake

None

Site Lat Long:	48.209413 -116.288354 (http://www.google.com/maps/place/48.209413,-116.288354)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Island View Resort water intake.
Implementation:	Secure upstream end of boom to North Shoreline to steel post. Secure downstream end of boom to South Shoreline to steel post. Notify Island View Resort.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Use East Hope Boat Ramp for staging and boat launch. No boat launch facilities. Beyond Hope Resort boat launch is 0.5 miles away.
Field Notes:	• 4WD Access: **NO** • Seasonal Access Only: **YES** • Locked Gate: **NO**
Resources Targeted:	Municipal water intake
Watercourse:	Lake Pend Oreille: substrate is gravel; approx. depth is 10 to 20 feet



Suggested Equipment	
Quantity	Description
550 ft.	Curtain Boom Tow Bridles
As Appropriate	
750 ft.	Polypropylene Line
None	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
3	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Cabinet Gorge Dam (16.8 miles)
Second Cache: Sandpoint (21.8 miles)

Nearest Address: 1767 Peninsula Rd
Hope ID 83836

Site-Specific Points of Contact

Misha Van Booven (208) 264-5509

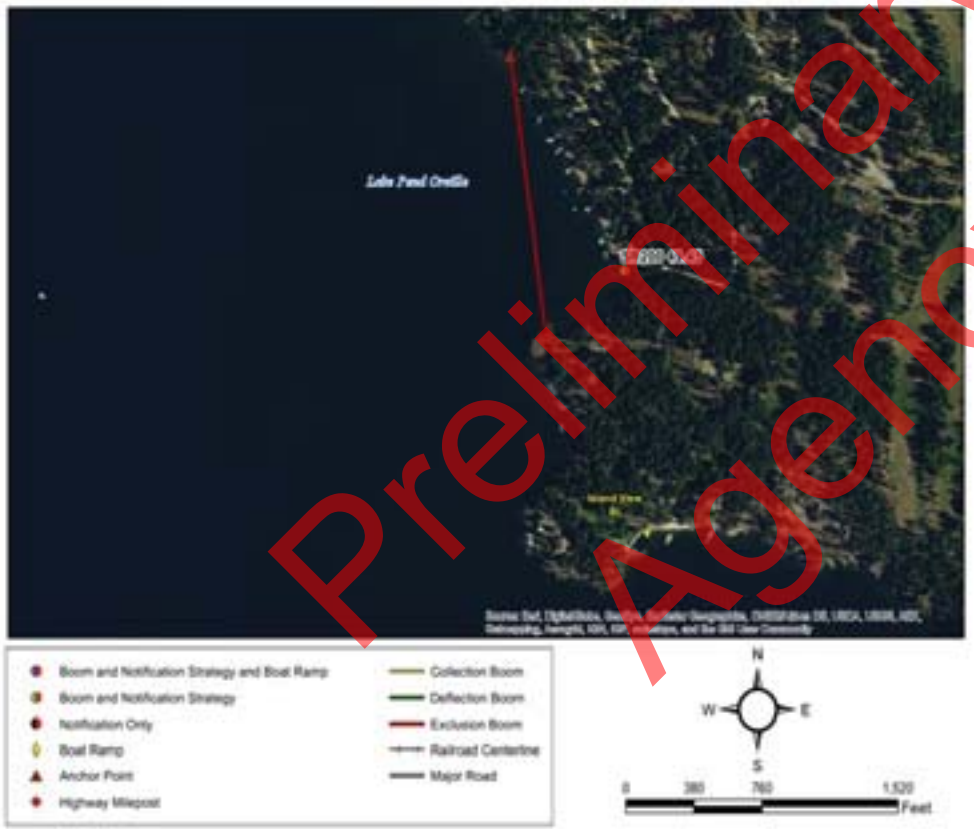
Site Access -

Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 18.3 mi
3. Turn right onto Hope Peninsula Rd/NF-1002/Peninsula Rd - 0.8 mi
4. Turn left onto Hope Peninsula Rd/Peninsula Rd - 1.0 mi
1767 Peninsula Road, Hope, Idaho

Surface water intake.

Looking towards the intake from the lake, facing north.

Site Lat Long:	48.197571 -116.28636 (http://www.google.com/maps/place/48.197571,-116.28636)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Kullyspell Estates water intake.
Implementation:	Secure upstream end of boom to North Shoreline to steel post. Secure downstream end of boom to South Shoreline to steel post. Notify Kullyspell Water Intake.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Use East Hope Boat Launch for access and staging. No boat launch facilities. Island View boat launch is 0.3 miles away. Island View BL is 0.3 miles away.
Field Notes:	• Use Island View Boat Launch for access. Access from boat only. • 4WD Access: **NO** • Seasonal Access Only: **YES** • Locked Gate: **NO**
Resources Targeted:	Municipal water intake
Watercourse:	Lake Pend Oreille: substrate is gravel; approx. depth is 10 to 20 feet



Suggested Equipment	
Quantity	Description
1500 ft.	Curtain Boom Tow Bridles
As Appropriate	
1900 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
1	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Cabinet Gorge Dam (17.8 miles)
Second Cache: Sandpoint (22.8 miles)

Nearest Address: 575 Osprey Cr
Hope ID 83836

Site-Specific Points of Contact

Jim Erdman, Intake Manager (208) 290-4184

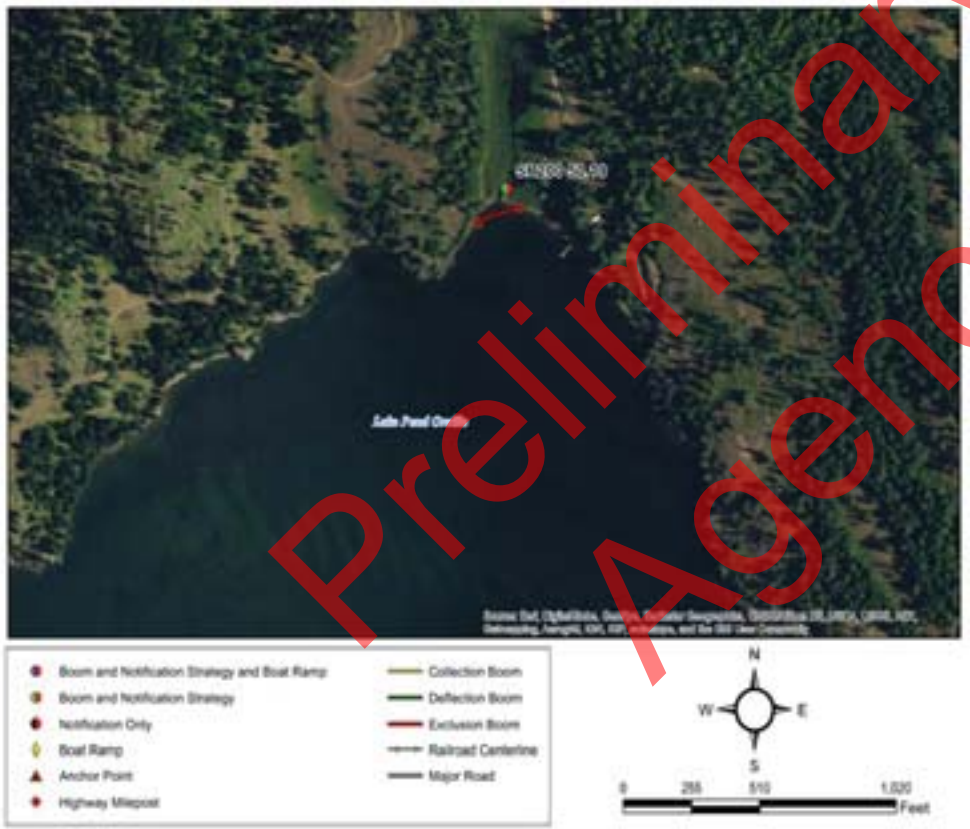
Site Access - Boat access ony, use Island view boat launch, directions below

Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 18.3 mi
3. Turn right onto Hope Peninsula Rd/NF-1002/Peninsula Rd - 0.8 mi
4. Turn left onto Hope Peninsula Rd/Peninsula Rd - 1.3 mi
5. Turn left onto E David Thompson Rd - 0.1 mi
6. Turn right onto Osprey Cir - 0.5 mi
7. Slight left onto Kienholz Dr - 266 ft
Kienholz Drive, Hope, Idaho

Water intake for Kullyspell Estates located offshore in this area.

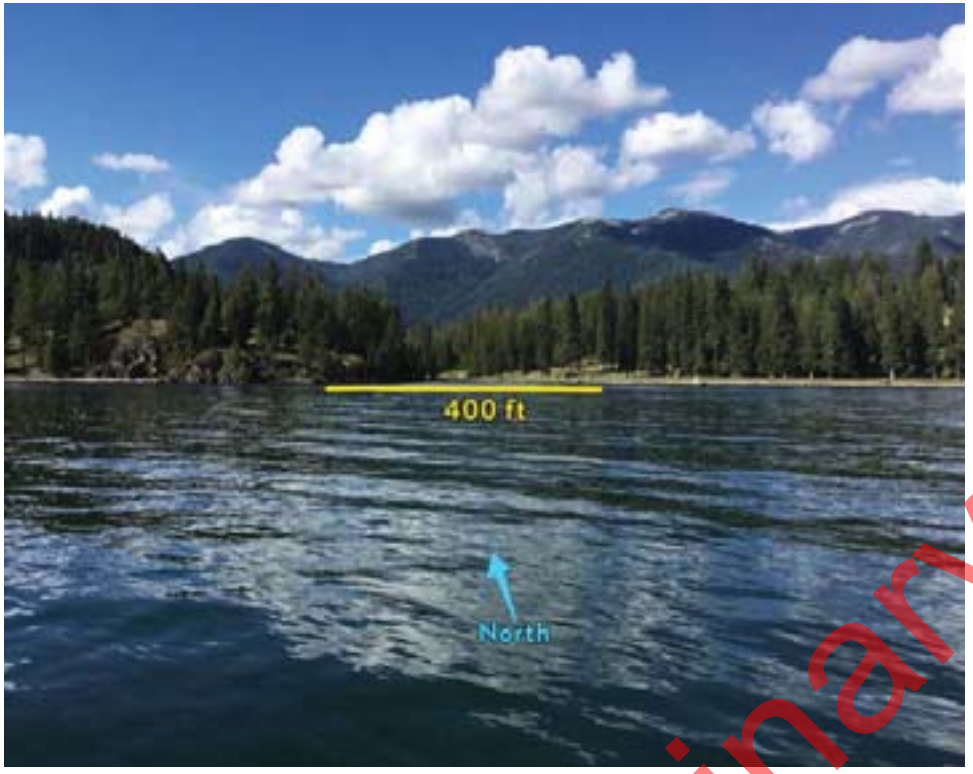
Looking at the estates from the lake, facing north.

Site Lat Long:	48.191753 -116.261614 (http://www.google.com/maps/place/48.191753,-116.261614)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at David Thompson Wildlife Preserve.
Implementation:	Secure upstream end of boom North Shoreline to steel post. Secure downstream end of boom North Shoreline to steel post. Vacuum truck access is poor. Not accessible by boat in low water.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. No boat launch facilities. Hope Marina boat launch is 2.6 miles away.
Field Notes:	• Private road extends along wildlife preserve, through this road one could access the preserve via land. A private driveway or yard could potentially be used as a staging area, but no boat ramp is present. Closest boat ramp is Hope Marina. • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Wildlife
Watercourse:	Lake Pend Oreille:



Suggested Equipment	
Quantity	Description
400 ft.	Curtain Boom Tow Bridles
As Appropriate	
525 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
1	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Cabinet Gorge Dam (16.9 miles)
Second Cache: Sandpoint (21.9 miles)

Nearest Address: 296 Hope School Rd
Hope ID 83836

Site-Specific Points of Contact

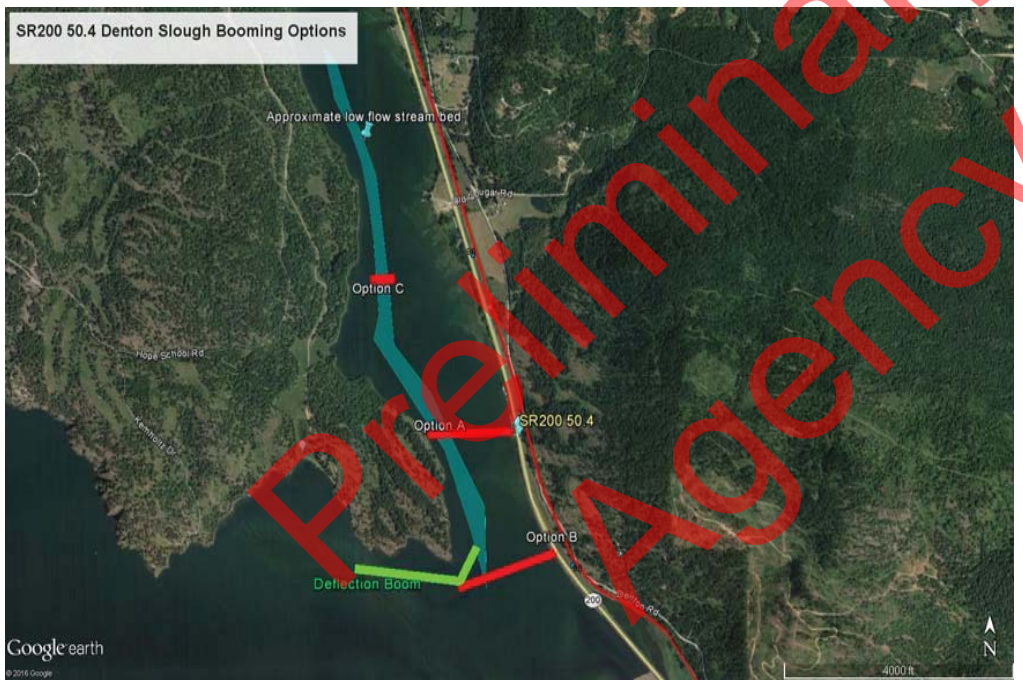
Site Access -

Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 18.3 mi
3. Turn right onto Hope Peninsula Rd/NF-1002/Peninsula Rd - 92 ft
4. Turn left onto Hope School Rd - 0.3 mi
5. Turn left - 141 ft
6. Slight right - 92 ft
255 Hope School Road, Hope, Idaho

Close-up view of wildlife preserve, facing northwest.

Private residences, that may be used as a possible staging ground, they lie just east of wildlife preserve.

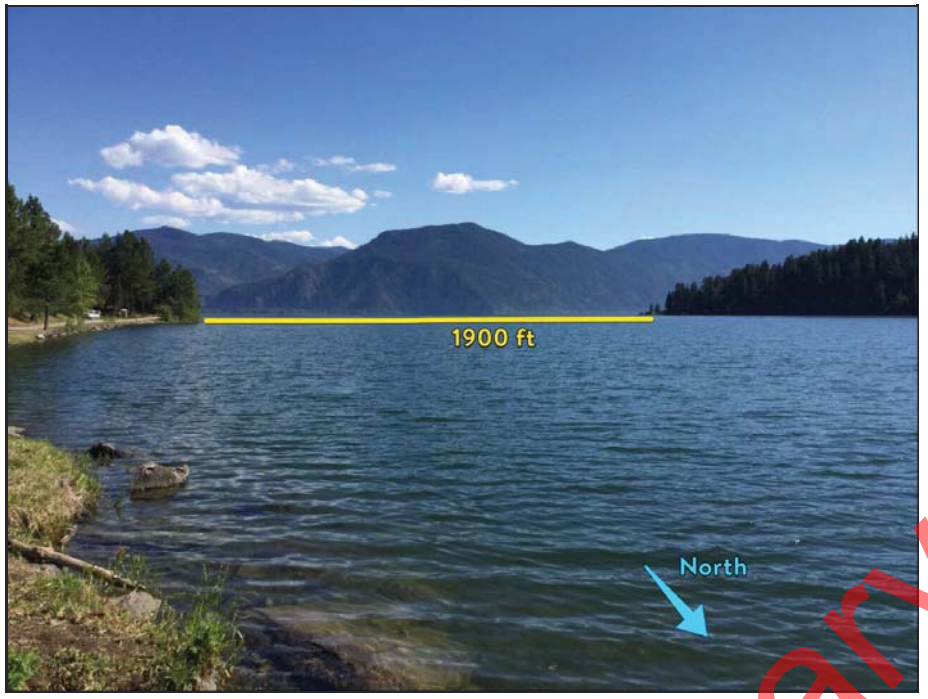
Site Lat Long:	48.192413 -116.246086 (http://www.google.com/maps/place/48.192413,-116.246086)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Denton Slough.
Implementation:	Three booming options are suggested depending upon source of contamination, wind direction and water level. **See Section 4.3.2 and the end of this strategy data sheet for further descriptions for 3 booming options.**
Site Safety Note:	Complete Job Safety Analysis. Low water lake levels will result in very muddy and shallow channels
Staging Area:	On site staging is large. Large parking area for vehicles and equipment on north side of slough, south side of the highway. No boat launch facilities. Clark Fork River Driftyard boat launch is 1.5 miles away.
Field Notes:	• Use Clark Fork River boat ramp for access from water. No boat ramp at this location. Boom to be placed across inlet of slough or around point at south side of slough inlet depending on wind or spill location. • See supplemental information at the end of this strategy data sheet for further information.
Resources Targeted:	Recreation, Reservoir, Threatened and Endangered Species, cultural resources
Watercourse:	Lake Pend Oreille; substrate is gravel; approx. width is 1500 ft.; approx. depth is over 20 feet; slow moving; channelized



Suggested Equipment	
Quantity	Description
1900 ft.	Curtain Boom Tow Bridles
As Appropriate	skimmer and vacuum truck
2400 ft.	Polypropylene Line
10	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
3	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Visited on 2016-06-29



Nearest Cache: Cabinet Gorge Dam (12.8 miles)
Second Cache: Sandpoint (22.2 miles)

Nearest Address: 4523 Denton Rd
Hope ID 83836

Site-Specific Points of Contact:
US Army Corps of Engineers
State Historical Preservation Office
Kalispell Tribe

Site Acess- directions to Clark Fork River Driftyard boat launch

Sandpoint, Idaho
1. Head north on on US-2 E/N Fifth Ave
2. Continue onto ID-200
3. Continue for 21.6 miles
(If you cross over the RR track bridge, you went too far)
4. Turn right onto Driftyard Road; continue for about 1 mile.

Denton slough staging area.

View from west end of staging area looking at the mouth of Denton slough.

Denton Slough	(MRL4 98.43) **SR200 50.4**
Supplemental Information	
Implementation	Three booming options are suggested depending upon source of contamination, wind direction and water level. **See Section 4.3.2 for further descriptions and a larger booming photo.** • Boom Option A—secure boom to east and west shorelines to steel posts with one in-water anchor in the middle. • Boom Option B—Secure east side to steel post and west side to an in-water anchor, with another in-water anchor in the middle if needed. Boom Option C for low water situations – secure east and west sides to steel posts driven into channel bottom. • Anticipate significant mud for Boom Option C. • Deploy deflection boom as shown in photo below for contamination moving from the lake northwards.
Field Notes	• No vehicle access on west side; Dormar Drive, also known as Hope School Road, is gated and does not reach the shore. • Vacuum truck access is good on east side • Use Clark Fork River boat ramp for access from water. No boat ramp at this location • 4WD Access: **NO** • Seasonal Access Only: **No** • Locked Gates: ○ West side -- **Yes** ○ East side -- **NO**
Contact Notes	For all booming options, contact US Army Corps of Engineers, State Historical Preservation Office, and Kalispell Tribe for boom anchor location limitations.

Figure 4-3 SR200 50.4 Denton Slough Booming Options

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Cardboard
Sector 6

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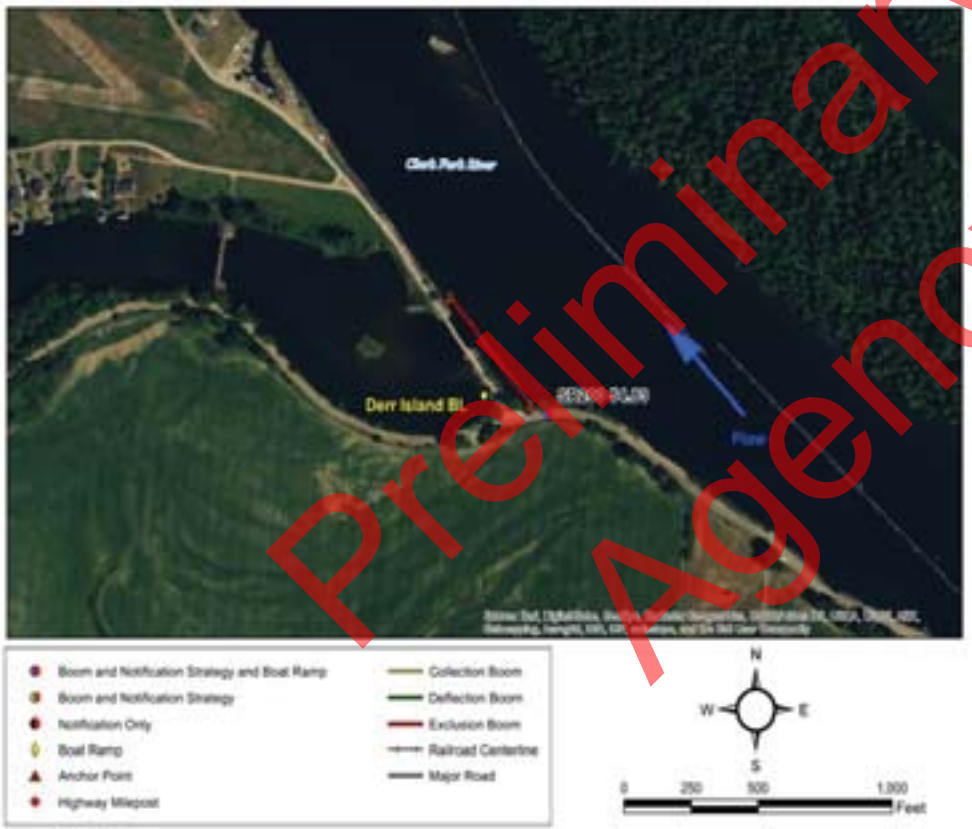
Sector & Map	Site ID & Highway Milepost	Railroad Milepost	Site Name	Accessible by boat at Low Water?	Nearest Boat Ramp or Staging Area
Sector 6 Clark Fork	SR200 54.83	MRL4 94.47	Johnson Creek Trestle	Unlikely	SR200 54.83
	SR200 56.05	MRL4 92.92	Clark Fork Bridge	Yes	SR200 57.07
	SR200 57.12	MRL4 91.79	Lower Fish Hatchery Slough	Uncertain	SR200 57.07
	SR200 58.62	MRL4 90.45	Upper Fish Hatchery Slough	Uncertain	SR200 58.77
	SR200 60.79	MRL4 87.66	Clark Fork River Access	Yes	SR200 60.79
	SR200 61.63	MRL4 86.81	Cabinet Gorge Fish Hatchery	Yes	on site
	SR200 62.95	MRL4 85.35	Cabinet Gorge Dam	Yes	on site

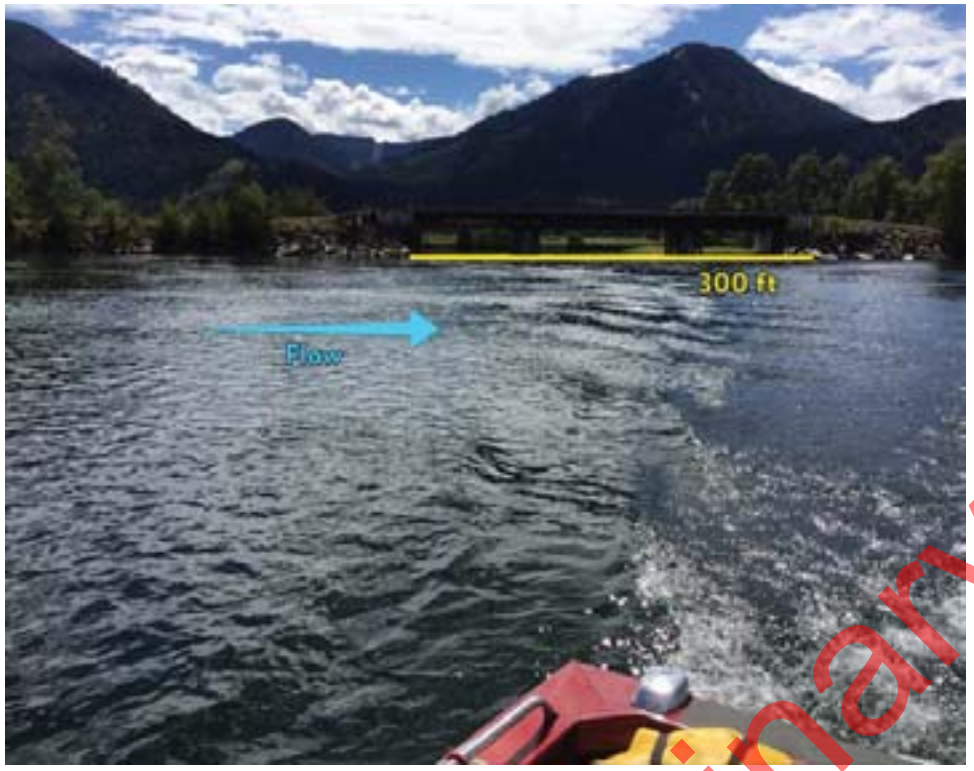

Sector 6 Clark Fork
USCG0004513/26
Go Back to Regional Map
SR200 54.83
SR200 56.05
SR200 57.12
SR200 58.62
SR200 60.79
SR200 62.95
SR200 61.63
Preliminary Draft for Agency Review

Site Lat Long:	48.141411 -116.205066 (http://www.google.com/maps/place/48.141411,-116.205066)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Johnson Creek Trestle.
Implementation:	Clark Fork flow direction is to the west. Secure upstream end of boom River Left to steel post. Secure downstream end of boom River Left to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is small. The staging area consists of a small gravel boat ramp, off of a county road. There is very limited parking and working area. Gravel boat launch. Derr Island boat launch is at site.
Field Notes:	• The Johnson Creek road trestle is privately owned by Delta Shore estates. With access to this road one could do exclusion boom without a boat, but a boat would greatly assist the operation. • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Wildlife, Recreation
Watercourse:	Clark Fork: gradient is low; substrate is gravel; approx. width is 900 ft.; approx. depth is 10 to 20 feet; braided channels; slow moving



Suggested Equipment	
Quantity	Description
300 ft.	Curtain Boom Tow Bridles
As Appropriate	
400 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
10	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
1 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Cabinet Gorge Dam (10.5 miles)
Second Cache: Sandpoint (29.6 miles)

Nearest Address: 1348 Johnson Crk Rd
Clark Fork ID 83811

Site-Specific Points of Contact

Site Access -

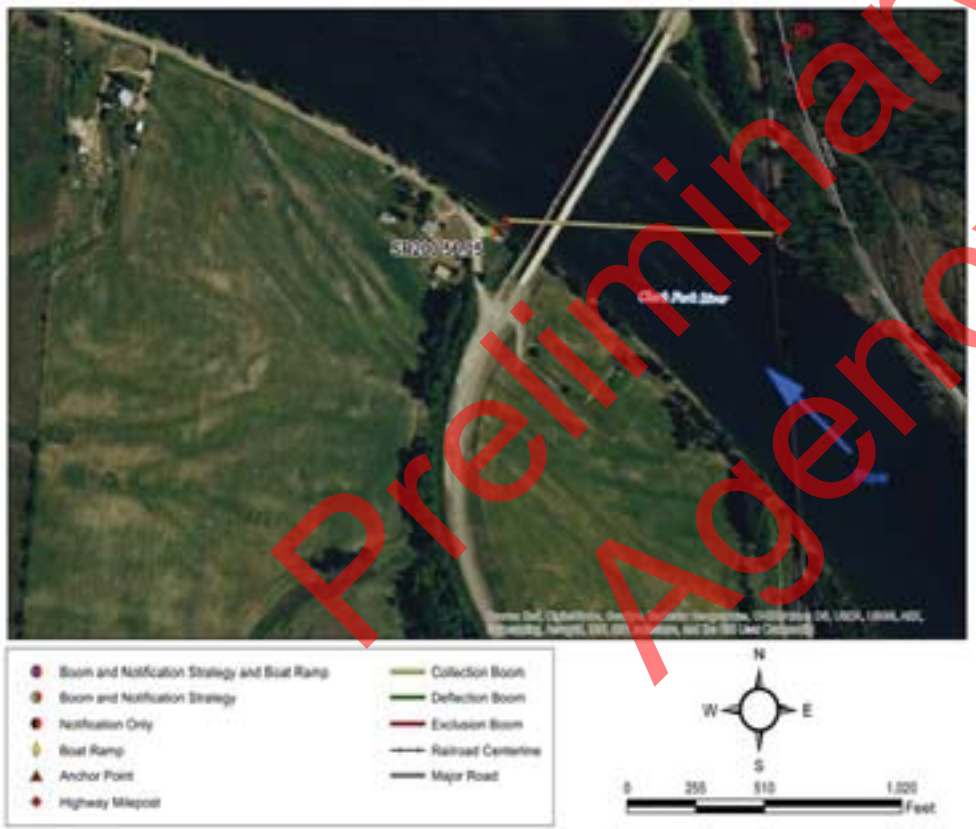
Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 25.4 mi
3. Turn right onto Stephen St - 0.3 mi
4. Turn left onto S River Rd - 0.7 mi
5. Continue onto Johnson Creek Rd - 295 ft
6. Turn right to stay on Johnson Creek Rd - 1.6 mi

Destination will be on the right

Looking South, towards Johnson Creek road bridge over Clark Fork South braid.

Looking South, towards Johnson Creek road bridge over Clark Fork South braid.

Site Lat Long:	448.135 -116.174465 (http://www.google.com/maps/place/48.135,-116.174465)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Clark Fork flow direction is to the west. Deploy collection boom and initiate contaminant recovery at Clark Fork Bridge. Secure upstream end of boom River Right to bridge piling. Secure downstream end of boom River Left to steel post. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is small. Small vehicle and equipment parking area at sportsman access on west side of south river road bridge. No boat launch facilities. Pint Lane boat launch is 1.4 miles away.
Field Notes:	• 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use
Watercourse:	Clark Fork: gradient is low; substrate is gravel; approx. width is 840 ft.; approx. depth is 10 to 20 feet; channelized; slow moving



Suggested Equipment	
Quantity	Description
1100 ft.	Curtain Boom Tow Bridles
As Appropriate	
1350 ft.	Polypropylene Line
5	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
2	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Cabinet Gorge Dam (9.0 miles)
Second Cache: Sandpoint (28.1 miles)

Nearest Address: 70 Johnson Crk Rd
Clark Fork ID 83811

Site-Specific Points of Contact

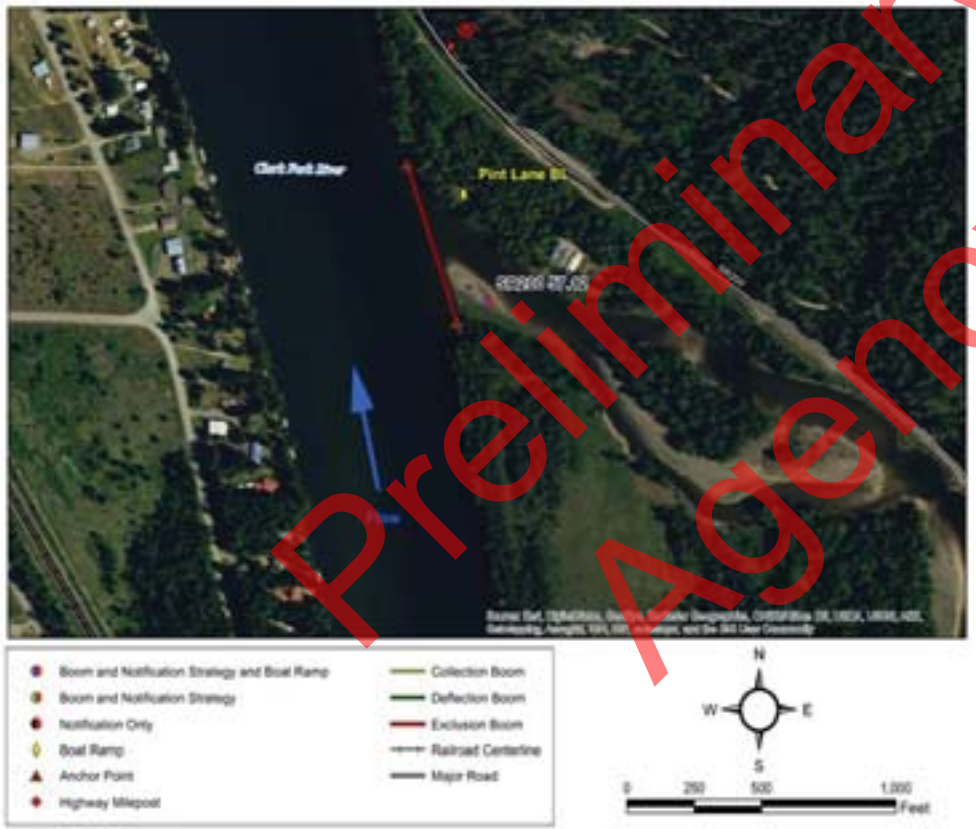
Site Access - By boat, directions to Johnson Creek Boat launch

Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 25.4 mi
3. Turn right onto Stephen St - 0.3 mi
4. Turn left onto S River Rd - 0.7 mi
5. Continue onto Johnson Creek Rd - 295 ft
6. Turn right to stay on Johnson Creek Rd - 9.5 mi
7. Turn right onto Johnson Creek Rd/NF-278 - 5.0 mi
8. Turn left to stay on Johnson Creek Rd/NF-278 - 3.4 mi
Johnson Creek Boat Launch

View looking upstream from collection point to River right bridge piling anchor.

Looking east at the staging area from South Side River Road.

Site Lat Long:	48.123607 -116.155906 (http://www.google.com/maps/place/48.123607,-116.155906)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Lower fish hatchery slough.
Implementation:	Clark Fork flow direction is to the west. Secure upstream end of boom River Right to steel post. Secure downstream end of boom River Left to steel post.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. Gravel boat launch. Pint Lane boat launch is at site.
Field Notes:	• Nearby private boat launch. • Only accessible by boat • 4WD Access: **NO** • Seasonal Access Only: **YES** • Locked Gate: **NO**
Resources Targeted:	Threatened and Endangered Species, Reservoir, Wetland
Watercourse:	Clark Fork: gradient is low; substrate is gravel; approx. width is 858 ft.; approx. depth is 10 to 20 feet



Suggested Equipment	
Quantity	Description
250 ft.	Curtain Boom Tow Bridles
As Appropriate	
300 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Cabinet Gorge Dam (6.2 miles)
Second Cache: Sandpoint (28.9 miles)

Nearest Address: 57140 Highway 200
Clark Fork ID 83811

Site-Specific Points of Contact

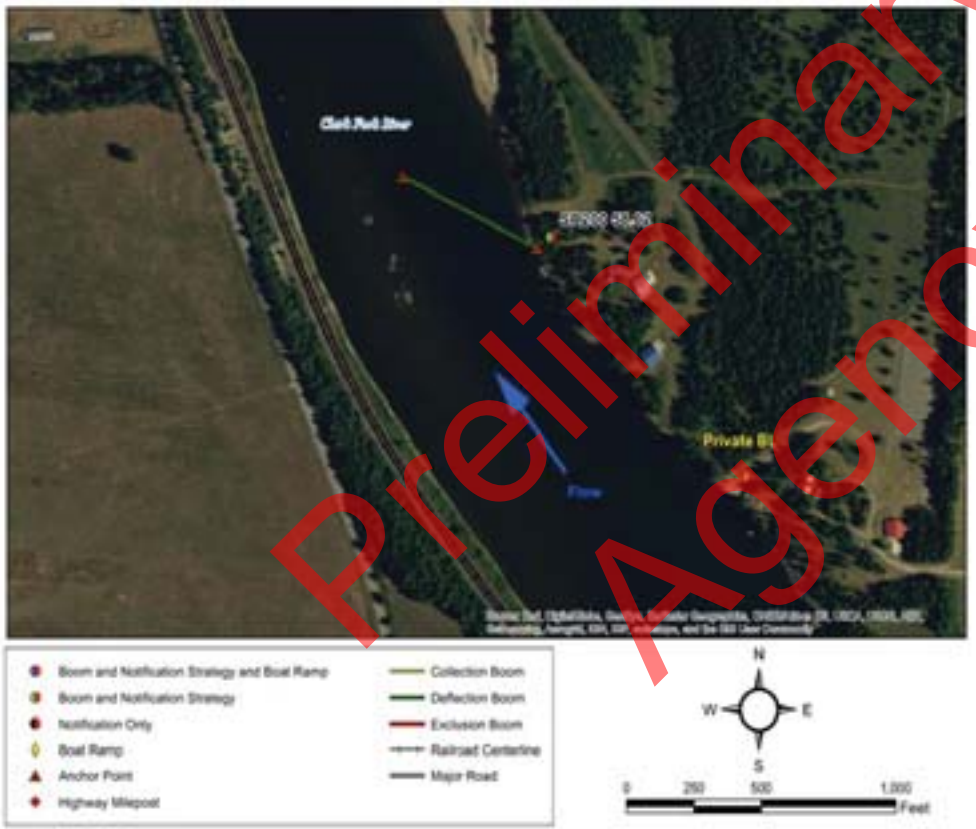
Site Access -

Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 25.5 mi
57140 Idaho-200, Clark Fork, Idaho

Lower fish hatchery slough from down River looking east

None

Site Lat Long:	48.105616 -116.143659 (http://www.google.com/maps/place/48.105616,-116.143659)
Strategy Objective:	Notification and deflection away from shoreline.
Implementation:	Clark Fork flow direction is to the west. Deflect contaminant moving downstream away from shoreline at Upper fish hatchery slough diversion. Secure upstream end of boom River Right to steel post. Secure downstream end of boom Midstream to buoy. Notify private land owner.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. No boat launch facilities. Private boat launch is 0.2 miles away.
Field Notes:	• Contact Royce Anderson 2082661177 • 4WD Access: **NO** • Seasonal Access Only: **YES** • Locked Gate: **NO**
Resources Targeted:	Threatened and Endangered Species, Reservoir, Wetland
Watercourse:	Clark Fork: gradient is low; substrate is gravel; approx. width is 750 ft.; approx. depth is over 20 feet



Suggested Equipment	
Quantity	Description
800 ft.	Curtain Boom Tow Bridles
As Appropriate	
1000 ft.	Polypropylene Line
4	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
1	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Cabinet Gorge Dam (11.4 miles)
Second Cache: Sandpoint (30.5 miles)

Nearest Address: 58344 Highway 200
Clark Fork ID 83811

Site-Specific Points of Contact

Royce Anderson, land owner (208) 266-1177

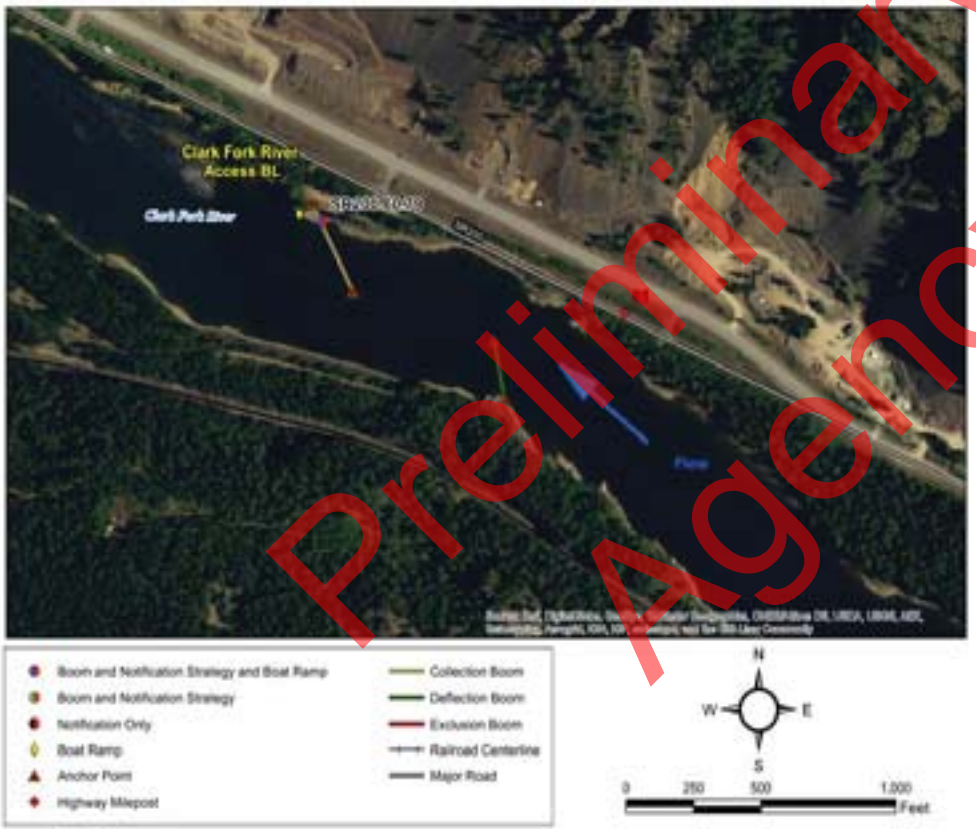
Site Access -

Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 28.7 mi
3. Turn right when possible for river access, access is by un-named two track to river
Upper fish hatchery slough diversion

Looking down river at deflection site

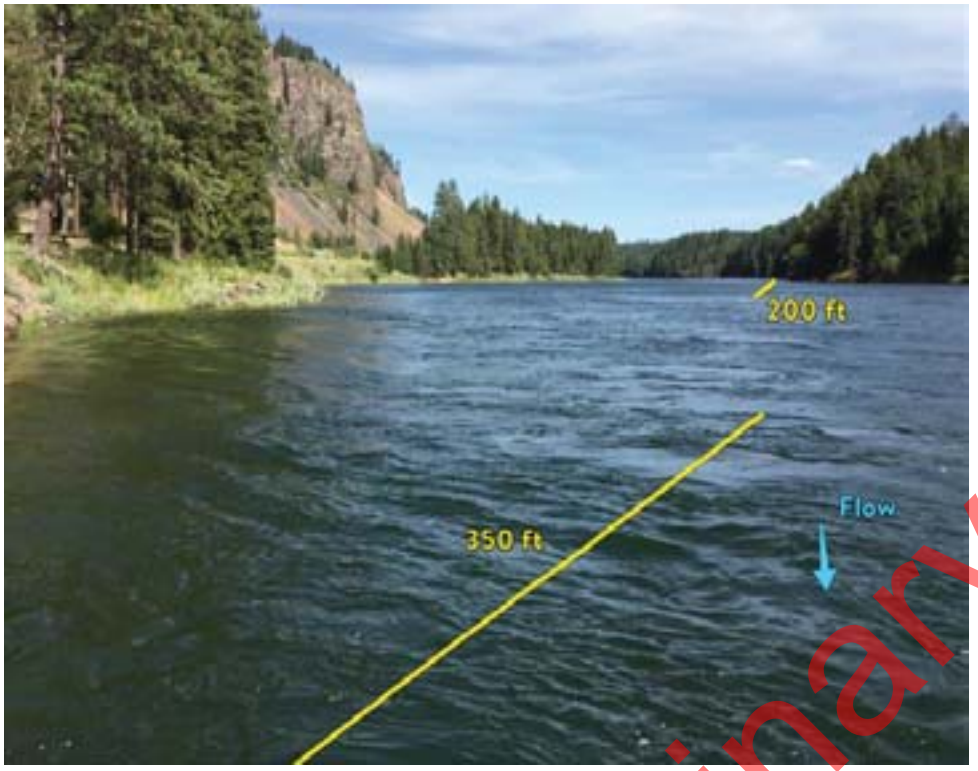
None

Site Lat Long:	48.09251 -116.096934 (http://www.google.com/maps/place/48.09251,-116.096934)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Clark Fork flow direction is to the west. Deploy collection boom and initiate contaminant recovery at Clark Fork River Access. Secure upstream end of boom River Left to steel post. Secure downstream end of boom Midstream to buoy. Secure upstream end of second boom Midstream to buoy. Secure downstream end of second boom River Left to steel post. Vacuum truck access is good. Notify Avista Utilities.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is medium. Gravel parking lot on right with a concrete boat launch. Clark Fork River Access boat launch is at site.
Field Notes:	• Boat launch is locked. Contact Avista for access 406-847-1280. • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Recreation, Reservoir, Threatened and Endangered Species
Watercourse:	Clark Fork: gradient is low; substrate is gravel; approx. width is 492 ft.; approx. depth is over 20 feet; fast moving



Suggested Equipment	
Quantity	Description
550 ft.	Curtain Boom Tow Bridles
As Appropriate	
700 ft.	Polypropylene Line
8	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
2	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Cabinet Gorge Dam (2.5 miles)
Second Cache: Sandpoint (32.5 miles)

Nearest Address: 60238 Idaho 200
Clark Fork, Idaho

Site-Specific Points of Contact

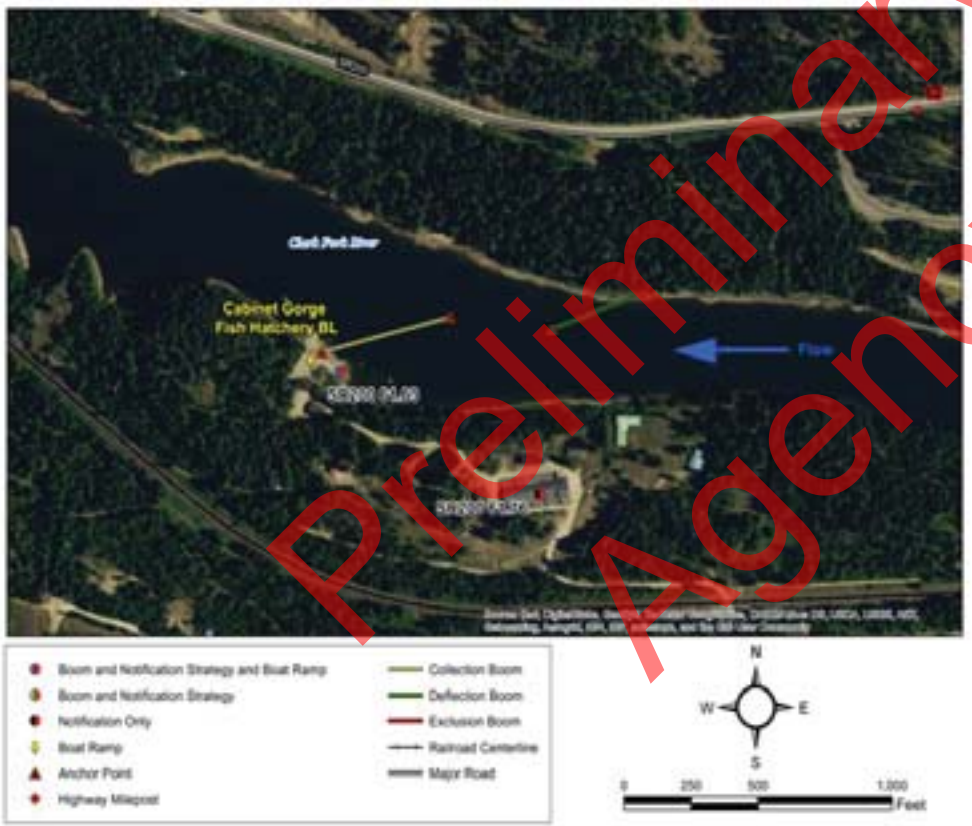
Site Access -

Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 27.8 mi
60238 Idaho 200, Clark Fork, Idaho

Looking upstream from collection site

Staging area looking west

Site Lat Long:	48.086624 -116.07978 (http://www.google.com/maps/place/48.086624,-116.07978)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Clark Fork flow direction is to the west. Deploy collection boom and initiate contaminant recovery at Cabinet Gorge Fish Hatchery. Secure upstream end of boom River Right to tree. Secure downstream end of boom Midstream to buoy. Secure upstream end of second boom Midstream to buoy. Secure downstream end of second boom River Left to steel post. Vacuum truck access is good. Notify Avista fish hatchery.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is large. Large parking and staging area on fish hatchery road adjacent to boat ramp. Gravel boat launch.
Field Notes:	• Monitoring equipment in the water at collection point. May need to be moved during spill containment efforts. • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Critical bull trout habitat, fish hatchery release area, Clark Fork River delta, downstream municipal and irrigation water supplies, recreational use, wildlife habitat
Watercourse:	Clark Fork: gradient is low; substrate is gravel; approx. width is 450 ft.; approx. depth is 10 to 20 feet; slow moving



Suggested Equipment	
Quantity	Description
900 ft.	Curtain Boom Tow Bridles
As Appropriate	
1150 ft.	Polypropylene Line
5	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
4	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Cabinet Gorge Dam (10.9 miles)
Second Cache: Sandpoint (35.4 miles)

Nearest Address: 220 Hatchery Rd
Clark Fork ID 83811

Site-Specific Points of Contact

Tim Swant, Hatchery Manager (406) 847-1282

Site Access -

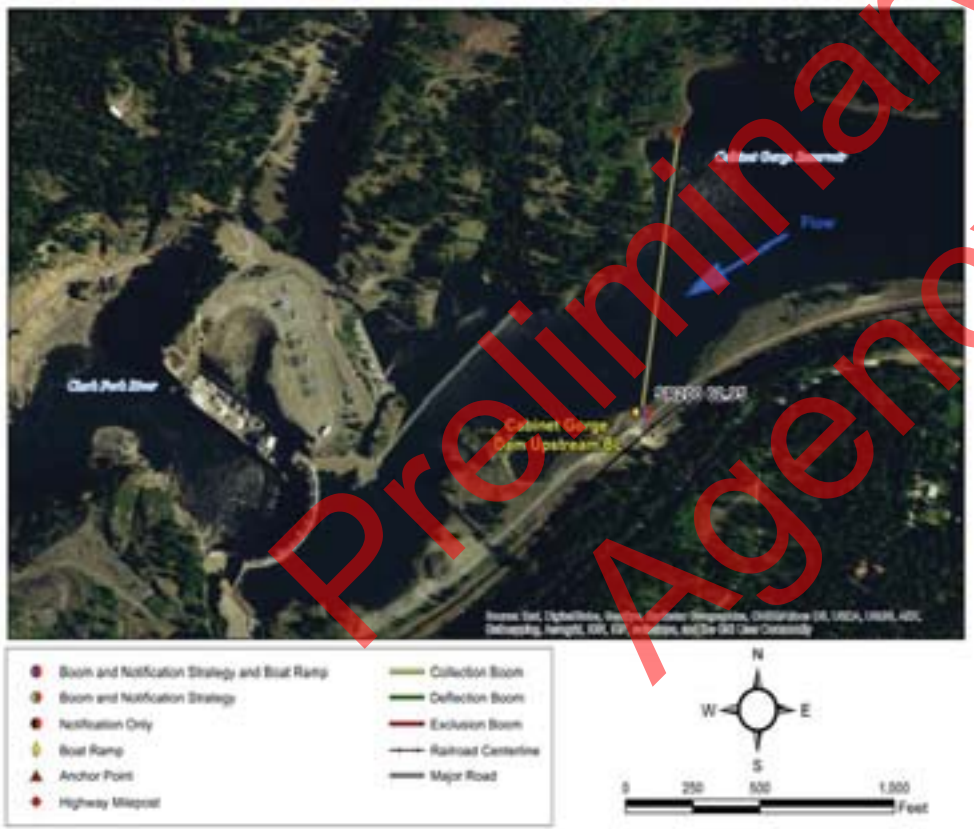
Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St -
2. Continue onto ID-200 - 25.4 mi
3. Turn right onto Stephen St - 0.3 mi
4. Turn left onto S River Rd - 0.7 mi
5. Continue onto Johnson Creek Rd - 295 ft
6. Continue straight onto River Rd - 6.5 mi
7. Turn left onto Cabinet Gorge Rd - 0.6 mi
8. Turn right to stay on Cabinet Gorge Rd - 0.4 mi

Cabinet Gorge Hatchery

View of boat ramp and collection point looking upstream.

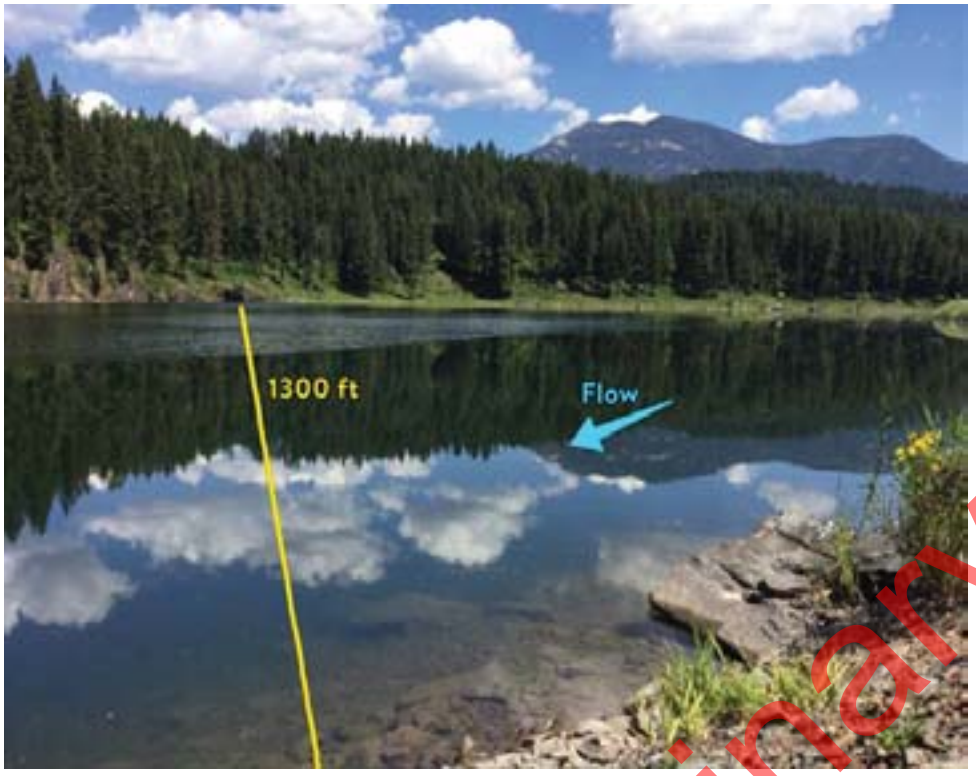
View looking upstream from boat ramp and collection point towards river right anchor.

Site Lat Long:	48.087117 -116.05216 (http://www.google.com/maps/place/48.087117,-116.05216)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	Clark Fork flow direction is to the west. Deploy collection boom and initiate recovery at Cabinet Gorge Dam. Secure upstream end of boom River Right to tree. Secure downstream end of boom River Left to steel post. Vacuum truck access is good. Notify Avista Cabinet Gorge Dam.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is large. Equipment and vehicle parking area adjacent to rail crossing. Gravel boat launch. Cabinet Gorge Dam Upstream boat launch is at site.
Field Notes:	• Locked gate on road controlled by Avista 406-847-1280. • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **YES**
Resources Targeted:	Cabinet gorge dam, critical bull trout habitat, Clark Fork River delta, downstream municipal and irrigation water supplies, recreational use, wildlife habitat
Watercourse:	Clark Fork: gradient is low; substrate is gravel; approx. width is 400 ft.; approx. depth is over 20 feet; slow moving



Suggested Equipment	
Quantity	Description
1300 ft.	Curtain Boom Tow Bridles
As Appropriate	
1700 ft.	Polypropylene Line
8	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
2	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Cabinet Gorge Dam (9.5 miles)
Second Cache: Sandpoint (36.7 miles)

Nearest Address: 2305 Cabinet Gorge Rd
Clark Fork ID 83811

Site-Specific Points of Contact

Avista Utilities Cabinet Gorge Dam (Control Room) (208) 266-1531

Site Access -

Sandpoint, Idaho
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi
2. Continue onto ID-200 - 25.4 mi
3. Turn right onto Stephen St - 0.3 mi
4. Turn left onto S River Rd - 0.7 mi
5. Continue onto Johnson Creek Rd - 295 ft
6. Continue straight onto River Rd - 6.5 mi
7. Turn left onto Cabinet Gorge Rd - 0.6 mi
8. Turn right to stay on Cabinet Gorge Rd - 0.7 mi

Destination will be on the left

View looking upstream from collection point to river right anchor.

View looking downstream at collection point and river left anchor on observation deck.

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Cardboard
Sector 7

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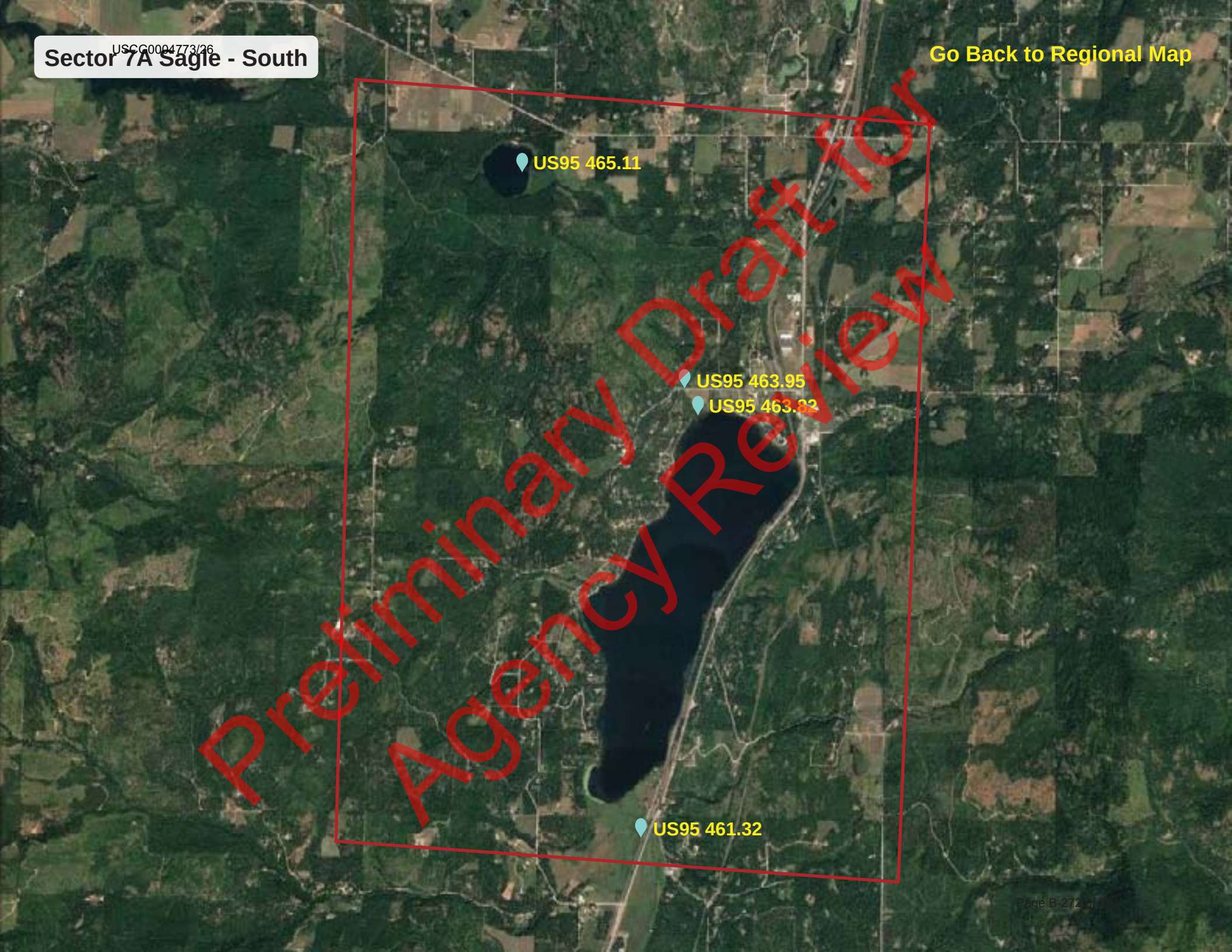
Sector & Map	Site ID & Highway Milepost	Railroad Milepost	Site Name	Accessible by boat at Low Water?	Nearest Boat Ramp or Staging Area
Sector 7A Sagle (South)	US95 461.32	BNSF Spokane 16.94	Cocolalla Creek Trestle	No	US95 463.62
	US95 463.82	BNSF Spokane 14.22	Cocolalla Creek Outlet	No	US95 473.87
	US95 463.95	BNSF Spokane 14.07	Cocolalla Loop Rd Bridge	No	US95 473.87
	US95 465.11	BNSF Spokane 13.43	Round Lake	Yes	US95 465.12
Sector 7B Sagle (North)	US95 471.08	BNSF Spokane 6.7	Bottle Bay Bridge	No	US95 473.87
	US95 472.98	MRL4 4.89	Sourdough Point Water Intake	Yes	US95 472.98


Sector 7A Sagle - South
USCG0004773/26
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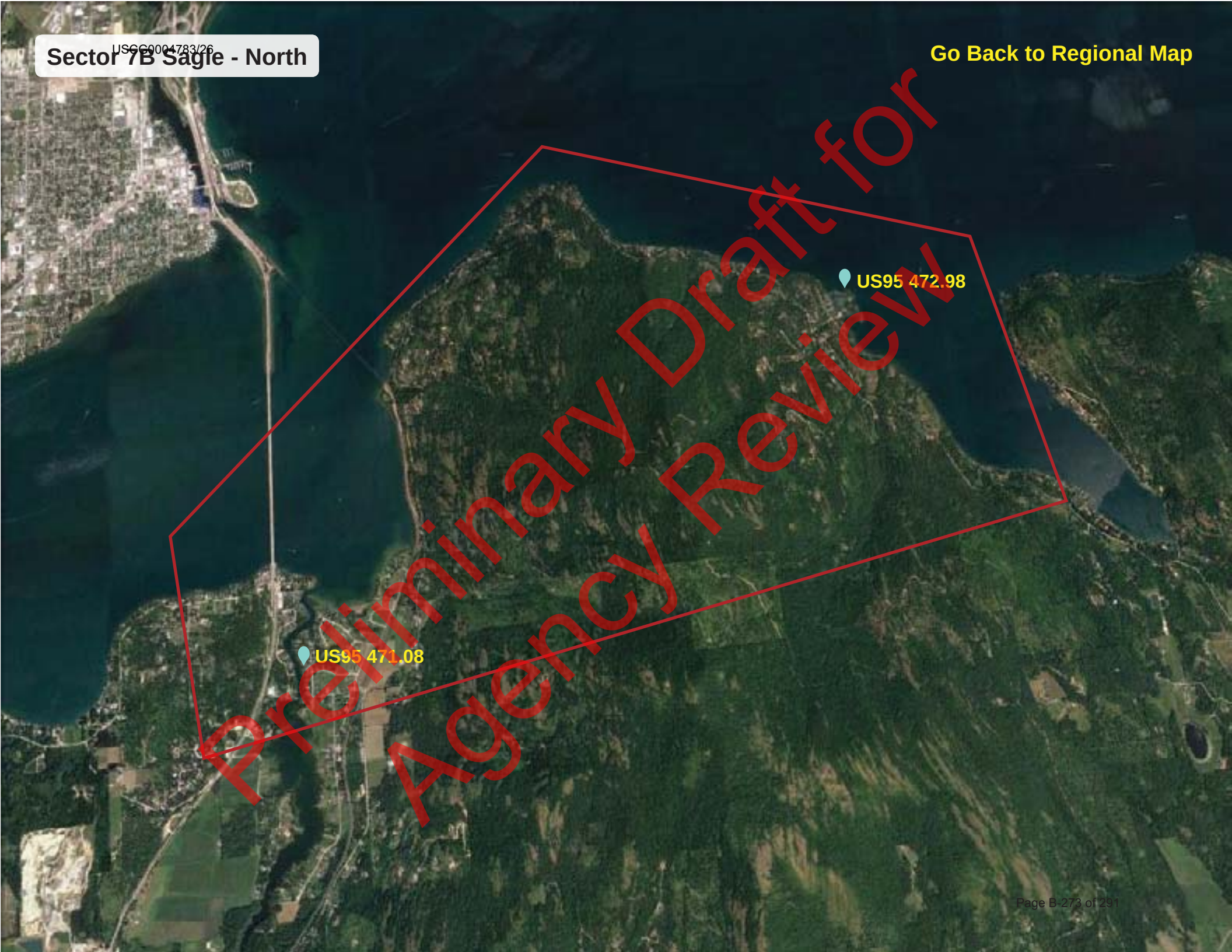
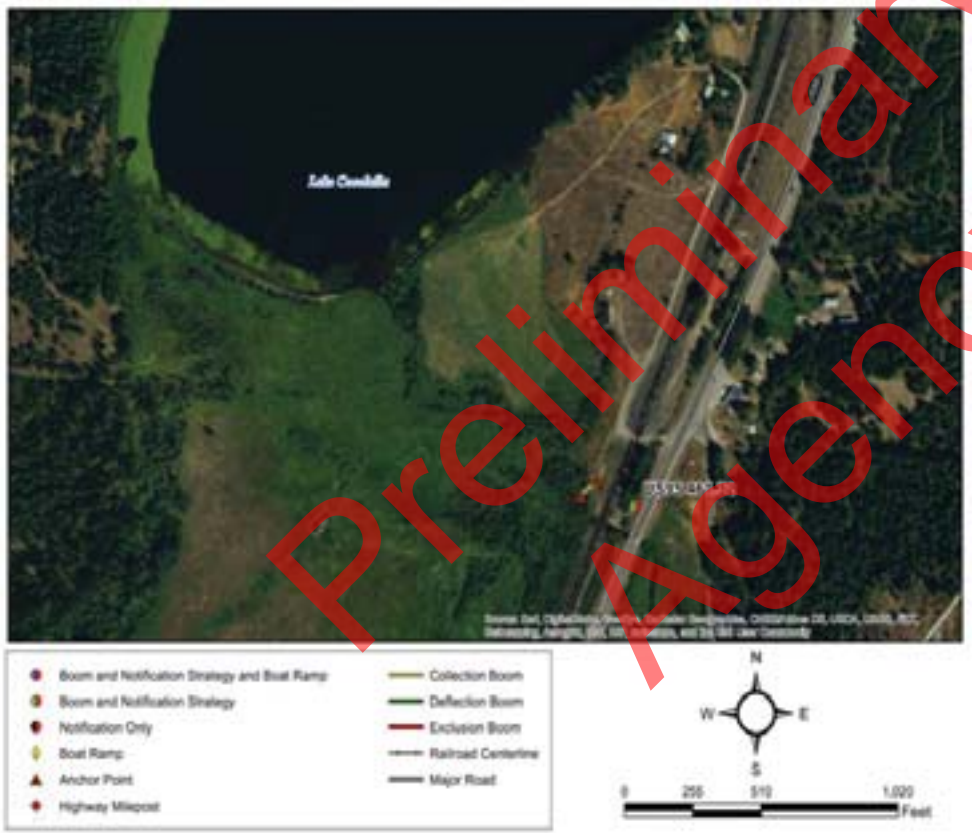
US95 465.11
US95 463.95
US95 463.82
US95 461.32
Preliminary Draft for Agency Review


Sector 7B Sagle - North
USGG0004783/26
Go Back to Regional Map
US95 472.98
US95 471.08
Preliminary Draft for Agency Review

Site Lat Long:	48.106531 -116.618517 (http://www.google.com/maps/place/48.106531,-116.618517)
Strategy Objective:	Notification and contaminant collection and recovery of contaminated material prior to its entrance into Lake Cocolalla
Implementation:	River flow direction is to the west. Deploy collection boom and initiate contaminant recovery at Cocolalla Creek railroad bridge. Secure upstream end of boom River Right to steel post. Secure downstream end of boom River Left to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is medium. Small parking area adjacent to railroad on west side of track for vehicles. No boat launch facilities. Lake Cocolalla boat launch is 2.9 miles away.
Field Notes:	• Stream may be intermittent and frozen during winter. • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Lake Cocolalla, fish habitat, recreation
Watercourse:	Gradient is low; substrate is gravel; approx. width is 33 ft.; approx. depth is 1 to 5 feet; channelized; slow moving



Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	
	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
0 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (13.5 miles)
Second Cache: Bonners (45.8 miles)

Nearest Address: 11 Rd Southside School
Cocolalla ID 83813

Site-Specific Points of Contact

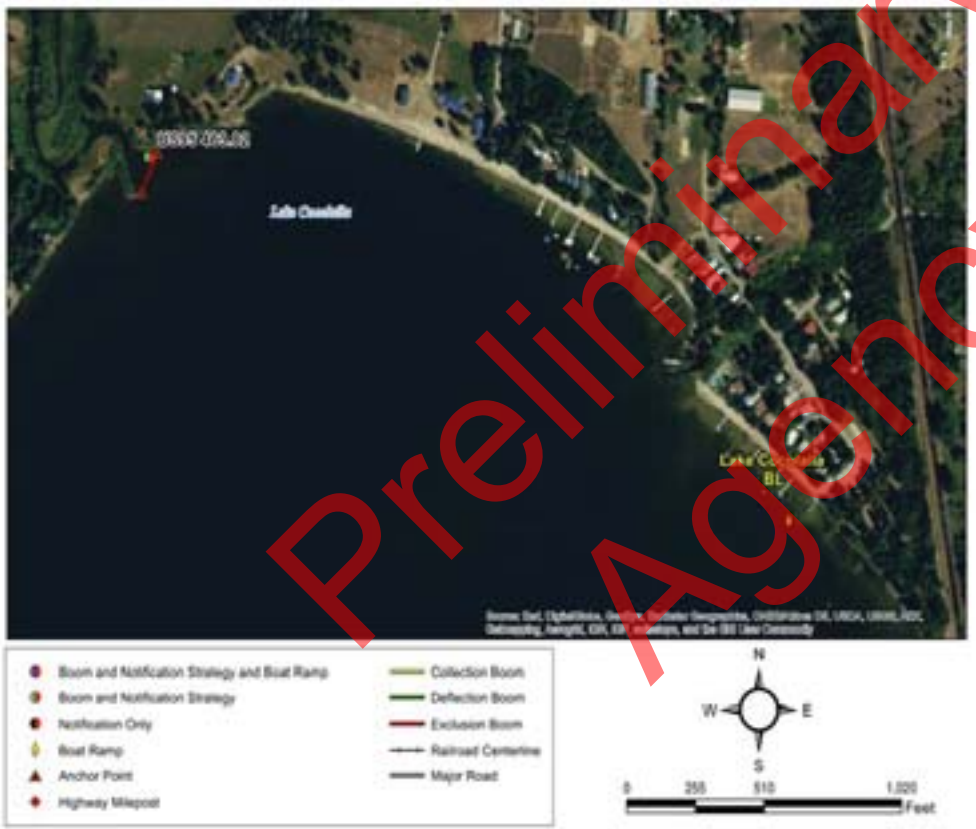
Site Access -

Sandpoint, Idaho
1. Head south on N Fifth Ave Toward Cedar St - 0.2 mi
2. Turn left onto Pine St - 0.3 mi
3. Turn right onto S 1st Ave - 0.2 mi
4. Turn left onto E Superior St - 0.5 mi
5. Merge onto US - 95 S - 15.4 mi

View of the train bridge and parking area.

None

Site Lat Long:	48.141084 -116.613382 (http://www.google.com/maps/place/48.141084,-116.613382)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Cocolalla Creek outlet.
Implementation:	River flow direction is to the north. Secure upstream end of boom River Right to steel post. Secure downstream end of boom River Left to steel post. Vacuum truck access is poor.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	No staging area. No boat launch facilities. Sandy Beach boat launch is 1.7 miles away.
Field Notes:	• Access by boat for photos and precise measurements. • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Cocolalla Creek, Round Lake State Park downstream, fish habitat, wetlands, municipal and irrigation water supply, recreation
Watercourse:	Gradient is low; substrate is sand; approx. width is 150 ft.; approx. depth is 5 to 10 feet; braided channels; shoals



Suggested Equipment	
Quantity	Description
200 ft.	Curtain Boom Tow Bridles
As Appropriate	
250 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (11.4 miles)
Second Cache: Bonners (43.7 miles)

Nearest Address: 398 Sportsmans Access

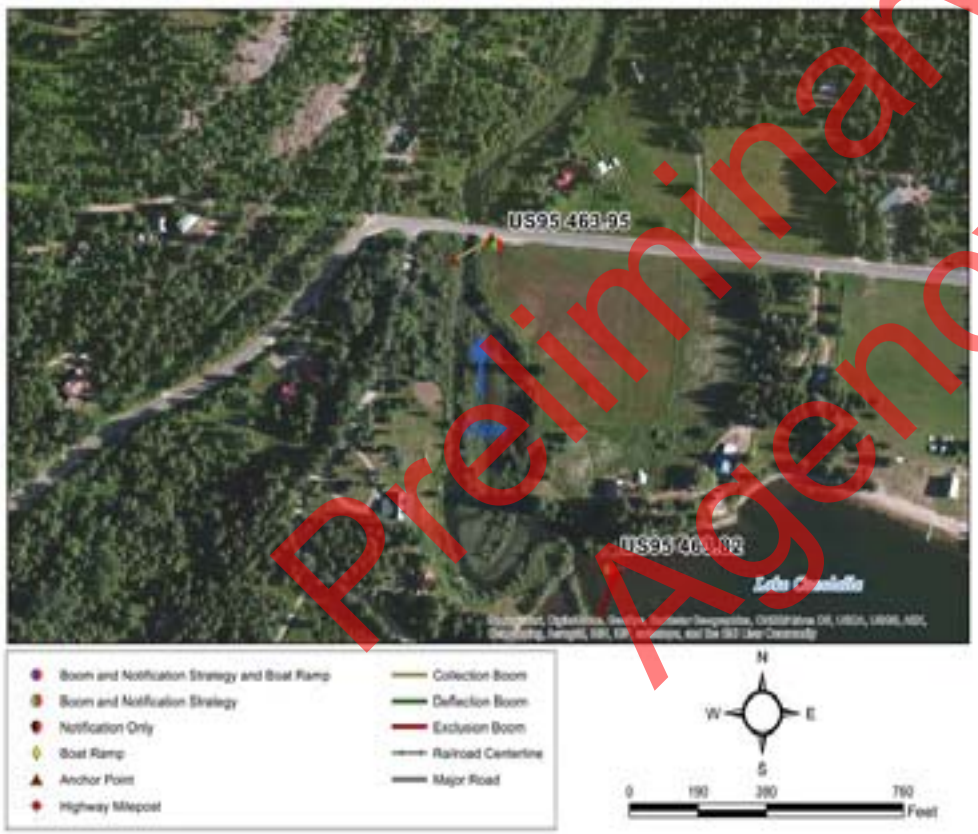
Site-Specific Points of Contact

Site Access -

Sandpoint, Idaho
1. Head south on N Fifth Ave Toward Cedar St - 0.2 mi
2. Turn left onto Pine St - 0.3 mi
3. Turn right onto S 1st Ave - 0.2 mi
4. Turn left onto E Superior St - 0.5 mi
5. Merge onto US - 95 S - 9.5 mi
6. Turn right onto Cocolalla Loop Rd - 0.5 mi
7. Turn left onto road directly after N Beach Rd for best access.

Cocolalla Creek Outlet, Cocolalla, Idaho

Site Lat Long:	48.143234 -116.614958 (http://www.google.com/maps/place/48.143234,-116.614958)
Strategy Objective:	Notification and contaminant collection and recovery.
Implementation:	River flow direction is to the north. Deploy collection boom and initiate contaminant recovery at Cocolalla Loop Rd Bridge. Secure upstream end of boom River Right to steel post. Secure downstream end of boom River Right to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is small. Limited parking along narrow road shoulder adjacent to bridge. No boat launch facilities. Sandy Beach boat launch is 1.4 miles away.
Field Notes:	• 4WD Access: **NO** • Seasonal Access Only: **YES** • Locked Gate: **NO**
Resources Targeted:	Cocolalla Creek, fish habitat, wetlands, Round Lake State Park downstream, municipal and irrigation water supplies, recreation
Watercourse:	Gradient is low; substrate is sand; approx. width is 30 ft.; approx. depth is 1 to 5 feet; braided channels; shoals; slow moving



Suggested Equipment	
Quantity	Description
50 ft.	Curtain Boom Tow Bridles
As Appropriate	
50 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
0 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (11.4 miles)
Second Cache: Bonners (43.7 miles)

Nearest Address: 524-698 Cocolalla Lp
Cocolalla ID 83813

Site-Specific Points of Contact

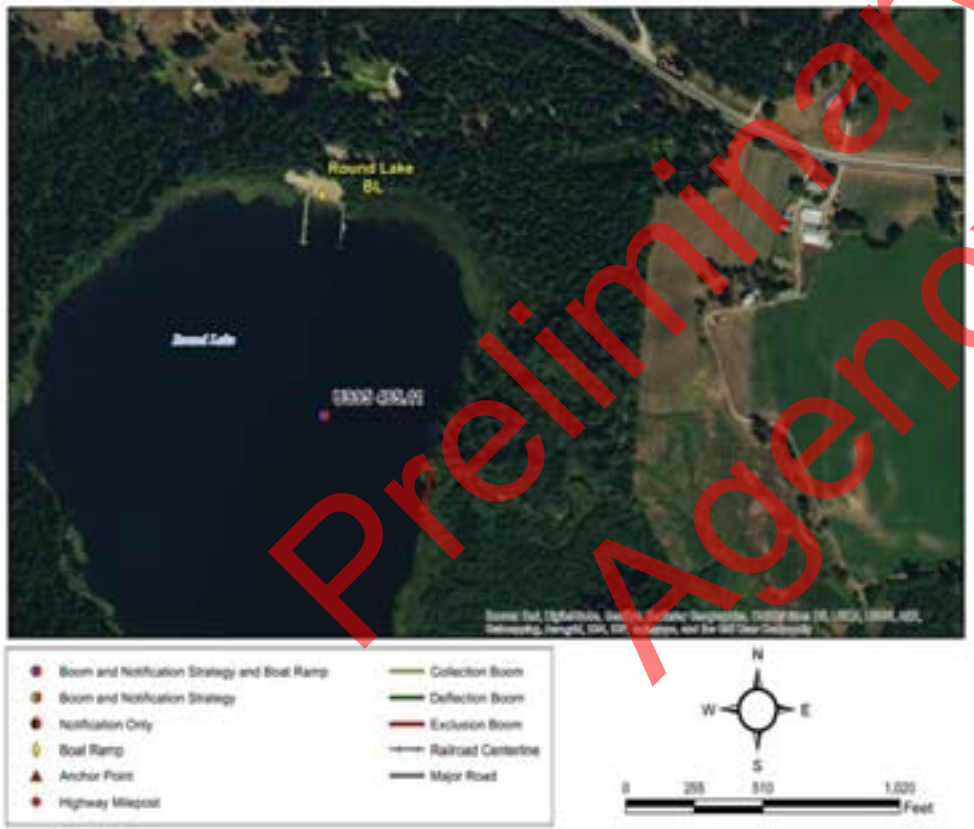
Site Access -

Sandpoint, Idaho
1. Head south on N Fifth Ave Toward Cedar St - 0.2 mi
2. Turn left onto Pine St - 0.3 mi
3. Turn right onto S 1st Ave - 0.2 mi
4. Turn left onto E Superior St - 0.5 mi
5. Merge onto US - 95 S - 9.5 mi
6. Turn right onto Cocolalla Loop Rd - 0.7 mi

Upstream side of bridge showing creek and culvert.

Looking east across bridge at parking area.

Site Lat Long:	48.162092 -116.637139 (http://www.google.com/maps/place/48.162092,-116.637139)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Round Lake.
Implementation:	Secure upstream end of boom East Shoreline to steel post. Secure downstream end of boom East Shoreline to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is medium. Medium sized parking area adjacent to boat ramp with additional parking for vehicles uphill from the ramp. Gravel boat launch. Round Lake boat launch is at the site.
Field Notes:	• Exclusion boom across outlet of Cocolalla Creek where it enters lake. No gas powered motors allowed on around lake without permit. • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Municipal water intake
Watercourse:	Round Lake State Park, fish habitat, recreation



Suggested Equipment	
Quantity	Description
200 ft.	Curtain Boom Tow Bridles
As Appropriate	
	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)

Nearest Cache: Sandpoint (11.3 miles)
Second Cache: Bonners (43.6 miles)

Nearest Address: 1440 Dufort Rd
Sagle ID 83860

Site-Specific Points of Contact

Site Access -

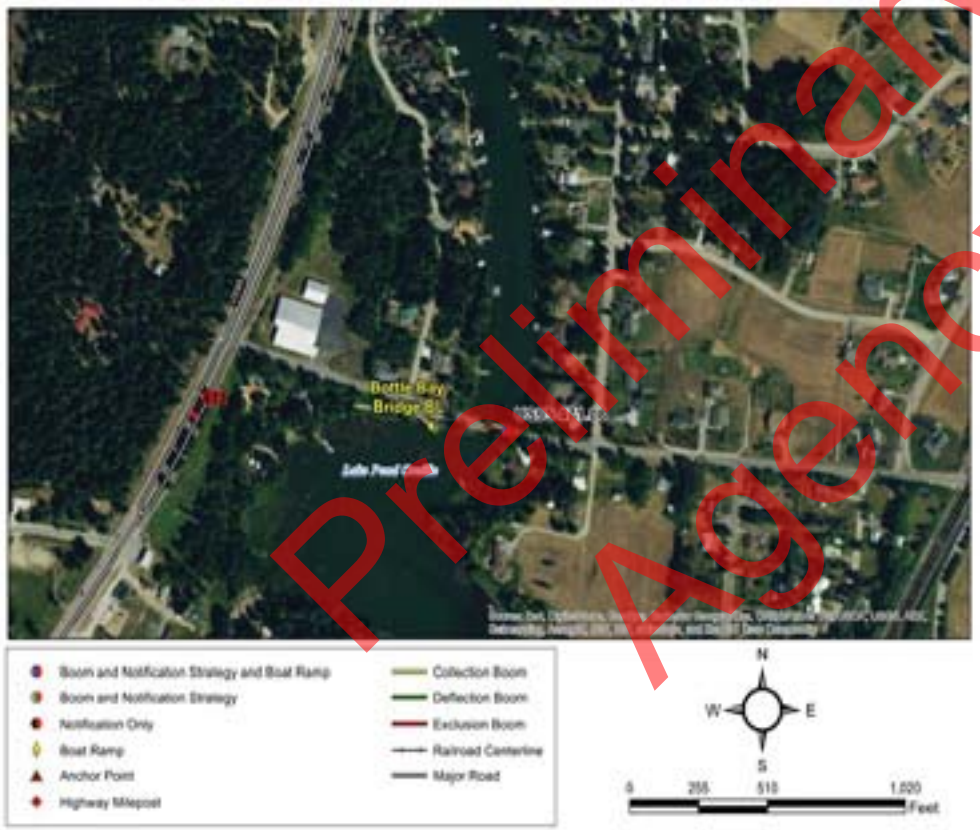
Sandpoint, Idaho
1. Head south on N Fifth Ave Toward Cedar St - 0.2 mi
2. Turn left onto Pine St - 0.3 mi
3. Turn right onto S 1st Ave - 0.2 mi
4. Turn left onto E Superior St - 0.5 mi
5. Merge onto US - 95 S - 8.0 mi
6. Turn right onto Dufort Rd - 1.9 mi
7. Turn left toward Mirror Lake Rd - 0.1 mi
8. Continue onto Mirror Lake Rd - 213 ft

Mirror Lake Rd, Westmond, Idaho

Looking southeast toward inlet.

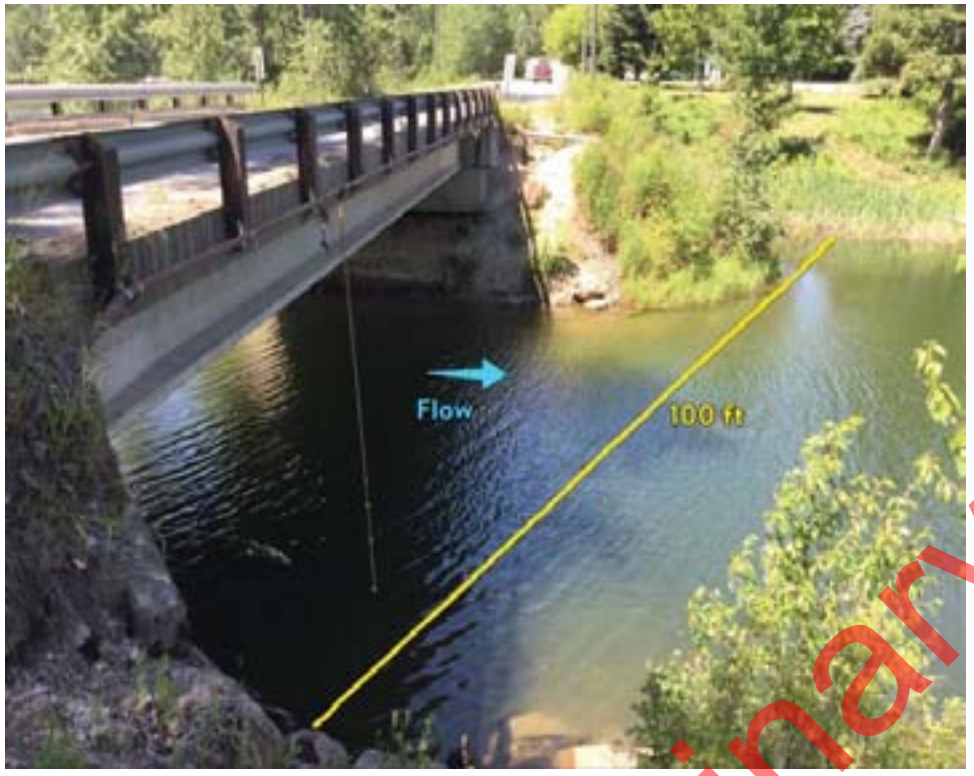
View of parking area from boat ramp.

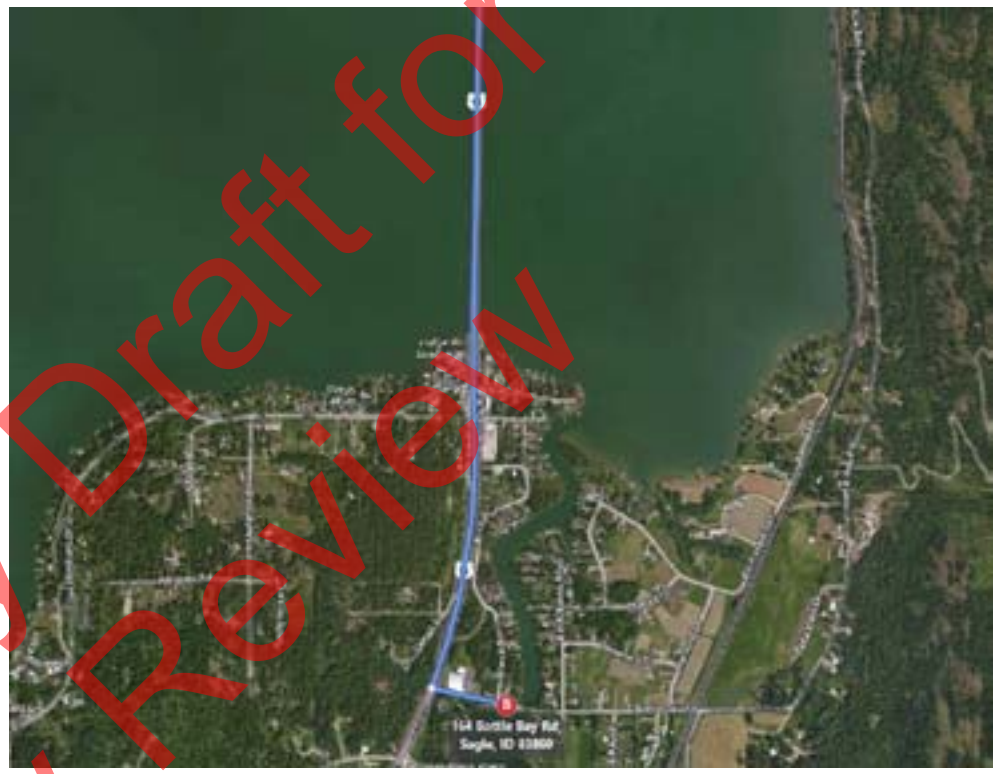
Site Lat Long:	48.230107 -116.536618 (http://www.google.com/maps/place/48.230107,-116.536618)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Bottle Bay Bridge.
Implementation:	River flow direction is to the north. Secure upstream end of boom River Right to steel post. Secure downstream end of boom River Left to steel post. Vacuum truck access is good.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is small. Limited parking along road on narrow shoulder with adjacent gravel boat ramp. Boat ramp best suited for smaller sized boats and trailers. Gravel boat launch. Bottle Bay Bridge boat launch is 0.1 miles away.
Field Notes:	• Boat ramp may require 4WD during periods of snow or rain. • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Lake Pend Orielle, municipal water resources, fish habitat, wetlands, recreation
Watercourse:	Gradient is low; substrate is mud; approx. width is 75 ft.; approx. depth is 5 to 10 feet; channelized; slow moving



Suggested Equipment	
Quantity	Description
100 ft.	Curtain Boom Tow Bridles
As Appropriate	
150 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
None	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	N

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
2 / 1	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
0 / 0	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)





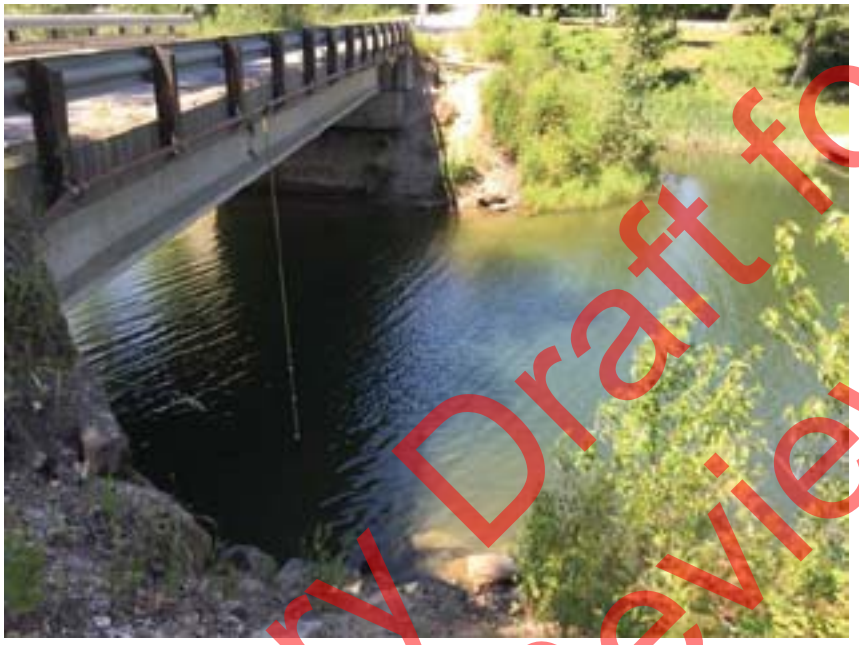
Nearest Cache: Sandpoint (4.0 miles)
Second Cache: Bonners (36.3 miles)

Nearest Address: 200 Bottle Bay Rd
Sagle ID 83860

Site-Specific Points of Contact

Site Access -

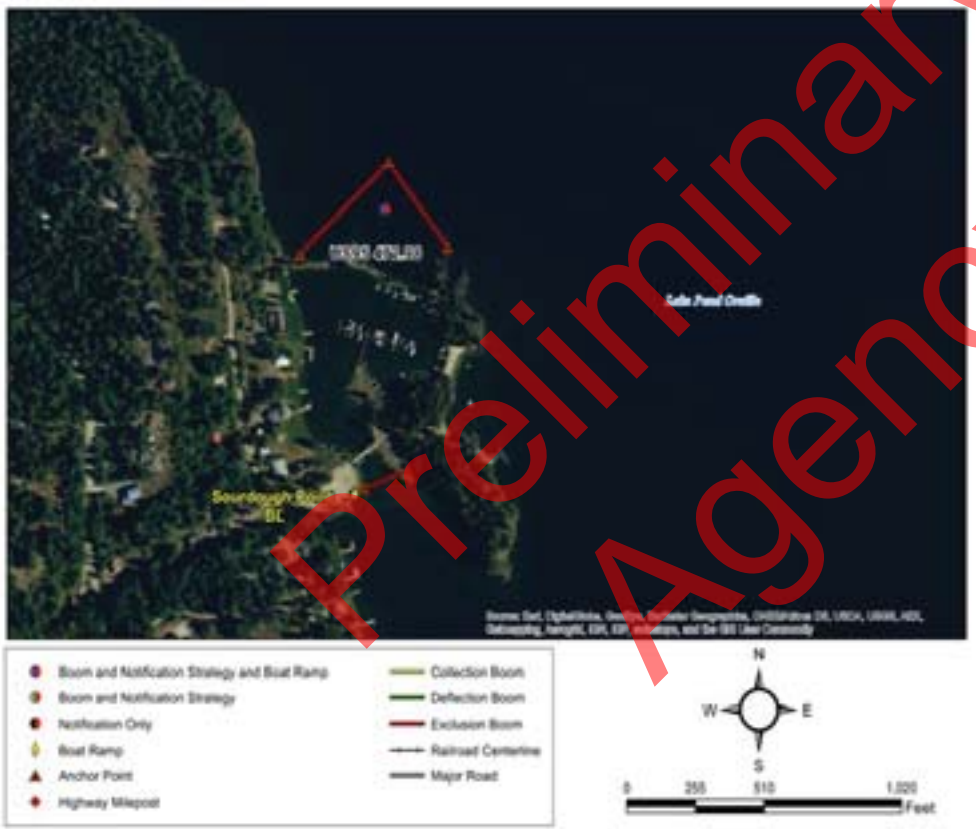
Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn left onto Pine St - 0.3 mi
3. Turn right onto S 1st Ave - 0.2 mi
4. Turn left onto E Superior St - 0.5 mi
5. Merge onto US-95 S - 2.5 mi
6. Turn left onto Bottle Bay Rd - 0.1 mi



Collection site on north side of bridge.

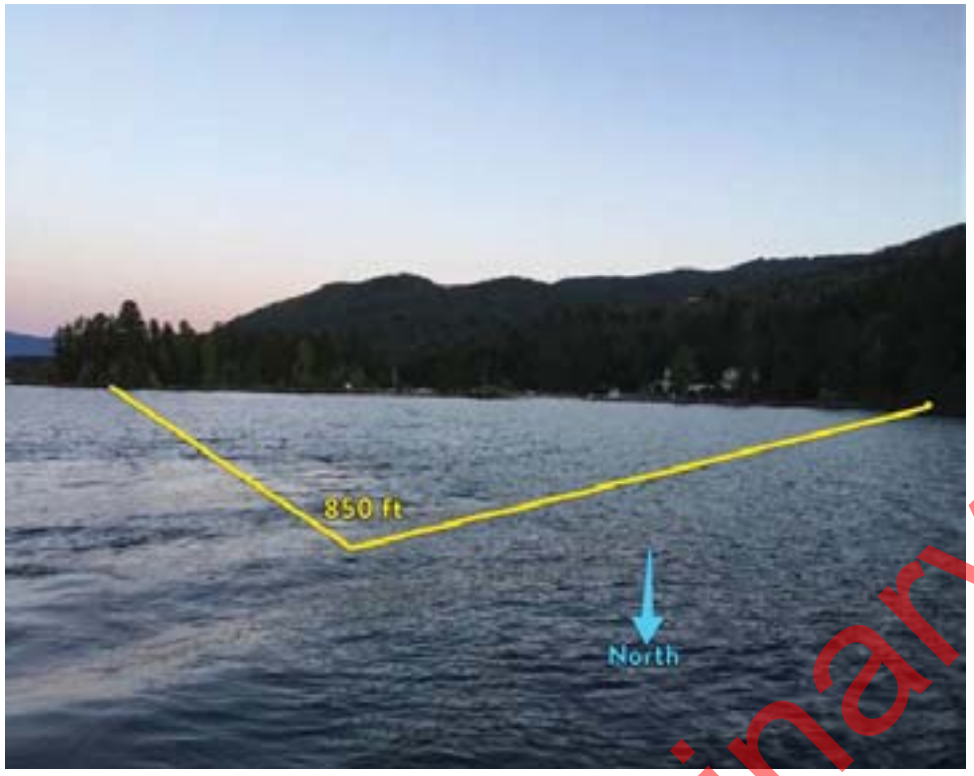
Bridge and narrow shoulders for parking.

Site Lat Long:	48.258104 -116.468924 (http://www.google.com/maps/place/48.258104,-116.468924)
Strategy Objective:	Notification and exclusion. Prevent contaminant from impacting sensitive area at Sourdough Point water intake.
Implementation:	Secure upstream end of boom South Shoreline to steel post. Extend boom to the north and into the lake. Secure to a buoy and secure downstream end of boom to South Shoreline to steel post. Notify Sourdough Point water intake.
Site Safety Note:	Complete Job Safety Analysis.
Staging Area:	On site staging is large. Large private boat launch with big parking lot. Concrete boat launch. Sourdough Point boat launch is 0.3 miles away.
Field Notes:	• Contact Water Treatment Operator: Robert Hanson 208-265-4270 • 4WD Access: **NO** • Seasonal Access Only: **NO** • Locked Gate: **NO**
Resources Targeted:	Wildlife Habitat, Threatened and Endangered Species, Recreational Use, Reservoir or Lake
Watercourse:	Lake Pend Oreille; substrate is mud; approx. depth is greater than 20 feet; slow moving; shoals



Suggested Equipment	
Quantity	Description
1200 ft.	Curtain Boom Tow Bridles
As Appropriate	
1500 ft.	Polypropylene Line
6	Steel Post Anchors
As Appropriate	Post pounder, shovels, knife, wood saw
1	In Water Anchors
As Appropriate	PFD work vests/rubber boots
As Appropriate	Throw bags, first aid kit
Jet boat/raft needed for strategy implementation?	Y

Suggested Personnel	
Quantity	Title (Function)
1	Booming Team Leader
1	Safety Representative
3 / 0	Haz-Mat Tech (Field Worker) / 1st Responder (Traffic Flagger)
1 / 1	Haz-Mat Tech (Boat Operator) / Haz-Mat Tech (Swiftwater)



Nearest Cache: Sandpoint (10.3 miles)
Second Cache: Bonners (42.7 miles)

Nearest Address: 81 W Shoreline Ln
Sagle ID 83860

Site-Specific Points of Contact

Sourdough Point Water Intake (208) 265-4270

Site Access -

Sandpoint, Idaho
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi
2. Turn left onto Pine St - 0.3 mi
3. Turn right onto S 1st Ave - 0.2 mi
4. Turn left onto E Superior St - 0.5 mi
5. Merge onto US - 95 S - 2.5 mi
6. Turn left onto Bottle Bay Rd - 6.2 mi
7. Turn left onto Sourdough Ln - 0.2 mi

Destination will be on the right

Close-up on the Sourdough Point water intake, facing south.

Looking at the Sourdough Point water intake, facing southeast.

Appendix C Oil Spill Scenario Travel Time Analysis

Appendix C

Oil Spill Scenario Time of Travel Analysis - Clark Fork River at Cabinet Gorge Dam

This analysis employs the Incident Command Tool for Protecting Drinking Water (ICWater) to examine river travel time in the event of an oil spill on the Clark Fork River. Several scenarios were modeled to assess time of travel at different river discharge rates and oil spill volumes. All scenarios listed in Tables C-1 and C-2 begin with a spill located at 48.086 N and 116.058 W, just below Cabinet Gorge Dam (Figure C-1). A separate scenario involving a spill location further downstream is illustrated in Figure C-2 and discussed below.

Crude oil is a complex mixture of numerous petrochemical compounds, the proportions of which can vary widely. ICWater requires input of a specific chemical agent to model the transport of a pollutant spilled in a river. Since benzene is the primary compound of concern in Bakken crude, it was used as a proxy for bulk crude oil in these scenarios. The composition of Bakken crude narrowly ranges, so two different benzene contents were examined: 0.2 wt% (Table C-1) and 0.5 wt% (Table C-2). However, both of these are likely conservative values as the U.S. Environmental Protection Agency (EPA) recently reported benzene content of 0.14 wt% for a sample collected and analyzed in 2014. All scenarios assume a reported density of 6.79 pounds per gallon (42.5° API) for Bakken crude (EPA, 2014).

Reported travel times indicate the amount of time it takes following the spill for benzene concentrations over the level of concern (0.005 milligrams per liter) to reach the distributary channels of the Clark Fork River Delta, near the currently installed debris booms (Figure C-1). In other words, travel times show how long before the dilute but harmful leading edge of the spill will reach the delta.

Figure C-1: Example Model Output

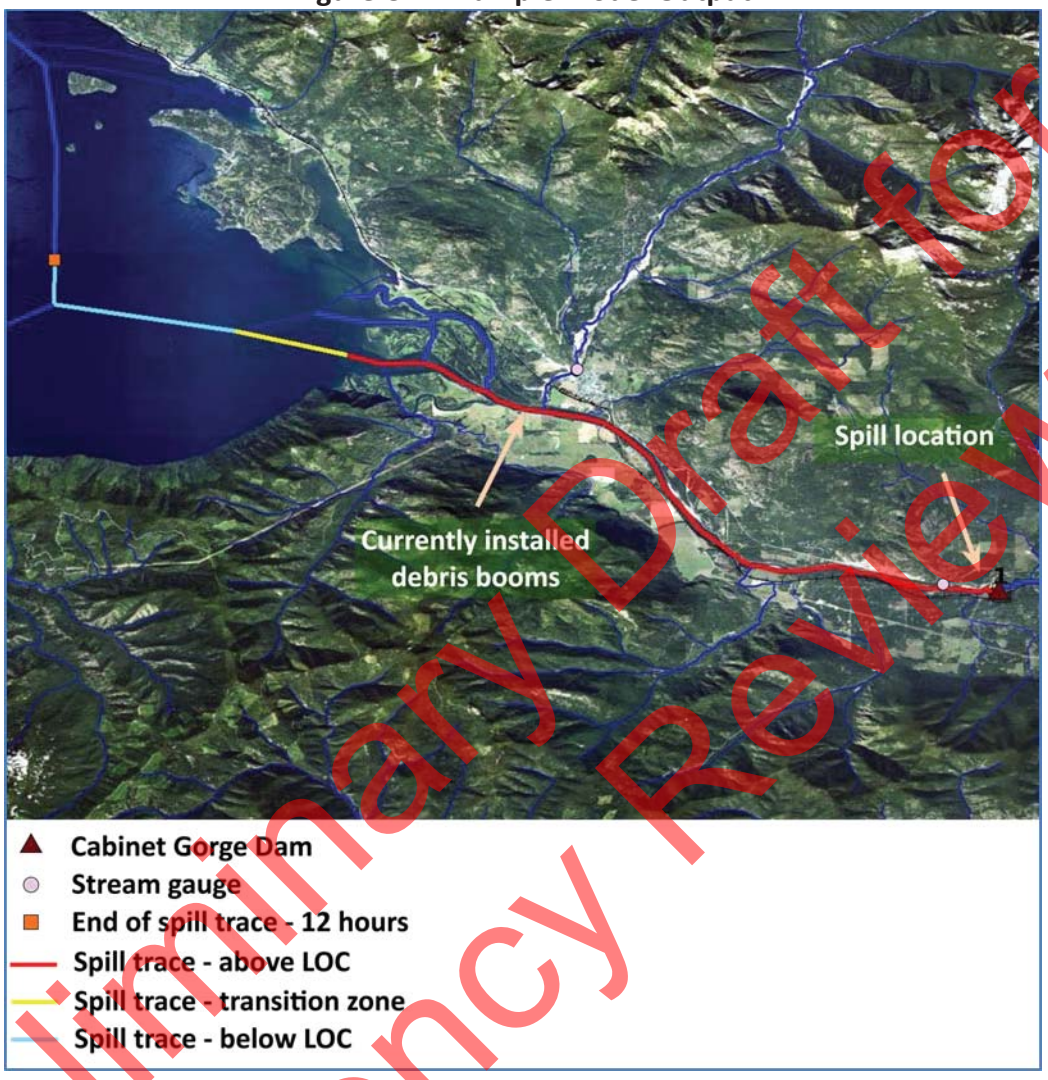


Figure C-1 provides an example model output showing 12 hours of travel time following a 45,000-gallon spill of 0.2 wt% crude at 25,000 cfs. This scenario illustrates a spill that is similar in size to one that occurred near Mosier, Oregon, on June 3, 2016, at a discharge exemplary of moderate to high flow rates for the Clark Fork River.

Table C-1: Travel times for Bakken crude oil spill with 0.2 wt% benzene

		Size of Spill (gallons)			
		30,000	45,000	100,000	300,000
Discharge (cfs)	100,000	1 hr 51 min	1 hr 26 min	1 hr 6 min	<1 hr
	75,000	1 hr 56 min	1 hr 33 min	1 hr 16 min	1 hr 4 min
	50,000	2 hr 16 min	1 hr 58 min	1 hr 41 min	1 hr 26 min
	25,000	2 hr 41 min	2 hr 31 min	2 hr 16 min	2 hr 3 min
	10,000	3 hr 41 min	3 hr 33 min	3 hr 22 min	3 hr 8 min
	5,000	4 hr 44 min	4 hr 38 min	4 hr 27 min	4 hr 14 min

Table C-2: Travel times for Bakken crude oil spill with 0.5 wt% benzene

		Size of Spill (gallons)			
		30,000	45,000	100,000	300,000
Discharge (cfs)	100,000	1 hr 7 min	< 1 hr	< 1 hr	< 1 hr
	75,000	1 hr 21 min	1 hr 14 min	< 1 hr	< 1 hr
	50,000	1 hr 47 min	1 hr 39 min	1 hr 29 min	1 hr 18 min
	25,000	2 hr 21 min	2 hr 14 min	2 hr 0 min	1 hr 54 min
	10,000	3 hr 26 min	3 hr 19 min	3 hr 11 min	3 hr 0 min
	5,000	4 hr 30 min	4 hr 26 min	4 hr 16 min	4 hr 5 min

At several points along the Clark Fork River below Cabinet Gorge Dam, railroad tracks run within 90 ft or less of the river bank. One of these points is approximately 1.4 miles below the dam and 6 miles above the delta. In the event of a derailment and crude oil spill at this location, comparable in volume to the June 2016 spill in Mosier, Oregon, during moderately high flow of 25,000 cfs (~3.2 ft/sec), it would take approximately 2 hours for the leading edge of the spill to reach the delta. At a lower flow of 10,000 cfs (~2.5 ft/sec), leading edge travel time would be approximately 2 hours and 57 minutes (Figure C-2).

To compare flows used in ICWater model scenarios with real historical flow values, Figure C-3 displays daily discharge for the last 10 years at the USGS/Avista Utilities stream gauge station downstream of the Cabinet Gorge Dam (location shown on Figure C-1), and Table C-3 displays monthly mean discharge for water years 1996–2016.

Figure C-3 Clark Fork River daily discharge recorded at the USGS/Avista Utilities stream gauge station located downstream from the Cabinet Gorge Dam. Location of the stream gauge relative to the dam is illustrated in Figure C-1.

Figure C-2: Location of Possible Oil Spill for Modeling

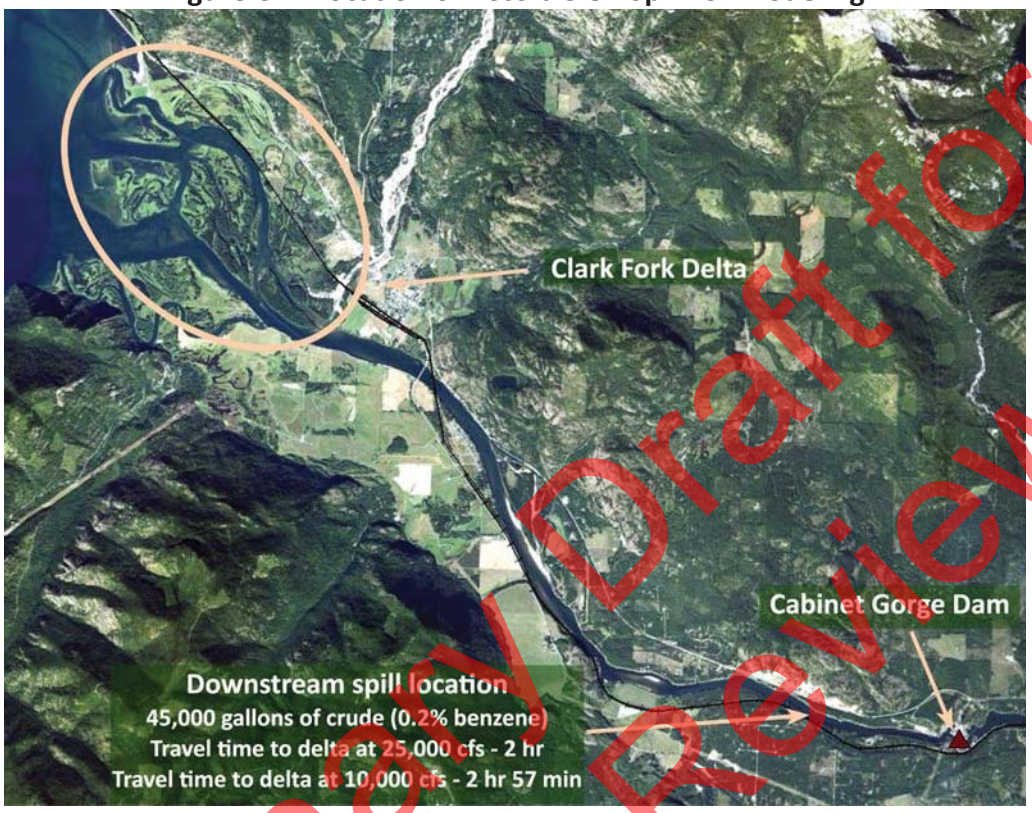


Figure C-3: Clark Fork River Daily Discharge

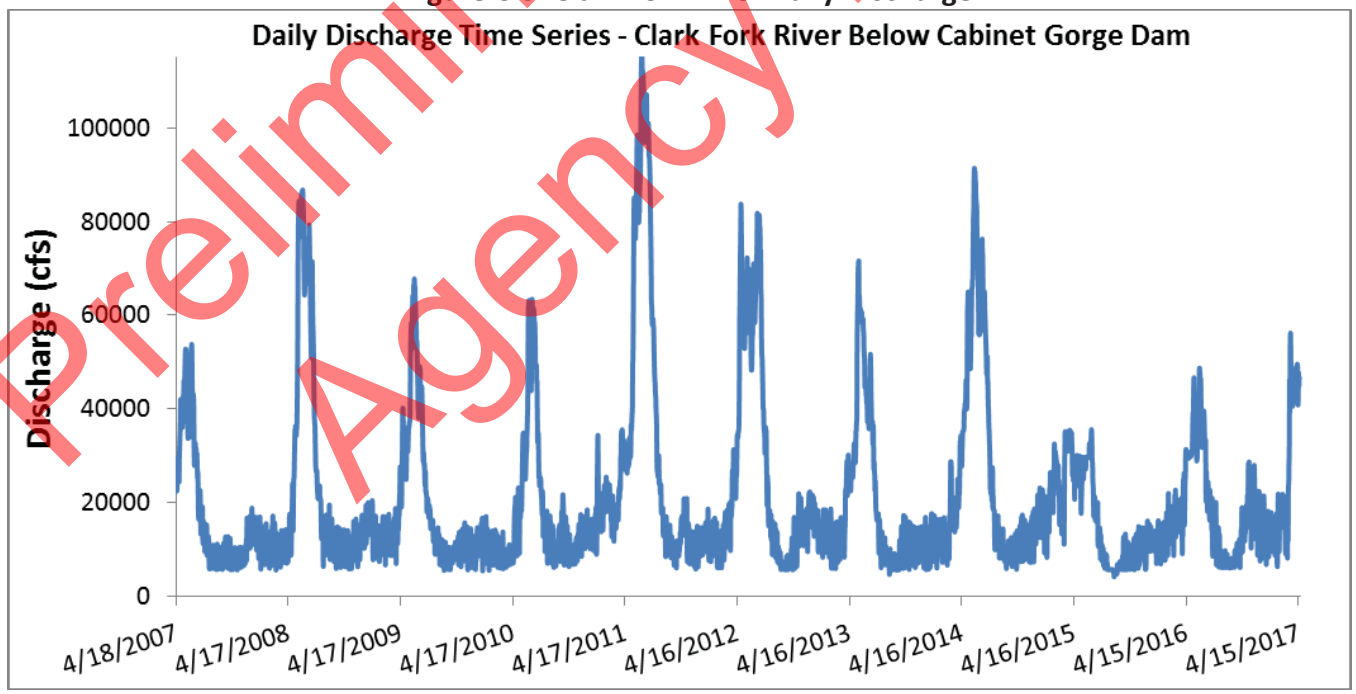


Table C-3: Clark Fork River Monthly Mean Discharge Values

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1995	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	12,290	21,370	34,250
1996	23,140	37,550	35,880	49,130	59,580	73,030	30,170	17,490	11,610	11,020	15,590	15,890
1997	19,530	19,170	24,080	37,410	93,000	96,050	34,910	19,080	13,440	13,200	18,670	17,480
1998	14,050	9,450	11,460	17,770	35,850	46,170	30,300	14,410	10,980	9,773	15,120	12,500
1999	13,060	11,370	16,550	22,660	38,320	60,140	30,450	14,330	9,828	9,194	17,250	19,740
2000	15,130	12,230	14,070	28,910	38,710	36,310	18,860	9,738	7,853	9,927	11,800	12,320
2001	10,990	6,156	6,916	8,844	26,990	23,630	11,890	7,046	5,818	6,334	7,065	8,779
2002	12,450	13,030	13,200	24,630	40,200	79,180	34,360	13,720	9,692	7,002	10,320	13,070
2003	7,309	11,810	13,080	26,770	38,440	44,670	16,160	8,585	6,101	6,254	12,200	12,530
2004	9,234	10,520	13,600	17,460	33,840	35,010	20,180	11,960	14,110	12,100	11,050	15,940
2005	13,280	12,320	8,114	15,840	38,970	45,880	19,550	10,680	6,443	11,140	12,710	12,200
2006	13,910	16,580	13,920	31,520	60,000	52,310	18,800	7,513	7,331	8,529	17,560	14,020
2007	13,740	12,790	21,650	27,480	42,310	35,850	15,100	8,334	8,397	8,498	7,973	14,340
2008	11,590	11,200	10,970	11,810	52,830	72,700	35,720	14,300	12,310	11,300	11,090	14,050
2009	14,720	12,790	12,960	22,390	43,990	48,170	20,150	11,250	8,402	10,010	11,420	10,250
2010	11,380	11,280	8,310	11,450	23,020	54,400	27,040	12,380	13,140	10,580	11,760	14,100
2011	17,330	20,680	18,360	30,270	63,820	101,100	63,090	19,030	10,820	13,460	12,420	11,850
2012	13,040	10,820	15,950	39,880	61,190	68,530	35,380	11,700	6,919	10,380	15,680	17,930
2013	13,870	13,430	12,520	25,010	52,340	42,930	18,580	8,633	7,052	11,300	10,830	10,510
2014	12,330	12,260	17,480	31,520	65,510	66,930	34,050	12,010	8,922	11,440	12,350	16,720
2015	18,070	25,770	26,700	30,080	27,570	25,380	10,220	5,550	7,125	7,706	10,900	11,900
2016	11,520	14,130	17,620	26,190	38,580	29,550	14,130	7,035	7,661	n.d.	n.d.	n.d.

Appendix D Summary of Equipment Trailer Contents

Equipment	AVT	BNF1	BNF2	BNF SNP	RRT 1
Containment Boom (total length shown in ft)	1,716	3,800	1,000	1,000	1,000
Boom Vane	0	1	0	1	0
Boom Deflectors	2	6	0	6	0
Absorbents					
Absorbent Track Pad Roll	0	1	0	1	1,000 pads
Oil Absorbent Boom Bale	0	5	0	5	
Oil Absorbent Pad Bale	8	4	0	4	
Sweep Boom; 5"	8	6	0	6	0
Skimmer, Hydraulic Powered	0	1	0	1	0
Skimmer, Shovel Head	0	1	0	1	0
Diesel Power Pack for Skimmer	0	1	0	1	0
2000-Watt Generator	1	1	0	1	0
Oil Compatible Collapsible Tank	0	1	0	1	0
Helicopter Cargo Net	0	2	0	2	0
Oil Spill PPE	no	yes	no	yes	no
River Safety PPE	no	yes	no	yes	no

Notes:

AVT: Avista 14-Foot Enclosed Bumper Pull (Cabinet Gorge Dam)

BNF1: BNSF M2 24-Foot Enclosed Double Axel Bumper Pull (Bonners Ferry)

BNF2: (*supplements BNF1*): BNSF M3 Enclosed Double Axel Gooseneck (Bonners Ferry)

BNF SNP: BNSF M2 24-Foot Enclosed Double Axel Bumper Pull (Sandpoint)

RRT1: Idaho Office of Emergency Management Regional Response Team 1 (Coeur d'Alene)

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Appendix E High-Occupancy Facilities

The Lake Pend Oreille region has numerous high-occupancy facilities that are located very close to the rail lines and major highways. These facilities include schools, one hospital, several nursing homes, and several large employers. The table below lists the facilities with their primary contact phone number. The figures following show their location.

A nearby hazardous material spill may require prompt shelter-in-place warning or evacuation of these facilities.

The facilities on this list were included based on a subjective estimate of the number of people present. The list generally includes the following types of facilities:

- Public and private schools
- Apartments
- Dense mobile home and recreational vehicle parks with limited access
- Hospitals
- Nursing homes
- Large hotels
- Assisted-living facilities
- Facilities that employ many people
- Campgrounds close to railroad tracks
- Parks that host large gatherings (e.g., Sandpoint Music Festival at War Memorial Field)

Churches and small parks were excluded from the list.

The following figures include several 0.5-mile radius circles depicting approximate areas that may need evacuation in the event of a hazardous material train accident. The circles are centered on active rail lines. While the location of any accident cannot be predicted, these circles provide a general indication of the size of area needing evacuation.

The table below organizes the facilities geographically. Figures are provided following the table for areas with numerous high-occupancy facilities.

For more information, see the Bonner County Evacuation and Reception Plan, June 1, 2010, Bonner County Board of Commissioners, Bonner County Idaho.

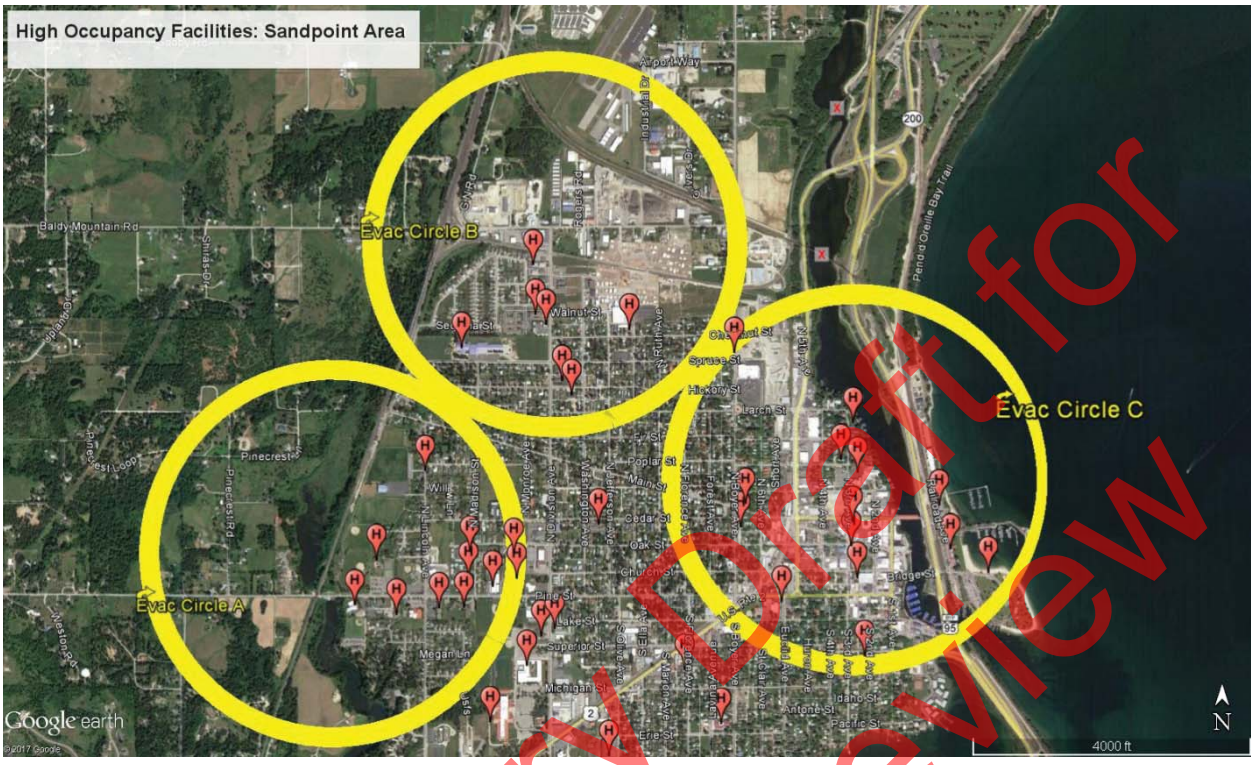
Name	Address	Facility Type	Phone (Area Code 208)	Map Figure
Community : Clark Fork				
Clark Fork High School	121 E 4th Ave, Clark Fork	School / High School	255-7177	—
Lightning Creek Apartments	120 W 10th Ave, Clark Fork	Living / Apartment	—	—
Trunnell Enterprises RV Park	Hwy 200 From Sandpoint	Recreation / Campground	—	—
Community : East Hope				
Hope Elementary School	255 Hope School Rd, Hope	School / Elementary	264-5681	—
Community : Trestle Creek				
Idaho Country Resort	Along Hwy 200	Recreation / Campground	—	—
Jeb & Margaret's Trailer Haven	12 Mi. E. Of Sandpoint	Recreation / Campground	—	—
Trestle Creek RV Park	42303 Highway 200, Hope	Living / Rv Park	264-5894	—
Community : Kootenai				
Northside School	7881 Colburn-Culver Rd, Sandpoint	School / Elementary	263-2734	—
Community : Ponderay				
Evacuation Circle D				
Beehive Hearthstone Village	402 W 3rd Ave, Kootenai	Living / Assisted Living	—	D
Hotel Ruby	47725 Highway 95 North, Ponderay, Id	Hotel	263-5383	D
Kootenai Elementary School	301 Sprague St, Kootenai	School / Elementary	255-4076	D
Lake Pend Oreille School Dist	901 Triangle Dr, Ponderay	School /	263-2184	D
Mountain View Village	550 Larkspur St, Ponderay	Living / Assisted Living	—	D
Mt Baldy Apartments	835 Kootenai Cutoff Rd, Ponderay	Living / Apartment	—	D
Trinity Assisted Living	100 Humbird St, Kootenai	Living / Assisted Living	—	D
Valentine Apartments	31138 Highway 200, Ponderay	Living / Apartment	—	D
Woodland Crossing Apartments	839 Kootenai Cutoff Rd, Ponderay	Living / Apartment	—	D
Hotel Ruby	477255 Highway 95 N. Ponderay	Hotel	263-5383	—
Community: Sandpoint				

Name	Address	Facility Type	Phone (Area Code 208)	Map Figure
Evacuation Circle A				**A**
Alpine Vista Senior Apartments	1705 Pine Street, Sandpoint	Living / Senior	265-4446	A
Bristlecone Apartments	1510 Pine St, Sandpoint	Living / Apartment	—	A
Forrest Bird Charter School	614 Madison Ave, Sandpoint	School / Charter	—	A
Northwood Terrace Apartments	307 Halley St, Sandpoint	Living / Apartment	—	A
Oak St Apartments	1509 Oak St, Sandpoint	Living / Apartment	—	A
Pend Oreille Manor	1411 W Lake St, Sandpoint	Living / Apartment	—	A
Pine Meadow Apartments	205 Halley St, Sandpoint	Living / Apartment	—	A
Ridley Village 1	950 Ridley Village Rd, Sandpoint	Living / Apartment	—	A
Ridley Village 2	1000 Ridley Village Rd, Sandpoint	Living / Apartment	—	A
Sandpoint High School	410 S Division Ave, Sandpoint	School / High School	—	A
Sandpoint Junior Academy	2255 Pine St, Sandpoint	School / Private	263-3584	A
Sandpoint Middle School	310 S Division Ave, Sandpoint	School / Junior High	265-4169	A
Sandpoint Villas Apartments	1602 Pine St, Sandpoint	Living / Apartment	—	A
Selkirk Ridge Apartments	117 S Lincoln Ave, Sandpoint	Living / Apartment	—	A
Travers Great Northern Park	2016 Pine St, Sandpoint	Recreation / Park	—	A
Valley Vista Care Center	220 S Division Ave, Sandpoint	Living / Assisted Living	265-4514	A
Waldorf School	2007 Sandpoint West Dr, Sandpoint	School / Private	265-2683	A
Evacuation Circle B				**B**
Bridge Assisted Living	1123 N Division Ave, Sandpoint	Living / Assisted Living	263-1524	B
Farmin Stidwell Elementary School	1626 Spruce St, Sandpoint	School / Elementary	—	B
Huckleberry Apartments	1314 Huckleberry Ave, Sandpoint	Living / Apartment	255-5999	B
Lake Pend Oreille High School	1005 N Boyer Ave, Sandpoint	School / High School	263-6121	B and C
Litehouse Foods	1109 N. Ella, Sandpoint	Manufacturing - Food	265-3700	B
Pend Oreille Village	910 N Division Ave, Sandpoint	Living / Apartment	—	B
Quest Aircraft Co	1200 Turbine Dr., Sandpoint	Manufacturing - Airplanes	263-1111	B

Name	Address	Facility Type	Phone (Area Code 208)	Map Figure
Skyline Apartments	1315 Hickory St, Sandpoint	Living / Apartment	—	B
Syringa Estates	1101 N Division Ave, Sandpoint	Living / Apartment	—	B
Evacuation Circle C				**C**
Best Western Edgewater	Follow Signs To Beach	Recreation / Campground	263-2111	C
Bonner General Hospital	520 N 3rd Ave, Sandpoint	Public Services / Hospital	263-1441	C
Courser Apartments	219 Church St, Sandpoint	Living / Apartment	—	C
Driftwood Apartments	720 N 3rd Ave, Sandpoint	Living / Apartment	—	C
Farmin Park	312 Oak St, Sandpoint	Recreation / Park	—	C
Florence St Apartments	324 S Florence Ave, Sandpoint	Living / Apartment	—	C
Florence Street Apartments	324 S Florence Ave, Sandpoint	Living / Apartment	—	C
Lake Pend Oreille High School	1005 N Boyer Ave, Sandpoint	School / High School	263-6121	B and C
La Quinta	415 Cedar St, Sandpoint	Hotel	263-9581	C
Mountain Shadow Suites	320 N Boyer Ave, Sandpoint	Living / Condos	—	C
North Idaho College	12 S. Euclid, Sandpoint	School / Post-Secondary	263-4594	C
Pedersen Apartments	302 Poplar St, Sandpoint	Living / Apartment	—	C
Sandpoint City Beach		Recreation / Park	—	C
Seasons Apartments	424 Sandpoint Ave Sandpoint	Living / Vacation Rental	255-1054	C
Superior St Apt	302 S 2nd Ave, Sandpoint	Living / Apartment	—	C
Villa Apartments	620 Main St, Sandpoint	Living / Apartment	—	C
Washington Elementary	430 S Boyer Ave, Sandpoint	School / Elementary	263-4759	C
Sandpoint: Other High Occupancy Facilities				
Cambridge Square Apartments	1205 Cedar St, Sandpoint	Living / Apartment	—	—
Holiday Inn Express	477326 Highway 95, Ponderay	Business / Motel	255-4500	—
Lakeview Park	607 S Ella Ave, Sandpoint	Recreation / Park	—	—
Luther Park	510 Olive Ave, Sandpoint	Living / Assisted Living	265-3557	—

Name	Address	Facility Type	Phone (Area Code 208)	Map Figure
Ponderosa Apartments	4107 Samuelson Ave, Sandpoint	Living / Apartment	—	—
Sandpoint Christian School	477954 Highway 95, Ponderay	School / Private	265-8624	—
Sandpoint Evergreen Assisted Living	624 S Division Ave, Sandpoint	Living / Assisted Living	265-2354	—
Schweitzer Ranch Senior	4107 Samuelson Ave, Sandpoint	Living / Senior	—	—
War Memorial Field	Sandpoint	Recreation / Community Park	—	—
Community : Dover				
No High Occupancy Facilities			—	—
Community : Sagle				
Country Inn	1 Mi. South Of Sandpoint	Recreation / Campground	—	—
Sagle Elementary	550 Sagle Rd, Sagle	School / Elementary	263-2757	—
Travel America Rv Park	468800 Highway 95 Unit 1, Sagle	Living / Rv Park	—	—
Community : Cocolalla				
Southside Elementary	375 Southside School Rd, Cocolalla	School / Elementary	—	—
Community : Laclede				
Riley Creek Campground	Laclede	Recreation / Campground	—	—
Community : Priest River				
Beardmore East Apartments	382 Harriet St, Priest River	Living / Apartment	—	—
Gregory St Apartments	384 Gregory St Unit 202, Priest River	Living / Apartment	—	—
Lowes Apartments	218 Highway 57, Priest River	Living / Apartment	—	—
Murray Apartments	238 Sherman St, Priest River	Living / Apartment	—	—
Priest River Elementary	231 Harriet St, Priest River	School / Elementary	448-1181	—
Priest River High School	598 Id-57, Priest River ID	SCHOOL / HIGH SCHOOL	448-1211	—
Priest River Jr High School	5709 Highway 2, Priest River	School / Junior High	448-1118	—
Whitaker Apartments	328 Summit Blvd, Priest River	Living / Apartment	—	—
Community : Old Town				

Name	Address	Facility Type	Phone (Area Code 208)	Map Figure
Albeni Cove Campground	Albeni Falls	Recreation / Campground	—	—
Idaho Hill Elementary School	402 E 3rd St S, Oldtown	School / Elementary	437-4227	—
Pend Oreille Valley School	33820 Highway 41, Oldtown	School / Private	—	—
House of the Lord	754 Silver Birch Lane, Oldtown	School / Private	437-2184	—



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Appendix F Boat Ramps and Marinas

Sector	Site ID	Site Name (See Note 1)	Usable at Low Pool Water Level?	Latitude and Longitude	General Suitability at Full Pool (See Note 2)	Gravel or Concrete Boat Ramp?	Field notes
1A	US2 0.37	Oldtown Boat Ramp	Yes	48.185348 -117.032438	1	Concrete	Good floating dock.
1A	none	Albeni Falls Dam	Uncertain	48.179392 -116.996120	1	Concrete	No dock. Use dependent on river flows.
1A	US2 2.21	Albeni Cove Boat Ramp	No	48.176539 -116.997049	1	Concrete	Generally usable from mid-June to the end of September. Availability dependent on river flows as well as lake elevation. Access gate closed at night during open period. Closed to vehicle access during off-season. Contact U.S. Army Corps of Engineers Albeni Falls Dam (see contact sheet at beginning of this document).
1B	US2 6.38	Priest River City Boat Ramp	Yes	48.176933 -116.904242	1	Concrete	Usability confirmed at lake elevation 2,054 ft. Massive concrete and rock ballasts protect boat ramp from stream flows. High quality floating docks. Auto access is confusing—must parallel railroad tracks on Railroad Avenue which is a poorly maintained road.
1B	US2 6.87	Priest River Mouth Boat Ramp also known as "The Mud Hole"	No	48.177921 -116.89271	2	Concrete	Ramp usable mid-June to end of September. Launchable elevation is 2,058 ft. Swift current on Priest River during high water flows may pose a hazard. Site may be gated at night.
2A	US2 13.38	Willow Bay Resort Boat Ramp (Marina)	No	48.152507 -116.76856	2	Concrete	Fuel available. Phone 208-265-8854

Sector	Site ID	Site Name (See Note 1)	Usable at Low Pool Water Level?	Latitude and Longitude	General Suitability at Full Pool (See Note 2)	Gravel or Concrete Boat Ramp?	Field notes
2A	US2 13.49	Riley Creek Boat Ramp	No	48.158966 -116.772205	2	Concrete	Usable mid-June to end of September. USACE reports launchable at lake elevation 2,058 ft. Gate closed at night during open season; closed to vehicle access during off-season.
2A	US2 14.37	Laclede Ferry Boat Ramp	Yes	48.161332 -116.754025	1	Concrete	Ramps usable mid-June to end of September. Ramp observed usable at lake elevation 2,054 ft, but docks were unusable at this elevation.
2A	US2 16.29	Morton Slough Boat Ramp	No	48.180695 -116.714602	1	Concrete	Usable mid-June to end of September. USACE reports launchable elevation is 2,059 ft. Gate closed at night during open season; closed to vehicle access during off-season.
2B	US2 25.15	Dover Marina Boat Ramp	No	48.244936 -116.614668	1	Concrete	Usable mid-June to end of September. Contact Dover Bay at 208-263-3083. Fuel available.
2B	US95 470.21	Springy Point Boat Ramp	No	48.236959 -116.586229	2	Concrete	Usable mid-June to end of September. USACE reports launchable elevation is 2,059 ft. Gate closed at night during open season; closed to vehicle access during off-season.
3	US95 473.87	Sandpoint City Beach Boat Ramp (Sandpoint Marina Windbag Marina)	No	48.271857 -116.541449	1	Concrete	West boat ramp was observed to be usable at 2,054 ft, but east ramp was unusable. Shallow water just offshore may require jet boats or mud buddy props rather than prop-driven boats. Marinas have no fuel for servicing facilities—only boat parking.
4A / 5	SR200 41.38	Hawkin's Point Boat Ramp	No	48.282777 -116.378872	2	Gravel	Usable in mid-June to end of September. Launchable at lake elevation 2,056 ft.

Sector	Site ID	Site Name (See Note 1)	Usable at Low Pool Water Level?	Latitude and Longitude	General Suitability at Full Pool (See Note 2)	Gravel or Concrete Boat Ramp?	Field notes
5	SR200 42.59	Trestle Creek Boat Ramp	No	48.276717 -116.347099	2	Concrete	Usable in mid-June to end of September. Launchable at lake elevation 2,054 ft, but the dock is unusable. Caution: sharp rock ballast on each side of ramp. Wind from the south often makes this launch site very hazardous.
5	SR200 44.98	Hope Boat Basin Boat Ramp	Yes	48.250419 -116.315243	1	Concrete	Good access even in low water. Managed by Bonner County. This ramp is suitable for very large vessels even in low water.
5	SR200 46.25	Pringle Park Boat Ramp	No	48.239177 -116.29388<	2	Concrete and gravel	Usable to lake elevation 2054 but unusable at low pool elevation. More protection offered here than at Trestle Creek but wind can make this launch site hazardous.
5	SR200 47.38	Hope Marina Boat Ramp	No	48.229128 -116.276511	1	Concrete	Unusable below lake elevation 2,058 ft. Marina. Fuel available.
5	SR200 47.9	Beyond Hope Resort Boat Ramp	No	48.215623 -116.285212	2	Concrete	
5	SR200 49.76	Island View Boat Ramp	unlikely	48.193974 -116.285392	2	Concrete	Private ramp. Small breakwater area to shelter boat parking.
6	SR200 51.69	Clark Fork River Drift Yard Boat Ramp	Yes	48.173532 -116.231974	1	Concrete	Ramp observed usable at lake elevation 2,054 ft; however, dock is unusable. Channel flowing by the launch site may be very shallow at this elevation requiring jet boats or mud buddies. Closed from March 1 through June 15 for waterfowl nesting.

Sector	Site ID	Site Name (See Note 1)	Usable at Low Pool Water Level?	Latitude and Longitude	General Suitability at Full Pool (See Note 2)	Gravel or Concrete Boat Ramp?	Field notes
6	SR200 54.28	Johnson Creek Boat Ramp	No	48.138974 -116.228631	2	Concrete	Usable at lake elevation 2,054 ft, but the creek channel away from the launch may be impassable at this lake elevation. Very narrow boat ramps. No cell phone service in this area.
6	SR200 54.83	Derr Island Boat Ramp	No	48.141516 -116.206072	3	Gravel	Very rudimentary at intersection of Derr Island Road and Johnson Creek Road. Not usable at low water. Appears to be public land.
6	SR200 57.07	Pint Lane Boat Ramp	No	48.124568 -116.156401	3	Concrete ramp with thick dirt and gravel on it.	Private land.
6	SR200 58.77	Private Boat Ramp	No	48.103583 -116.140426	2	Concrete and gravel	No dock. Use dependent on river flows. Private land.
6	SR200 60.79	Clark Fork River Access Boat Ramp	No	48.092555 -116.097287	3	Concrete	No dock. Use dependent on river flows. Private land.
6	SR200 61.63	Cabinet Gorge Fish Hatchery Boat Ramp	No	48.086706 -116.08024<	3	Gravel	No dock. Use dependent on river flows.
6	SR200 62.95	Cabinet Gorge Dam Upstream Boat Ramp	Yes	48.087107 -116.052317	3	Gravel	Access controlled by Avista 406-847-1280. Usability dependent upon reservoir level.
7A	US 95 462.56	Sandy Beach Boat Ramp (Lake Cocolalla)	NA	48.126724 -116.624359	3	gravel	Not maintained in winter. Very rough access.
7A	US95 463.62	Lake Cocolalla Boat Ramp	NA	48.138325 -116.60323	1	Concrete	Very good dock and ramp.

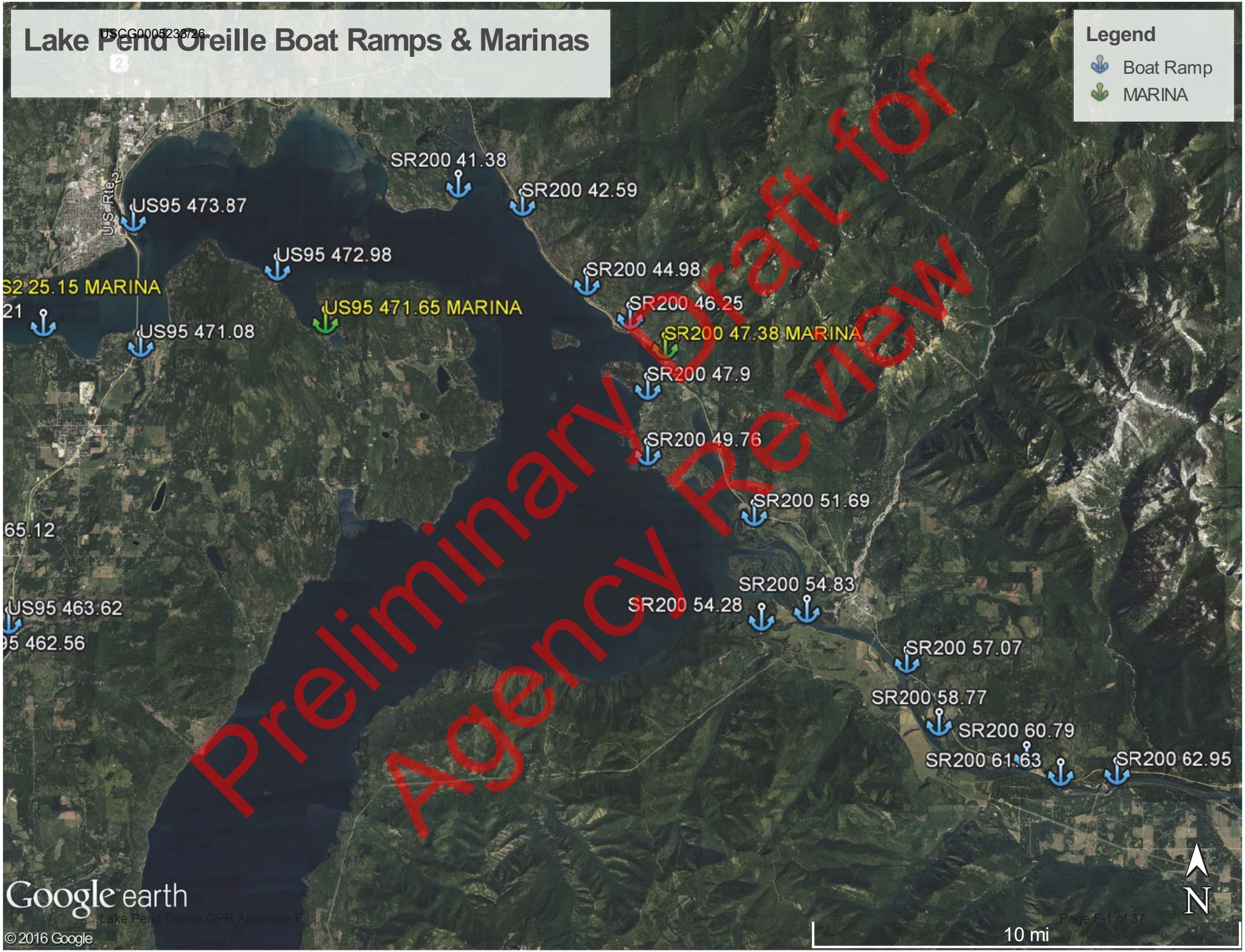
Sector	Site ID	Site Name (See Note 1)	Usable at Low Pool Water Level?	Latitude and Longitude	General Suitability at Full Pool (See Note 2)	Gravel or Concrete Boat Ramp?	Field notes
7A	US95 465.12	Round Lake Boat Ramp	NA	48.164107 -116.637451	3	Gravel	No gas-powered motors allowed on boats. Electric or self-propelled boats only. Round Lake is separate from Lake Pend Oreille and unaffected by fluctuating Lake Pend Oreille levels.
7B	US95 471.08	Bottle Bay Bridge Boat Ramp	No	48.230089 -116.537762	3	Gravel	Boat ramp may require 4WD during periods of snow or rain.
7B	US95 471.65	Bottle Bay Marina Boat Ramp	No	48.238042 -116.445367	2	Concrete	Access to boat ramp is down steep narrow road with little turn around room. Fuel available.
7B	US95 472.98	Sourdough Point Boat Ramp	No	48.255446 -116.469042	2	Concrete	Contact Water Treatment Operator: Robert Hanson 208-265-4270. This ramp goes dry early in fall. Small shallow marina has no fuel or service facilities; only boat parking. Private land.
Other	SR54 14.65	Eagle Boat Ramp, Farragut State Park	Yes	47.965026 -116.545805	1	Concrete	This is one of the best boat ramps on the lake, but it is at the southern end of the lake and a long distance from areas likely to be impacted by hazmat spills.
Other	SR54 15.57	Bayview Boat Ramp (Marina)	Yes	47.980766 -116.558464	1	Concrete	The boat launch itself doesn't have much of a staging area, but there are plenty of adjacent lots and parking areas. Fuel available at boat ramp and at the nearby MacDonald's Hudson Bay Resort.
		War Memorial	No	48.264248, -116.558066	1	Concrete	Good staging area. Photo not included in subsequent pages.

General Notes:

1. Highlighted rows indicate the marinas which have fuel service available.
2. Suitability:
Condition 1 = Suitable for large boats such as Sheriff's department or rescue boats

Condition 2 = Suitable for smaller boats such as water ski boats.
Condition 3 = Suitable only for small fishing skiffs, canoe launches, or row boats.

3. All ramps have slip, trip, fall hazards, traffic/roadway hazards, congestion, water hazards, and hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Most boat ramps are unusable from mid-October through mid-May due to low water levels.


Lake Pend Oreille Boat Ramps & Marinas
USCG0005238726
Legend
Boat Ramp
MARINA
SR200 41.38
SR200 42.59
US95 473.87
U.S. Rte 2
US95 472.98
SR200 44.98
S2 25.15 MARINA
21
US95 471.65 MARINA
SR200 46.25
US95 471.08
SR200 47.38 MARINA
SR200 47.9
SR200 49.76
SR200 51.69
65.12
SR200 54.83
SR200 54.28
US95 463.62
95 462.56
SR200 57.07
SR200 58.77
SR200 60.79
SR200 61.63
SR200 62.95
Preliminary Draft for Agency Review
Google earth
© 2016 Google
Lake Pend Oreille GPR Appendix F
Page F-1 of 37
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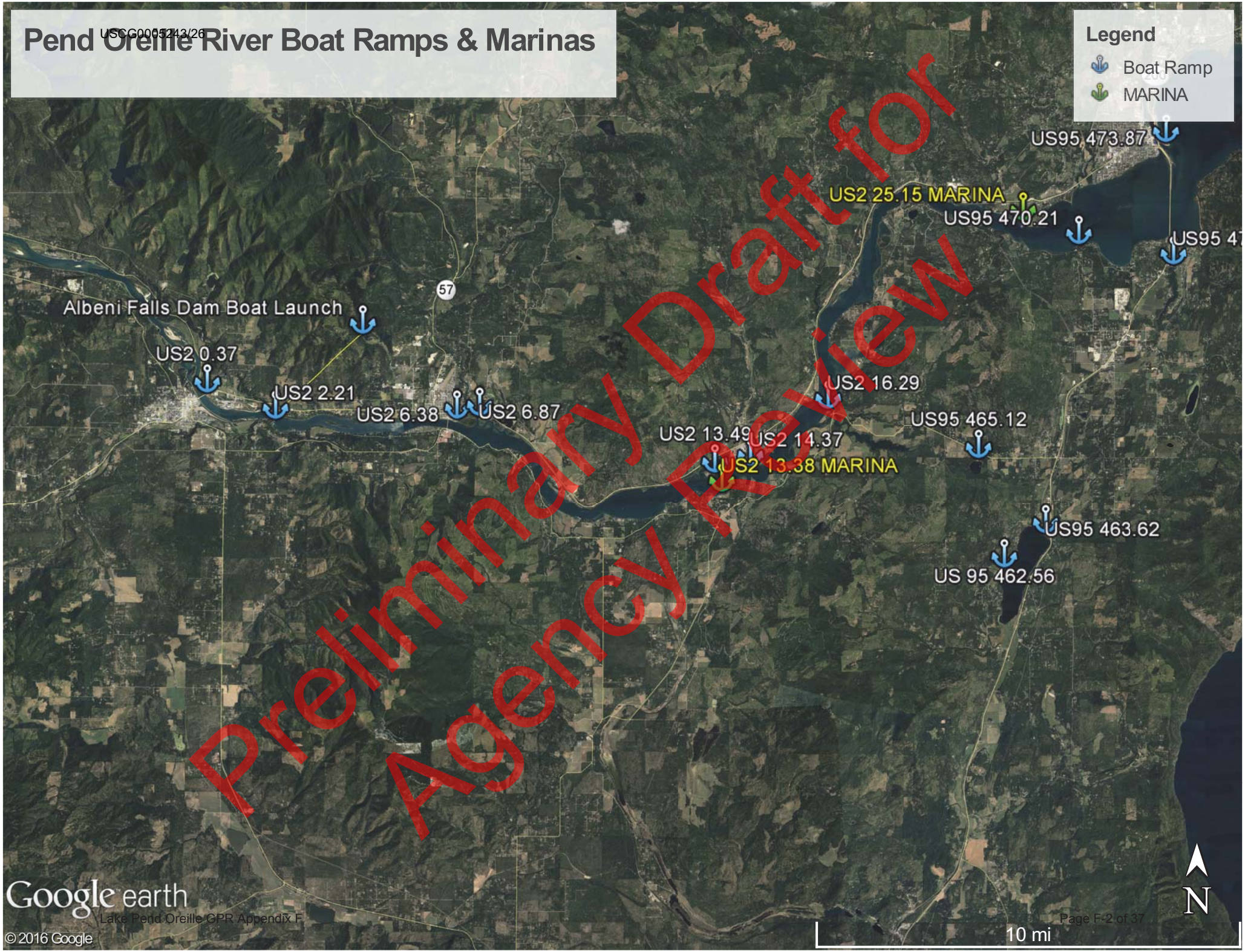
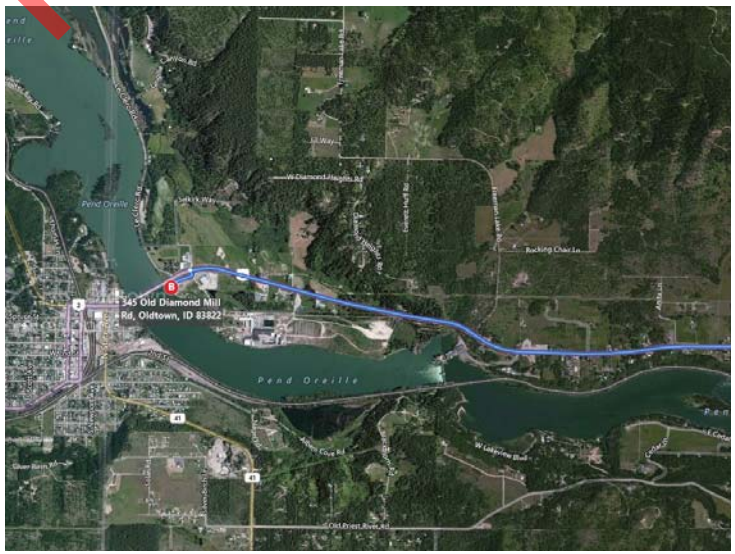
Pend Oreille River Boat Ramps & Marinas



Site Lat Long:	48.185348 -117.032438 (http://www.google.com/maps/place/48.185348,-117.032438)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Large parking area for vehicles and equipment adjacent to boat ramp. Concrete boat ramp.
Field Notes:	Large staging area. Ramp may not be usable in winter

Directions to Site

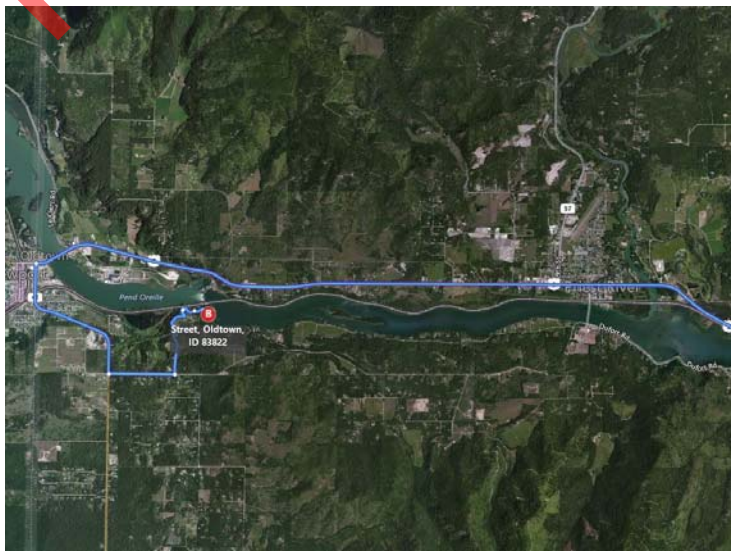
1. Head south on N Fifth Ave toward Cedar St. - 0.2 mi 2. Turn right onto US 2 W/Pine St - 27.8 mi 3. Turn left at Selkirk Way - 151 ft 4. Turn right onto Old Diamond Mill Rd - 0.3 mi



Site Lat Long:	48.176539 -116.997049 (http://www.google.com/maps/place/48.176539,-116.997049)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Large paved parking area for vehicles and equipment adjacent to boat ramp. Onsite boat ramp. Concrete boat ramp.
Field Notes:	Restricted access. Recreation area gate locked from 2200-0700. Sheriff Deputies and Campground Host have keys. Ramp may not be usable in winterRamp is generally usable from mid-June to the end of September. Launcable water elevation is 2055 ft. Availability dependant on river flows as well as elevation. Kept closed if flows at dam are greater than 40 cfs. Access gate closed at night furing

Directions to Site

1. Head south on N Fifth Ave toward Cedar St - 0.2 mi 2. Turn right onto US-2 W/Pine St - 22.2 mi 3. Turn left onto Wisconsin St - 0.4 mi 4. Turn right onto OId Priest River Rd - 5.0 mi 5. Turn right onto Blackthorne Rd - 0.8 mi 6. Turn left to stay on Blackthorne Rd - 459 ft 7. Continue straight onto Albeni Cove Rd - 0.3 mi 8. Sharp left - 161 ft 9. Albeni Cove Recreation Area



Site Lat Long:	48.176933 -116.904242 (http://www.google.com/maps/place/48.176933,-116.904242)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Large city park with large parking area and turnaround. Concrete boat ramp.
Field Notes:	Large staging area. Ramp may not be usable in winter

Directions to Site

1. Head south on N Fifth Ave toward Cedar St - 0.2 mi 2. Turn right onto US-2 W/Pine St - 22.2 mi 3. Turn left onto Wisconsin St - 0.2 mi 4. Turn left onto Railroad Ave - 394 ft 5. Railroad Avenue, Priest River, Idaho

Site Lat Long:	48.177921, -116.89271 (http://www.google.com/maps/place/48.177921,-116.89271)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Concrete parking lot, boat ramp, and grass field Concrete boat ramp.
Field Notes:	Large staging area. Ramp may not be usable in winter. Ramp usable mid June to End of September. Launchable elevation is 2058 ft. Need to verify if this area is gated at night.

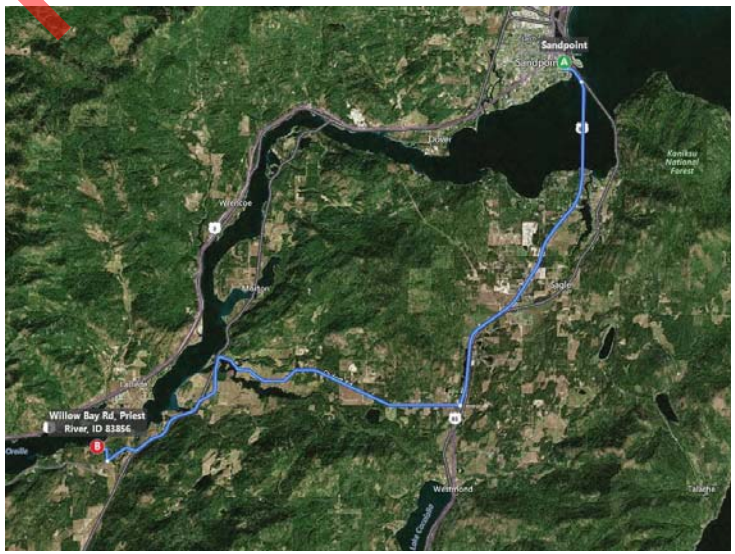
Directions to Site

1. Head south on N Fifth Ave toward Cedar St - 0.2 mi 2. Turn right onto US-2 W/Pine St - 22.2 mi 3. In the town of Priest River, ID, Turn left onto Wisconsin St- 0.2 mi 4. Turn left onto Railroad Ave 5. Priest River Park

Site Lat Long:	48.152507 -116.76856 (http://www.google.com/maps/place/48.152507,-116.76856)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Concrete Boat Ramp. $10 launch fee. Contact Resort office at 208-265-8854 Concrete boat ramp.
Field Notes:	Ramp may not be usable in winter

Directions to Site

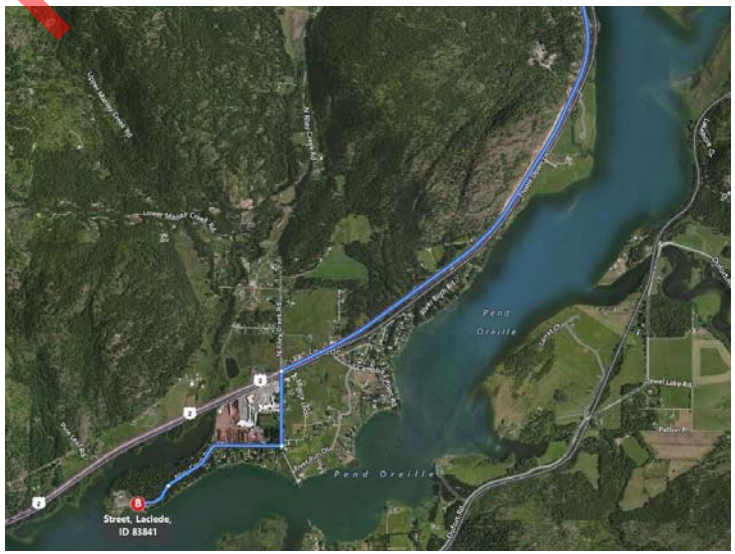
1. Take US-95 S for 8.0 mi 2. Turn right onto Dufort Rd- 9.5 mi 3. Turn right onto Willow Bay Rd and continue to destination



Site Lat Long:	48.158966 -116.772205 (http://www.google.com/maps/place/48.158966,-116.772205)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Large asphalt parking lot with large staging area. Concrete boat ramp.
Field Notes:	Usable mid-June to End of Sept. Launcahable elevation is 2058. Gate closed at night during open season; closed to vehicle access during off-season.

Directions to Site

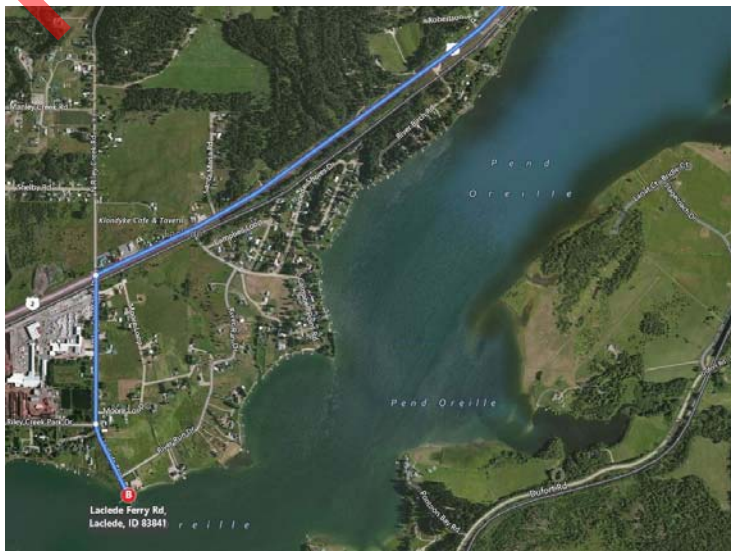
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi 2. Turn right onto US-2 W/Pine St - 13.8 mi 3. Turn left onto Riley Creek Rd - 0.4 mi 4. Turn right onto Riley Creek Park Rd - 1.0 mi 5. Riley Creek Recreation Area, Laclede, Idaho



Site Lat Long:	48.161332 -116.754025 (http://www.google.com/maps/place/48.161332,-116.754025)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Concrete with a gravel parking lot Concrete boat ramp.
Field Notes:	Ramp may not be usable in winter

Directions to Site

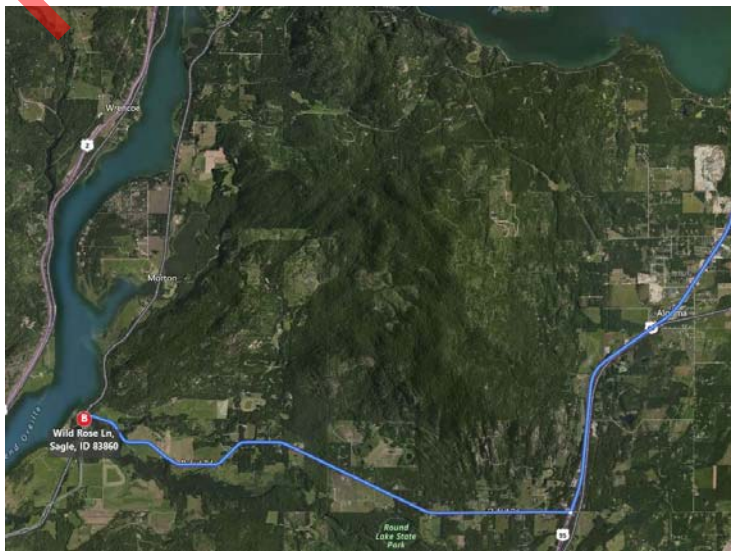
1. Head south on N Fifth Ave Toward Cedar St - 0.2 mi 2. Turn right onto US-2 W/Pine St - 13. 8 mi 3. Turn left onto Riley Creek Rd - 0.4 mi 4. Continue onto Laclede Ferry Rd - 0.2 mi 5. Laclede Ferry Road, Laclede, Idaho



Site Lat Long:	48.180695 -116.714602 (http://www.google.com/maps/place/48.180695,-116.714602)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Large parking area for vehicles and equipment adjacent to boat ramp. Concrete boat ramp.
Field Notes:	Usable mid-June to End of Sept. Launcahable elevation is 2059. Gate closed at night during open season; closed to vehicle access during off-season.

Directions to Site

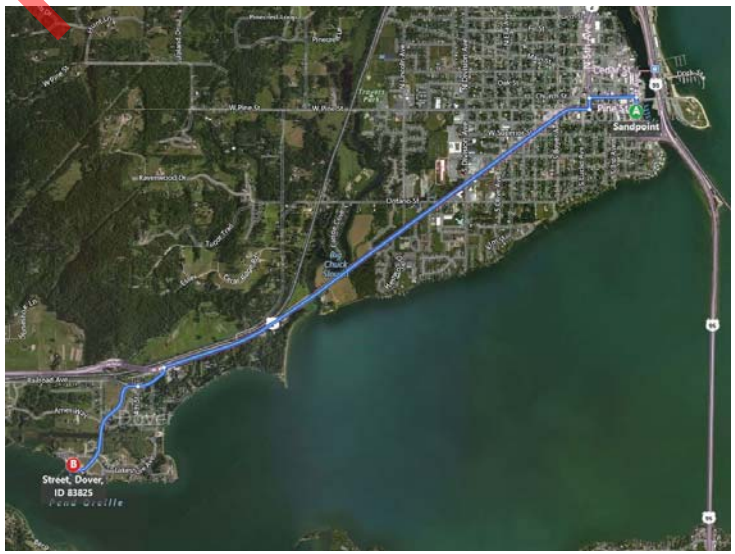
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi 2. Turn left onto Pine St - 0.3 mi 3. Turn right onto S 1st Ave - 0.2 mi 4. Turn eft onto E Superior St - 0.5 mi 5. Merge onto US-95 S - 8.0 mi 6. Turn right onto Dufort Rd - 5.7 mi 7. Turn right onto Lakeshore Dr - 52 ft 8. Turn left onto Wild Rose Ln - 194 ft 9. Wild Rose Lane, Sagle, Idaho



Site Lat Long:	48.244936 -116.614668 (http://www.google.com/maps/place/48.244936,-116.614668)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Concrete boat ramp.
Field Notes:	Contact Jenny Hickson with Dover bay at 208-263-3083. Ramp may not be usable in winter

Directions to Site

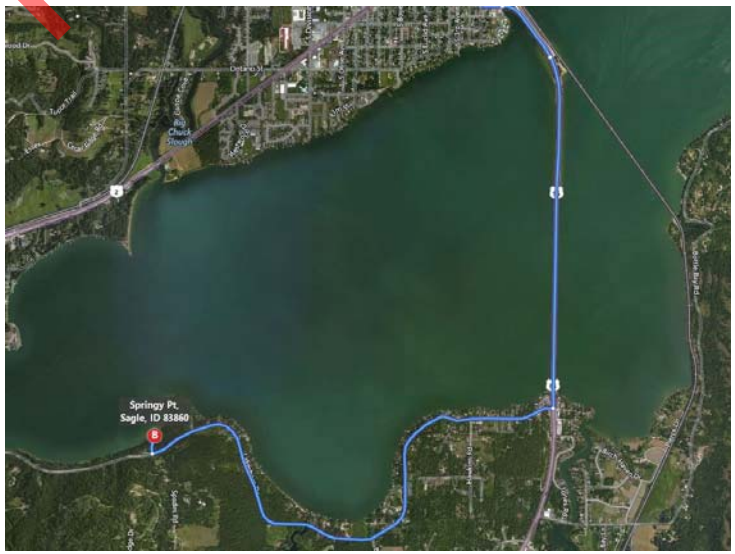
1. Head south on N Fifth Ave Toward Cedar St - 0.2 mi 2. Turn right onto US-2 W/Pine St - 2.7 mi 3. Turn left onto Old Hwy U.S. 2 - 0.2 mi 4. Continue onto Dover Bay Blvd - 0.3 mi 5. Continue onto Dover Bay Pkwy - 0.2 mi 6. Turn right onto Lakeshore Avenue - 495 ft 6. 639 Lakeshore Avenue, Dover, Idaho



Site Lat Long:	48.236959 -116.586229 (http://www.google.com/maps/place/48.236959,-116.586229)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	A large boat ramp and dock with plenty of turn around room. A large day use parking lot is a little ways down from the boat launch. Concrete boat ramp.
Field Notes:	Usable mid-June to End of Sept. Launcahable elevation is 2059. Gate closed at night during open season; closed to vehicle access during off-season.

Directions to Site

1. Head south on N Fifth Ave toward Cedar St - 0.2 mi 2. Turn left onto Pine St - 0.3 mi 3. Turn right onto S 1st Ave - 0.2 mi 4. Turn left onto E Superior St - 0.5 mi 5. Merge onto US-95 S - 1.9 mi 6. Turn right onto Lakeshore Dr - 3.1 mi 7. Turn right onto Springy Point 8. 292 ft Springy Point, Sagle, Idaho



Site Lat Long:	48.271857 -116.541449 (http://www.google.com/maps/place/48.271857,-116.541449)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	2 concrete boat ramps adjacent to large parking and staging area. Concrete boat ramp.
Field Notes:	Sanpoint City beach BL. Ramp may not be usable in winter

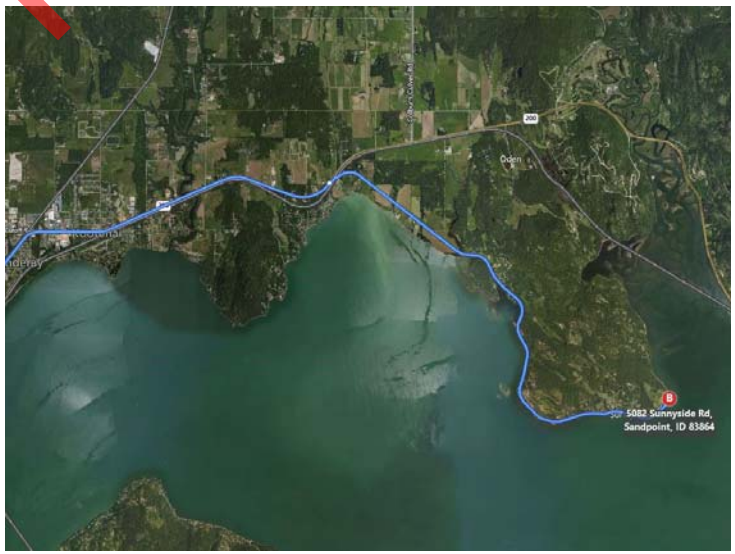
Directions to Site

1. Head south on N Fifth Ave toward Cedar St - 171 ft 2. Turn left onto Pine St 0.3 mi 3. Pine St turns left and becomes N First Ave 246 ft 4. Turn right onto Bridge St 0.2 mi 5. Turn right

Site Lat Long:	48.282777 -116.378872 (http://www.google.com/maps/place/48.282777,-116.378872)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Gravel ramp with adequate parking. Idaho Fish & Game site. Concrete dock with no cleats or other tie-off points. Gravel boat ramp.
Field Notes:	Medium sized staging area. Usable in mid-June to end of sept. Launchable elevation is 2056 ft.

Directions to Site

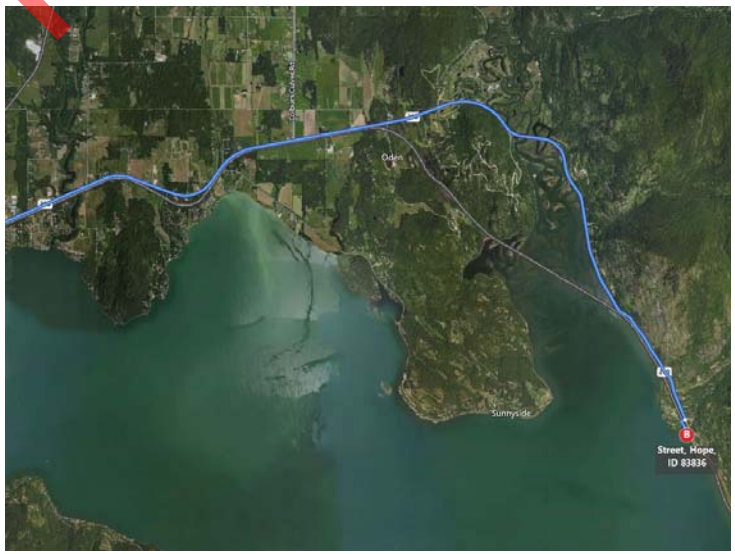
1. Continue onto ID-200 for 6.4 mi 2. Turn right onto Sunnyside Cut Off Rd for 1.2 mi 3. Turn left onto Sunnyside Rd for 2.1 mi 4. Slight right to stay on Sunnyside Rd 5. Destinations will be on the right



Site Lat Long:	48.276717 -116.347099 (http://www.google.com/maps/place/48.276717,-116.347099)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Concrete ramp with large parking area. Likely unusable during winter months when lake is low. Concrete boat ramp.
Field Notes:	Usable in mid-June to end of sept. Launchable elevation is 2054 ft

Directions to Site

1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi 2. Continue onto ID-200 - 17.5 mi 3. Trestle Creek Boat Launch



Site Lat Long:	48.250419 -116.315243 (http://www.google.com/maps/place/48.250419,-116.315243)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Concrete ramp. Concrete boat ramp.
Field Notes:	Good access even in low water. Managed by Bonner County. Ramp may not be usable in winter

Directions to Site

1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi 2. Continue onto ID-200 - 14.8 mi 3. Turn left onto W Main St - 0.8 mi 4. Continue onto Lake - 249 ft 5. Turn left onto E Main St - 7 ft 6. 199 East Main Street, Hope, Idaho

Site Lat Long:	48.239177 -116.29388 (http://www.google.com/maps/place/48.239177,-116.29388)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Concrete and gravel boat ramps. Concrete boat ramp.
Field Notes:	Site likely not usable during winter when lake is low. Managed by ID Fish and Game. Ramp may not be usable in winter.

Directions to Site

1. Take ID-200 for 16.4 mi 2. Destination will be on the right as one passes through East Hope

Site Lat Long:	48.229128 -116.276511 (http://www.google.com/maps/place/48.229128,-116.276511)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Concrete ramp near Floating Restaurant. Contact 208-264-5106. Likely not usable during winter when lake is low. Concrete boat ramp.
Field Notes:	Ramp may not be usable in winter

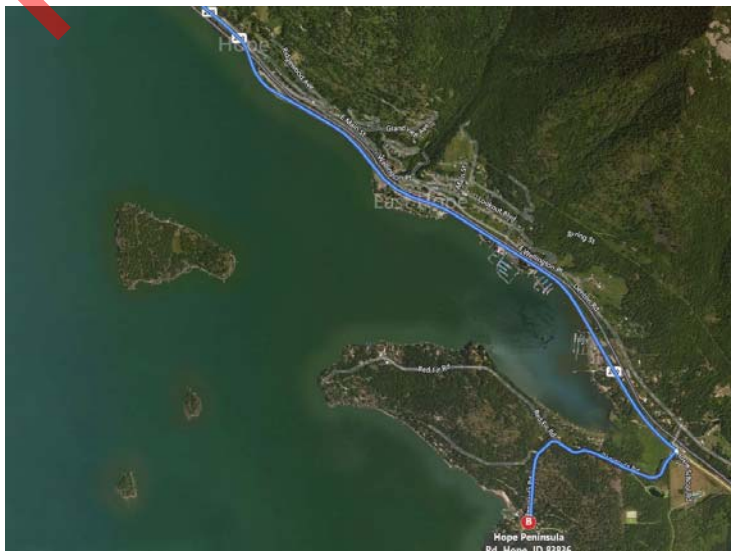
Directions to Site

1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi 2. Continue onto ID-200 - 17.5 mi 3. Hope Marina BL, Hope, Idaho

Site Lat Long:	48.215623 -116.285212 (http://www.google.com/maps/place/48.215623,-116.285212)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Concrete. Concrete boat ramp.
Field Notes:	Possibility that the ramp could be too shallow during winter months. Mooring fee charged for marina use. Contact 208-264-5251 for resort marina staff. Likely not usable during winter when lake is low. Ramp may not be usable in winter

Directions to Site

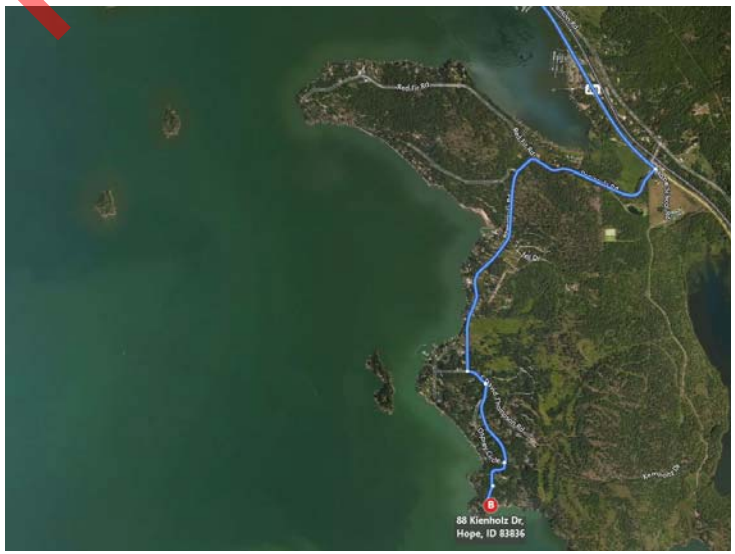
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi 2. Continue onto ID-200 - 18.3 mi 3. Turn right onto Hope Peninsula Rd/NF-1002/Peninsula Rd - 0.8 mi 4. Turn left onto Hope Peninsula Rd/Peninsula Rd - 0.6 mi 1243 Peninsula Road, Hope, Idaho



Site Lat Long:	48.193974 -116.285392 (http://www.google.com/maps/place/48.193974,-116.285392)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	A large paved boat launch, though no visible parking. Looked like it was an extension to a private drive way. Concrete boat ramp.
Field Notes:	Ramp may not be usable in winter

Directions to Site

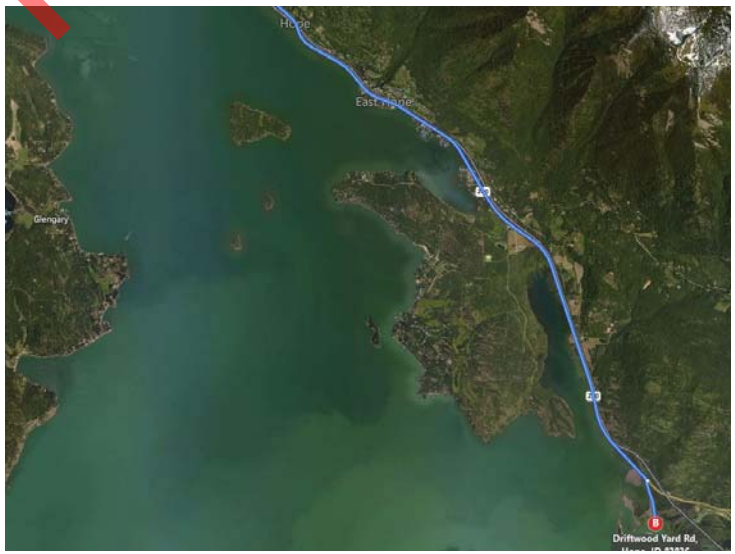
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi 2. Continue onto ID-200 - 18.3 mi 3. Turn right onto Hope Peninsula Rd/NF-1002/Peninsula Rd - 0.8 mi 4. Turn left onto Hope Peninsula Rd/Peninsula Rd - 1.3 mi 5. Turn left onto E David Thompson Rd - 0.1 mi 6. Turn right onto Osprey Cir - 0.5 mi 7. Slight left onto Kienholz Dr - 266 ft 8. Kienholz Drive, Hope, Idaho



Site Lat Long:	48.173532 -116.231974 (http://www.google.com/maps/place/48.173532,-116.231974)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Year-round concrete ramp. Large parking area for vehicles and equipment adjacent to ramp. Concrete boat ramp.
Field Notes:	Concrete ramp. Large parking area for vehicles and equipment adjacent to ramp. Ramp usable at 2058 ft. Access closed during goose nexting season.

Directions to Site

1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi 2. Continue onto ID-200 - 2.7 mi 3. Turn right onto Kootenai Bay Rd - 387 ft 4. Turn left onto Whiskey Jack Rd - 0.8 mi



Site Lat Long:	48.138974 -116.228631 (http://www.google.com/maps/place/48.138974,-116.228631)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Twin boat launches parallel each other, both launches are rather narrow, so larger boats and trailers may be a tight squeeze. Boat launch is accompanied by a large parking and staging area. Concrete boat ramp.
Field Notes:	Twin boat launches parallel each other, both launches are rather narrow, so larger boats and trailers may be a tight squeeze. Boat launch is accompanied by a large parking and staging area. Concrete boat ramp. Launchable elevation is 2054 ft.

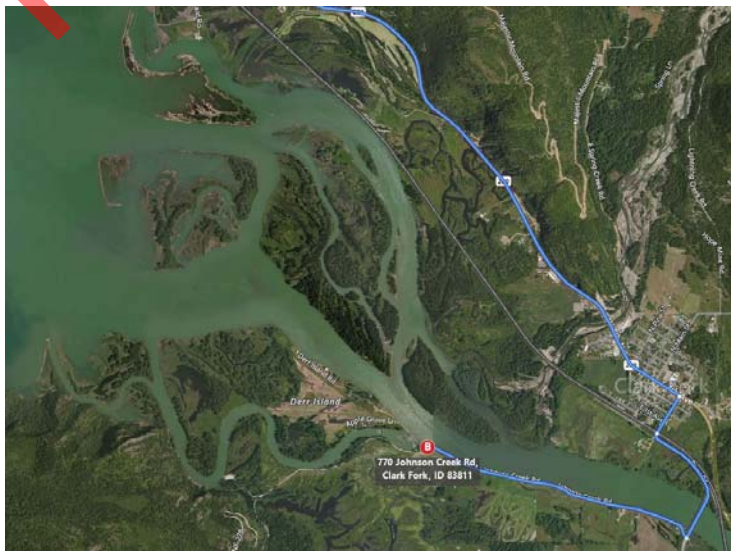
Directions to Site

1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi 2. Continue onto ID-200 - 25.4 mi 3. Turn right onto Stephen St - 0.3 mi 4. Turn left onto S River Rd - 0.7 mi 5. Continue onto Johnson Creek Rd - 295 ft 6. Turn right to stay on Johnson Creek Rd - 9.5 mi 7. Turn right onto Johnson Creek Rd/NF-278 - 5.0 mi 8. Turn left to stay on Johnson Creek Rd/NF-278 - 3.4 mi 9. Johnson Creek Boat Launch

Site Lat Long:	48.141516 -116.206072 (http://www.google.com/maps/place/48.141516,-116.206072)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	A gravel boat launch off of a county road. There is extremely limited parking. Gravel boat ramp.
Field Notes:	This looks to be a public boat launch, and differs from the Derr Island Private BL. If it is private it is owned by the Delta Shore Estates. Ramp may not be usable in winter

Directions to Site

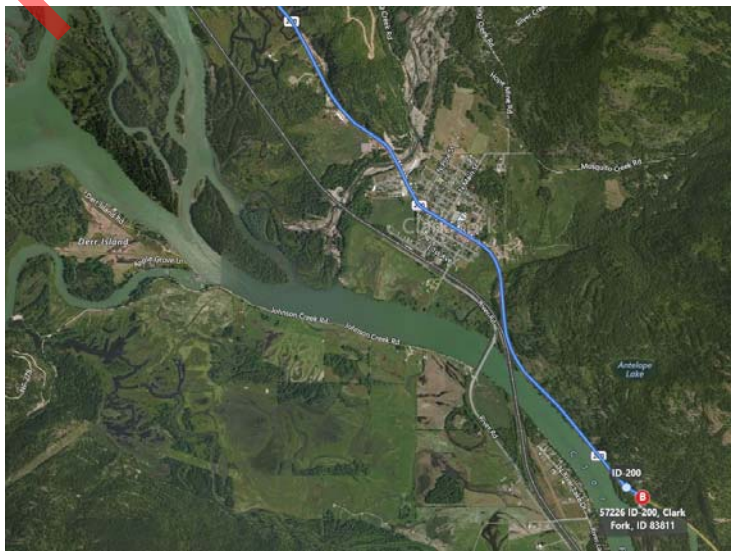
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi 2. Continue onto ID-200 - 25.4 mi
3. Turn right onto Stephen St - 0.3 mi 4. Turn left onto S River Rd - 0.7 mi 5. Continue onto Johnson Creek Rd - 295 ft 6. Turn right to stay on Johnson Creek Rd - 1.6 mi 7. Turn right onto Apple Grove Ln - 0.2 mi 8. Continue straight onto Derr Island Rd - 0.3 mi



Site Lat Long:	48.124568 -116.156401 (http://www.google.com/maps/place/48.124568,-116.156401)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Concrete with thick dirt on it. Concrete boat ramp.
Field Notes:	Locked Gate. Ramp may not be usable in winter

Directions to Site

1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi 2. Continue onto ID-200 - 25.5 mi 3. 57209 Idaho 200



Site Lat Long:	48.103583 -116.140426 (http://www.google.com/maps/place/48.103583,-116.140426)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Gravel/concrete Concrete boat ramp.
Field Notes:	Private contact Royce Anderson (208) 266-1177. Ramp may not be usable in winter

Directions to Site

1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi 2. Continue onto ID-200 - 28.7 mi 3. Turn right when possible for river access 4. Private Boat Launch

Site Lat Long:	48.092555 -116.097287 (http://www.google.com/maps/place/48.092555,-116.097287)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Gravel parking lot on lookers right Concrete boat ramp.
Field Notes:	Boat launch is locked. Contact Avista for access 406-847-1280. Ramp may not be usable in winter

Directions to Site

1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi 2. Continue onto ID-200 - 27.8 mi 3. 60238 Idaho 200, Clark Fork, Idaho

Site Lat Long:	48.086706 -116.08024 (http://www.google.com/maps/place/48.086706,-116.08024)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Large parking and staging area on fish hatchery road adjacent to boat ramp. Gravel boat rapm.
Field Notes:	Contact fish hatchery for ramp access, 406-847-1282. Ramp may not be usable in winter

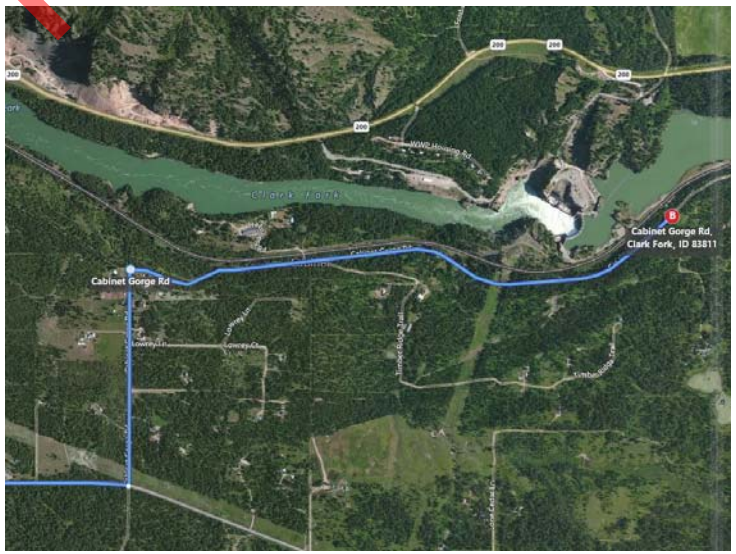
Directions to Site

1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi 2. Continue onto ID-200 - 25.4 mi 3. Turn right onto Stephen St - 0.3 mi 4. Turn left onto S River Rd - 0.7 mi 5. Continue onto Johnson Creek Rd - 295 ft 6. Continue straight onto River Rd - 6.5 mi 7. Turn left onto Cabinet Gorge Rd - 0.6 mi 8. Turn right to stay on Cabinet Gorge Rd - 0.4 mi 9. Cabinet Gorge Hatchery

Site Lat Long:	48.087107 -116.052317 (http://www.google.com/maps/place/48.087107,-116.052317)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Equipment and vehicle parking area adjacent to rail crossing. Large staging area onsite. Gravel boat ramp.
Field Notes:	Locked gate on road controlled by Avista 406-847-1280.Ramp may not be usable in winter

Directions to Site

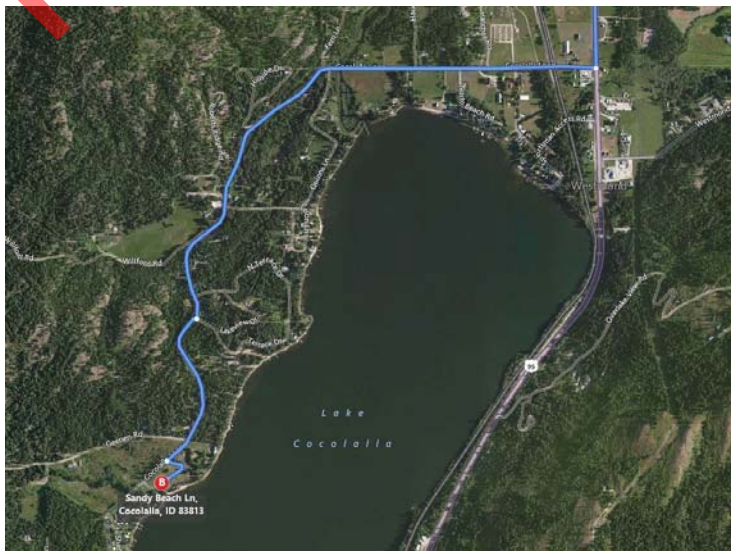
1. Head north on US-2 E/N Fifth Ave toward Alder St - 1.0 mi 2. Continue onto ID-200 - 25.4 mi 3. Turn right onto Stephen St - 0.3 mi 4. Turn left onto S River Rd - 0.7 mi 5. Continue onto Johnson Creek Rd - 295 ft 6. Continue straight onto River Rd - 6.5 mi 7. Turn left onto Cabinet Gorge Rd - 0.6 mi 8. Turn right to stay on Cabinet Gorge Rd - 0.7 mi 9. Cabinet Gorge Dam



Site Lat Long:	48.126724 -116.624359 (http://www.google.com/maps/place/48.126724,-116.624359)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Posted no trespassing. No contact information on sign. Ramp size and quality not verified or documented. Unknown ramp type.
Field Notes:	Ramp may not be usable in winter

Directions to Site

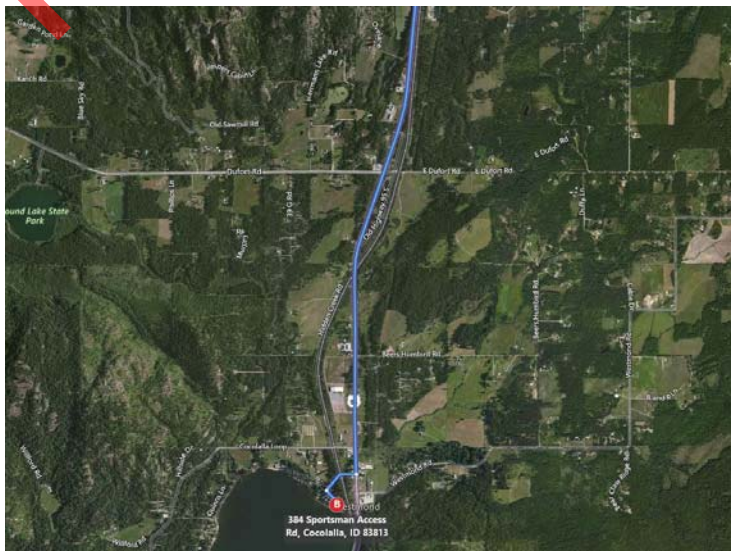
1. Take US-95 S for 9.5 mi 2. Turn right onto Cocolalla Loop Rd 2.0 mi 3. Turn left at boat launch



Site Lat Long:	48.138325 -116.60323 (http://www.google.com/maps/place/48.138325,-116.60323)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Concrete ramp with large parking area for vehicles and equipment. Concrete boat ramp.
Field Notes:	Ramp may not be usable in winter

Directions to Site

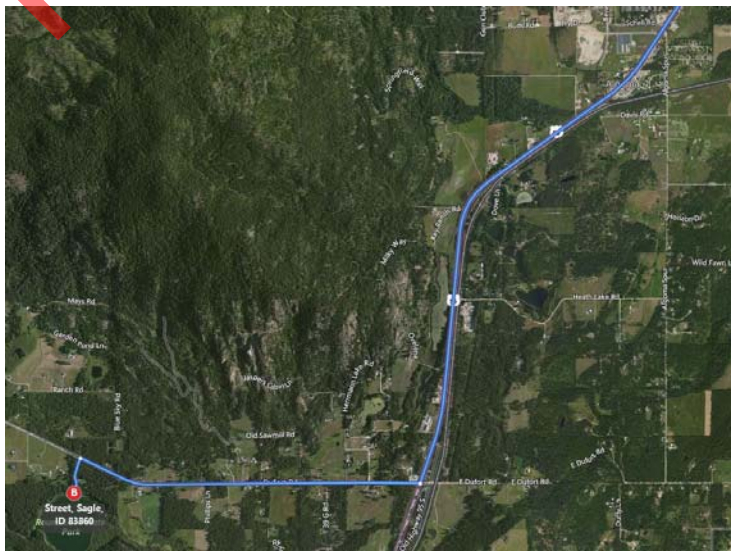
1. Head south on N Fifth Ave Toward Cedar St - 0.2 mi 2. Turn left onto Pine St - 0.3 mi 3. Turn right onto S 1st Ave - 0.2 mi 4. Turn left onto E Superior St - 0.5 mi 5. Merge onto US - 95 S - 9.6 mi 6. Turn right onto Sportsman Access Rd - 0.2 mi 7. Turn left to stay on Sportsman Access Rd - 203 ft 8. 287 Sportsman Access Rd, Cocolalla, Idaho



Site Lat Long:	48.164107 -116.637451 (http://www.google.com/maps/place/48.164107,-116.637451)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Large gravel ramp with adjacent parking area. Gravel boat ramp.
Field Notes:	No gas powered motors allowed on boats. Electric or self propelled boats only. Ramp may not be usable in winter

Directions to Site

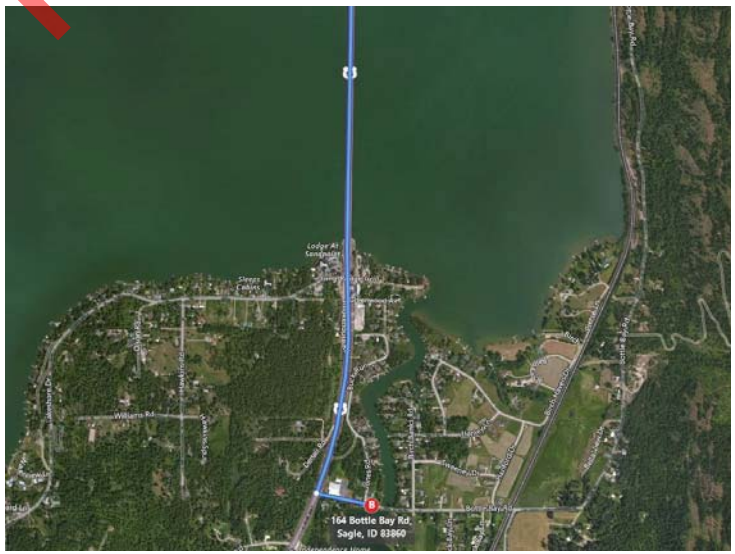
1. Head south on N Fifth Ave Toward Cedar St - 0.2 mi 2. Turn left onto Pine St - 0.3 mi 3. Turn right onto S 1st Ave - 0.2 mi 4. Turn left onto E Superior St - 0.5 mi 5. Merge onto US - 95 S - 8.0 mi 6. Turn right onto Dufort Rd - 1.9 mi 7. Turn left toward Mirror Lake Rd - 0.1 mi 8. Continue onto Mirror Lake Rd - 213 ft 9. Mirror Lake Rd, Westmond, Idaho



Site Lat Long:	48.230089 -116.537762 (http://www.google.com/maps/place/48.230089,-116.537762)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Limited parking along road on narrow shoulder with adjacent gravel boat ramp. Boat ramp best suited for smaller sized boats and trailers. Gravel boat ramp.
Field Notes:	Boat ramp may require 4WD during periods of snow or rain. Ramp may not be usable in winter.

Directions to Site

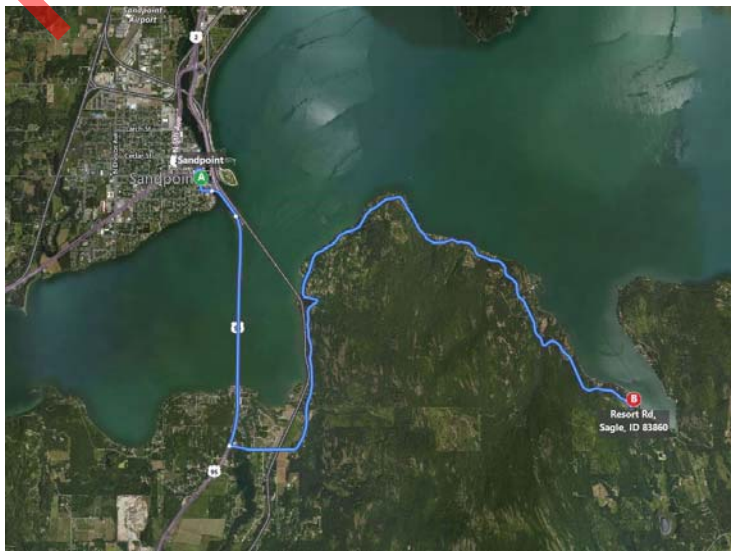
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi 2. Turn left onto Pine St - 0.3 mi 3. Turn right onto S 1st Ave - 0.2 mi 4. Turn left onto E Superior St - 0.5 mi 5. Merge onto US-95 S - 2.5 mi 6. Turn left onto Bottle Bay Rd - 0.1 mi 7. 140 Bottle Bay Road, Sagle, Idaho



Site Lat Long:	48.238042 -116.445367 (http://www.google.com/maps/place/48.238042,-116.445367)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Large, well taken care of, boat ramp, though it has no parking area. Concrete boat ramp.
Field Notes:	Ramp may not be usable in winter

Directions to Site

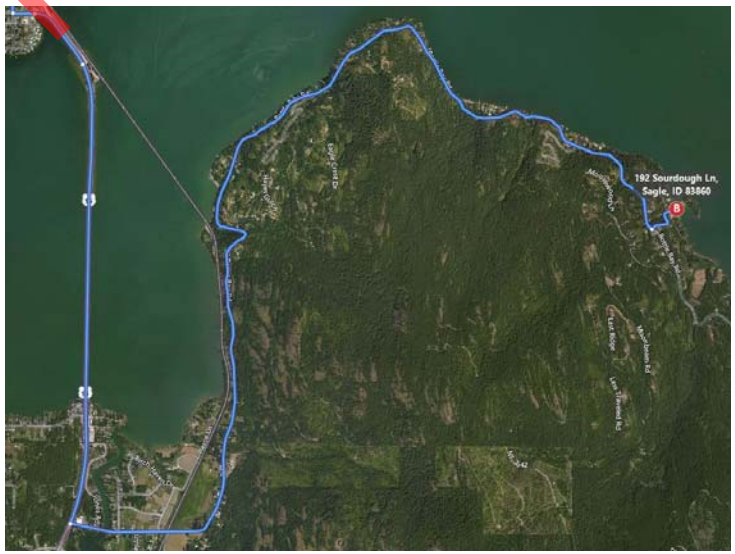
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi 2. Turn left onto Pine St - 0.3 mi 3. Turn right onto S 1st Ave - 0.2 mi 4. Turn left onto E Superior St - 0.5 mi 5. Merge onto US - 95 S - 2.5 mi 6. Turn left onto Bottle Bay Rd - 8.1 mi 7. Turn left onto Resort Rd - 0.1 mi 8. 125 Resort Road, Sagle, Idaho



Site Lat Long:	48.255446 -116.469042 (http://www.google.com/maps/place/48.255446,-116.469042)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Large staging and parking area Concrete boat ramp.
Field Notes:	Contact Water Treatment Operator: Robert Hanson 208-265-4270. Ramp may not be usable in winter

Directions to Site

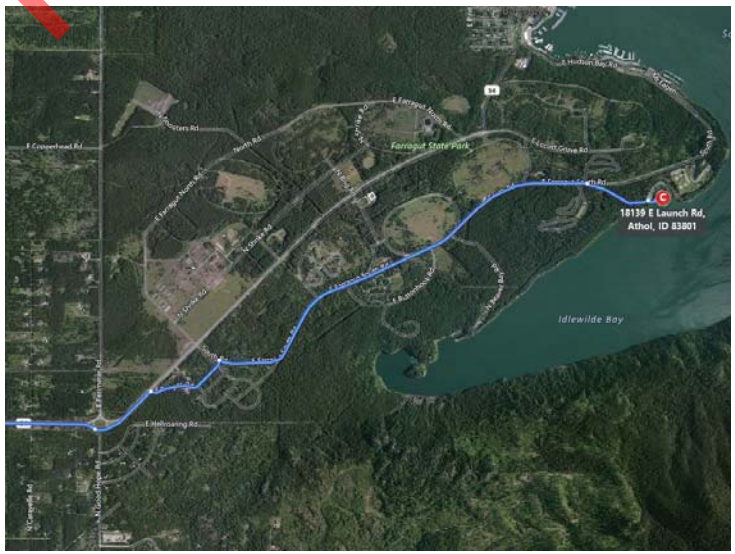
1. Head south on N Fifth Ave toward Cedar St - 0.2 mi 2. Turn left onto Pine St - 0.3 mi 3. Turn right onto S 1st Ave - 0.2 mi 4. Turn left onto E Superior St - 0.5 mi 5. Merge onto US - 95 S - 2.5 mi 6. Turn left onto Bottle Bay Rd - 6.2 mi 7. Turn left onto Sourdough Ln - 0.1 mi 8. Turn right at the 1st cross street onto E Shoreline Ln - 69 ft 9. 22 East Shoreline Lane, Sagle, Idaho



Site Lat Long:	47.965026 -116.545805 (http://www.google.com/maps/place/47.965026,-116.545805)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Large boat ramp and staging area, plenty of room for parking. Concrete boat ramp.
Field Notes:	Located on Farragut State Park, $10 per vehicle out-of-state fee ($5 if you're an Idaho resident). Ramp may not be usable in winter

Directions to Site

1. Tale US-95 S for 18 mi 2. Turn left onto Bayview Rd- 3.7 mi 3. Continue onto E Careywood Rd- 0.7 mi 4. Turn right onto N Good Hope Rd/E Perimeter Rd- 2.4 mi 5. At the traffic circle, take the 3rd exit onto ID-54 E- 2.8 mi 6. Slight right onto Blackwell Cir Dr/Locust Grove Rd-Park Entrance, continue to follow Blackwell Cir Dr- 0.6 mi 7. Turn right toward Launch Rd- 0.2 mi 8. Slight left onto Launch Rd



Site Lat Long:	47.980766 -116.558464 (http://www.google.com/maps/place/47.980766,-116.558464)
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Large boat launch and staging area in the town of Bayview. Concrete boat ramp.
Field Notes:	The boat launch it self doesn't have much of a staging area, but there are plenty of adjacent lots/parking area that would work just fine. Due to Farragut State park there is a $10 out-of-state fee to launch a boat from here ($5 if you're an Idaho resident). Ramp may not be usable in winter

Directions to Site

1. Tale US-95 S for 18 mi 2. Turn left onto Bayview Rd- 3.7 mi 3. Continue onto E Careywood Rd- 0.7 mi 4. Continue onto E Perimeter Rd- 2.4 mi 5. Slight right onto N Main Ave- 0.2 mi 6. Turn left onto Lakeside Ave- 230 ft 7. Turn right onto E Boileaus G Dock

Sandpoint Vets Memorial

Back to boat ramp map

Site Lat Long:	48.264697 -116.558078
Strategy Objective:	Boat Launch. Access only.
Site Safety Note:	Slip, trip, fall hazards; traffic/roadway hazards, congestion, water hazards, hazards from spilled material. Expect extreme winter conditions from middle of November to middle of March. Complete a task specific Job Safety Analysis
Staging Area:	Large parking area for vehicles and equipment adjacent to boat ramp. Concrete boat ramp.
Field Notes:	Ramp is unusable at low pool level. Photo unavailable.

Directions to Site: 1. Head north on S 1st Ave toward Lake St. 2. Turn left onto Lake St. 3. Turn left onto Euclid Ave. 4. Turn right onto Lakeview Blvd. 5. Turn left into parking lot.

Appendix G Other Geographic Response Plans—Rosetta Stone

Site ID & Highway Milepost	Railroad Milepost	Site Name	DEQ Approach	Corresponding BNSF Strategy	BNSF Approach	MRL Site Designator	MRL Site Name	MRL Strategy
Sector 1A West Pend Oreille								
US2 0.30	POVA 1430.86	Oldtown Boat Launch	Contaminant Collection	POVA 1430.8 / 0.3	Collection and Recovery	–	–	–
US2 2.0	POVA 1428.59	Albeni Falls Dam	Contaminant Collection	POVA 1428.7 / 2.0	Notification Only	LPO1_29.23	Albeni Falls Dam	Collection and Recovery
US2 2.21	POVA 1428.66	Albeni Cove Recreation Area	Contaminant Collection	POVA 1428.6 / 2.2	Collection and Recovery	–	–	–
Sector 1B West Pend Oreille Fire District								
US2 5.73	POVA 1424.79	10th St Surface Water	Exclusion	–	–	–	–	–
US2 6.2	POVA 1424.31	Priest River-South	Contaminant Collection	POVA 1421.6 / 6.3	Collection and Recovery	LPO1_20.2	Priest River Slough #1	Exclusion
US2 6.38	POVA 1424.13	Priest River City Water Intake	Exclusion	POVA 1424.1 / 6.5	Deflection	LPO1_24.86	Priest River Boat Ramp	Collection and Recovery; Does Not Address City Water Intake
US2 6.87	POVA 1423.64	Priest River Mouth	Exclusion	–	–	LPO1_24.52	Priest River Trestle	Exclusion
US2 7.59	POVA 1423.0	Priest River Mouth Slough	Exclusion; Very Long Booms	–	–	LPO1_23.55	Priest River Slough #3	Exclusion
US2 10.19	POVA 1420.46	Carey Creek Game Management Area	Deflection	–	–	LPO1_21.68	Priest River Slough #2 (This is incorrectly named)	Exclusion

Site ID & Highway Milepost	Railroad Milepost	Site Name	DEQ Approach	Corresponding BNSF Strategy	BNSF Approach	MRL Site Designator	MRL Site Name	MRL Strategy
US2 10.52	POVA 1420.12	Baylor Lane Slough	Exclusion	–	–	LPO1_20.7	Priest River Slough #1 (This is incorrectly named)	Exclusion
Sector 2 Westside Fire								
US2 13.3	POVA 1417.28	Riley Creek Slough	Contaminant Collection	POVA 1417.1 / 13.4	Collection and Recovery	LPO1_18	Riley Creek	Exclusion
US2 13.49	POVA 1417.06	Riley Creek Recreation Area	Contaminant Collection	–	–	–	–	–
US2 14.37	POVA 1416.24	Laclede Public Water Supply	Exclusion	POVA 1416.4 / 14.3	Deflection	–	–	–
US2 16.06	UP Spokane Railroad 62.78	Cocolalla Creek Mouth	Exclusion	UP MP 63.1 HMP 16.1 Dufort Road Bridge	Collection/Recovery Location Is Further Inland than DEQ GRP or MRL GRP	LPO1_14.82	Morton Slough - error; this is misnamed in the MRL GRP Correct geographical name is Cocolalla Creek Mouth	Deflection
US2 16.29	UP Spokane Railroad 63.14	Morton Slough Boat Launch	Contaminant Collection	POVA 63.2 / 16.2	Collection and Recovery	–	–	–
–	–	–	–	–	–	LPO1_14.13	Laclede Slough	Exclusion
US2 17.12	POVA 1413.35	Morton Slough Game Management Area	Exclusion	–	–	LPO1_13.48	Upper Morton Slough	Exclusion

Site ID & Highway Milepost	Railroad Milepost	Site Name	DEQ Approach	Corresponding BNSF Strategy	BNSF Approach	MRL Site Designator	MRL Site Name	MRL Strategy
–	–	–	–	–	–	LPO1_12.46	Johnson Creek Slough	Exclusion
–	–	–	–	–	–	LPO1_11.06	Gypsy Bay	Exclusion
US2 20.71	POVA 1409.86	Bay near Muskrat lake	Exclusion	–	–	LPO1_9.66	Bay Near Muskrat Lake	Exclusion
–	–	–	–	–	–	LPO1_9.28	Smith Creek Slough	Exclusion
–	–	–	–	–	–	LPO1_8.01	Pend Oreille Union Pacific Railroad Trestle	Collection and Recovery
–	–	–	–	–	–	LPO1_8.02	Snug Harbor Slough	Exclusion
–	–	–	–	–	–	LPO1_6.73	Hornby Creek Mouth	Deflection
US2 24.89	BNSF Newport 71.01	Dover Bay Slough	Exclusion	–	–	LPO1_6.12	Dover Slough	Exclusion
–	–	–	–	–	–	LPO1_5.65	Springy Point Slough	Exclusion
US2 25.16	BNSF Newport 71.31	Dover Bay Marina	Contaminant Collection	BNSF 71.4 / 25.2	Collection and Recovery	–	–	–
US2 25.63	BNSF Newport 71.87	Dover Bay Water Intake	Exclusion	BNSF 71.7 / 25.5	Deflection	LPO1_5.3	Dover water intake	Deflection
Sector 3A Sandpoint								
US2 26.68	BNSF Newport 72.79	Chuck Slough	Collection and Recovery	–	–	LPO1_4.22	Chuck Slough	Exclusion

Site ID & Highway Milepost	Railroad Milepost	Site Name	DEQ Approach	Corresponding BNSF Strategy	BNSF Approach	MRL Site Designator	MRL Site Name	MRL Strategy
US2 27.07	BNSF Newport 73.29	Ontario St West	Collection and Recovery	BNSF 73.3 / 27.1	Collection and Recovery	–	–	–
US2 27.17	BNSF Newport 73.33	Ontario St East	Contaminant Collection	BNSF 73.3 / 27.1	Collection and Recovery	–	–	–
US2 27.74	BNSF Spokane 3.32	S. Ella Ave Culvert	Collection and Recovery	–	–	–	–	–
Sector 3B Sandpoint								
US2 28.02	BNSF Spokane 3.33	Memorial Park Culvert	Collection and Recovery	–	–	–	–	–
US2 28.17	BNSF Spokane 3.35	S Euclid Ave Culvert	Collection and Recovery	–	–	–	–	–
US2 28.31	BNSF Spokane 3.37	S 4th Ave Culvert	Collection and Recovery	–	–	–	–	–
US2 28.36	BNSF Spokane 3.38	S 3rd Ave Culvert	Collection and Recovery	–	–	–	–	–
US95 472.85	BNSF Spokane 4.28	Long Bridge	Collection and Recovery	BNSF 4.3 / 472.8	Collection and Recovery	LPO1_1.37	Sandpoint	Collection and Recovery Between RR and Highway Longbridges; Very Confusing Strategy That Won't Work

Site ID & Highway Milepost	Railroad Milepost	Site Name	DEQ Approach	Corresponding BNSF Strategy	BNSF Approach	MRL Site Designator	MRL Site Name	MRL Strategy
US95 473.84	BNSF Spokane 3.4	Sandpoint Public Works Water Intake	Exclusion	BNSF 3.2 / 474.3	Exclusion	–	–	–
US95 473.9	BNSF Spokane 3.17	Sandpoint City Beach and Marina	Collection and Recovery	BNSF 3.1 / 474.4	collection and recovery	LPO1_0.14	Sandpoint City Beach	Deflection
US95 473.91	BNSF Spokane 3.29	Mouth of Sand Creek	Collection and Recovery	–	–	–	–	–
US95 474.31	BNSF Spokane 3.13	Lower Sand Creek	Collection and Recovery	–	–	LPO1_0.2	Sand Creek	Collection and Recovery
Sector 3C Sandpoint								
US95 474.41	BNSF Spokane 3.02	E. Cedar St Culvert # 1	Collection and Recovery	–	–	–	–	–
US95 474.45	BNSF Spokane 2.98	E. Cedar St Culvert # 2	Collection and Recovery	–	–	–	–	–
US95 474.46	BNSF Spokane 2.97	E. Cedar St Culvert # 3	Collection and Recovery	–	–	–	–	–
US95 474.78	BNSF Spokane 2.9	Alder St Culvert	Collection and Recovery	–	–	–	–	–
US95 475.09	BNSF Kootenai 1402.96	N. 5th Ave Surface Water Outflow #1	Collection and Recovery	–	–	–	–	–
Sector 3D Sandpoint								
US95 475.21	BNSF Kootenai	N. 5th Ave Surface Water	Collection and Recovery	–	–	–	–	–

Site ID & Highway Milepost	Railroad Milepost	Site Name	DEQ Approach	Corresponding BNSF Strategy	BNSF Approach	MRL Site Designator	MRL Site Name	MRL Strategy
	1402.75	Outflow #2						
US95 475.22	BNSF Kootenai 1402.74	N. 5th Ave Surface Water Outflow #3	Collection and Recovery	–	–	–	–	–
US95 475.3	BNSF Kootenai 1402.66	Sand Creek Trestle	Collection and Recovery	–	–	MRL4z_118.27	Sand Creek Trestle	Collection and Recovery
US95 475.32	BNSF Kootenai 1402.63	Visitor Center Culvert #1	Collection and Recovery	–	–	–	–	–
US95 475.34	BNSF Kootenai 1402.6	Visitor Center Culvert #2	Collection and Recovery	–	–	–	–	–
US95 475.4	BNSF Kootenai 1402.58	Visitor Center Culvert # 3	Collection and Recovery	–	–	–	–	–
US95 475.41	BNSF Kootenai 1402.55	Visitor Center Culvert # 4	Collection and Recovery	–	–	–	–	–
US95 475.42	BNSF Kootenai 1402.57	Baldy Mountain Rd Surface Water Outflow #2	Collection and Recovery	–	–	–	–	–
US95 475.5	BNSF Kootenai 1402.53	Baldy Mountain Rd Surface Water Outflow #1	Collection and Recovery	–	–	–	–	–
US95 475.53	BNSF Kootenai 1402.33	N Boyer Ave and Baldy Mountain Rd.	Collection and Recovery	–	–	–	–	–
Sector 4A Northside (Lakeshore)								

Site ID & Highway Milepost	Railroad Milepost	Site Name	DEQ Approach	Corresponding BNSF Strategy	BNSF Approach	MRL Site Designator	MRL Site Name	MRL Strategy
–	–	Sandcreek Bike Path	–	MP 402.5 [HMP 475.6]	Collection and Recovery	–	–	–
–	–	Baldy Mountain Road Culvert	–	MP 75.0 [HMP 475.6]	Collection and Recovery	–	–	–
US95 478.53	BNSF Kootenai 1399.09	Bronx Rd	Collection and Recovery	BNSF 1399.1 / 478.5	Collection and Recovery	–	–	–
US95 479.99	BNSF Kootenai 1399.67	Sand Creek Water Treatment Plant	Notification Only	–	–	–	–	–
SR200 33.15	MRL4 114.92	Boyer Slough	Collection and Recovery	–	–	MRL4z_114.94	Boyer Slough	Collection and Recovery
SR200 34.53	MRL 113.5	Oden Water Assn Water Intake	Exclusion	MRL 13.6 / 34.4	Notification Only	MRL4z_113.49	Kootenai Bay	Notification and Exclusion But Does Not Address Water Intake
SR200 34.98	MRL4 113.0	Culver Slough	Exclusion	–	–	MRL4z_113.09	Culver Slough	Exclusion
SR200 36.39	MRL4 109.77	Pend Oreille State Wildlife Management Area	Exclusion	–	–	MRL4z_110.29	Pend Oreille State Wildlife Mgmt Area	Exclusion Actual Location Is Different than for DEQ Approach
SR200 38.69	MRL 109.93	Pack River Bridge	Exclusion	MRL 109.6 / 38.6	Collection and Recovery	–	–	–
SR200 41.28	MRL4 107.49	Sunnyside Water Intake	Exclusion	MRL 108.2 / 40.6	Notification Only	MRL4z_107.39	Sunnyside (does not address water	Exclusion

Site ID & Highway Milepost	Railroad Milepost	Site Name	DEQ Approach	Corresponding BNSF Strategy	BNSF Approach	MRL Site Designator	MRL Site Name	MRL Strategy
							intake)	
Sector 4B Northside (Selle Valley)								
US95 480.44	BNSF Kootenai 1397.09	West Selle Rd	Collection and Recovery	BNSF 1397.1 / 480.5	Collection and Recovery	–	–	–
US95 484.17	BNSF Kootenai 1393.33	East Colburn	Collection and Recovery	–	–	–	–	–
US95 485.77	BNSF Kootenai 1391.75	Lower Pack River	Collection and Recovery	BNSF 85.0 / 485.7	Collection and Recovery	–	–	–
SR200 37.78	MRL 111.05 UP 81.9	Rapid Lightning Road Bridge	Collection and Recovery	UP 82.3 / 37.7	Collection and Recovery	–	–	–
Sector 5 Sam Owen Fire								
SR200 40.78	MRL4 107.95	Pack River Trestle	Exclusion	MRL 107.9 / 40.8	Exclusion	MRL4z_108.35	Pack River Trestle	Exclusion
SR200 42.09	MRL4 106.71	Trestle Creek	Exclusion	–	–	–	–	–
–	–	–	–	–	–	MRL4z_106.21	Trestle Creek Boat Ramp	Exclusion; Address Boat Ramp, Not Trestle Creek Stream
SR200 46.4	MRL4 102.4	Red Fir Resort Water Intake	Exclusion	MRL 102.6 / 46.2	Notification Only	MRL4z_102.47	East Hope Peninsula	Exclusion

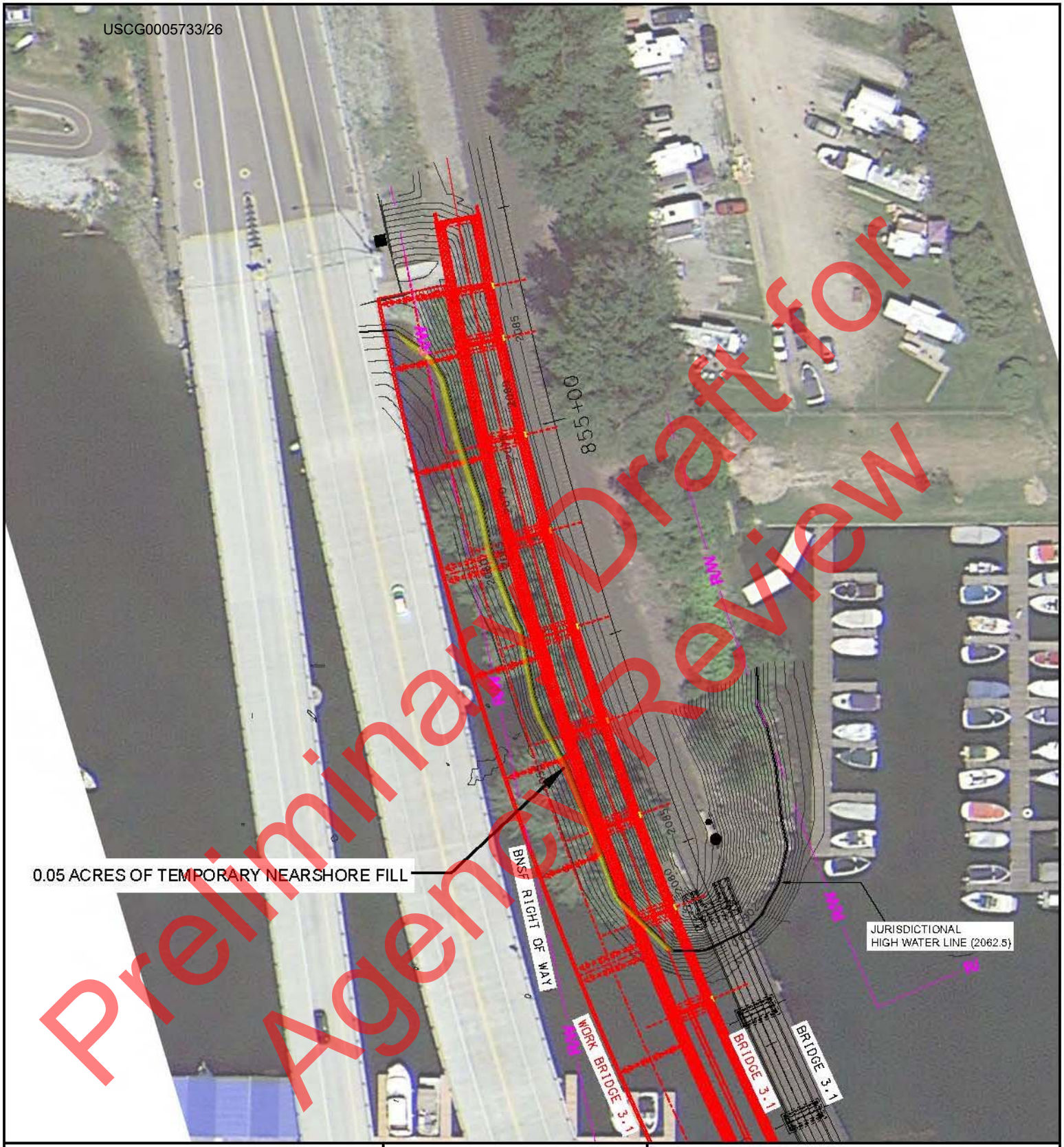
Site ID & Highway Milepost	Railroad Milepost	Site Name	DEQ Approach	Corresponding BNSF Strategy	BNSF Approach	MRL Site Designator	MRL Site Name	MRL Strategy
–	–	–	–	–	–	MRL4z_100.85	Sam Owen Campground	Exclusion
SR200 48.08	MRL4 100.86	Islandview Resort Water Intake	Exclusion	MRL 100.6 / 48.2	Notification Only	–	–	–
SR200 49.45	MRL4 99.36	Kullyspell Estates Water Intake	Exclusion	MRL 99.4 / 49.5	Notification Only	MRL4z_99.44	Sam Owen South Bay	Exclusion
SR200 50.19	MRL4 98.52	David Thompson Wildlife Preserve	Exclusion	MRL 98.5 / 50.3	Notification Only	–	–	–
SR200 50.4	MRL4 98.43	Denton Slough	Exclusion	MRL 98.4 / 50.4	Notification Only	MRL4z_98.46	Denton Slough	Collection and Recovery
Sector 6 Clark Fork								
SR200 54.83	MRL4 94.47	Johnson Creek Trestle	exclusion	–	–	MRL4z_94.52	Johnson Creek Trestle	Exclusion. Identical to the brainstorming we did with F&G on 4/12/16. See page 271. Only called for 650 ft of curtain boom.
–	–	–	–	–	–	–	–	–
SR200 54.50	MRL 94.26	Mouth of the Clark Fork	Diversion with Collection Downstream	–	–	MRL4z_97.35	Mouth of the Clark Fork	Collection and Recovery

Site ID & Highway Milepost	Railroad Milepost	Site Name	DEQ Approach	Corresponding BNSF Strategy	BNSF Approach	MRL Site Designator	MRL Site Name	MRL Strategy
SR200 56.05	MRL4 92.92	Clark Fork Bridge	Collection and Recovery	MRL 93.0 / 56.0	Collection and Recovery	MRL4z_93.62	Clark Fork, ID Trestle	Collection and Recovery
SR200 57.12	MRL4 91.79	Lower Fish Hatchery Slough	Exclusion	–	–	MRL4z_91.83	Lower Fish Hatchery Slough	Exclusion
SR200 58.62	MRL4 90.45	Upper Fish Hatchery Slough	Deflection	–	–	MRL4z_90.56	Upper Fish Hatchery Slough	Exclusion
–	–	–	–	–	–	MRL4z_89.31	Twin Creek	Exclusion
SR200 60.79	MRL4 87.66	Clark Fork River Access	Contaminant Collection	MRL 87.7 / 61.3	Collection and Recovery	–	–	–
SR200 61.63	MRL4 86.81	Cabinet Gorge Fish Hatchery	Collection and Recovery	MRL 86.8 / 61.7	Notification Only	MRL4z_86.79	Cabinet Gorge Fish Hatchery	Collection and Recovery
SR200 62.95	MRL4 85.35	Cabinet Gorge Dam	Contaminant Collection	MRL 85.4 / 63.0 (action) MRL 85.7 / 62.7 (notification only)	Notification & Contaminant Collection Upstream of Dam, and Notification Only at the Dam	MRL4z_85.35	Cabinet Gorge Dam	Collection and Recovery
Sector 7A Sagle (South)								
–	–	Lake Pend Oreille - Open Water Recovery	–	MP 96.9 [HMP 51.7]	Collection and Recovery	–	–	–
US95 461.32	BNSF Spokane 16.94	Cocolalla Creek Trestle	Collection and Recovery	MP 16.9 [HMP461.3]	Collection and Recovery	–	–	–

Site ID & Highway Milepost	Railroad Milepost	Site Name	DEQ Approach	Corresponding BNSF Strategy	BNSF Approach	MRL Site Designator	MRL Site Name	MRL Strategy
–	–	–	HWY 95 [Cocolalla Creek South Of BNSF 16.9]	BNSF 20.6 [HMP 458.2]	Collection and Recovery	–	–	–
US95 463.82	BNSF Spokane 14.22	Cocolalla Creek Outlet	Exclusion	–	–	–	–	–
US95 463.95	BNSF Spokane 14.07	Cocolalla Loop Rd Bridge	Contaminant Collection	BNSF 14.2 / 463.9	Collection and Recovery	–	–	–
Sector 7B Sagle (North)								
US95 471.08	BNSF Spokane 6.7	Bottle Bay Bridge	Exclusion	BNSF 6.6 / 471.0	Collection and Recovery	–	–	–
–	–	Waterlife Discovery Center Sandpoint Fish Hatchery	–	BNSF 7.4 / 470.5	Notification Only	LPO1_3.42	Sandpoint Fish Hatchery	Exclusion
US95 472.98	BNSF 4.4	Sourdough Point Water Intake	Exclusion	BNSF 4.4 / 473.1	Notification Only	–	–	–

Appendix D
Waters of the United States Impact Maps

USCG0005733/26



LEGEND

— = EXISTING (TYPICAL)

— = PROPOSED

= NEARSHORE FILL AREA (TEMPORARY)

N

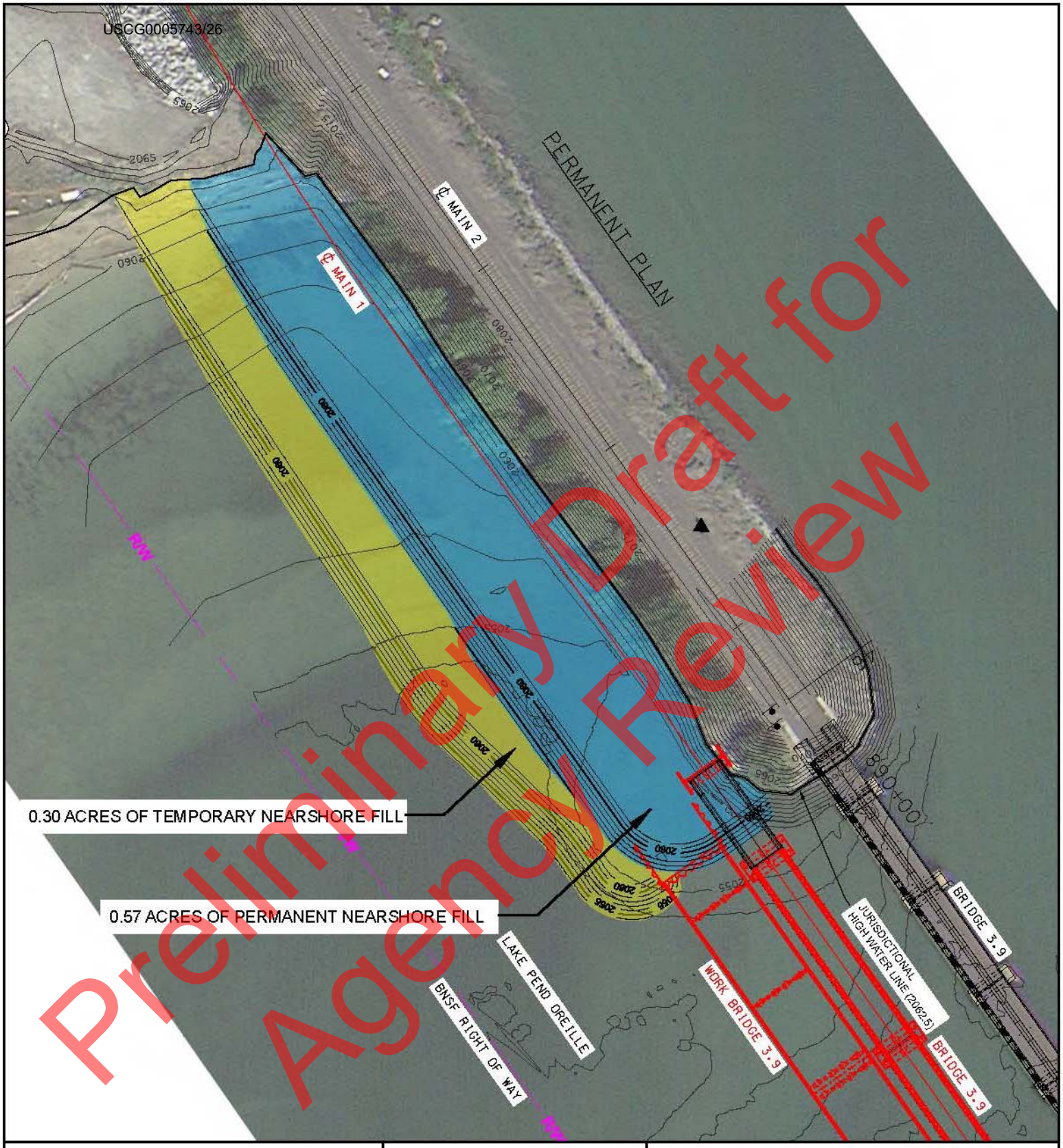
30' 0 15' 30' 60'

GRAPHIC SCALE

JURISDICTIONAL IMPACTS
BNSF BRIDGE 3.1 NORTH END

PROJECT: BNSF SANDPOINT JUNCTION CONNECTOR
BNSF LOCATION: MONTANA DIVISION, KOOTENAI SUBDIVISION, MP 2.9-5.1
CITY: SANDPOINT
COUNTY: BONNER
STATE: IDAHO
DATE: NOVEMBER 2017

BASED ON: HANSON PRELIMINARY PLANS (30%, NOV. 2017)



LEGEND

- = EXISTING (TYPICAL)
- = PROPOSED
- = NEARSHORE FILL AREA (PERMANENT)
- = NEARSHORE FILL AREA (TEMPORARY)

N

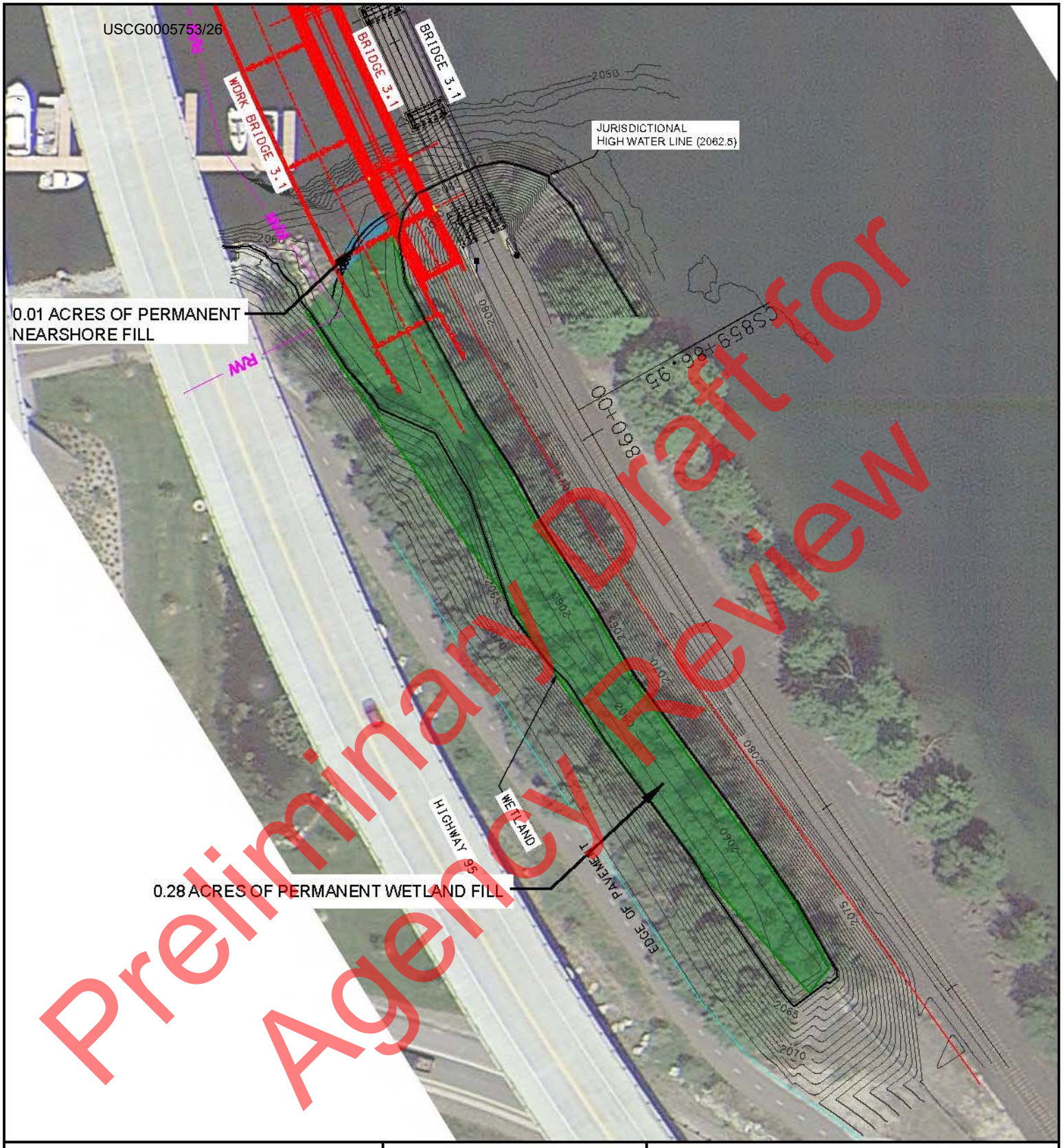
30' 0 15' 30' 60'

GRAPHIC SCALE

JURISDICTIONAL IMPACTS BNSF BRIDGE 3.9 NORTH END

PROJECT: BNSF SANDPOINT JUNCTION CONNECTOR
BNSF LOCATION: MONTANA DIVISION, KOOTENAI SUBDIVISION, MP 2.9-5.1
CITY: SANDPOINT
COUNTY: BONNER
STATE: IDAHO
DATE: NOVEMBER 2017

BASED ON: HANSON PRELIMINARY PLANS (30%, NOV. 2017)



LEGEND

- = EXISTING (TYPICAL)
- = PROPOSED
- = NEARSHORE FILL AREA (PERMANENT)
- = WETLAND FILL AREA (PERMANENT)

N

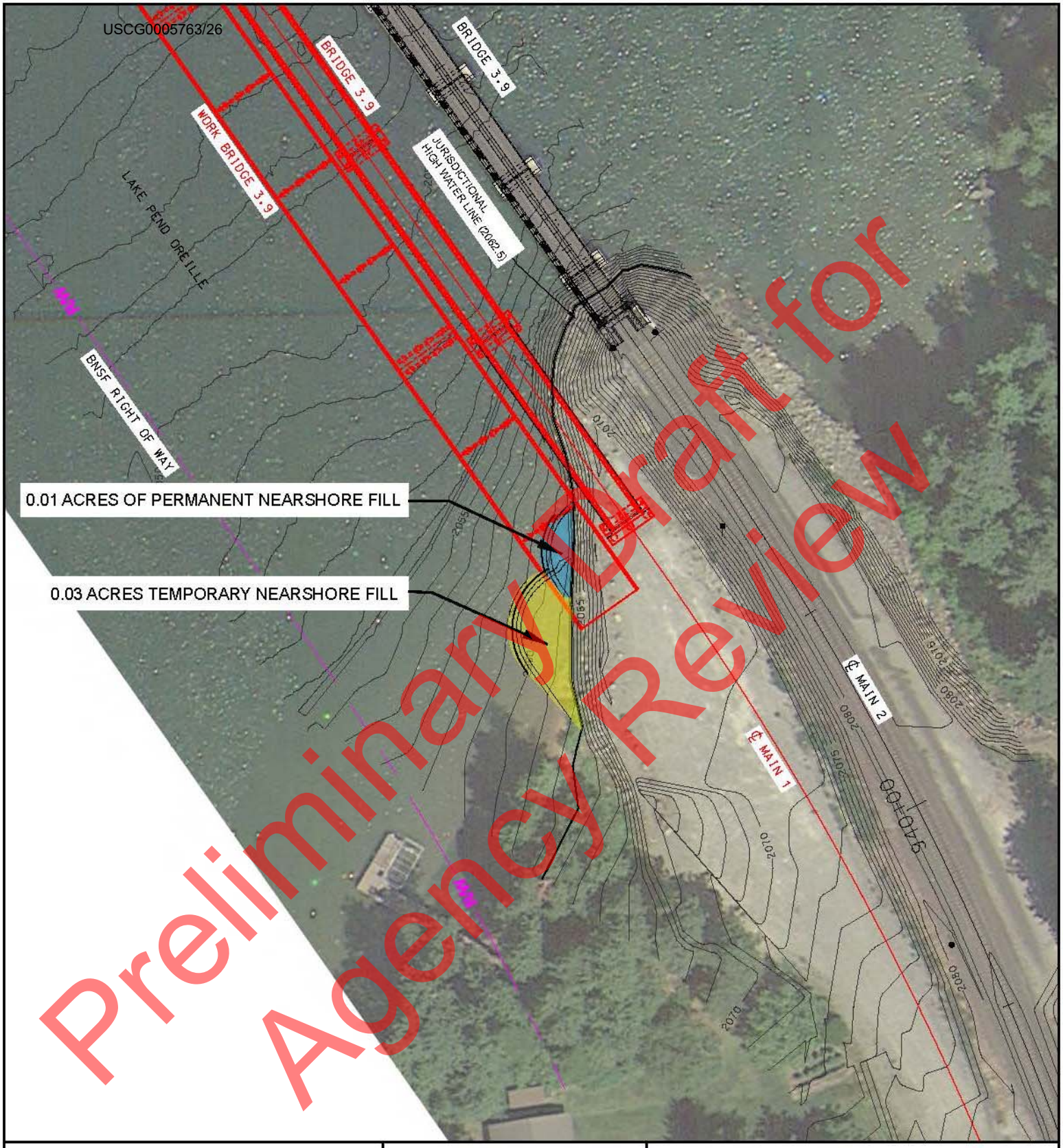
30' 0 15' 30' 60'

GRAPHIC SCALE

JURISDICTIONAL IMPACTS
BNSF BRIDGE 3.1 SOUTH END

PROJECT: BNSF SANDPOINT JUNCTION CONNECTOR
BNSF LOCATION: MONTANA DIVISION,
KOOTENAI SUBDIVISION, MP 2.9-5.1
CITY: SANDPOINT
COUNTY: BONNER
STATE: IDAHO
DATE: NOVEMBER 2017

BASED ON: HANSON PRELIMINARY PLANS (30%, NOV. 2017)



LEGEND

- — = EXISTING (TYPICAL)
- — = PROPOSED
- = NEARSHORE FILL AREA (PERMANENT)
- = NEARSHORE FILL AREA (TEMPORARY)

N

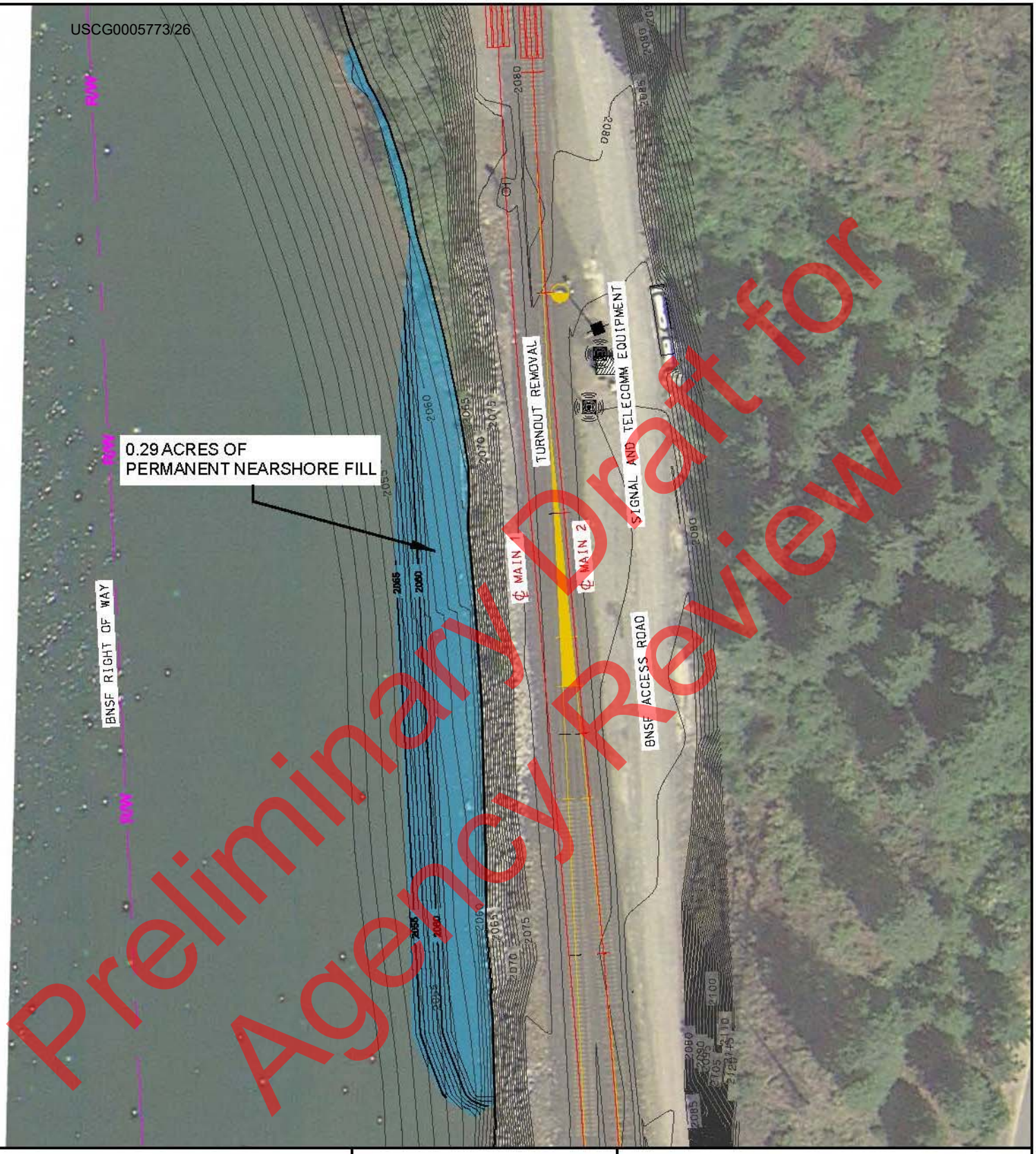
30' 0 15' 30' 60'

GRAPHIC SCALE

JURISDICTIONAL IMPACTS BNSF BRIDGE 3.9 SOUTH END

PROJECT: BNSF SANDPOINT JUNCTION CONNECTOR
BNSF LOCATION: MONTANA DIVISION, KOOTENAI SUBDIVISION, MP 2.9-5.1
CITY: SANDPOINT
COUNTY: BONNER
STATE: IDAHO
DATE: NOVEMBER 2017

BASED ON: HANSON PRELIMINARY PLANS (30%, NOV. 2017)



LEGEND

— = EXISTING (TYPICAL)

— = PROPOSED

— = REMOVALS

■ = NEARSHORE FILL AREA (PERMANENT)

N

30' 0 15' 30' 60'

GRAPHIC SCALE

JURISDICTIONAL IMPACTS
EAST ALGOMA TURNOUT

PROJECT: BNSF SANDPOINT JUNCTION CONNECTOR
BNSF LOCATION: MONTANA DIVISION, KOOTENAI SUBDIVISION, MP 2.9-5.1
CITY: SANDPOINT
COUNTY: BONNER
STATE: IDAHO
DATE: NOVEMBER 2017

BASED ON: HANSON PRELIMINARY PLANS (30%, NOV. 2017)