

# Kootenai River Habitat Restoration Project

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## Phase 1a Project: Project Description and Construction and Access Overview



### 1. Phase 1a Project Description

The Phase 1a project will implement treatments at three distinct locations in close proximity to one another: the 1,900-foot-long side channel (river right); a 1,050-foot-long segment of the Kootenai River mainstem river bank (river right); and an 800-foot-long Kootenai River mainstem river bank segment that includes a developing island/small side channel area (river left)

#### Main Channel Right Bank Restoration

The restoration plan for the Kootenai River right bank consists of 1,050 feet of restoration treatments along an exposed gravel bar adjacent to a steep eroding bank. Measures include streambank restoration, floodplain construction and habitat improvement using bioengineering techniques and large wood placement. Right bank treatments are divided into lower elevation and upper elevation bank treatments. In general, lower elevation bank restoration treatments address the riparian area below 32,000 cfs. Water surface elevation and upper elevation bank restoration treatments address the upland area above this level. Proposed treatments will create conditions that increase channel margin roughness, promote floodplain accretion, and support the establishment of riparian vegetation on re-graded banks. The site will be protected by a riparian enclosure fence.

#### Left Bank/Side Channel Restoration

The restoration plan for the Kootenai River left bank includes 800 feet of restoration treatments upstream and downstream of a developing floodplain island that is threatened by enlargement of a small side channel. Proposed bank restoration treatments will create site conditions that increase channel margin roughness, promote floodplain accretion, protect developing floodplain vegetation and enhance off-channel wetlands in side channel backwater habitats.

#### Right Side Channel Restoration

The restoration plan for the right side channel includes 1,900 feet of restoration treatments in an existing side channel. The restoration will address side channel aquatic habitat conditions by creating pool habitat, improving bank cover, and enhancing hydraulic complexity. These treatments include installing bank structures, constructing and revegetation of floodplain surfaces and modifying side channel geometry by controlling the inlet flow capacity from the mainstem Kootenai River. Bank structures will be installed along the margins of the existing base flow water surface in the side

channel in order to narrow the effective width in combination with floodplain creation and bioengineering. The site will be protected by a riparian enclosure fence.

## **2. Phase 1a Access**

### *Access to right bank and side channel*

Access to the Phase 1a project along the right bank of the Kootenai River will be off of State Highway 95/2, to the south along the District 2 County Road 60 to the McNally property. The access road follows a narrow, one and a half lane unimproved road along a high bluff above the Kootenai River. This road winds down to the floodplain of the Kootenai River and transitions from primarily a rock bed to a dirt road on the old Kootenai River floodplain. The upper road may require widening at several corners to facilitate construction equipment access. Blasting and heavy ripping may be required at these sites for roadway improvement.

The lower road is on an earth bed and will require appropriate sub grade placement to facilitate construction and material ingress and egress.

### *Right bank staging*

Equipment and materials staging areas will be adjacent to the project site on an upland terrace feature above ordinary high water. This area is currently used as a grazing pasture and provides ample space for equipment and materials staging. Equipment fueling and maintenance areas will also be located in this general area.

### *Access to left bank*

Access to the Phase 1a project along the left (west) bank of the Kootenai River will be off State Highway 95/2 to the south along the District 15 County Road 24. Permission for access over two private landowners properties will be required. Approximately one-half mile before the Dobson Creek – Katka Creek turnoff, a field access road turns to the north and crosses the BNSF railroad alignment. This access is gated and coordination with BNSF for a gate access and a railway observer during construction activities will be necessary. The access road then heads east paralleling the Kootenai River on the left, and the BNSF railway on the right. At this time, no special provisions have been identified for improvement of the BNSF railway crossing other than tracked vehicles must be trucked across the railway tracks.

A small two-track access road turns north to the Kootenai River and provides direct access to the project site across the floodplain. Access for construction equipment and materials can be performed by grading the two-track to the project location; alternatively, considering the low flow condition during construction, the road could be improved for the first 500 feet then transitioned onto the long cobble bar that runs continuously along the bankline to the project area. The alternative alignment would require less site restoration post demobilization.

### Left bank staging

Equipment and materials staging areas will be adjacent to the project site on the floodplain above ordinary high water. Materials can be staged temporarily within the left side channel along the exposed cobble streambed. Equipment fueling and maintenance areas will be located at an upland location near the site access road where it turns from the BNSF alignment.

## **3. Construction Sequencing**

### Summary of typical construction sequencing

Phase 1a construction will occur from upstream to downstream following the sequence identified below:

1. Mobilize equipment
2. Construct site access improvements
3. Deliver and stage materials
4. Implement dewatering plan and BMPs
5. Construct lower bank restoration treatments
6. Construct upper bank restoration treatments
7. Construct floodplain surfaces with backfill
8. Install side channel bank structures
9. Place growth media and construct microtopography
10. Install plans and transplant shrubs/trees
11. Install the riparian fence
12. Reclaim the site and seed disturbed areas
13. Demobilize equipment

### Phase 1a Construction sequence

The Phase 1a project will be initiated by performing the required roadway and site mobilization improvements. This includes BNSF railroad coordination, BMP installation for sediment and erosion control, roadway widening, sub grade improvements, access road and site grading, materials and equipment staging, and maintenance location preparation. The right bank project components may be implemented concurrently with dewatering work area isolation and fish removal.

Phase 1a right river access from the staging areas can be developed by excavation of a temporary access road off of the floodplain and to the channel bed. River access would likely be located at the inlet to the side channel which would facilitate machinery access and material delivery to both right bank project sites. Much of the streambed is exposed at low flow conditions during the construction period and will allow equipment to operate along the margins of the stream banks without creating excessive disturbance.

Much of the streambed Phase 1a left river access is exposed at low flow conditions during the construction period and will allow equipment to operate along the margins of the stream banks without creating excessive disturbance.

Construction will be initiated with the instream components and foundation excavations of the lower bank treatment including floodplain construction adjacent to the toe of the right bank. Material excavated during the foundation preparation can be temporarily staged for LWG backfill or utilized for floodplain construction. Following construction of the lower bank restoration treatments, upper bank construction can be initiated. Material excavated during bank re-grading may be used to backfill proposed floodplain surfaces along the right bank or within the side channel. Following backfill and construction of floodplain surfaces in the side channel, side channel bank structures can be installed and surface treatments to these floodplain areas including additional roughness elements, microtopography, and planting will be performed.

Concurrent to the structure construction, at some locations bank shaping can occur with excavated material stockpiled and used for the vegetated soil lifts. Upon completion of the lower bank treatment, the transition and construction of the upper bank treatments can occur. Within the side channel, the contractor will be directed to implement the project elements adjacent to the BLM owned Hideaway Island RNA, and then work towards the right bank line. Completion of all of the instream elements prior to transitioning to the upper bank components will allow the contractor to work their way out from the channel. Finally, the upper floodplain vegetation planting and riparian fencing will be completed, followed by site reclamation and demobilization.