

Pend d'Oreille Bay Trail Master Plan

December 14, 2015



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Table of Contents

1. Introduction	1
2. Process and Public Involvement	2
3. Background Information	5
4. Design	9
5. Interpretive Plan	32
6. Implementation	46
7. Operations and Management	52
References	56
Appendix A – Preliminary Design Drawings for the POBT	
Appendix B – Right-of-Way Exhibits	
Appendix C – Cost Estimates	
Appendix D – Online Survey and Results	



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1. INTRODUCTION

The Pend d’Oreille Bay Trail (POBT) runs along the northern shore of Lake Pend Oreille and currently extends from the Humbird Mill Park in Sandpoint to a point approximately 1.4 miles north. The trail is bounded on the west by the Burlington Northern Santa Fe (BNSF) and Montana Rail Links’ railroad corridor and on the east by Lake Pend Oreille. The conceptual plan for the POBT is to provide a safe, natural, non-motorized, and sustainable waterfront connection between the communities of Sandpoint, Ponderay, and Kootenai. Lake Pend Oreille is a tremendous asset, and it has the potential to be an even greater asset with the full development of the POBT.

Our Vision: “The Pend d’Oreille Bay Trail weaves our communities and Lake Pend Oreille together, physically and socially, leading us from the hearts of our cities to the lake-shore and each other.”

The Pend d’Oreille Bay Trail not only provides access to the great outdoors and the natural beauty of Lake Pend Oreille, it has brought the community together. Since 2006, a wide variety of citizens, private organizations, and public agencies have worked together to make the trail a reality. In 2010, the non-profit organization known as the Friends of Pend d’Oreille Bay Trail was formed and became the leader in pushing the vision for the trail forward. Although the public has been using the trail for decades, it wasn’t until 2014 that the entire first 1.4 miles of the existing trail was purchased by public entities and secured for public use primarily due to the hard work of the Friends of Pend d’Oreille Bay Trail, the City of Ponderay, and the City of Sandpoint.

This Master Plan for the Pend d’Oreille Bay Trail builds upon the Pend d’Oreille Bay Trail Concept Plan (2010), which was endorsed by Bonner County and adopted by the Cities of Sandpoint, Kootenai, and Ponderay. This Master Plan provides preliminary engineering design, cost estimates, and an interpretive plan for the proposed extension of and improvements to the existing POBT. The overall goal of the Pend d’Oreille Bay Trail Master Plan is to create a trail system that demonstrates a model for cultural, economic, and environmental sensitivity and sustainability. These attributes have been the guiding elements throughout the planning and design process.

PLAN GOALS

Design: Create a multi-use, non-motorized trail corridor that provides for waterfront access, invites a full range of year-round recreational and educational activities, and allows for commuter use by connecting communities.

Private Property Rights: From concept through design, construction and operation, acknowledge and respect the property rights of the current and historic owners.

Environment: In planning and operation, make the trail corridor a model of environmental protection.

Safety: Make the trail safe to access and safe to use.

Education: Provide a safe, natural outdoor learning environment for multiple educational disciplines (geology, biology, history, recreation, art, etc.) from toddlers to elders.

Outreach: Develop a strategy for outreach and marketing in the development and operations phases of the Pend d’Oreille Bay Trail.

Operations and Maintenance: Create the mechanisms to manage and maintain the trail through municipal and private means.

Finance: Develop a strategy to finance the implementation of the Pend d’Oreille Bay Trail Concept Plan.

Future: In all that the Pend d’Oreille Bay Trail becomes in the near-term, retain options for future expansion.



2. PROCESS AND PUBLIC INVOLVEMENT

The POBT Master Plan is based on the 2010 Concept Plan but has been refined through additional site visits, public outreach, and stakeholder input gathered specifically for the Master Plan. Several avenues were used to gather community input. These included one-on-one stakeholder interviews, meetings with trail focused committees, presentations to government and civic groups, public open houses and workshops, and an online survey.

2.1. Stakeholder Interviews

Individual interviews were held either on the phone or in person with several key stakeholders, including representatives from Idaho Department of Environmental Quality, the Corps of Engineers, Idaho Fish and Game, the Bonner County History Museum, the Friends of the POBT, the City of Sandpoint, the City of Ponderay, the City of Kootenai, and affected landowners, such as Dann Hall, Ross Hall Jr, Dana Martin, and Sandy Wolters.

Several meetings were also held with the Ponderay Village Sub-Area Plan project consultant, Street Plans, in order to ensure good coordination between the two projects. The Master Plan was also coordinated with the overall Bonner County Trail Plan, which is being completed by the Trust for Public Land, and the Kootenai Walkability Study, which is being completed by Vitruvian Planning. Meetings were held on site from October 9-11, 2014; December 8-10, 2014; and March 23-27, 2015.

2.2. General Public Outreach

In March 2015, a well-attended public outreach event dubbed “Ales for Trails” was held from 5-8 p.m. at the Laughing Dog Brewery in Ponderay. Approximately 69 people that attended the Ales for Trails event provided input on amenity design options, interpretive themes, and project priorities. Preliminary information for the Ponderay Trails and Greenways Study, which was being conducted by StreetPlans, was also available during this event. Results of this event are summarized in Section 4 – Design.

Public outreach at events such as the Ales for Trails night (opposite) were an important part of the planning process.

2.3. Committee Meetings

The Trail Mix Committee consists of representatives from the Cities, County, government entities, and other trail focused and interested organizations within Bonner County. Approximately 24 people actively serve on the Trail Mix Committee. Information on the POBT Master Plan was presented at Trail Mix Committee meetings in October 2014, March 2015, and August 2015.

The Friends of the POBT Board of Directors includes 10 members. Meetings were held with the Friends of POBT during their regular board meetings and at other times throughout the process to discuss the Master Plan. Presentations were also given to the Ponderay Rotary Club, with approximately 14 people attending, and the Kootenai City Council during March 2015.

The POBT Master Plan was developed in close collaboration with the Ponderay Village Sub-Area Plan, which was being completed concurrently. Representatives from the POBT Master Plan consultant group attended the four day design charrette held in December 2014 for the Sub-Area Plan, and several coordination meetings with the Sub-Area Plan consultant were held throughout the planning process.



The Master Plan was coordinated with planning for the Ponderay Sub-Area Plan during design charrettes (above).

2.4. Online Survey

An online survey was available for more than two months from March 23, 2015 until May 30, 2015 in order to reach those who may not have been able to attend or may not have heard about the other outreach events. The online survey gathered feedback on the same topics presented at the Ales for Trails event, including types of amenities, amenity design options, interpretive themes, and project priorities. The survey was distributed via email to those on existing distribution lists for the Friends of POBT; more than 150 responses were collected. The complete results are included in Appendix D and a summary is included in Section 5. Interpretive Plan, and Section 6. Implementation Plan.



The Friends of POBT Board of Directors and other stakeholders provided valuable input into the plan.

PHOTO: JANE ROHLING



PHOTO: JANE ROHLING

3. BACKGROUND INFORMATION

The POBT has been a work in progress for many years, and as a result, there are many reports and studies that have been completed for the proposed POBT system and the surrounding area. In addition to the POBT Concept Plan, this includes several railroad crossing studies and environmental site assessments. There are also many trail, pathway, and planning studies being conducted concurrently with the Master Plan, which have been coordinated and incorporated into the Master Plan.

3.1. Past POBT Studies and Plans

PEND D’OREILLE BAY TRAIL CONCEPT PLAN

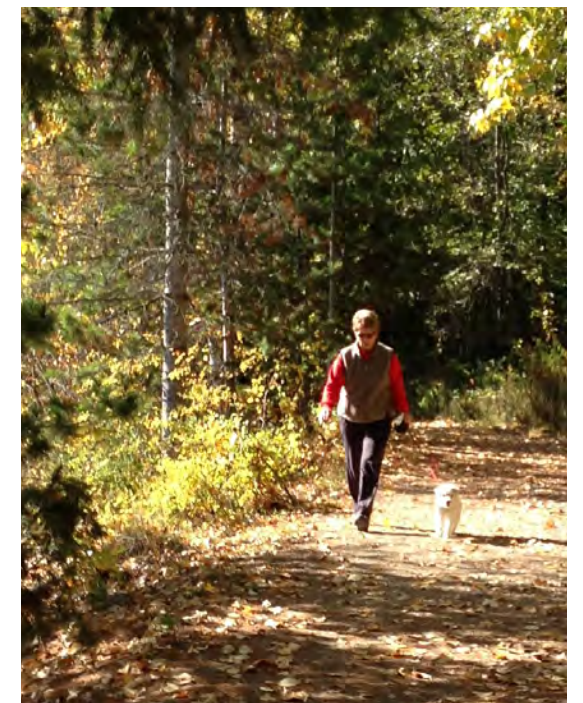
The Pend d’Oreille Bay Trail Concept Plan was completed in 2010 and provides an overall framework for development of the POBT from Sandpoint to Kootenai. This includes a recognition of the opportunities and challenges that come with development of the trail, as well as distinct goals and objectives. Design concepts for parks, trail types, trail alignments, ADA accessibility, trailheads, railroad crossings, and signage, along with the concept map provided the basis for the Master Plan. The Concept Plan also includes recommendations for operations, management, and maintenance, and serves as a good resource for funding options for trail improvements.

Our Vision: “The Pend d’Oreille Bay Trail enriches the lives of residents of Bonner County and its cities by providing a place within walking and cycling distance for personal renewal in nature, reflection on the area’s rich natural and cultural heritage, quiet recreation on and near the lake, and safe, non-motorized travel to and from work, school, play, shopping, and social events.”

PHOTO, LEFT: JANE ROHLING



The Pend d’Oreille Bay Trail is a popular destination for cyclists, walkers, and joggers.





PEND D'OREILLE BAY TRAIL COUNT AND SURVEY

A trail count and user survey was conducted during the summer of 2014 by a summer intern of the Idaho Conservation League. A total of 173 responses were collected from 402 people that used the trail during two days: Saturday, July 26th and Wednesday, August 13th. The majority of the users were walkers or runners (47 to 58 percent total) with 79 percent of all users indicating that they were using the trail for exercise. The average age of the surveyed users was 48, and 53 percent of all users used the trail between 1 to 10 times per month. Summer was the most popular time of year to use the trail (95 percent) but spring and fall had significant use as well (72 to 73 percent). Most users parked at the existing trail head at Humbird Mill Park (61 percent), but indicated they were willing to park at City Beach (59 percent) if the lot was full, despite the observation by the surveyors that there was a fair amount of cars parked illegally on the road when the trailhead parking lot was full.

The trail count and user survey was repeated during the summer of 2015 on Wednesday, August 5th and Saturday, August 8th. The results were similar to the 2014 trail survey with the three most popular uses of the trail being exercise (69 percent), leisure (62 percent), and pets (23 percent). Twenty-four percent of the respondents indicated they were using the trail for the first time, likely due to the fact that the survey was conducted during the Festival at Sandpoint.



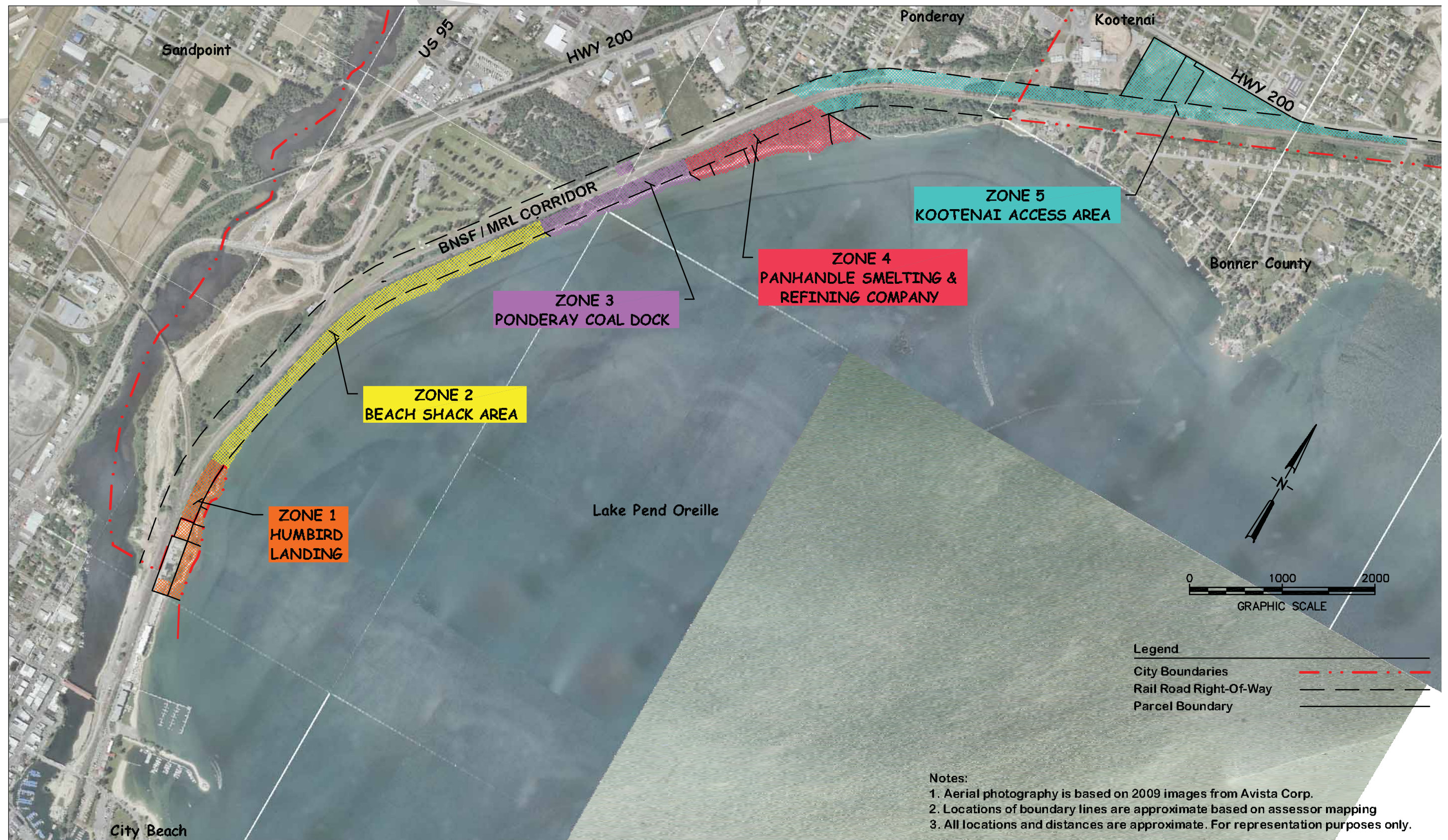
A trail count and user survey was conducted during the summer of 2014 and 2015 by the Idaho Conservation League.

ENVIRONMENTAL SITE ASSESSMENTS

Due in part to its close proximity to the railroad, the area around the POBT has been the home for many natural resource extraction industries, including the former Humbird Lumber Mill operations in Sandpoint, the former Panhandle Smelting and Refining Company (PSRC) smelter facility in Ponderay, and the former Northern Pacific railcar maintenance and lumber mill operations in Kootenai. The historical presence of these industries has led to environmental contamination in the area around the POBT.

Since 2009, Phase I Environmental Site Assessment Reports (ESAs) have been completed for all 19 individual parcels in the POBT corridor, Phase II ESAs have been completed for seven parcels, and one clean-up plan for two parcels has been completed thanks to the support of a generous Brownfields Assessment Coalition Community-Wide Hazardous Substance and Petroleum Brownfields Assessment Grant (Grant) from the U.S. Environmental Protection Agency via the American Recovery and Reinvestment Act (ARRA). Coalition partners that are administrating the conditions of the grant include Idaho DEQ, the Cities of Ponderay, Sandpoint, and Kootenai, and Bonner County, with DEQ accepting the lead role. For the purpose of assessing the nature and level of contamination, the geographic area around the POBT was divided into five zones (see figure opposite page).

Since completion of the Coalition Assessment project in August 2012, DEQ has utilized State Response Grant funds to carry out follow-up environmental assessment work in the corridor including: additional Phase I assessments to satisfy liability requirements for the sale of private properties in Zones 1-4 to the cities of Ponderay and Sandpoint; final Phase II site characterizations on five properties in Zones 4 and 5; and an interim Analysis of Brownfield Clean-up Alternatives for two properties in Zone 4 at the Panhandle Smelting and Refining Company site. Additionally, the record of survey for all waterfront properties was finalized, and a project-specific section on DEQ's website was established that houses the assessment's information repository (including project reports, maps and surveys) and administrative record. Of all 19 properties assessed, only two will require cleanup. Efforts will address lead and other heavy metals at the Panhandle Smelting and Refining Company site in Zone 4, which includes Black Rock. DEQ will soon be developing an Analysis of Brownfield Cleanup Alternatives for these properties.



The POBT Corridor was divided into five zones (above) for the purposes of environmental studies.

RAILROAD CROSSING STUDIES

A study of the various design alternatives to construct a railroad crossing to connect the City of Ponderay to the POBT corridor was conducted by URS Corporation in March 2012. The proposed alignments were developed using Burlington Northern Santa Fe (BNSF) Railway Guidelines for Grade Separations, and the alternative crossing locations that were analyzed were located near the intersection of Oak Avenue and 4th Street and the intersection of Birch Street and 2nd Street. Crossing types included combinations of pedestrian/bicycle underpasses and overpasses and roadway underpasses and overpasses with bicycle and pedestrian facilities. At-grade crossings were not considered due to safety issues. Estimated costs range from \$1 to 1.3 million for pedestrian/bicycle only crossings and \$2.2 to 3.2 million for roadway crossings with bicycle and pedestrian facilities included. Estimated costs did not include costs for drainage and utility relocations, property acquisitions, or environmental assessments.

AECOM is currently conducting a technical analysis and feasibility study of a vehicular and pedestrian underpass across from the Harbison property and a pedestrian only underpass near the intersection of 3rd Street and Cedar in Ponderay.



Birdseye rendering of the 30 year plan for Ponderay.

3.2. Related Studies and Plans

Trails and pathways are important to the Bonner County community as evidenced by the multiple trail planning efforts that have been underway over the last five years. There are a large number of jurisdictions, governmental agencies, organizations, advocacy and non-profit groups, and businesses who are active in trail and open space development efforts in the region. There is a general collective vision to make the Sandpoint region a major recreation and outdoor tourism draw (Rumore, 2014).

Completion of the POBT will provide an important connection between the Cities of Sandpoint, Ponderay, and Kootenai for both tourists and residents.

The Bonner County Trails Plan, which is a subpart of the Transportation Component of the Bonner County Comprehensive Plan, is currently being completed by the Trust for Public Lands. The North Idaho Bikeways Trail Map for the Sandpoint Region was completed in 1995. Trail and pathway plans that are being completed concurrently with the POBT Master Plan include a master bike and pedestrian master plan for the Cities of Kootenai and Ponderay (by Vitruvian Planning) and a Ponderay Trails and Greenways Study (by StreetPlans). A key priority of these plans is to provide connection between existing trails, pathways, and open spaces, as well as between the places where people live, work, and play. Completion of the POBT will provide an important connection between the Cities of Sandpoint, Ponderay, and Kootenai for both tourists and residents.

In addition to the multiple overall pathway plans that have been, or are being completed in the area, there are planning efforts underway for Bonner County and the City of Ponderay that are directly tied to the POBT Master Plan. The Trust for Public Land is completing a “greenprint” project that uses GIS to help the community prioritize its park and conservation goals. A “sub-area” plan is being completed for Ponderay and includes plans for an underpass under the railroad to connect the city with the lakeshore of Lake Pend Oreille and future commercial development around the POBT. The POBT Master Plan was completed in close collaboration with the Ponderay Village Sub-Area Plan as described in Section 2.

4. DESIGN

The design for the POBT corridor is based on the POBT Concept Plan, as well as information that has become available since the Concept Plan was completed in 2010. As a result, the Master Plan is slightly different from the Concept Plan, but has the same underlying design principles. The Master Plan includes preliminary engineering drawings for the entire POBT system from Sandpoint to Kootenai (Appendix A-C). An overview of the Master Plan is shown on the next page.

Overall design objectives (from the 2010 Concept Plan) include:

- Design trails for hiking, running, biking, and cross-country skiing.
- Design access to the shoreline for swimming, fishing, kayaking, and canoeing.
- Design the trail to meet ADA accessibility requirements where feasible.
- Equip the trail with amenities that enhance the practical, esthetic, and recreational qualities for year round users.

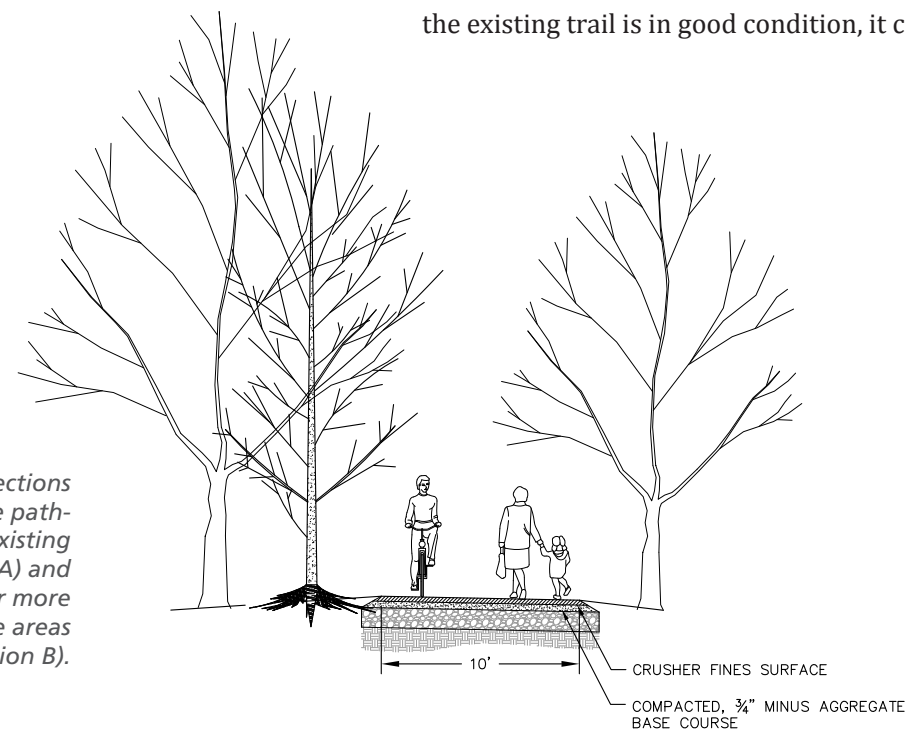
In addition to the design objectives from the Concept Plan, physical and human design essentials of sustainable and enjoyable natural surface trails were used to create the Master Plan design. This includes using natural shapes and anchors, providing safe and efficient alignments, and considering physical forces, tread materials, and trail watersheds on the long term sustainability of the trail.

4.1 Character

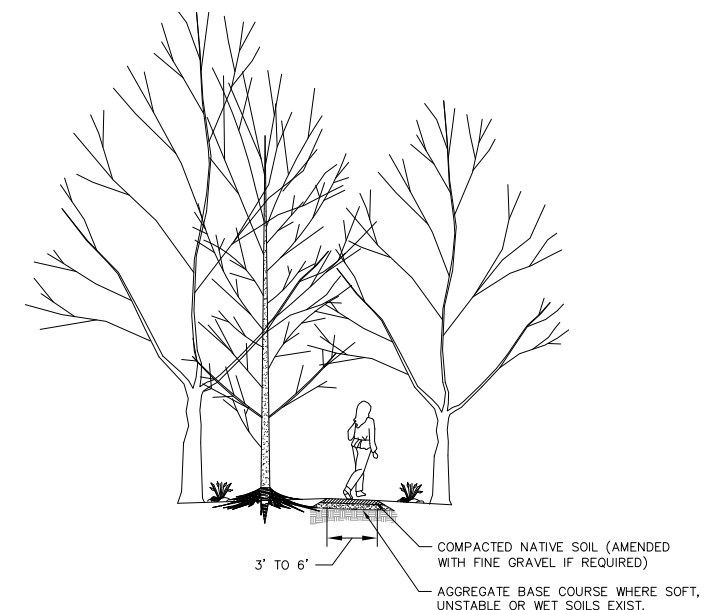
Water, trees, crisp leaves, and fresh breezes come to mind when thinking of the POBT. There is a strong desire to keep the character of the trail as natural as possible. This was evident in the results of the online survey conducted in 2015 in which 62 percent of respondents indicated that they felt that any trail connection should be gravel, and several commented that the trail should be as natural as possible.

In order to maintain and further enhance the quiet, natural character of the trail, two typical trail cross sections are proposed for the new sections of trail that consist of either a surface of dirt or crusher fines (3/8-inch or smaller stone material). The crusher fine material should contain a full range of particle sizes and materials, from clay and silt to larger stones, to help it resist displacement and provide surface stability. In areas where ADA accessibility is desired, the crusher fines can be stabilized further with a binder, which will also reduce maintenance needs while allowing stormwater to infiltrate. New trail surfaces should be underlaid with 4 to 6 inches of compacted, crushed granular base material. Where the existing trail is in good condition, it can remain in place.

Typical trail cross sections include a 10-ft wide pathway similar to the existing trail (Cross Section A) and a narrower path for more intimate and sensitive areas (Cross Section B).

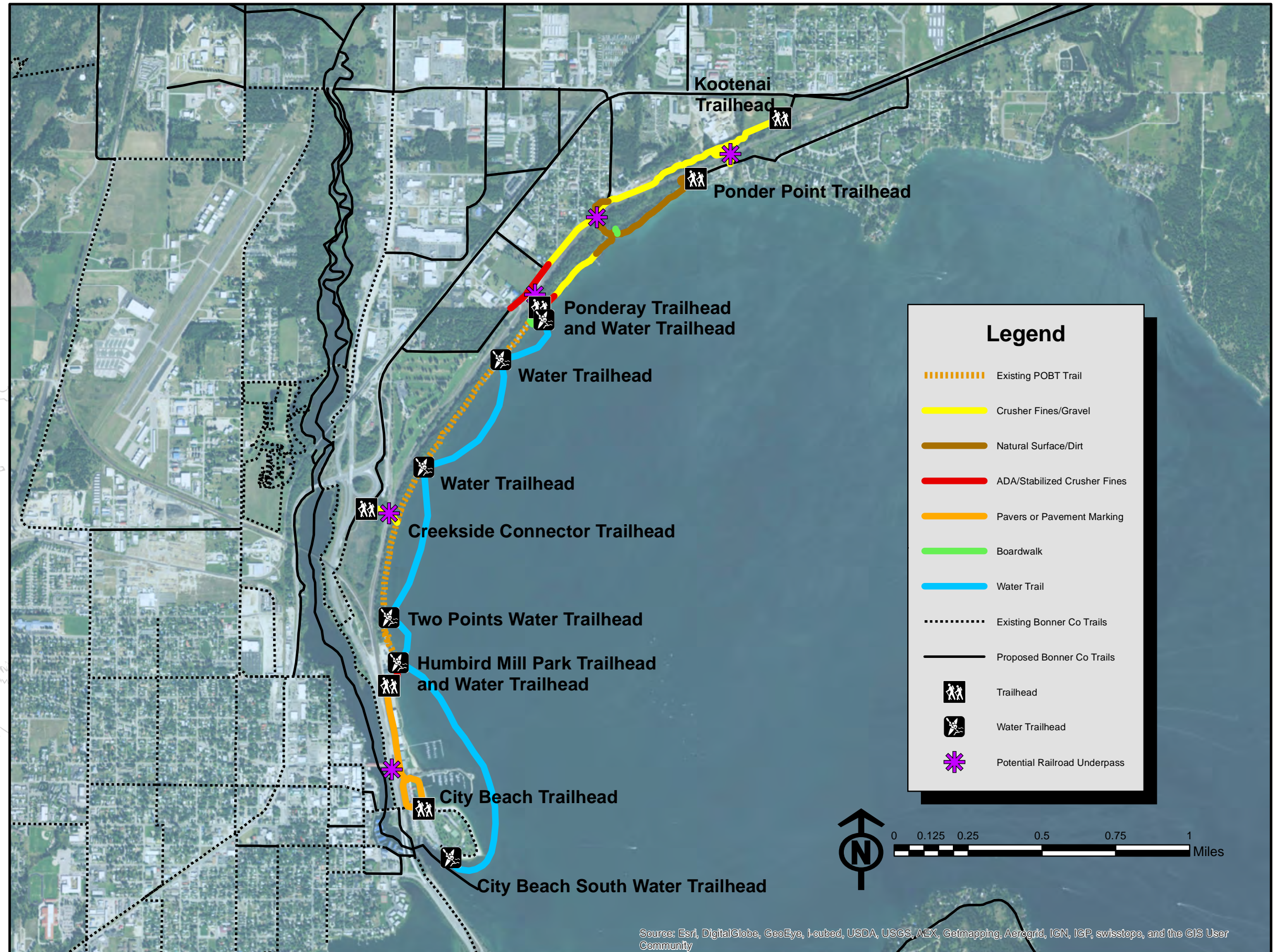


A. 10' MULTI-USE PATHWAY



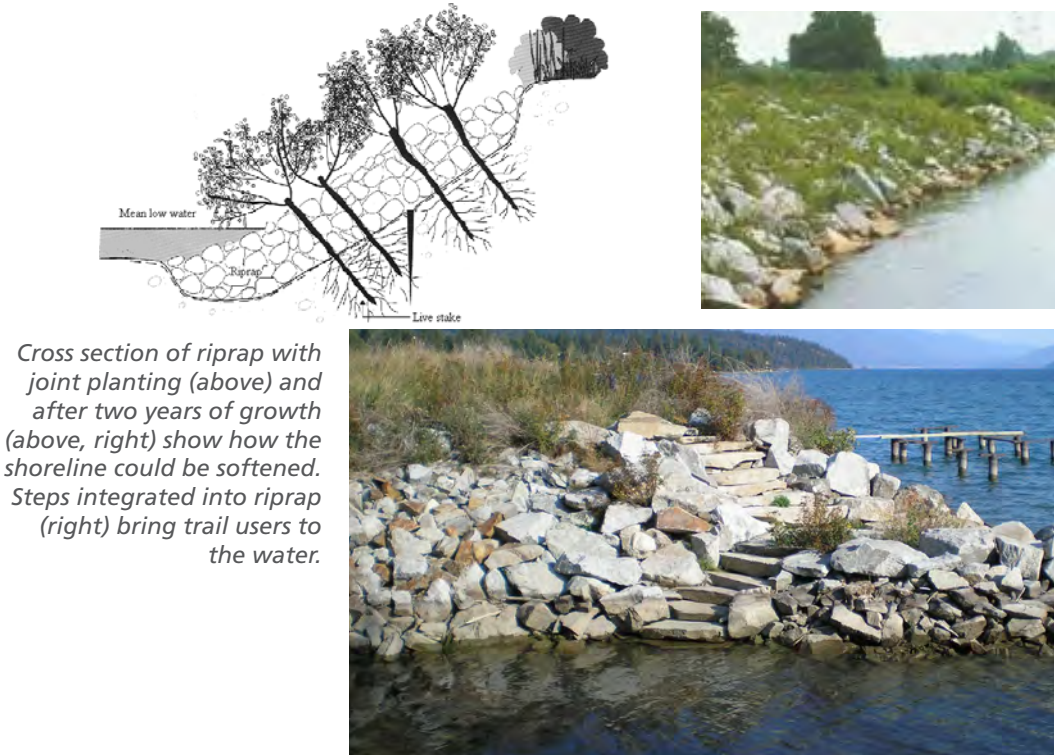
B. NATURAL SURFACE TRAIL

POBT Master Plan Overview



The distinct experience that the POBT provides is being on the edge between the land and water. Edges that are shaped with natural shapes feel the most comfortable and anchored (Parker, 2004). This explains the desire expressed by the public to soften the riprap shoreline along the upper portion of the trail. Softening the shoreline can be accomplished by planting willows and other native species in and above the riprap to create a vegetated buffer. Plants incorporated into the existing riprap can help stabilize the riprap by forming a living mat of roots under the rock that reinforces the soil. The stems should be 1.5 to 4 inches in diameter and long enough to reach the soil under the riprap.

In addition to moving along an edge, people love to cross it. Incorporating stone steps into the existing riprap will invite people down from the trail into the lake, and allow boaters to move from the lake up onto the trail.



Cross section of riprap with joint planting (above) and after two years of growth (above, right) show how the shoreline could be softened. Steps integrated into riprap (right) bring trail users to the water.

4.2 Alignment and ADA Access

During conceptual planning for the POBT, there was a desire to keep the shoreline trail very natural, but at the same time provide ADA access and separate users in high traffic areas. As a result, two separate alignments were included in the Concept Plan: an upper paved trail on the lake side of the railroad tracks and a natural surface shoreline trail. However, in 2013 after additional information was collected, it became apparent that the upper paved trail was not feasible due to space, soils, and right-of-way constraints. Thus, the Master Plan includes a single, predominately shoreline trail through the POBT corridor. The proposed trail alignment takes into consideration the location of ecologically sensitive areas, topography, vegetation, gateways, and viewpoints.

Although exceptions can be made to ADA accessibility requirements for trails due to terrain and other conditions, the majority (85 percent) of those surveyed indicated that providing some ADA access is desirable. Thus, the Master Plan provides ADA access where it is most feasible. Short ADA accessible sections of the trail from the parking areas at Humbird Mill Park and Ponderay to points of interest are included in the Master Plan Preliminary Design Drawings (Appendix A).

General ADA requirements for trails that should be applied to ADA sections of the trail include (Department of Justice, 2013):

1. The surface shall be firm and stable with a clear width of 36 inches minimum.
2. Maximum running slope is 1:12 (8.33%) for up to 200 feet; 1:10 (10%) for up to 30 feet; and 1:8 (12%) for up to 10 feet with 60 inches long resting intervals at the top and bottom of the segment length.
3. Cross slope of the trail and resting intervals shall be 1:48 (2%) maximum, although up to 1:20 (5%) is permitted when necessary for drainage on trail surfaces other than concrete, asphalt, or boardwalks.
4. Tread obstacles shall not exceed ½ inch in height or 2 inches in height for trail surfaces other than concrete, asphalt, or boardwalks.

4.3 Trailheads

Proposed trailheads include primary, secondary, tertiary, and water trailheads as defined in the Concept Plan with features as shown in Table 1.

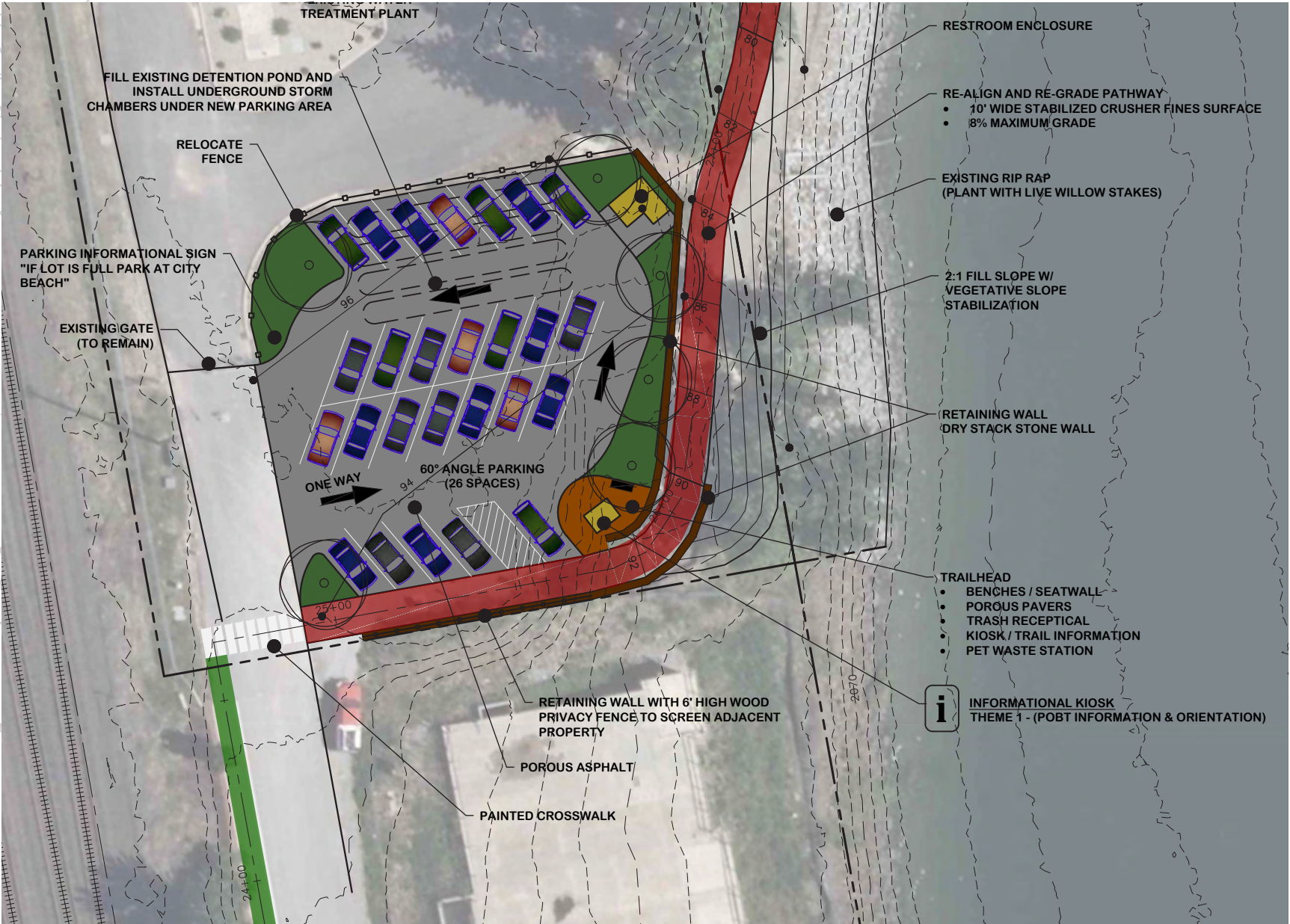
Table 1. Amenities provided for various trailhead classifications

	Primary	Secondary	Tertiary	Water
Map	X	X	X	X
Signage	X	X	X	X
Pet Waste Disposal Bags	X	X	X	
Waste Bins	X	X	X	
Parking	X	X (limited)		
Bike Racks	X	X		
Interpretive Kiosk	X	X		
Seating	X	X		
Lighting	X	X		
Restrooms	X			
Drinking Fountain	X			

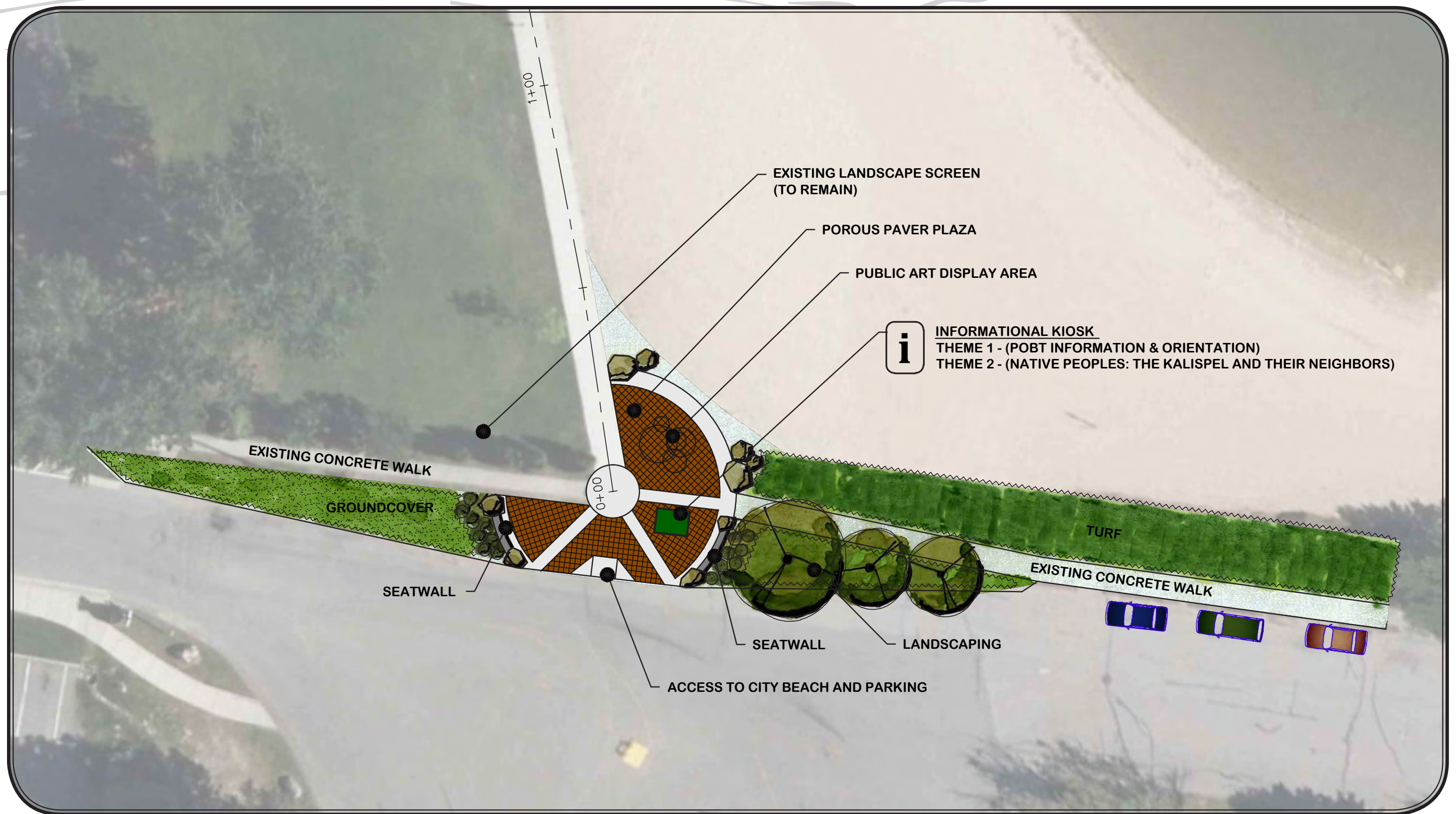
PRIMARY TRAILHEADS

Three primary trailheads are proposed: 1) near the Sandpoint Lake Water Treatment Plant at Humbird Mill Park, 2) opposite of the proposed railroad crossing in Ponderay, and 3) at the northern end of the proposed trail in Kootenai. The primary trailhead proposed in the Concept Plan at the former Lakeside Inn property was shifted to the existing trailhead at Humbird Mill Park due to existing demand and usage at the existing trailhead, which currently has trail maps, a portable toilet, and parking available. Additionally, the minimal pedestrian improvements that can be made along Sandpoint Avenue west of the Seasons at Sandpoint decreases the desirability of the former Lakeside Inn property as a primary trailhead. A rendering of the proposed trailhead at Humbird Mill Park is shown here. Renderings of the trailhead at Ponderay and Kootenai are included in Section 4.6. Parks and Amenities.

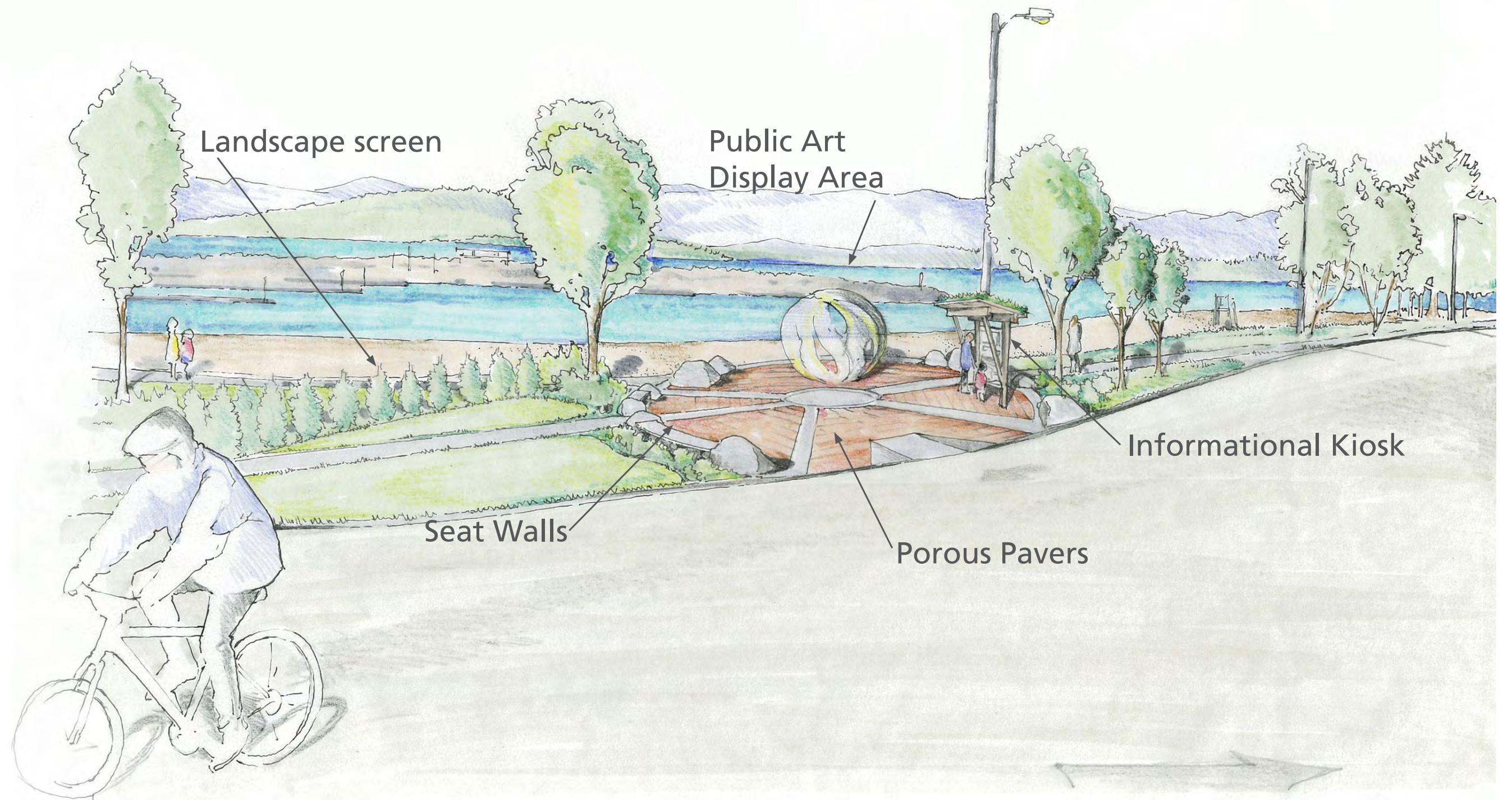
Proposed Humbird Mill Park Trailhead expansion (right) See Appendix A, page D2.1 and D2.2 for details.



Existing trailhead signage near the Sandpoint Lake Water Treatment Plant and Humbird Mill Park (top).



Proposed Sandpoint City Beach Trailhead. See also Appendix A, page D-1.



Conceptual rendering of the trailhead at City Beach.

SECONDARY TRAILHEADS

One secondary trailhead is proposed at City Beach. City Beach has ample parking available to provide overflow parking for the primary trailhead located at Humbird Mill Park. Proposed trailhead improvements at City Beach include installing an informational kiosk and a waste receptacle. In addition to information on the POBT, the kiosk at City Beach could include general information about City Beach park rules and regulations.

Although the former Lakeside Inn property was identified in the Concept Plan as a secondary trailhead, it is now the location of a paid parking lot that primarily serves downtown Sandpoint. Thus, it is not included in the Master Plan as a potential trailhead.



Pedestrians on existing Sandpoint Avenue (right). Stamped and colored asphalt (bottom, left), and thermoplastic applications (bottom, right) can be used to better demarcate the pedestrian and cyclists zone along Sandpoint Avenue.



TERTIARY TRAILHEADS

Two tertiary trailheads are proposed: 1) at the southern end of Ponder Point Lane and 2) at the southern end of the Elks Golf Club golf course. These tertiary trailheads can provide local access to the POBT and will not include parking as they are expected to experience lower use. The trailhead south of the golf course would be located just on the west side of a potential railroad underpass at the end of the existing dead-end spur from the Creekside Trail at the southeast corner of the intersection of ID-200 and US-95.

The trailhead at the end of Ponder Point Lane can provide residents of the Ponder Point neighborhood easy access to the POBT. “No Parking” signs and signs directing people to park at the Kootenai Trailhead will need to be placed at the end of Ponder Point Lane. Enforcement of no parking will be important because there is physically space for cars to park at the end of the cul-de-sac, but no parking will be allowed.

4.4 Connections

The completion of the POBT is all about connections: connecting cities and connecting people. Critical connections for the Master Plan include extensions of the existing trail made possible with new railroad underpasses. Connections have been grouped into five major connection points described in this section.

SANDPOINT CONNECTION

Currently, the existing trail starts near the Sandpoint Lake Water Treatment Plant and Humbird Mill Park. A good pedestrian connection between the existing trailhead and City Beach and downtown Sandpoint is lacking. Pedestrian friendly improvements along Sandpoint Avenue from the Bridge Street intersection to the existing trailhead at Humbird Mill Park could increase the number of people who would be willing to park at City Beach and relieve the parking pressure at Humbird Mill Park. Because Sandpoint Avenue is a private road with a public access easement, improvements would need to be coordinated with the Seasons at Sandpoint Homeowners Association and the City of Sandpoint, who jointly maintain this section of road.

Recommended pedestrian improvements along Sandpoint Avenue include changing the color and/or texture of the existing bicycle lane and adding signage and markings to indicate that the lane is for bicycle and pedestrian use. Ideally, the lane would be reconstructed with pavers or colored and stamped concrete or asphalt that would be flush with the adjacent road and allow for passage of emergency vehicles. In the interim, green paint or a thermoplastic pattern could be applied to the existing surface to help increase motorist awareness of the shared bike and pedestrian lane. A trailhead kiosk and a stamp, or color, in the public sidewalk located in between the Best Western and the shoreline could also help direct pedestrians from City Beach to Sandpoint Avenue and the POBT.

PONDERAY CONNECTION

Connecting the trail to the City of Ponderay requires extending the existing trail to the north through several privately owned parcels with environmental contamination. This includes the property with “Black Rock,” a large outcrop of smelter slag from the former Panhandle Smelting and Refining Company lead and silver smelter. A crossing either under or over the railroad is also needed to complete a safe connection into Ponderay. Numerous studies have been conducted on both the environmental contamination from the smelting operations and the feasibility of a railroad crossing (AECOM, 2015; STRATA, 2012; Terra Graphics, 2012; URS, 2011). This Master Plan assumes that private properties or easements can be acquired for the trail and that all environmental issues have been addressed.

The Ponderay connection, including the construction of a railroad underpass to connect Ponderay, was ranked as the highest priority of all connections presented during the public outreach process. Currently, there are well-worn trails that cross Black Rock and other private properties, and dangerous crossings of the railroad tracks occurs regularly. Providing a safe and legal connection into Ponderay is a high priority for the POBT Master Plan, as well as for economic development of Ponderay (StreetPlans, 2015).

Providing a safe and legal connection into Ponderay is a high priority for the POBT Master Plan.

The proposed Ponderay connection and trailhead was developed collaboratively with the Ponderay Village Sub-Area Plan. It includes a primary trailhead and passenger drop-off on the lake side of the railroad tracks and a multi-use underpass across from the current Harbison property at the south end of Railroad Avenue in Ponderay. Parking would be provided by on-street parking on the west side of the railroad. The connection to Ponderay also includes

a pedestrian only underpass across from Third Street in Ponderay at the location of an existing drainage gully. The connection to Ponderay is highly dependent on construction of the railroad underpass, which is closely tied economically with lakeside commercial, residential, and civic development. Thus, the Ponderay connection will ultimately be integrated into, but still distinct from, a more urban setting. As the Ponderay Sub-Area develops, it should facilitate the passage of the POBT through the development using the recommended stabilized crusher fines pathway surface.



The user created trail across private property and the railroad (left) and warning signs at the entrance to the Black Rock Property (above) demonstrate the importance of a safe connection to Ponderay

KOOTENAI CONNECTION

The connection to Kootenai is an extension of the connection to the City of Ponderay along the west (land) side of the railroad tracks. The trail would primarily be located within the right-of-way of the railroad but kept as far as possible from the railroad tracks. It would also incorporate a physical barrier between the trail and the tracks, such as a 6 foot high screen and security fence, to limit conflicts between pedestrians and the railroad. Most of the length of this connection is densely vegetated with good tree canopy. The character of the trail would be similar to the existing trail but without a view to the lake.

The Kootenai connection may tie directly into a larger network of paved trails in Kootenai and Ponderay. Therefore, paving this section of trail was considered since commuter traffic will likely increase once the POBT connects the three cities. In fact, 71 percent of those surveyed during the 2014 Trail Count and Survey indicated they would use the POBT as an alternative transportation route if the trail connected Sandpoint to Ponderay and Kootenai. However, the majority of the respondents to the online survey for the Master Plan (62 percent) felt that this connection should be gravel. Thus, it is recommended that a surface such as stabilized crusher fines, which has a natural look but creates a hard surface, be used for this connection.

The proposed trailhead in Kootenai is located on properties currently owned by the Bonner County Historical Society and LBD Development, LLC. Both owners are open to having a primary trailhead for the POBT in this location, and some facilities, such as restrooms and parking, could be shared between the properties.



The Kootenai trail connection would have a natural feel through wooded areas (above), similar to the existing trail.

PONDER POINT CONNECTION

The connection to Ponder Point Lane in Bonner County extends north from the northern end of the existing trail along the shoreline and across property currently owned by the Corps of Engineers (COE), Jacob Behrens, and Rob Behrens. This connection also includes a tertiary trailhead at the Ponder Point Lane cul-de-sac and a secondary underpass into Kootenai located approximately 650 feet north-east of the cul-de-sac and along an existing drainage gully. There is an existing user-created trail from Ponder Point Lane to the shoreline of the lake, but the trail does not continue to the existing POBT.

The COE property is a designated Wildlife Management Area (WMA) and was purchased by the COE to remediate wildlife impacts from the construction of the Albeni Falls Dam. The WMA is managed by Idaho Fish and Game. During the Master Plan process, three alternative alignments for a trail connection to Ponder Point were developed. The first alignment was located immediately east and at the elevation of the railroad on the lake side and mostly within the railroad right-of-way. The second alignment followed the shoreline along the lake, and the third alignment ran through the middle of the property and through the existing wetlands.

Respondents to the online survey for the Master Plan (79 percent) favored the shoreline trail over the upper railroad trail or the wetland trail. Representatives from Idaho Fish and Game expressed concern that the wetland trail would have the greatest impact on wildlife of the three alignments. There was concern that illegal at-grade railroad crossings would occur if the upper railroad trail were constructed and visible from the Kootenai connection on the west side of the railroad. Thus, the recommended alignment is the shoreline trail. Additionally, based on public feedback and the desire to minimize wildlife impact and soil instabilities, it is recommended that this section of trail be a narrow, 3 foot wide dirt trail (Cross Section B in Section 4.1).

The primary purpose of the Ponder Point trailhead and trail connection is to provide local access for residents of the Ponder Point neighborhood to the POBT. Thus, the trailhead will be a tertiary trailhead with only a map, signage, pet waste disposal station, and a waste bin. It will be important to work closely with the neighbors prior to constructing this connection in order to address any concerns about having a trail connection and trailhead at this location. An important consideration will be enforcing “No Parking” regulations at the proposed trailhead and redirecting automobiles to park at the Kootenai trailhead.

Location of the proposed shoreline trail across the Corps of Engineers property (below) and the existing user created trail to Ponder Point (bottom).



CREEKSIDE TRAIL CONNECTION

Currently, there is a spur from the Creekside Trail that passes under US-95 and extends to the northeast towards the intersection of US-2 and ID-200. It currently ends at property owned by Anvil Properties, just south of the Elks Lodge and Golf Course. The POBT Concept Plan included a secondary railroad underpass or overpass and secondary trailhead in this location, and the draft Bonner County Trails Plan (TPL, 2015) also shows a connection in this location.

Because the railroad splits just to the south of the proposed crossing location, a pedestrian only overpass may be more financially viable. Alternatively, the underpass could be located just south of the railroad split so that it can be shorter and less expensive to construct. Another possible secondary underpass connection to the Creekside Trail is across from the Cedar Street Bridge in Sandpoint where a pedestrian tunnel is already planned and is partially constructed under the highway to access the railroad depot.



Kayakers on Lake Pend Oreille will be able to access the trail at several water trailheads.

4.5 Water Trail

Access to and views of the water of Lake Pend Oreille is an inseparable part of the POBT experience. A water trail, primarily for non-motorized boating, is proposed from the City Beach boat launch to Ponderay's waterfront property. The stretch from City Beach northeast to Boyer Slough (north of Kootenai Bay) is a popular paddling route through a fairly open expanse of water that can be rough with strong south or west winds (Fritz, 2009). Water trailheads with non-motorized access ramps, signage, maps, and some amenities can help make this paddle an even more pleasant experience. Water trailheads are proposed at City Beach, Humbird Mill, just south of the Hall property at an existing down ramp, and at the Ponderay waterfront property.

4.6 Parks and Amenities

Although many members of the community expressed the desire to keep the POBT natural, there is equal excitement to develop parks and amenities along the trail and provide opportunities for community gatherings. To keep with the rustic character of the trail, parks should be developed with minimal amenities and no formal play structures. A "park" in this context may be as simple as a place with a bench, picnic table, scenic viewing areas, and small gathering spaces.

The Master Plan proposes that amenities (benches, restrooms, and shelters) and other features have a similar character and design throughout the POBT corridor. This will help differentiate the POBT from other trails in the area and help establish a sense of ownership and responsibility for the trail by donors to the project. However, the southern portion of the trail, including the Humbird Mill Park area, is located on property owned by the City of Sandpoint, and therefore, benches, wayfinding signage, and other park amenities that differ from the City of Sandpoint standard design will need to obtain special approval by the City on a case by case basis.

HUMBIRD MILL PARK

Humbird Mill Park is located at the existing trailhead near the Sandpoint Lake Water Treatment Plant. There is an existing bench and picnic table near the Humbird Mill ruins, and there is potential to further develop this area with additional side trails, benches, and gathering spaces that can be used as outdoor classrooms (See next page and Appendix A).

A conceptual plan for the Humbird Mill Park was completed for the City of Sandpoint in 2007. However, conditions have changed so that this plan is no longer relevant. Features from the previous plan, such as the side trail and an expanded parking area, are included in the Master Plan for the Humbird Mill Park.

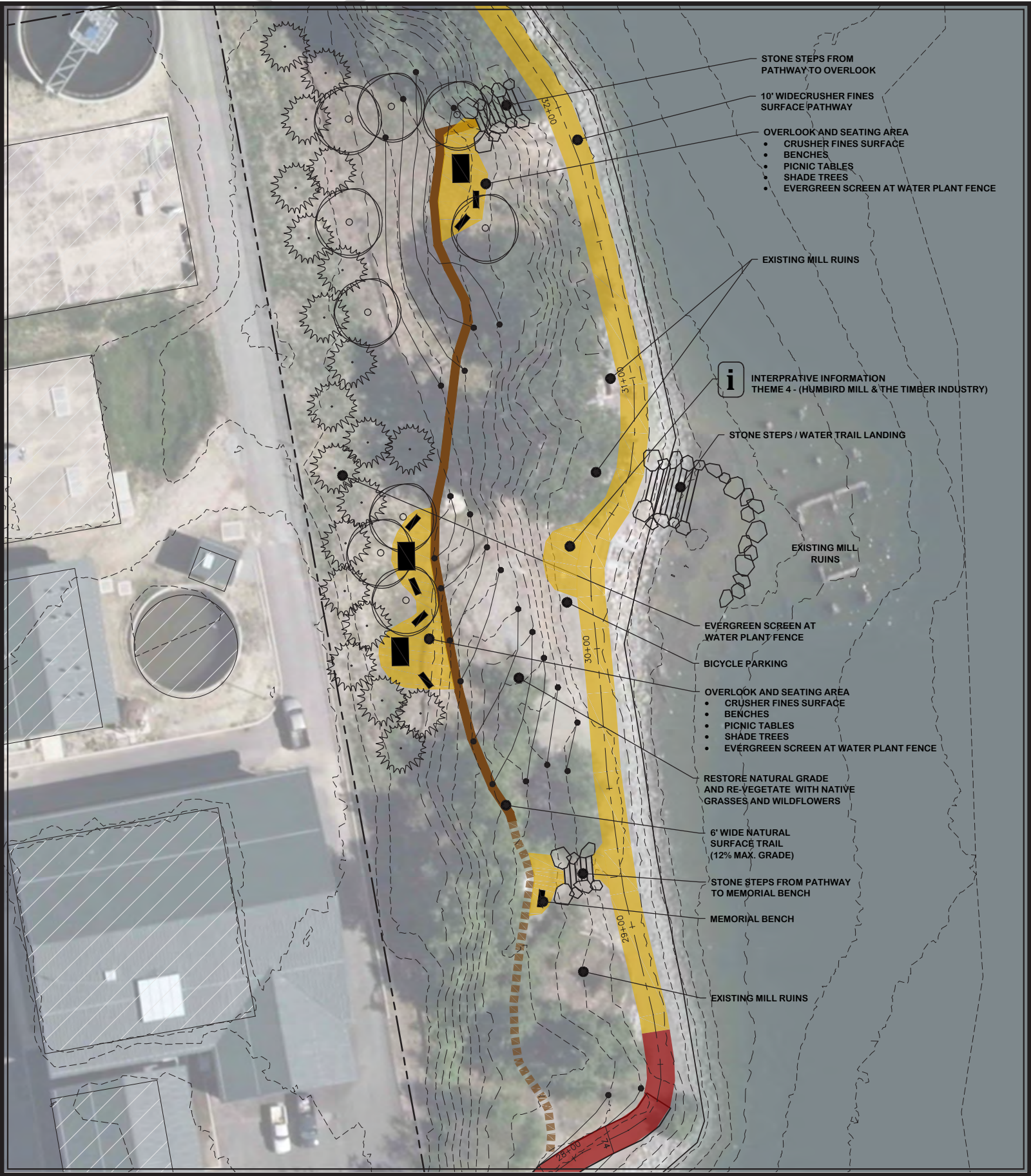


The existing Humbird Mill Park features ruins from the old mill (left), as well as standard city benches (middle) and picnic tables (right).

The proposed plan for Humbird Mill Park (right) includes a side trail, landscaping, additional benches and picnic tables, and gathering areas. See Appendix A, page D-4 for full concept plan of Humbird Mill Park.

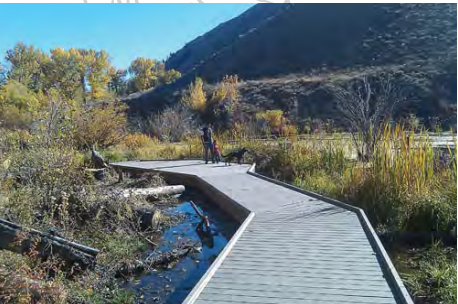


Enhanced access to the water is proposed at Humbird Mill Park as shown in this rendering (above).

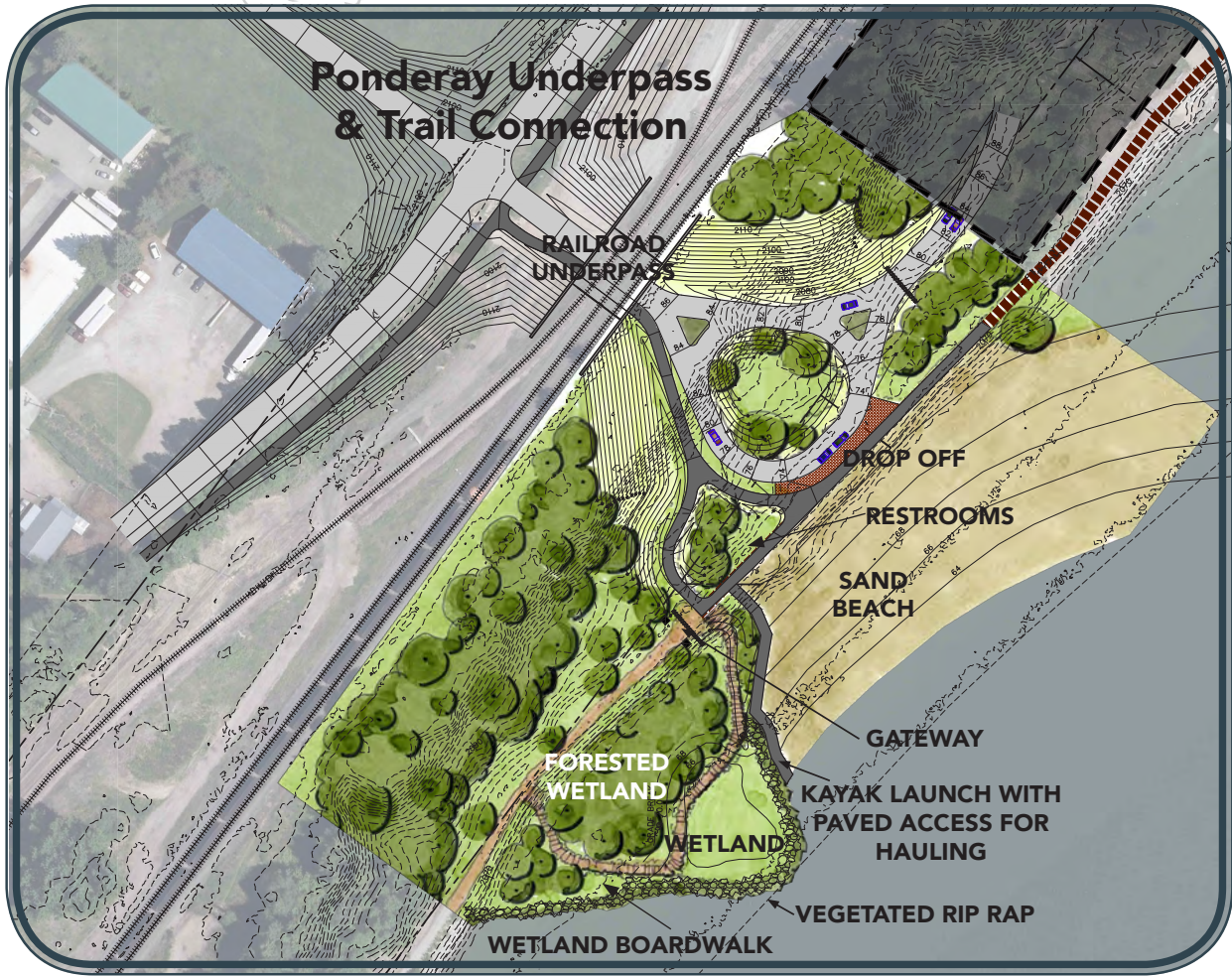


PONDERAY LAKEFRONT PARK AND TRAILHEAD

With the proposed railroad underpass in Ponderay, there is opportunity to connect Ponderay with its shoreline and create a public space on the lake. Plans for the development of the Ponderay shoreline are included in the Ponderay Village Sub-Area Plan (StreetPlans, 2015), and details of the connection with the POBT and a small proposed park is included in this Master Plan. The Ponderay Lakefront Park Trailhead includes a pavilion with restrooms, sheltered seating areas, and interpretive information. As part of the Sub-Area Plan, it also includes a sand beach, kayak launch with paved access, and a wetland boardwalk through a constructed wetland with interpretive information. A portion of the park would be ADA accessible.



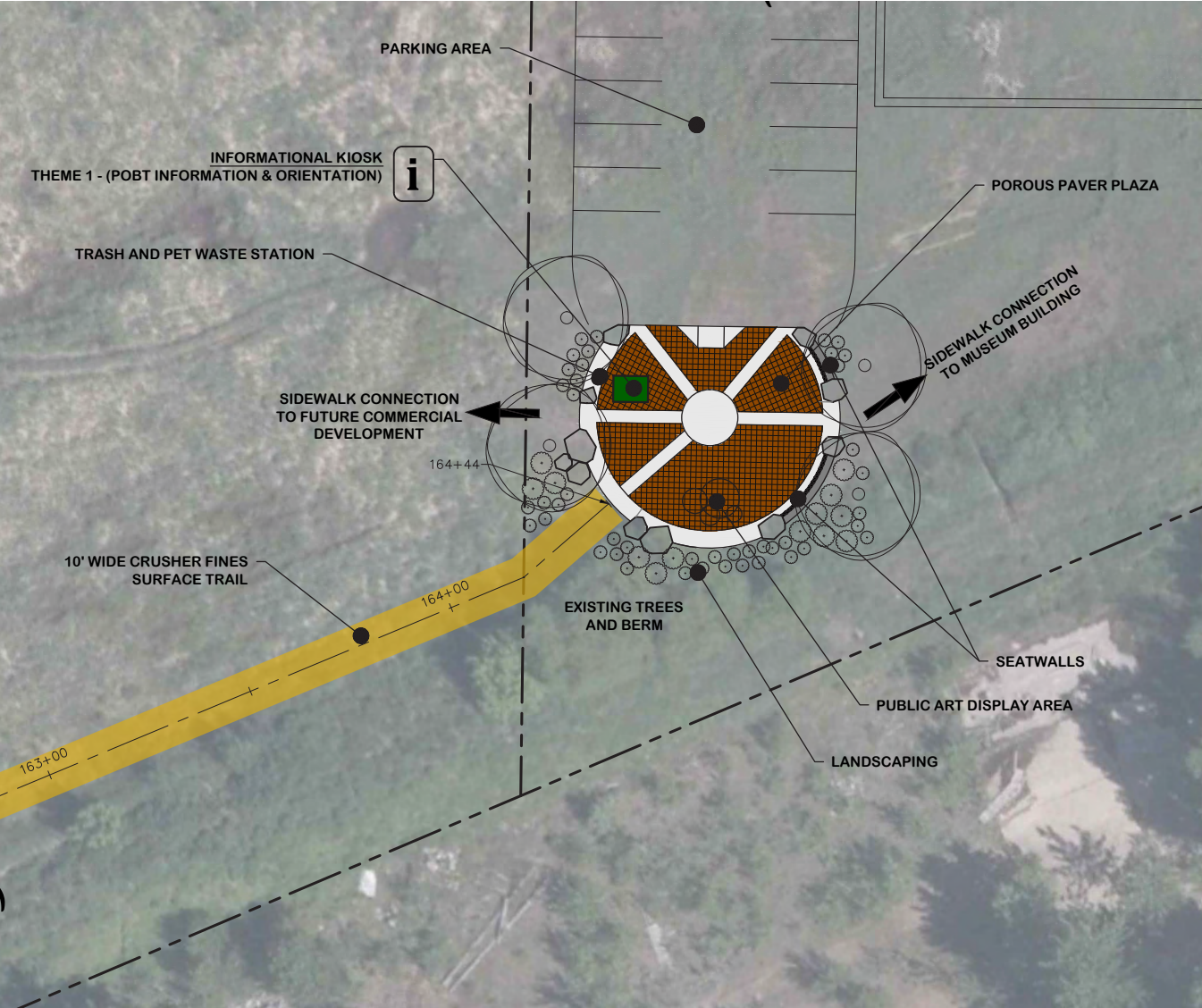
Example wetland boardwalk that could be placed through constructed stormwater treatment wetlands in Ponderay (left). Plan rendering of the Ponderay Trailhead (below). See Appendix A for detailed plans, sheet P-8.



KOOTENAI GATEWAY PARK AND TRAILHEAD

A gateway park and trailhead in Kootenai was included in the Concept Plan and could include restrooms, an information kiosk and signage, interpretive information, picnic tables, a pavilion, and a playground. Plans for the Kootenai park and trailhead should be coordinated with plans for the future museum and the property owner. The plans were not available at the time the Master Plan was completed. If the Kootenai trailhead is developed before the museum and neighboring property, a temporary gravel parking lot could be constructed to accommodate trail parking.

The trailhead in Kootenai (below) includes an informational kiosk and parking that can be shared with the future museum. See Appendix A, page D-5 for full concept plan of the Kootenai Trailhead.



STONE BENCH OPTIONS

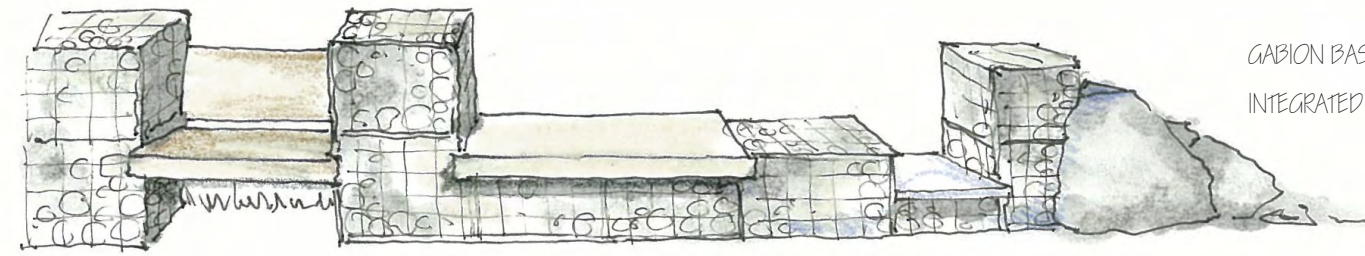
TIES TO HUMBIRD MILL RUINS AND BLACK ROCK

MATERIALS AND CHARACTER

The intent of the Master Plan is to protect and enhance the natural qualities of the trail experience by minimizing the visual impact of constructed improvements. Thus, the character of amenities within the POBT corridor could be very rustic and tied to the surrounding forest. At the same time, the POBT corridor has also been greatly impacted by the natural resource extraction industries that have historically surrounded it. Thus, three materials were considered as themes for the amenities along the POBT, including:

- Wood, which is reflective of the forest surrounding the trail and the historic logging industry.
- Stone, which is reflective of the stone ruins from the Humbird Mill.
- Steel, which is reflective of the historic smelting industry at the Pan-handle Refinery and the nearby railroad.

The results of the public outreach overwhelmingly favored wood (57 percent) and stone (37 percent) materials as opposed to the steel (Appendix D). Additionally, when given the choice within the wood and stone options, there was clear preference for the more simple and rustic designs, such as a well-placed log along the shoreline of the trail.



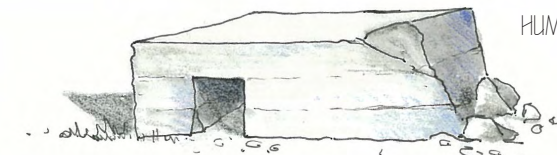
GABION BASKETS WITH CONCRETE BENCHES
INTEGRATED INTO HILLSIDE WITH STONE



STONE BASE WITH
CONCRETE TOP



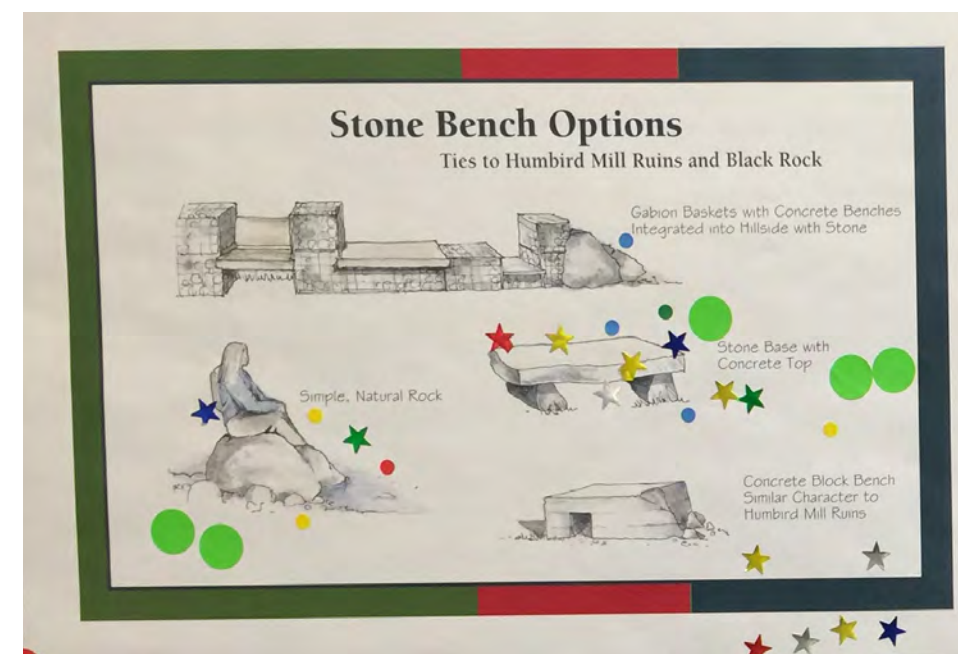
SIMPLE, NATURAL ROCK



CONCRETE BLOCK BENCH
SIMILAR CHARACTER TO
HUMBIRD MILL RUINS



Bench options using stone or concrete materials (top) based on the stone ruins at Humbird Mill (left). The stone benches along the existing trail (far left).



Results of the public outreach event and the online survey clearly favored wood and stone materials (left and following page).



Existing wood benches along the POBT (above).

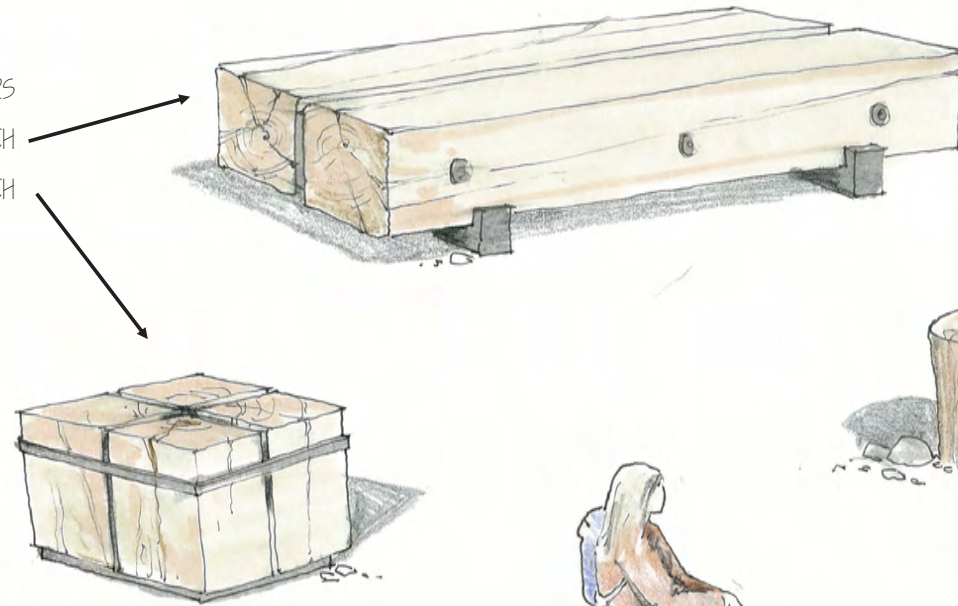


Bench options using wood materials (above right) based on the logging history of the area (left).

WOOD BENCH OPTIONS

TIES TO LOGGING AND THE FOREST

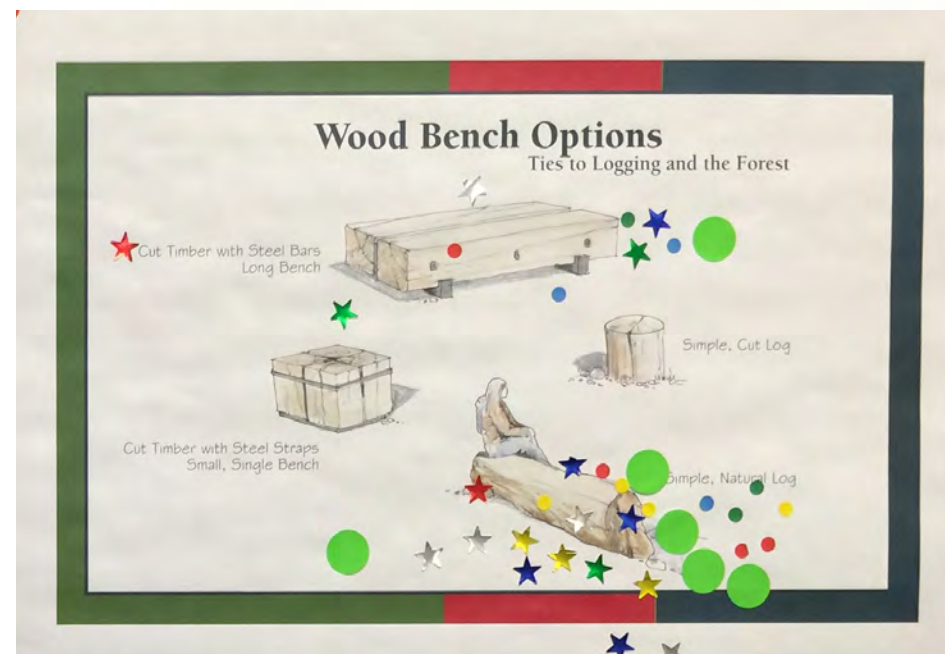
CUT TIMBER WITH STEEL BARS
LONG BENCH
SMALL, SINGLE BENCH



SIMPLE, CUT LOG



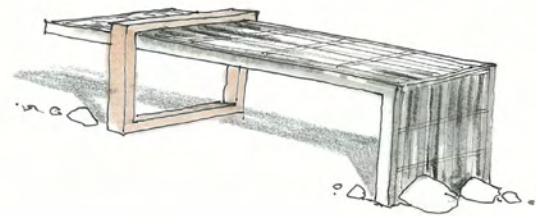
SIMPLE, NATURAL LOG



Results of the public outreach event and the online survey clearly favored wood and stone materials.

STEEL BENCH OPTIONS

TIES TO RAILROAD AND MINING

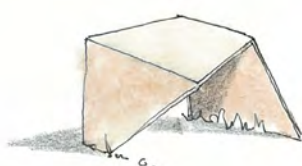


STEEL GRATE BENCH

BENT PLATE STEEL
LONG BENCH



BENT PLATE STEEL
SINGLE BENCH

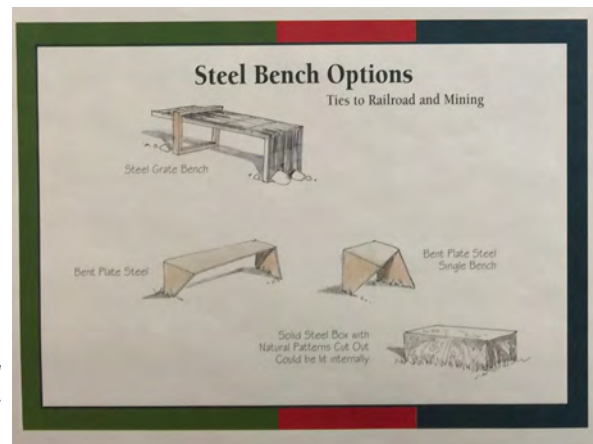


SOLID STEEL BOX WITH NATURAL
PATTERNS CUT OUT
COULD BE LIT INTERNALLY

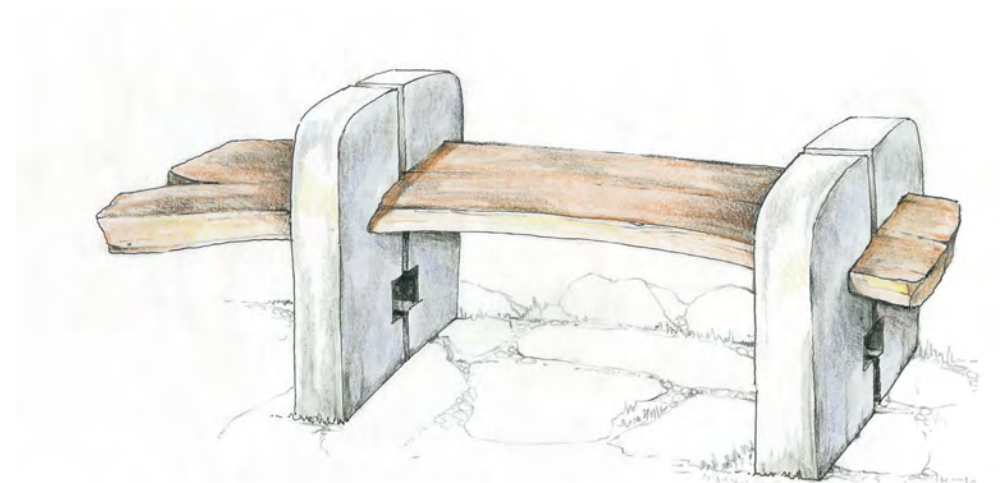


Bench options using steel material (top) based on the mining history of the area and active railroads (left).

The steel material received no votes during the public outreach event (right).



An alternative design was suggested that combined the wood and stone materials (below). This could be the standard bench design in the more refined park areas, with natural logs or large rocks placed along the trail in the more remote sections. Additional stone and wood benches that are manufactured locally are included in Appendix C.



Composite wood and concrete bench for the POBT.

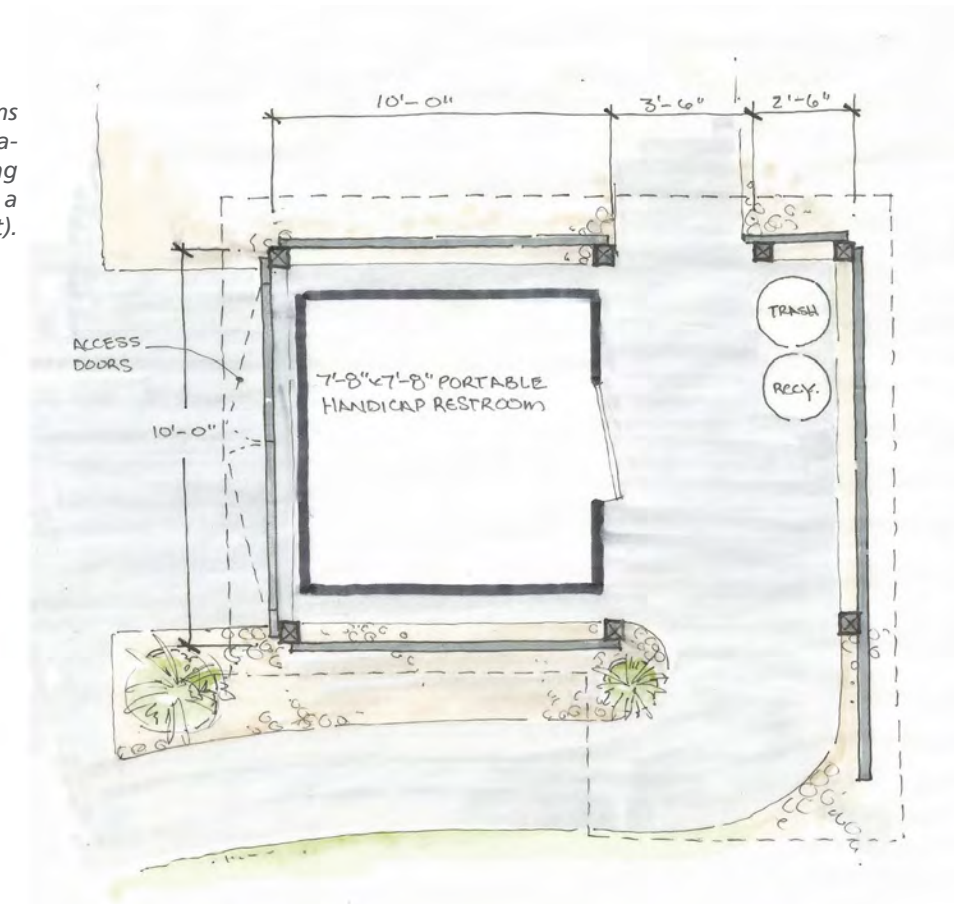
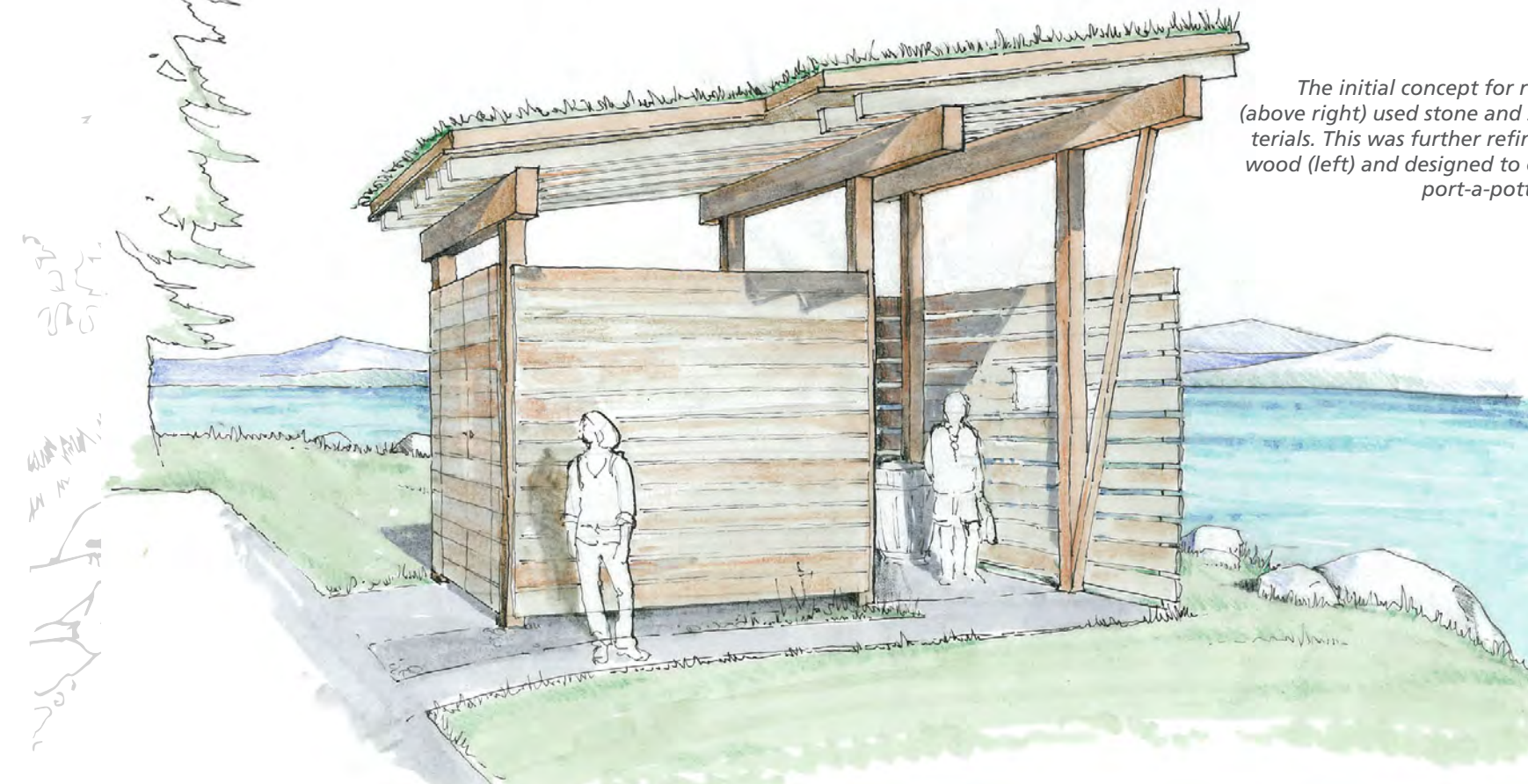
RESTROOMS

Restrooms are proposed at the primary trailheads and parks along the POBT. The original concept for the restrooms combined woods, stone, and steel materials (right). This was further refined after public input was gathered, and the proposed design incorporates a natural, vegetated roof and only wood material (below). The design can be used as a shelter for portable toilets that are removed and pumped seasonally as shown on the floor plan or it can be used as a building for a composting toilet or a fully plumbed toilet, depending on the water utilities that are available in a particular location. Solar panels could be used to provide electricity to restrooms located in remote locations.

Typically, vegetated roofs are planted with low-profile, drought resistant vegetation that requires minimal long-term maintenance. However, vegetated roofs may require short-term supplemental irrigation and weeding until the vegetation is established. If maintenance of a green roof is not feasible, standard roof materials can be used.



The initial concept for restrooms (above right) used stone and steel materials. This was further refined using wood (left) and designed to enclose a port-a-potty (right).





OUTDOOR CLASSROOMS

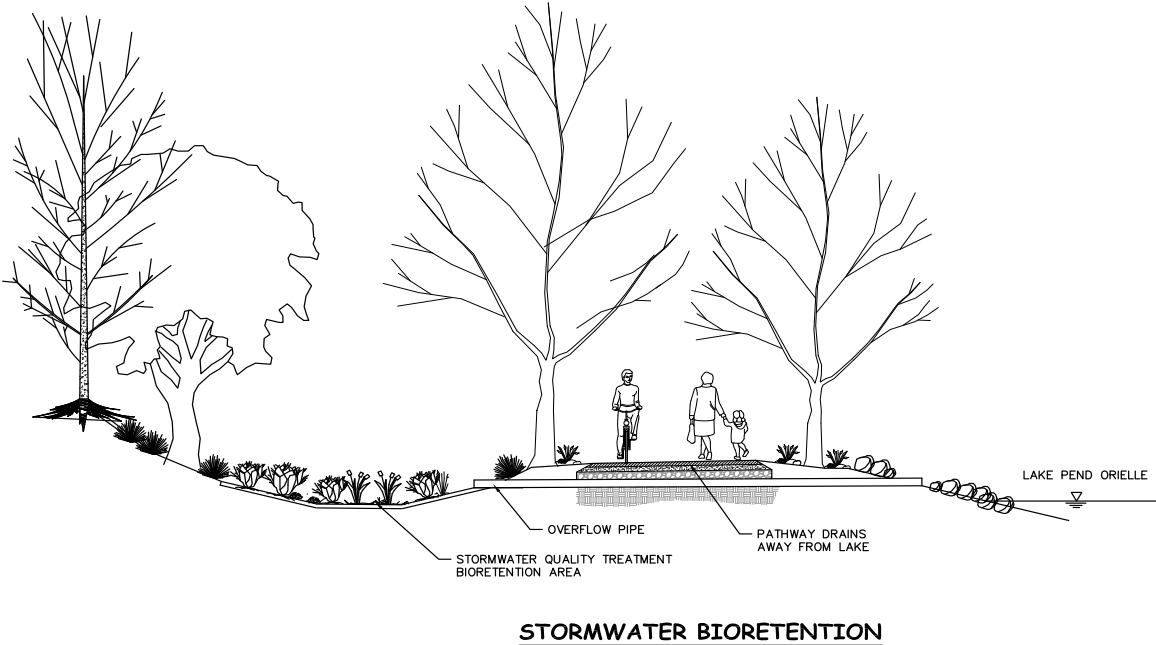
Outdoor classrooms or informal gathering spaces provide kids and adults the opportunity to learn directly from the outdoor environment. Several locations for clearings have been identified along the POBT corridor that can be used for small to medium gatherings of up to 35 people. The proposed pavilion at the Ponderay Trailhead can also be used as a formal or informal gathering space and outdoor classroom.

Informal and formal gathering areas along the POBT provide opportunities for kids and adults to enjoy the outdoors in a group setting.

4.7 Environmental

As the vision statement for the POBT states, the Pend d’Oreille Bay Trail is a collectively held treasure, designed for sustainability and to showcase spectacular lake and mountain scenery. Because of the importance of the natural surroundings of the POBT, environmental factors, such as providing sustainable stormwater management, considering the unique geology of the area, and considering adequate visual and sound buffers, were woven through the entire design. Maintaining a close tie to nature is an integral part of the POBT experience.

The Pend d’Oreille Bay Trail is a collectively held treasure, designed for sustainability and to showcase spectacular lake and mountain scenery.



STORMWATER

Stormwater management for the POBT is focused on low-impact solutions that mimic natural hydrologic conductions and treat stormwater runoff at its source of generation. General low-impact development stormwater design guidelines that apply to the POBT include:

- Using pervious surfaces where possible to infiltrate stormwater.
- Minimizing directly connected impervious areas.
- Using multiple best management practices (BMPs) to enhance water quality.

Development along the POBT corridor will need to meet applicable requirements and permitting from the Corps of Engineers, Idaho Department of Lands, Idaho Department of Water Resources, and local floodplain regulations.

Along the POBT corridor, materials that are pervious and allow for stormwater infiltration are preferred over impervious surfaces, such as asphalt or concrete. The proposed trail surface of crusher fines is pervious, firm, and stable and has a natural appearance. Parking areas at the proposed parks and trailheads should also be constructed with permeable surfaces, such as pervious concrete or pervious asphalt if possible. The proposed restroom enclosures have pervious vegetated roofs that capture rainfall and enhance water quality.

Minimizing directly connected pervious surfaces can be accomplished by adding bioretention areas or raingardens in and around parking lots to allow runoff to infiltrate. Additionally, enhancing the vegetated buffer between the lake and the trail and adding bioretention areas on the land-side of the trail will help enhance water quality before stormwater enters the lake.

GEOLOGY

The geology of the POBT corridor consists of quaternary moraine and glacio-fluvial outwash. Soils in the area are Haploxeralfs and Xerochrepts with slopes in the 30 to 55 percent range and Mission silt loams with slopes in the 0 to 2 percent range (USGS Soil Survey). This combination of silty, low plasticity soil is less stable and more erodible than most, and susceptible to both hydraulic and wind erosion. In fact, there is a long history of bank erosion along the lake shoreline due to a combination of 1) prolonged and energetic wave action while the lake is held at high pool during the summer and 2) a reduction in external and internal pore water pressure that holds the soil in place when the lake is drafted during the winter (COE, 2003).

In order to mitigate against the risk of damage to the mainline railroad tracks of the Burlington Northern Santa Fe Railroad (BNSF) and Montana Rail Link (MRL) and to prevent private property loss due to bank erosion, several riprap stabilization projects were completed by the U.S. Army Corps of Engineers in 1963, 1994, and 2003 through the trail corridor. These riprap bank stabilization projects included the construction of a maintenance road behind the riprap structure, which created the POBT.

The proposed extension of the POBT takes into consideration the geology and groundwater hydrology of the area. The typical trail cross section (See Section 4.1 and Appendix A) includes a geotextile filter fabric to stabilize the subbase in marshy wetland areas. Side slopes will be graded at a maximum 1V:3H slope and stabilized with native plants and jute matting to prevent erosion.

Existing riprap bank stabilization along the POBT (below).



Crusher fines surface texture (top) gives the trail a natural look and feel while remaining pervious. Raingardens, such as these in Sandpoint (above), can be used at trailhead parking areas to infiltrate stormwater.

BLACK ROCK

For the purposes of the POBT Master Plan, it was assumed that the environmentally contaminated properties within the trail corridor, such as the former Panhandle Smelting and Refining Company site (locally known as “Black Rock”), have been remediated and are safe for public use. There are several remediation alternatives that can be used to address the elevated levels of lead and arsenic currently present at levels that are a risk to human health. This includes removal, replacement, or capping of the soil and waste materials in select areas of the site to reduce overall soil concentrations to safe levels (Terragraphics, 2012). The remediation alternative that is selected will be dependent on current and projected land uses. For the POBT Master Plan, it was assumed that the Black Rock feature would not be removed and, thus, the trail alignment passes along the west side of Black Rock at the existing elevation of Black Rock. The trail could, however, be realigned if Black Rock needed to be removed completely.



Black Rock is a contaminated property that will need to be remediated to be safe for public use prior to completion of the Ponderay Connection.

BUFFERS

Visual and auditory buffers between the trail and the railroad as well as industrial, residential, and commercial sites have been incorporated into the Master Plan. Buffer types and locations are summarized in Table 2.

Table 2. Buffer Types and Locations

Location	Reason	Buffer Provided
Humbird Mill Trailhead	Prevent lights from parked cars shining into the condominiums at the Seasons	Retaining wall with wood fencing and/or landscaping
	Shield restroom visually and reduce the impact of smells	Provide architectural restroom enclosures. Place restrooms on far end of parking, away from condominiums and maintain them regularly to reduce odors.
	Visual screening of the Sandpoint Lake Water Treatment Plant	Landscape trees and shrubs along the fence between the Treatment Plant and Humbird Mill Park
Two Points	Visual screen of adjacent privately leased property	Landscape buffer to include trees and shrubs
Along the trail	Provide a visual and auditory screen from the railroad tracks	Locate the trail as far as possible from the railroad. In areas where the railroad can be seen from the trail, a 6’ tall privacy fence will be constructed between the trail and railroad.
	Provide a visual and auditory screen from lumber operations in Kootenai	Landscape buffer to include trees and shrubs
Ponderay Trailhead	Shield restroom visually and reduce the impact of smells	Provide architectural restroom enclosures. Maintain them regularly to reduce odors.

4.8 Landscaping

New landscaping is proposed in the Master Plan in order to provide slope and bank stabilization, visual screening, and sound buffering. Landscaping will also be used to improve the existing environment and enhance the user experience by providing shade for trail visitors, as well as forage and habitat for wildlife. The objective of all landscape additions will be to mimic the existing natural environment while addressing specific development issues. To accomplish this, only native plant species should be used that require no additional water or care to thrive. Species selection should also consider how best to compete with non-native invasive species. A brief list of example plant species grouped by their potential application is shown here. More exhaustive lists can be found in Appendix A.

The Idaho Panhandle ecosystem is blessed with a broad spectrum of plant species to choose from for landscape use. Typically, conifer trees are a good choice for screening as their foliage is intact year round. Deciduous trees make good shade due to the broad canopy structure, while slope stabilization is often achieved with a variety of grasses. While these lists are representative of the general classes of plants that may be used for a specific purpose, care must be taken to select the proper species for each unique site. Each site has different soil types, sun and wind exposures, and soil water content. Similarly, plant species have evolved preferences, such as pH adaptability, sunlight exposure requirements, and drought tolerance. The proper species selection will consider all of these characteristics.



SCREENING TREES



Common Name	Scientific Name
Douglas-fir	<i>Pseudotsuga menziesii</i>
Fir, grand	<i>Abies grandis</i>
Fir, Subalpine	<i>Abies lasiocarpa</i>
Redcedar, western	<i>Thuja plicata</i>
Spruce, Engelmann	<i>Picea engelmannii</i>

SHADE TREES



Common Name	Scientific Name
Alders	<i>Alnus species</i>
Aspen, Quaking	<i>Populus tremuloides</i>
Birch, Paper	<i>Betula papyrifera</i>
Birch, River	<i>Betula occidentalis</i>
Cottonwood, Black	<i>Populus trichocarpa</i>
Maple, Rocky Mtn	<i>Acer glabrum</i>

SLOPE STABILIZATION



Common Name	Scientific Name
Bluegrass, canada	<i>Poa compressa</i>
Brome, smooth	<i>Bromus inermis</i>
Fescue, red	<i>Festuca rubra</i>
Fescue, sheep	<i>Festuca ovina</i>
Wheatgrass, thickspike	<i>Agropyron dasystachyum</i>

WETLAND RECLAMATION



Common Name	Scientific Name
Bulrush, Hardstem	<i>Schoenoplectus acutus</i>
Common Reed	<i>Phragmites australis</i>
Common Spikerush	<i>Eleocharis palustris</i>
Common Threesquare	<i>Schoenoplectus pungens</i>
Rush, Mountain	<i>Juncus arcticus</i>
Sedge, Nebraska	<i>Carex nebrascensis</i>
Sedge, Water	<i>Carex aquatilis</i>

WILDLIFE FOLIAGE



Common Name	Scientific Name
Arrowleaf balsamroot	<i>Balsamorhiza sagittata</i>
Aster, gray	<i>Aster glaucodes</i>
Blanketflower	<i>Gaillardia aristida</i>
Lupine	<i>Lupinus polyphyllus</i>
Lupine, silky	<i>Lupinus sericeus</i>
Meadowrue, purple	<i>Thalictrum dasycarpum</i>
Western groundsel	<i>Senecia integerrimus</i>
Wild ginger	<i>Asarum caudatum</i>
Yarrow, western	<i>Achillea millefolium</i>
Yellow buckwheat	<i>Eriogonum flavum</i>

4.9 Signage

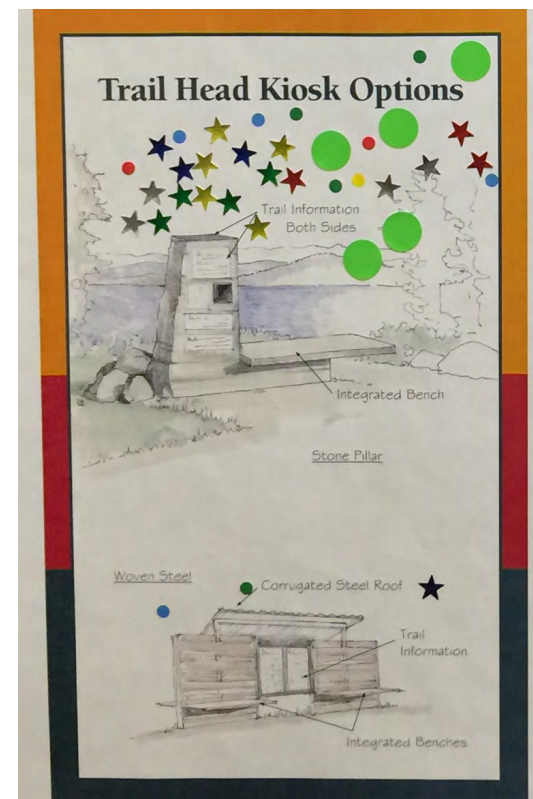
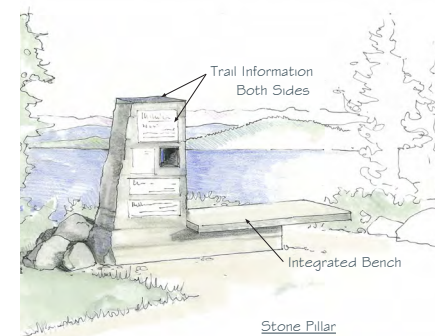
The types of signage along the POBT includes regulatory, wayfinding, interpretative, and safety signs. Except where standard regulatory type signage is required, signs along and pointing to the POBT should have a design that is unique and consistent with the natural beauty of the area.

Similar to the material choices for benches, three materials and designs for signage along the POBT were presented to the community: wood, stone, and steel. Stone and wood materials were the preferred choice and an example of a wooden kiosk with a green roof is shown here.



Recommended trailhead kiosks are made of wood with a green roof (above) or concrete (above right).

Trail Head Kiosk Options



Trailhead kiosks are proposed at the Sandpoint City Beach, Humbird Mill Park, Ponderay Lakeside Park, and the Kootenai trailhead. Trailhead kiosks should include the following information:

1. Location map with orientation
2. Stewardship and etiquette (Pick up after dogs, etc.)
3. Regulatory information (No Parking, No Trespassing on Private Property, etc.)
4. Alternative parking info if lot is full
5. Warnings
6. ADA required information including:
 - A. Length of the trail or trail segment
 - B. Surface type
 - C. Typical and minimum tread width
 - D. Typical and maximum running slope
 - E. Typical and maximum cross slope

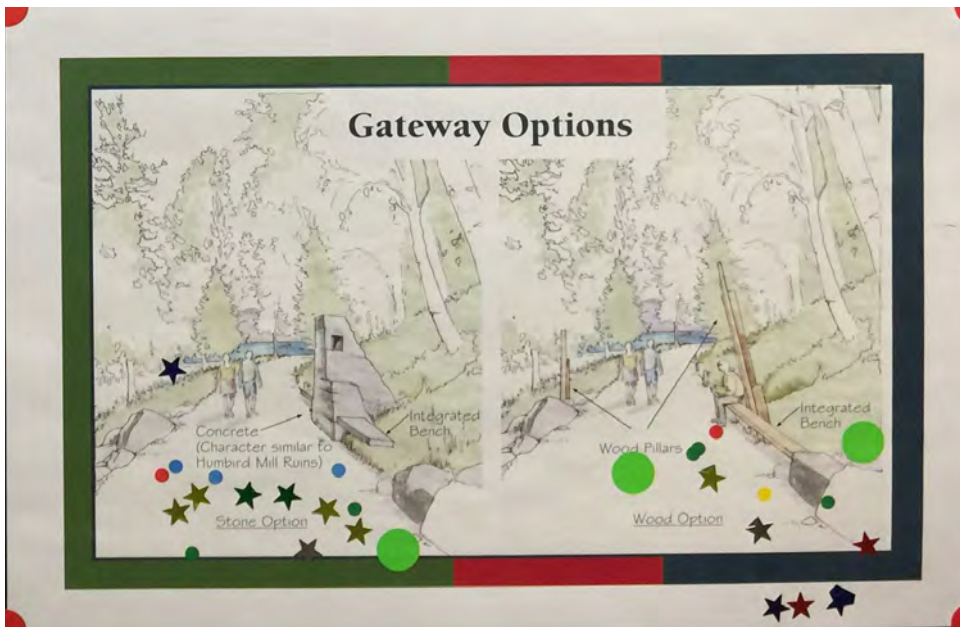
Gateways are types of trail indicators that signal passage from one area to another, without written plaques. Gateways are where the trail is clearly constrained on two or three sides and help create a sense of distance and passage. Gateways between more formal and developed areas to more natural and rustic sections of the trail are proposed at Humbird Mill Park, Ponderay Lakeside Park, and Kootenai trailhead. See plans located in Appendix A for more detailed location information.

Existing gateway along the POBT created by the "Cairn of Thanks" and an overhanging log (below).





Gateways designed using stone or concrete (left) was preferred to the one made of wood (above) during the public outreach event (below).



Wayfinding signage is needed to help direct visitors and residents to the trail and to let them know where they are along the trail. Wayfinding signage should be located at all trailheads, including water trailheads. For wayfinding signs located within the City of Sandpoint, special designs will need to be approved by the City Council. The Sandpoint Downtown Streets Plan and Design Guide (2012) recommends MUTCD approved signage within the City and consists of a green background with white lettering. Color-coded bicycle route badges are being used in conjunction with the MUTCD standard signs.

A type of wayfinding sign that is important for safety reasons, are trail mile markers. In addition to being used by emergency responders, they can be helpful for guiding trail users and recording maintenance needs. Mile markers can be as simple and natural as engraved stones located along the trail or they could take the form of a wood or concrete pillar.

Existing MUTCD wayfinding signage in Sandpoint (right). Trail mile markers that replicate railroad mile markers (below) could be used along the POBT.



Interpretive signage will be located along the trail using designs that are minimally intrusive. Of the standard trailside interpretive signage examples that were presented during the public workshops for the Master Plan, the preferred option was the simple cantilevered sign. Details on the information that could be included at each interpretive location is included in Section 5. Interpretive Plan.



Simple interpretive signs can help inform visitors about the unique history of the POBT.



BIRDING THE BAYS AND BYWAYS

There are opportunities galore along the International Selkirk Loop for bird watchers! The route traverses lush valleys and wetlands, is adjacent to pristine rivers and lakes, and is surrounded by mountain ranges covered with dense mixed conifer forests and alpine meadows. This incredibly diverse environment is home to a wide array of birds so keep your binoculars and cameras handy!

Visit some of the national wildlife refuges, wildlife management areas, state parks and other areas described in the Birder's Guide to the International Selkirk Loop that is available at chambers of commerce and other locations along the route.

BALD EAGLE

Symbol of the Northwest, the bald eagle is still found in nesting colonies along the Selkirk Loop. They often nest in the tops of tall, dead trees in the forests and on old structures in town settings. Bald eagles are also found along the Selkirk Loop, especially in the areas of the Selkirk Loop and the Selkirk Loop. They are also found in the Selkirk Loop and the Selkirk Loop.

TUNDRA SWAN

These birds migrate from the Selkirk Loop to the Selkirk Loop. They are found in the Selkirk Loop and the Selkirk Loop. They are also found in the Selkirk Loop and the Selkirk Loop.

WESTERN GREBE

These birds migrate from the Selkirk Loop to the Selkirk Loop. They are found in the Selkirk Loop and the Selkirk Loop. They are also found in the Selkirk Loop and the Selkirk Loop.

OSPREY


These birds migrate from the Selkirk Loop to the Selkirk Loop. They are found in the Selkirk Loop and the Selkirk Loop. They are also found in the Selkirk Loop and the Selkirk Loop.

GREAT BLUE HERON



These birds migrate from the Selkirk Loop to the Selkirk Loop. They are found in the Selkirk Loop and the Selkirk Loop. They are also found in the Selkirk Loop and the Selkirk Loop.

PILEATED WOODPECKER

These birds migrate from the Selkirk Loop to the Selkirk Loop. They are found in the Selkirk Loop and the Selkirk Loop. They are also found in the Selkirk Loop and the Selkirk Loop.



BIKING & HIKING SANDPOINT AND THE INTERNATIONAL SELKIRK

THE SPIRIT OF SANDPOINT

People have been a part of this landscape for centuries, but only in the 1880s did humans begin to greatly alter their surroundings. The human stories of Sandpoint are forever linked to the nearby mountains, lakes, rivers, and meadows. Traveling by foot, canoe, horse, wagon, steamboat, train, and car, it was often a challenge to navigate this beautiful and formidable land. But come they did. Over time, Sandpoint grew to be the largest city on the banks of Lake Pend Oreille.

How did you arrive? What will you take away? What would entice you to stay? You, too, are now part of the spirit of Sandpoint.

HUNTERS, GATHERERS, TRADERS, TRAVELERS

Native peoples camped in summer villages in Sandy Point for thousands of years and the area was a crossroads for two routes to distant hunting and gathering grounds. Indian-Salmon for trade and transport. Sandpoint's location made it a hub for the Selkirk Loop and the Selkirk Loop.

SETTLING SANDPOINT


The Selkirk Loop, located south of Sandpoint, was a hub for the Selkirk Loop and the Selkirk Loop. It was a hub for the Selkirk Loop and the Selkirk Loop.

CHEAP LAND & STUMP FARMS

Between 1880 and 1900, efforts were made to establish Sandpoint as a center for the Selkirk Loop. The Selkirk Loop was a hub for the Selkirk Loop and the Selkirk Loop.

WORKING & PLAYING

People have been drawn to the Selkirk Loop and the Selkirk Loop. They are found in the Selkirk Loop and the Selkirk Loop.



5. INTERPRETIVE PLAN

This interpretive plan provides guidelines for interpreting significant natural and historic features visible from the Pend d'Oreille Bay Trail (POBT). Interpreting these features contributes to the preservation, protection, and enhancement of archaeological and historic sites and enhances resident's and visitor's appreciation of the area. Interpretation can also encourage the use of the trail by educational groups. This interpretive plan includes recommendations for interpretive themes and storylines, presents suggested signage locations, and provides options for different types of interpretive media.

Note that the interpretive plan is flexible, and the number of sites and the number of signs at each site can be modified based on budgets, the desire to limit the number of signs to retain the undeveloped nature of the trail, and the desire of the parties involved in implementation. All of the suggested themes do not need to be interpreted; limiting the number and sizes of interpretive signs while presenting some of the interpretive stories via print, web, or mobile media offers a variety of interpretive opportunities with minimal impact on the natural setting.

The suggested locations for interpretation can vary as well. Many themes are related to wider landscape views that are visible along the entire POBT and thus, could be located anywhere since they are not tied to specific features. These themes were spread out to provide a more relaxed interpretive experience. However, interpretation of specific features along the trail, such as Humbird Mill and Black Rock, should be located at those sites. See Appendix A for detailed location information.

5.1 Audience Analysis

As the resident and tourist demographic of the greater Sandpoint area change, so will the demographics of the POBT trail users. Current users of the POBT include:

- Families out for a stroll
- Walkers and runners out for exercise
- Bicyclists
- Dog walkers
- Bird/wildlife watchers and photographers
- Cross country skiers and snowshoers
- Fishers
- Swimmers

Potential partners and stakeholders who have an interest in, or might benefit from, development of interpretive opportunities along the POBT include:

- Residents of Sandpoint, Ponderay, and Kootenai.
- Recreation users from outside of Bonner County.
- Those interested in tourism opportunities in the area, including walking, biking, and boat tours.
- Area school and youth groups and other organized groups with an interest in educational opportunities and volunteer projects.

As the population increases and urban centers expand, the number of visitors to the POBT is also expected to increase. New users may include:

- Tourists seeking an easy, scenic walking/hiking opportunity, many of whom would enjoy the interpretive experience.
- Tourists who are specifically interested in learning more about the natural and cultural history of the trail or in combining an educational experience with their recreational visit.
- Organized groups, such as local school groups, that are studying natural resources, Native American history, the timber or mining industries, or railroads.
- Boaters, including canoeists and kayakers.

“The rich cultural and natural history of the POBT corridor make it a prime outdoor classroom for school field trips and lifelong learning.”
(POBT Concept Plan)

5.2 Conservation Education Potential

In the POBT Concept Plan, the education goal and related objectives are stated as follows:

Provide a safe, natural outdoor learning environment for multiple educational disciplines (geology, biology, history, recreation, art, etc.) from toddlers to elders.

- Obj 1. Develop interpretive opportunities along the trail corridor.
- Obj 2. Identify off trail scenic sites for educational gatherings.
- Obj 3. Develop web-based materials that enhance the educational experience of the trail.

The POBT can serve as an outdoor classroom, offering local teachers and educators an opportunity to teach about a variety of subjects under the umbrella of natural and cultural history. Diverse groups ranging from summer camps to groups of seniors interested in lifelong learning can all benefit from outdoor programs.

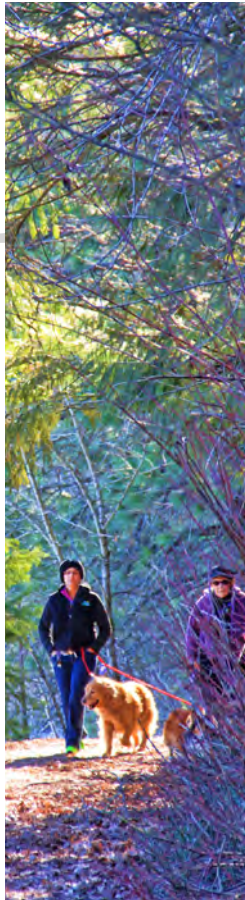
While it is outside of the scope of the Pend d’Oreille Bay Trail Interpretive Plan to develop detailed conservation education programs or curricula, the site’s potential for use by area schools and other educational groups is very high.

Web-based tools for teachers and group leaders would be especially useful. Classroom lessons, particularly history and science lessons, can be linked to interpretation along the trail. Areas along the trail where there is room for groups to gather for discussions without blocking the trail have been identified in the plan and are shown in Appendix A.

5.3 Goals and Objectives

“If you don’t know where you’re going, any road will get you there.” Lewis Carroll’s words are as true in interpretive planning as in any other type of direction-setting.

While interpretive media planning is more art than science, it is important for an organization to clearly state why it is important to get their specific messages out to targeted audiences. All interpretive media should support the mission of the organization. Managers should ask, “What does the organization hope to accomplish with the inclusion of interpretive media in the project?” Out of this simple question springs the heart and soul of any interpretive project, the foundation on which management and interpretive goals and objectives are built.



Dog walkers and their canine friends enjoy the beauty of the Pend d’Oreille Bay Trail.

Goals are generally long-term and set the overall tone of the project. Objectives tend to be short-term and ideally are measurable. Specific project goals for any given interpretive project should align with the mission and any previously stated goals for the organization. Goals generally use words like “understand,” “appreciate,” and “feel,” while objectives use words like “describe,” “reduce,” “increase,” and “identify.”

Objectives provide details about how goals will be accomplished and are ideally stated in specific and measurable terms describing overall visitor behavior or performance. Interpretive objectives state what an individual ideally will do as a result of interacting with specific interpretive media, such as a sign, exhibit, brochure, website, or mobile app.

In order for goals to be measurable, the managing organization needs baseline data measuring the site conditions and concerns prior to the addition of interpretive media. Objectives would then state the desired change in behavior in observable, quantifiable terms. Follow-up data collection is required to determine whether interpretation has succeeded in achieving the desired result. Unfortunately, baseline data is often not available, and follow-up data collection is often beyond the budgetary and staffing capabilities of organizations. For this reason, the objectives in this plan are stated in more general terms and would need to be modified by management in the future if they are to be measurable. As presented here, they are still of value as statements of desired outcomes.

Establishing goals and objectives for the interpretive plan and for each interpretive element will strengthen its educational and interpretive benefits.

MANAGEMENT GOALS AND OBJECTIVES

I. Goal: Gain public support for uses of the POBT that will ensure ongoing public access to the trail.

- **Objective:** POBT users will understand who manages the trail and what is required (funding, community support, volunteer assistance, etc.) in order to ensure that the trail is properly maintained. Contributions of money, political, and volunteer support will increase as a result.
- **Objective:** Trail users will recognize and respect the railroad right-of-way and private property along the trail so problems do not occur and the trail can remain open to public access.
- **Objective:** Trail users will know that cooperation between the communities of Sandpoint, Ponderay, and Kootenai is essential to the management of the trail. Citizens of all three communities will be engaged in the development and maintenance of the trail.

II. Goal: Enhance appreciation for the natural and cultural heritage of the area so trail users will be motivated to preserve and protect these resources.

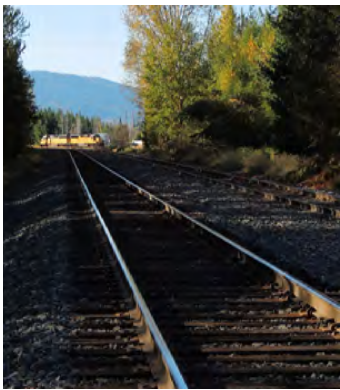
- **Objective:** Protect sites significant to the history of Sandpoint and the entire Inland Northwest and enhance their importance to the community through interpretive opportunities. The public will value and support the protection of these sites as a result.
- **Objective:** Establish partnerships to help provide funding for the development and maintenance of interpretive media for the POBT. The implementation of this plan will be evidence of success in this objective.
- **Objective:** Visitors will become more aware of the importance of the historic sites along the trail, recognize their own role as stewards of historic sites, and understand that these sites are protected by law. Visitors will carry this knowledge with them here and in their own communities where they will assist with protecting and monitoring historic sites and reporting vandalism or theft of our heritage.

III. Goal: Promote safe and ethical use of the trail and the shoreline, as well as respect for the private property adjacent to the trail.

- **Objective:** Trailhead signage or other maps will clearly show what areas are open to public access and what areas are closed in the vicinity of the POBT. This will reduce trespassing and related concerns of private landowners along the trail.
- **Objective:** Trailhead signs and other trail information will educate trail users about safety and ethics related to interactions between trail users (bicyclists, dogs walkers, runners, etc.) reducing conflicts between user groups and providing a more enjoyable experience for everyone.



Interpretive signage conveys knowledge and history of the area to visitors (when Steve Gill is not available).



Understanding the roles of the railroad (top), timber (right), and mining industries in the settlement and economic development of the area is an objective of the interpretive plan.

- **Objective:** Information will be available to inform trail users about safety related to the railroads, reducing trespassing and the potential for accidents.
- **Objective:** Information will be available to inform trail users about water safety, reducing water-related accidents and injuries.

IV. Goal: Trail users will understand the importance of environmental protection along the POBT.

- **Objective:** Interpretation and visitor information will make visitors aware of the need to protect the natural environment around these sites to minimize human impact on the natural environment (fire, noxious weeds, soil compaction, erosion, etc.).
- **Objective:** Visitors will know that it is important not to disturb wildlife along the trail, especially during breeding seasons and winter when they are most vulnerable. As a result, wildlife will continue to use the water and forests adjacent to the trail as habitat.
- **Objective:** Visitors will understand that staying on the designated trail is important for protection of wetlands and erosion control, reducing impacts adjacent to the trail.

INTERPRETIVE GOALS & OBJECTIVES

I. Goal: Visitors will be aware of the natural resources and historical sites along the POBT trail and their importance to the region, past and present.

- **Objective:** Visitors will be presented with an accurate representation of the history of the sites.
- **Objective:** Visitors will learn about the people who have inhabited this region from prehistoric times to the present and appreciate what brought them here, how they utilized natural resources, and how humans have changed the land over time.
- **Objective:** Visitors will gain an appreciation of the features of the natural environment—geological, botanical, wildlife, and water resources—and their importance to the region, past and present.
- **Objective:** Trail users will understand the roles that the timber and mining industries played in the settlement and economic development of Sandpoint, Ponderay, Kootenai, and Bonner County.
- **Objective:** Visitors will understand why it is important to protect and, in some cases, work to restore the natural and cultural resources along the trail and in the region for the benefit of future generations.

5.4 Media Recommendations

A wide variety of interpretive media is available for personal (programs and guided interpretive walks) and non-personal (signs, printed materials, and electronic media) interpretation. Different ways of delivering interpretive messages appeal to different audiences and can be tailored to fit available funding.

All media, whether wayside signs, print, web, or mobile, should utilize the same color palette and identity logo to enhance visitor recognition. The content may be similar or complementary. The research that is done for a web site or mobile app is the same research that is needed for interpretive signs.

WAYSIDE INTERPRETIVE SIGNS

- The advantage of interpretive wayside signs over brochures and other media is that signs are always present and are accessible to virtually all trail users.
- Signs made of high quality materials have a fairly long life-span (as much as 10-15 years) and require less maintenance than other media, but they can be more expensive initially and more expensive to replace or update than print or electronic media.
- There are several options for sign materials that are capable of full-color, high resolution digital imaging. The options recommended in this plan are very durable, vandalism-resistant, reasonably priced, and guaranteed against fading or manufacturing defects for at least 10 years. (See Appendix D for a comparison of materials that are frequently used for durable interpretive signs.)
- Signs do not need to be restocked like brochures.
- They do not require visitors to have electronic devices, such as a smartphone, to download apps or access websites from the trail.

PRINTED MATERIALS

- An interpretive trail brochure could be available at trailhead kiosks or other locations in town.
- A more in-depth educational pamphlet could be developed for visitors interested in learning more about the POBT. The pamphlet could be sold through local outlets like the Bonner County Museum, the Sandpoint Chamber of Commerce, or stores in Sandpoint and Ponderay.

WEB SITE

- Brochure and interpretive panel text, photos, and illustrations should be adapted for use online. Having an online presence can allow people to plan their visit in advance, enhancing their experience on the trail.
- More in-depth information on the natural and cultural history of the area can be posted on web sites, as well as curriculum supplements and field trip guides for educators.

MOBILE MEDIA

- A multi-media tour that can be accessed using a smart phone or Wi-Fi or GPS enabled tablet on the trail is another avenue of telling interpretive stories along the POBT. Mobile media and web applications are very popular methods of delivering interpretive messages.
- Mobile media can be designed as an app or a mobile web site and can stand alone or enhance other interpretive media by including more interpretive stories, more images, and audio and video.
- Interactive opportunities for citizen science projects, surveys of trail users, or other projects can be developed.
- Mobile media should not be the only interpretive media available since it can only be accessed by those with smartphones or devices capable of accessing the internet along the trail. One way to ensure that this interpretation is accessible to more people is to make it available online as downloadable PDF files that could be printed or viewed on tablets while offline.
- Costs for web and mobile media are highly variable and options change rapidly. A more detailed plan requiring much more research and consultation with experts in this media would be required before moving forward with mobile media development
- The desire to limit the number of signs on the POBT combined with the excellent cell phone reception along the trail make this a perfect place for mobile media.
- Web interpretation could be implemented immediately with little funding simply by beginning to include interpretive messages on the Friends of the Pend d'Oreille Bay Trail's existing website.



Wayside signs (top) and guided tours (above) are effective interpretive delivery methods.

INTERPRETIVE PROGRAMS AND GUIDED TOURS

- One of the best interpretive delivery methods is the oldest one: first person interpretation.
- For the foreseeable future, it is likely that this type of interpretation along the POBT will be provided by volunteers.
- Professional interpreters and educators could assist with the development of interpretive programs and guided tours and assist with training volunteers.
- Programs and hikes will not only educate residents and visitors about the natural and cultural history of the area, they will also generate ongoing support for the communities and the Friends of the Pend d'Oreille Bay Trail. If a fee is charged for programs, this could raise revenue for the trail as well.
- Interpretive training could also be conducted for area tourism providers who might want to offer a walk on the POBT to their clients.

INTEGRATED INTERPRETIVE PLANNING

An integrated planning approach saves time, results in media and messages that complement each other, and provides a meaningful interpretive experience for trail users. Before developing interpretive products, it is important to prioritize messages, determine media prescriptions, and develop an implementation strategy.

Because a variety of interpretive media is applicable and desirable for the POBT, advance consideration of which stories can best be told with each media is vital. The number, size, and cost of signs will restrict this medium to the highest priority storylines in each theme. Other stories may be better presented using more interactive media or where more "pages" can be included to expand on the concepts and content presented. Also, consider media other than signs for content that is likely to change before the typical 10-15 year lifespan of a sign ends.

It is recommended that the interpretive media used be reevaluated periodically as the plan is implemented to determine what stories are best told on interpretive signs along the trail. It may be years before interpretive signs can be developed and installed due to the need to resolve external factors or complete trail construction. However, electronic or print media can be developed at any time. For example, interpretive stories and messages can be added to the Friends of the POBT website today.

5.5 Themes, Sub-themes, and Story Lines

The central interpretive theme for the POBT, “Passing Through,” highlights the footprint left by the forces of nature, transportation, industry, and human visitors and settlers in the area (*Excerpt from the POBT Concept Plan*). This overarching interpretive theme can be woven through all of the themes and storylines in this plan.

Eleven possible interpretive themes are outlined. Note that they are not prioritized; they are presented in roughly the order they might be placed at interpretive sites along the trail from south to north. It is important to remember that interpretation is most effective when visitors can see and experience the stories being told.

It is not necessary to interpret all of the themes and storylines in this plan. The themes in the following tables are an initial inventory of possible stories that could be told along the POBT. It should also be recognized that as the POBT Master Plan is implemented and with passage of time, new themes or storylines may emerge. Like most plans, this should be a living document that is reviewed and updated periodically.

Theme 1	POBT Information & Orientation for trailheads, web, brochures
Suggested Themes & Storylines	<ul style="list-style-type: none">Explain that the spelling of the name of the Pend d’Oreille Bay Trail is based on the historic French-Canadian spelling of Pend Oreille and its appearance on older maps of the bay.Provide important visitor information on safety, ethics, and regulations for use of the POBT.Dog owners should be respectful of other trail users by keeping dogs on leashes or under verbal control at all times and by cleaning up dog waste.Provide a very brief introduction to the interpretive opportunities along the trail.Provide emergency information.Provide the URL to the POBT web site (and possibly a QR code that can be scanned) for additional trail information.
Images	<ul style="list-style-type: none">Provide a map of the trail that clearly delineates areas that are open to public access and areas that are not.Identify trailheads, parking, restrooms, and other access points on the map.Show the location of interpretive sites along the trail.Include a couple of photos from the trail to give users an idea of what is ahead.Use international symbols as needed to reinforce text on the sign.
Media Prescription	<p>Information/orientation: One 36”w x 48”h visitor information panel mounted vertically. Possibly a second interpretive sign. Similar information for trail users should be available on the POBT website.</p> <p>Provide dog waste bag dispensers at trail access points along with signage about owners being responsible for cleaning up after their dogs. Use biodegradable bags in dispensers so bags left behind by irresponsible pet owners will degrade.</p>
Location, Site Significance, Description	<ul style="list-style-type: none">These panels will be placed at sites where they will be most accessible to visitors such as primary trailheads, railroad underpass, and City Beach.Orientation sites should have adequate parking and gathering space to allow visitors to spend time reading the panels and orienting themselves to the vicinity.Secondary, off-site points for distributing printed materials could include the Sandpoint Chamber of Commerce Visitor Center, Trinity Restaurant, hotels in Sandpoint, outdoor equipment shops, etc.If a brochure is produced, there should also be a box where visitors can pick up copies of the brochure/map to take with them. A QR code and URL on the signs or brochure boxes would allow visitors to get information on mobile devices if the brochure box is empty.
Existing Signs	Trailhead sign with some general information about the POBT is located at the trailhead near the City Water Treatment facility.

Theme 2	Native Peoples: The Kalispel and Their Neighbors
Suggested Themes & Storylines	<p>Theme: Native peoples lived in and used the area long before the Euro American settlers arrived, especially the Kalispel Tribe of Idaho. Lake Pend Oreille remains important to tribal people today.</p> <ul style="list-style-type: none">• Storyline: Much of northern Idaho and Washington was occupied by the Kalispel people prior to Euro American settlement. The point of land now occupied by City Beach was once the location of a large Kalispel encampment. It is possible that smaller family campsites were located along the lakeshore during the summer.• Storyline: Tribes from all over the Northwest came to a trading center at Mud Slough (now Boyer Slough near Kootenai, Idaho). Several important trails used by native people crossed in or near Sandpoint.• Storyline: This was a gathering place for many tribes, as well as for special occasions past and present.• Storyline: The fur trade era marked the beginning of changes to Native American life in the region and the new era of Euro-American settlement. David Thompson built the first North Idaho trading post, which he called Kullyspel House, near Hope in September 1809.
Images	<ul style="list-style-type: none">• Historical and contemporary photos of the Kalispel Tribe.• A map delineating the homeland of the Kalispel, Kootenai, Coeur d’Alene, and possibly other tribes who visited or traveled in the area around Lake Pend Oreille for various reasons that also shows important travel routes.
Media Prescription	One or two interpretive panels as well as complimentary digital and/or print media. <i>This would also be a great theme for interpretive hikes and off-site programs. Consultation with Anna Armstrong, Education Director for the Kalispel Tribe, should be done as the interpretation for this theme is developed.</i>
Location, Site Significance, Description	Interpret the Kalispel Village site at City Beach; interpret other aspects of the Kalispel story at an appropriate site to be determined along the POBT. The story of David Thompson and the fur trade era might warrant an entire sign at the same location as the Native American theme or in a different location. The regions’ tribes are also interpreted at the Selkirk International Loop Interpretive site in Sandpoint.



The Kalispel people used unique sturgeon-nosed canoes made of white pine bark and other plant materials available in the forests surrounding the lakes and rivers.

Theme 3	Railroads
Suggested Themes & Storylines	<p>Theme: The arrival of the railroads in Sandpoint in the late 1800s was one of the most significant factors in the development of the region and the growth of Sandpoint, Ponderay, Kootenai, and Hope.</p> <ul style="list-style-type: none">• Storyline: Two transcontinental railroads carried passengers and goods across the northern tier of the United States and the Spokane International connected to railroads in Canada. Today, Sandpoint is known as a “funnel” because of the tracks that converge here.• Storyline: Thousands of men came from around the world to build the railroads, but Chinese workers far outnumbered those from other areas. Most left when the work was done and there are few reminders of their contribution to the region’s history today.• Storyline: Building railroad bridges and trestles across Lake Pend Oreille and deep ravines and wetlands were engineering feats that took specialized equipment and workers.• Storyline: Local transportation to, from, and within this remote region was arduous and slow prior to the coming of the railroads.• Storyline: There are a number of structures that remain around the POBT from the early railroad days, including the coal dump for locomotive fueling and remnants of tracks to Humbird Mill and Panhandle Smelting Co.• Storyline: Many Sandpoint residents recall the days when “Bum Jungle” was an area where transients (“hobos”) camped in the forests between the railroad tracks and the lakeshore along the POBT.
Images	<ul style="list-style-type: none">• Maps of railroad routes (past and present), the “funnel” of tracks.• Photos of railroad construction workers, particularly Chinese.• Photos of passengers and goods on trains.• Photos of early business development along tracks.
Media Prescription	Cluster of about 1-3 interpretive panels on this theme or individual panels mounted along walk to trailhead.
Location, Site Significance, Description	<ul style="list-style-type: none">• To be determined: Possibilities include along the fence opposite the Seasons condos to add interest to the walk from City Beach to the trailhead near Humbird Mill and at the site selected for a railroad underpass for trail access.• At least one sign should be located along the lakeshore where the present railroad bridge can be seen.• <i>Interpretation of the Sandpoint Depot would be better located on the other side of the restored depot rather than along the POBT or at trail access points.</i>
Existing Signs	Two railroad interpretive signs are located near the railroad overpass across from the Best Western Hotel. There is a railroad interpretive sign at the Sandpoint Chamber of Commerce and also at the Selkirk International Loop Interpretive site in Sandpoint.

Theme 4	Humbird Mill & the Timber Industry
Suggested Themes & Storylines	<p>Theme: The timber industry has been and continues to be important in the economy of local communities.</p> <ul style="list-style-type: none">• Storyline: Logging in the Idaho Panhandle.• Storyline: Linking the lake, the forest, and wood processing (logs, lumber, railroad ties, shingles, poles, and other products) in town and access to the railroads. Explain the role each played: what role did each play in the suitability of this site for a sawmill.• Storyline: Describe products, past and present, that have contributed to the economy of Bonner County: cordwood for trains and steamboats, wood pellets, matches, poles, fence posts, popsicle sticks, shingles, wood chips, and other items not often heard about.• Storyline: Interpret the lives of the workers and loggers who did the backbreaking work in the forests and the mill, not just the owners of the mill.• Storyline: New technologies made the Humbird Mill successful; new technologies in the forest and the product industry contribute to the industry in Sandpoint today.
Images	<ul style="list-style-type: none">• Historical photos of the Humbird Mill and mill workers .• Workers in the forest cutting lumber and transporting it from the forest to the lakeshore.• Logs on the lake being floated to the mill—steamboats, tugboats, or barges moving logs across the lake.• Forest products produced here, past and present.
Media Prescription	One or two interpretive panels, as well as complimentary digital and/or print media. <i>This would also be a great theme for interpretive hikes and off-site programs.</i>
Location, Site Significance, Description	<ul style="list-style-type: none">• Place signs where foundations are evident.• The Humbird Mill was one of the biggest employers in the area from 1899 to 1931.• There are many very visible and easily accessible remnants from the mill structures at this site near the beginning of the POBT.



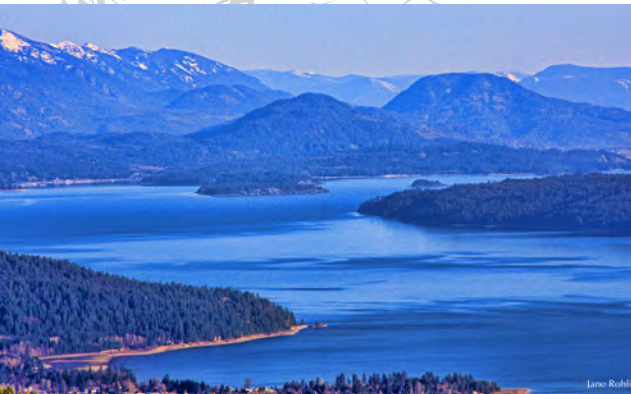
These and other remnants of the Humbird Mill are still visible along the Pend d’Oreille Bay Trail today.

Theme 5	Pend d’Oreille Bay Trail Stewards
Suggested Themes & Storylines	<p>Theme: There are a number of individuals, families, and organizations who have held the vision of this trail in their hearts. They have worked towards making it available to residents and visitors to Lake Pend Oreille’s north shore. This theme would acknowledge some of these contributors.</p> <ul style="list-style-type: none">• Storyline: Hazel Hall and her family who enjoyed this shoreline and worked to make it available to others; Leo Addison, who worked for the Hall family and spent years clearing the trail. General history of the trail development.• Storyline: John Coyle, Army Corps of Engineers, put off his retirement to help get POBT started. Responsible for some of the bank stabilization work of the Corps that functions as the trail.• Storyline: Friends of the Pend d’Oreille Bay Trail organized.• Storyline: Bob Carlson, North Idaho Bikeways• Storyline: Idaho Conservation League’s involvement• Storyline: Cairn of Thanks—financial supporters who have contributed \$1,000 or more to the Friends of the POBT.
Images	<ul style="list-style-type: none">• Photos of some of the people who are featured and photos of work being done on the trail.
Media Prescription	Possibly one interpretive panel on this theme. While it is important to those who have worked so hard to develop this trail, this type of information tends to be less interesting to visitors and trail users, unless there are very compelling personal stories to tell. Telling these stories on the Friends of the POBT website is a better option and easier to update when participation of new partners occurs.
Location, Site Significance, Description	Near the beginning of the trail (close to the Hall family property and the Cairn of Thanks)
Existing Signs	Some information about the Friends of the POBT & the trail itself is currently available at the trailhead near Humbird Mill.



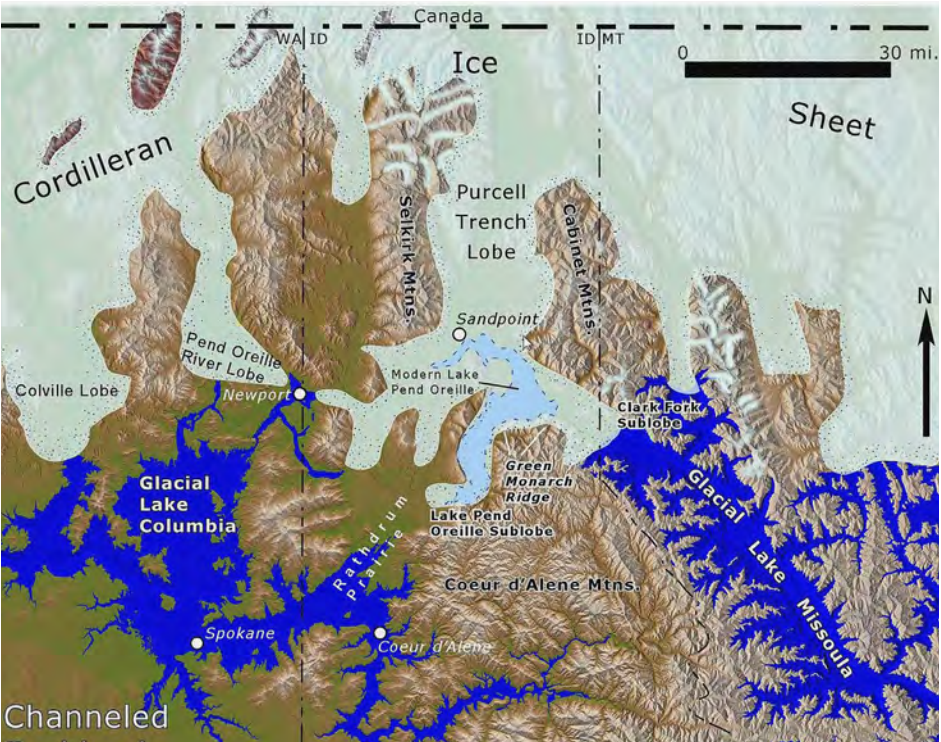
“The Cairn of Thanks” recognizes the people and entities that have worked to make the trail possible.

Theme 6	Lake Pend Oreille
Suggested Themes & Storylines	<p>Theme: Lake Pend Oreille is a world class resource with many fascinating ecological features. The lake provides habitat to an incredible diversity of wildlife and fish.</p> <ul style="list-style-type: none"> Storyline: About the lake—compare Lake Pend Oreille to other large, inland fresh water lakes around the world in size, depth, etc. Farragut Naval Training Station’s work with sonar has revealed geological information on the depth and structure of the lake’s bottom. (Interpretation of the lake’s formation will be included in the geological interpretive panels.) Storyline: The lake is a significant natural resource for all people who have lived in this area. Storyline: The lake as wildlife habitat, particularly the importance of the lake to migratory and resident waterfowl. Storyline: Fisheries in Lake Pend Oreille—introduce important native and nonnative species, and how they interact in the ecosystem. Storyline: Construction of the Albeni Dam and changes that have occurred as a result.
Images	<ul style="list-style-type: none"> Photographs and illustrations that interpret the lake ecosystem, the differences in water temperature, quality, depth, or other factors that are important to the lake’s aquatic life. Photos or illustrations of habitats and the species of wildlife, birds, and fish that utilize the lake with an emphasis on those that may be seen in the north end of the lake.
Media Prescription	<p>This is a broad theme that could be interpreted through a cluster of 1-3 signs at a single location or single signs at multiple locations. The stories are quite complex and the simplified stories on signs could be linked to more in-depth stories online, in a mobile app, or through programs and tours.</p>
Location, Site Significance, Description	<p>The location for this theme is very flexible; it could be placed anywhere along the trail. Look at placement of other more site-specific interpretive signs and then place this one where there is a “gap” to fill.</p>



Lake Pend Oreille is the fifth deepest lake in the United States and all but the southern tip is located in Bonner County. The views of the lake are all spectacular, whether you’re seeing it from the shoreline, on the water, or from area peaks. This view is from Schweitzer Mountain Resort.

Theme 7	Geology: Mountains, Glaciers, and Floods
Suggested Themes & Storylines	<ul style="list-style-type: none"> Theme: Mountains and trenches, glaciers and floods: geological forces that shaped the region. Storyline: Introduce the pre-Ice Age geological activity that is responsible for the formation of the mountain ranges that surround Sandpoint and Lake Pend Oreille (Cabinet, Selkirk, Coeur d’Alene Ranges, Green Monarch Ridge). Storyline: During the last Ice Age, the Purcell Trench, along with the Selkirk, Cabinet, and Coeur d’Alene mountains and Green Monarch Ridge guided the Purcell Lobe of the Cordilleran Continental Ice Sheet that repeatedly dammed the Clark Fork River, creating Glacial Lake Missoula. Storyline: The repeated formation and break up of ice dams at the mouth of the Clark Fork River caused multiple catastrophic floods that changed the face of the entire Pacific Northwest. Storyline: Farragut Naval Training Station—research that has contributed to knowledge of the lake bottom: it’s pre-glacial bedrock, glacial deposits, and post-glacial lakebed sediments. Storyline: The Scotchman Peaks, visible across the lake from the POBT, span the Idaho/Montana border. Friends of Scotchman Peaks Wilderness and other environmental organizations are working to have this area, one of the last, and largest, wild areas in the region, officially designated as a federal Wilderness Area.



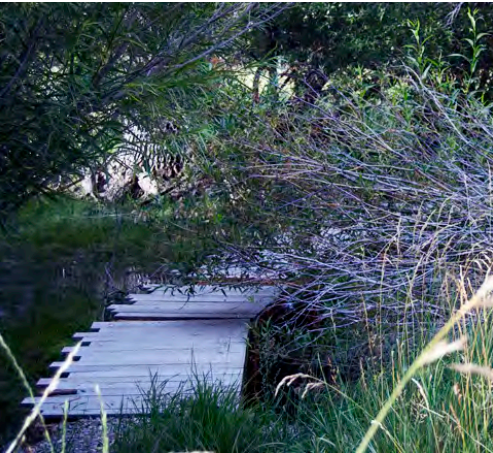
This relief map shows why the Sandpoint area is known as “the heart of the floods.” During the last Ice Age, the Purcell Trench Lobe repeatedly formed ice dams that backed up water forming Glacial Lake Missoula. Each time these ice dams broke, cataclysmic floods rushed across the Northwest, scouring and sculpting many of the landforms we see today.

Images	Illustrations, maps, or photos (especially aerial photos) that visually simplify the complex geological forces that affected the region including: <ul style="list-style-type: none">• The formation of the Selkirk and Cabinet mountains and the Purcell Trench.• The advance and retreat of the Purcell Lobe of the continental glacier during the last Ice Age that formed the ice dam that backed up the Clark Fork River forming Lake Missoula.• The pathways followed by the floods across the Idaho Panhandle and eastern Washington, guided initially by the same mountains that guided the glacier.• Photo naming the mountain peaks visible from the trail.
Media Prescription	This is a broad theme that could be interpreted through a cluster of 1-3 signs at a single location that allows visitors to draw links between different sub-themes and story lines. The stories are quite complex and the simplified stories on signs could be linked to more in-depth stories online, in a mobile app, or through programs and tours.
Location, Site Significance, Description	<ul style="list-style-type: none">• Various locations to be determined. The location of a cluster of geology interpretive panels is flexible because the lake and mountains that relate to the story are visible from virtually anywhere along the trail, although additional research and other parameters may eventually indicate that one location is preferable to others.• Those who walk the POBT can look across this vast lake and along the lakeshore and marvel at the millions of years of geological activity that resulted in the formation of Lake Pend Oreille.
Existing Signs	No existing signs along the POBT. There is some interpretation of the Ice Age Floods at the Sandpoint Chamber of Commerce site and along Hwy 200 near Hope, Idaho, and at the Selkirk International Loop Interpretive site in Sandpoint.



At 4,649 feet, Scotchman Peak, the tallest peak seen on the horizon to the south of the POBT, is the highest point in Bonner County. It is part of the Cabinet Mountain Range that straddles the Idaho/Montana border.

Theme 8	Natural Environment: Then and Now
Suggested Themes & Storylines	Theme: Natural processes have been changed or affected, long-term and short-term, all along the POBT as a result of human use. <ul style="list-style-type: none">• Storyline: The area between the railroad tracks and shoreline was stripped of vegetation during the time the sawmill and smelter were operating and has since regrown to the lush forested slope we see today.• Storyline: Interpret ways this second-growth forest is similar to or different from the vegetation that would have been here prior to the sawmill, smelter, and railroad.• Storyline: Native and non-native plants and animals—identify species that are present now that do or do not belong in this environment.• Storyline: Forest birds and wildlife, waterfowl: what species utilize this habitat, when and why?
Images	Photos or illustrations of specific native and non-native plant and animal species and communities in this area.
Media Prescription	Cluster of 1-3 interpretive panels on this theme near the pond or on a spur trail or boardwalk if constructed. <i>If there are wetland panels at another location, then this interpretive node could be oriented more towards the forest/upland ecosystem and the change in the environment over time as a result of human activities along the POBT.</i> Simplified stories on signs could be linked to more in-depth stories online, in a mobile app, or through programs and tours. This theme could be combined with Theme 11 or stand alone emphasizing different stories.
Location, Site Significance, Description	<ul style="list-style-type: none">• At the large pond/wetland near the Kootenai end of the trail. This is the largest pond along the trail (approximately 60-70 feet wide by 700 feet long) and it offers an opportunity to look at a little different environment than the rivers and lakes in the area and the wildlife attracted to this secluded pond surrounded by forest.• As noted above, this theme might be better at a different location along the trail where the upland forest can be interpreted, leaving the wetland site(s) for interpretation specifically about wetlands.



Boardwalks through wetlands allow visitors to enter the area while protecting the resources (left). Short spurs off of the main trail might invite interpretation of upland forests (right).

Theme 9	Boats on Lake Pend Oreille
Suggested Themes & Storylines	<p>Theme: Boats have been important for traveling and transporting goods around Lake Pend Oreille for centuries.</p> <ul style="list-style-type: none">• Storyline: Native Americans, including the Kalispel and other tribes in the region, traversed the lake in bark canoes for centuries before Euro Americans came to the area. David Thompson and fur trappers and traders may also have used canoes to cross the lake.• Storyline: With the advent of logging and mining in the area, working boats capable of transporting logs and ore became very important on Lake Pend Oreille. Steamboats, barges, tugboats, and pile drivers were all critical to the establishment of the timber, mining, and railroads around the lake.• Storyline: Boats also have facilitated both commercial and recreational fishing during the past century on Lake Pend Oreille.• Storyline: Today, most boating on Lake Pend Oreille is purely for fun! Sailboats, power boats, canoes, and kayaks of all kinds can be seen on the lake year round. Commercial boat tours, guided canoe, kayak, or fishing trips all contribute to the tourism economy today.
Images	<ul style="list-style-type: none">• Photos representing each of the types of boats that have been important on Lake Pend Oreille for work or recreation over the years.
Media Prescription	Cluster of about 1-2 interpretive panels on this theme could be placed at City Beach, but it would also be possible to interpret some of the storylines (Native American canoes, steamboats, and other working boats) with interpretation about the Kalispel, the Humbird Mill, and the Smelter. <i>A mobile app or web interpretation would also add interest to this theme and could target boaters specifically.</i>
Location, Site Significance, Description	<ul style="list-style-type: none">• It would be logical to place signs near the City Beach boat ramp or marina.• There are other possibilities along the trail—particularly near the pilings that remain from docks that served the Humbird Mill or the smelter.



Various types of watercraft are used on Lake Pend Oreille year-round. Sailing is especially popular during the summer on this long, windy lake.

Theme 10	Panhandle Smelting Company and Black Rock
Suggested Themes & Storylines	<p>Theme: Panhandle Smelting Company only operated for a couple of years, but its impact on the shore of Lake Pend Oreille remains an environmental problem more than a century later.</p> <ul style="list-style-type: none">• Storyline: Why was this independent smelter constructed at this location? Consolidation of many other smelters under a single company controlled prices for ore and made it difficult for small mining operations to get ore processed.• Storyline: The smelter was designed to process copper, gold, silver, and lead ore that was shipped by steamboat from mines around the lake.• Storyline: The smelter was in trouble from the start with financial and management problems, and it also lacked quality ore.• Storyline: Plans are underway to clean up soil in the area that was contaminated with lead and other toxins left behind by the smelter and restore the site for safe use by the public.
Images	<ul style="list-style-type: none">• Historic photos of the smelter during construction or operation.• Photos of Idaho Department of Environmental Quality's Brown-fields assessment of the area.• Photos of clean-up work if it occurs prior to the development of interpretation for the site or a drawing of what the site will look like after clean-up.
Media Prescription	Cluster of 1-2 interpretive panels on this theme near the site of the smelter and Black Rock. <i>Additional interpretation could be provided online or in an app, as well as through programs and tours, particularly as the clean-up and recovery of the site progresses. It will be important to have great photos to document progress here.</i>
Location, Site Significance, Description	<ul style="list-style-type: none">• At site of the smelter, near visible remnants of the operation.• At Black Rock and the area where tracks remain from train cars that carried slag to the lakeshore to be dumped.• Although a smelter operated here for only a couple of years in the first decade of the 20th century, the environmental damage remains in the area today, more than a century later.
Existing Signs	Warning signs are posted around the area that has lead contamination from the smelter activities.



The Panhandle Smelting Company only operated for a couple of years, but its impact on the shore of Lake Pend Oreille remains an environmental problem more than a century later.

Theme 11	Wetlands and Wildlife
Suggested Themes & Storylines	Theme: Both natural and constructed wetlands provide important wild-life habitat along the POBT. <ul style="list-style-type: none">• Storyline: The high water table and runoff from the slopes between the railroad tracks and the lakeshore have created wetlands.• Storyline: Wetlands provide habitat for diverse plants and wildlife.• Storyline: In addition to enhancing wildlife habitat, constructed wetlands help keep pollutants and silt out of the lake.
Images	<ul style="list-style-type: none">• Photos of wetland plants and wildlife to identify and interpret local flora and fauna.• Illustration explaining the purpose of the constructed wetland and how it works, why it was included in the site construction.
Media Prescription	Cluster of 1-3 interpretive panels on this theme near the pond or on a spur trail or boardwalk if constructed. <i>If there are wetland panels at another location, then this interpretive node could be oriented more towards the forest/upland ecosystem and the change in the environment over time as a result of human activities along the POBT.</i> Simplified stories on signs could be linked to more in-depth stories online, in a mobile app, or through programs and tours. This theme could be combined with Theme 8 or stand alone emphasizing wildlife at one location and native and non-native vegetation at another.
Location, Site Significance, Description	At natural wetlands along the POBT and/or at the constructed wetland location proposed for a site near the future railroad underpass.

5.6 Public Input

Public input on the eleven interpretive themes was gathered during the community outreach event and through the online survey as described in Section 2. Process and Public Involvement. The community was asked to identify which themes were of most interest to them and offer suggestions for other subjects or stories that could be told along the trail. The top themes identified by the public as most interesting, which should be considered as the interpretive plan is implemented, were:

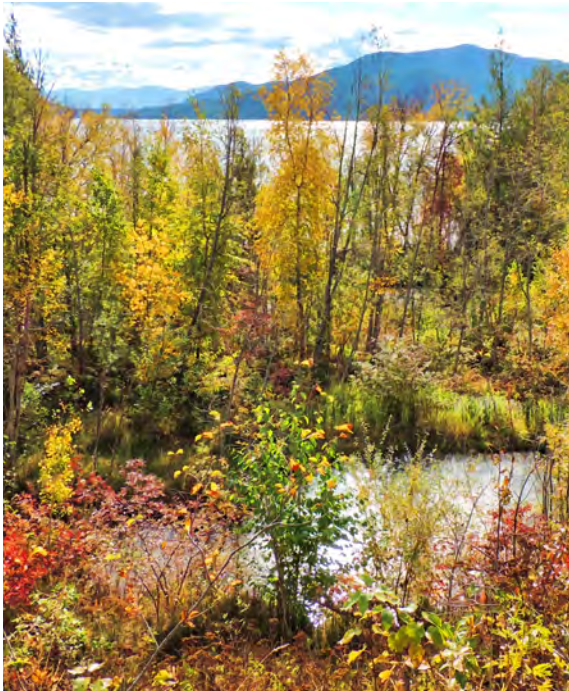
- Theme 6: Lake Pend Oreille (88.4 percent)
- Theme 2: Kalispel People and their Neighbors (50 percent)
- Theme 11: Wetlands and Wildlife (49.2 percent)

Suggestions from the public on subjects and stories that could be included in the interpretive plan were incorporated into the eleven themes and storylines where appropriate. Several comments were made regarding the desire to preserve the natural experience of the trail and avoid cluttering it with too many signs. These comments were taken into consideration by minimizing the number of signs suggested and by emphasizing that interpretation can be provided through media other than signs, such as websites, mobile media, print brochures, and guided hikes or programs.

Some comments from the public expressed a desire for interpretation of subjects that would be more appropriate to interpret in locations other than along the POBT. This included:

- Sandpoint Railway Depot—although the back of the depot is visible from the proposed walkway near the Seasons and the Depot could be mentioned on a sign in this area, it would be better interpreted at the Depot.
- History of early explorers—this has been addressed at other interpretive sites around the lake where there are more relevant ties to the earliest fur trade-era explorers of the area.
- Lake legends Pend Oreille Pete and the Pend Oreille Paddler—although this may be a viable theme, research for the interpretive plan did not turn up enough information on this subject to warrant inclusion at this time. The Pend Oreille Paddler could be incorporated as a short children’s sideline in lake or wildlife interpretation.

Comments from the public were grouped as they relate to the interpretive themes outlined in this plan, and they are included in their entirety in Appendix D.



The loud drumming or distinctive call of the pileated wood pecker may be heard in the more mature forests along the lakeshore (above). Small protected wetlands along the lakeshore provide excellent habitat for a variety of wildlife (left).



5.7 Interpretive Resources

It is important to hire professional interpretive planners if professional, well-designed interpretive products are desired. A good interpretive planner should have a range of experience in both personal and non-personal options for delivering interpretive messages and for meeting interpretive goals and objectives. An interpreter may have a college degree in interpretation or may have majored in social sciences, natural sciences, or the arts and learned the skills needed for interpretation through specialized professional training. Some may have received certifications from the National Park Service (NPS) or the National Association for Interpretation (NAI) in a number of specialties. Most are creative, intelligent, and passionate about their work.

Interpretation should reveal meanings to the site or story, not just state facts or describe what is already visible to the observer. A good professional interpreter recognizes the need to spark interest in the subject in a few minutes, appeal to a visitor's emotions, stimulate appreciation, and motivate visitors to take action to protect and preserve our natural and cultural heritage. A good interpretive designer understands the need for media to be visually attractive and to create a hierarchy of information so that visitors can interact with the interpretation on multiple levels depending on their own level of interest in the subject matter. Good design reflects the designer's knowledge of visual accessibility standards, a variety of learning styles, and diverse audiences.

The need to work with professional interpretive planners also applies to exhibit and sign fabricators. Work with sign fabricators who know about the impact of weather, long-term durability, resistance to vandalism, and ease of maintenance. A company that specializes in trade show exhibits may not have the background needed to develop interpretive exhibits. Sign makers should be familiar with the need for high resolution, long-lasting signage. New vendors, materials, and processes are continuously emerging, so it is important to revisit material options before developing interpretive signs.

THE HARPERS FERRY CENTER: www.nps.gov/hfc

The Harpers Ferry Center is the organization within the NPS that provides guidance and design services for the agency. They have an array of valuable resources for interpretive planning and design on their website. Some parts of the website are only accessible to NPS employees, but should you need to access the information, NPS partners will likely be able to assist. Harpers Ferry Center phone: 304-535-5050.

The following are direct links to useful resources.

- Waysides Exhibits (Interpretive Signs): <http://www.nps.gov/hfc/products/waysides/>
- Wayside Exhibit Guide: www.nps.gov/hfc/pdf/waysides/Wayside-Guide-First-Edition.pdf
- Digital Media (description of options): www.nps.gov/hfc/products/digitalmedia/

NATIONAL ASSOCIATION FOR INTERPRETATION (NAI):

www.interpnet.com

NAI offers many resources for interpretive projects. The direct links below connect to some of the resources on their website that may be particularly useful.

- NAI Resources for Interpreters: <http://bit.ly/1Yfyb1Q>
- InterpPress Books: <http://bit.ly/1QH69vM>
- Interpreter's Green Pages: www.interpnet.com/NAI/interp/Resources/Interpreters_Green_Pages_Products__Services_/nai/_resources/Interpreters_Green_Pages.aspx?hkey=743662cd-0884-48b2-bac1-8723d2934bb8
- Standards and Practices for Interpretive Methods: www.interpnet.com/nai/docs/BP-Methods-Jan09.pdf
- Standards and Practices for Interpretive Planning: www.interpnet.com/nai/docs/BP-Planning-Jan09.pdf

5.8 Cost Considerations

Because every interpretive project is a "custom" project, there are many variables that can affect the cost of developing interpretive media. The next sections outline a few of the considerations that affect the development of outdoor interpretive signs.

INTERPRETIVE SIGN DESIGN

With the advent of large format digital imaging and different fabrication methods, the cost of fabrication is no longer the most expensive part of an interpretive project. The most important, and possibly the most costly, part of a project is creating effective content. This includes research and writing, the procurement and selection of photographs, illustrations, maps, and other graphics, and the development of the layouts for the visual elements.

The size and type of content in the signs are important factors in determining design costs. Variables include fees charged by the designer or design team, as well as possible additional fees for photographs, illustrations, or maps. For a professionally designed interpretive sign, costs for research, writing/editing, and graphic design range from \$1500-\$3000 per sign. A factor that will influence the cost is whether or not there are travel expenses for the contractor to visit the site and meet with project coordinators or subject matter specialists.

EXTERIOR SIGN MATERIALS

The chart comparing exterior sign materials for interpretive signs in Appendix C was provided by Interpretive Graphics, a vendor of interpretive signs based in Salt Lake City, Utah (www.interpretivegraphics.com). It is an excellent summary of some of the factors that should be considered in the sign fabrication decision. There is a wide range in prices, although most come with a 10 year warranty against delamination, fading, or other material failures. The warranties do not include vandalism.

In general, maintenance involves cleaning the signs occasionally to wipe dirt and bird droppings off (unfortunately, birds love to perch on interpretive signs). Most of the popular materials used for interpretive signs are scratch-resistant, and graffiti can be cleaned off with solvents. None, however are bullet-proof.

The least expensive option for a very nice, long-lasting product is the fused graphic product (ImageLOC) produced by Gopher Signs at an approximate cost of \$150 for a 36" x 24" panel. This is the product used in the Selkirk International Loop Interpretive Site in Sandpoint. One benefit of this product is that the material is thick enough that it can be mounted on posts without frames, which reduces mounting costs significantly.

NPS STYLE INTERPRETIVE EXHIBIT MOUNTS

There are many vendors and many options for interpretive sign mounting systems. The type of frames and posts used by the National Park Service (NPS) are durable, classic mounting systems that will provide many years of service with virtually no maintenance. They are constructed of heavy-duty welded aluminum, usually with a textured powder-coat finish that is available in a variety of colors. They last for years and generally do not require much maintenance beyond occasional cleaning. See Appendix C for examples of these mounts.

CRATING AND SHIPPING

Because of the size and weight of interpretive signs and mounting systems, shipping costs are significant and should be included in the budget for signs.

FABRICATORS OF INTERPRETIVE SIGNS AND FRAMES

EnviroSigns, Ltd., PO Box 450, Wooster, OH 44691
888-492-5377
sales@envirosigns.com www.envirosigns.com
envirosigns.com/exhibit-bases/nps-style-exhibit-bases

Pannier Graphics
345 Oak Road, Gibsonia, PA 15044
800-544-8428
marketing@pannier.com www.PannierGraphics.com
panniergraphics.com/frames/exhibitbasesandframes.php

Hopewell Mfg.
www.hopewellmfg.com/images/HopewellFramesCATALOG.pdf
217 N. Franklin Street Waynesboro, PA 17268
717-655-5429, 717-655-5498

KVO Industries Inc.
1825 Empire Industrial Court, Suite A, Santa Rosa CA 95403
Phone: 707 573 6868 Toll Free: 800 657 6412
www.kvoindustries.com/frames.html
www.kvoindustries.com/nps.html

Interpretive Graphics
3590 Summerhill Drive - Salt Lake City, UT 84121
info@interpretivegraphics.com
www.interpretivegraphics.com

iZone Imaging
2526 Charter Oak Drive, Suite 100 Temple, TX 76502
Toll Free 888.464.9663 Local 254.778.0722
Email: info@izoneimaging.com
www.izoneimaging.com

Gopher Sign
1310 Randolph Ave.
St. Paul, Minnesota 55105
651-698-5095
www.gophersign.com



6. IMPLEMENTATION

Implementation of the Pend d'Oreille Bay Trail Master Plan will need to occur in phases as funding becomes available. With a total projected cost of more than \$22 million, it will be a significant multi-year effort that will require collaboration with many entities, including the Friends of the POBT, cities, counties, and other public and private institutions. As such, it is important to have a clear and feasible implementation plan that is based on the needs and desires of the community. Projects were prioritized based on input gathered from the community during public outreach events and the online survey, as well as input from the POBT Board of Directors. Community input was also weighed against physical constraints, financial limitations, and technical realities of the projects in order to develop the final implementation plan presented in Table 7.

6.1 Public Outreach Results

During the public outreach event held at the Laughing Dog Brewery in March 2015, participants were given \$100 play money “dollars” that they could spend on proposed trail improvements. To keep the exercise simple, the trail improvements were categorized into five separate project phases: the Sandpoint Connection, Ponderay Connection, Kootenai Connection, Ponder Point Connection, and existing trail improvements. Each project was assigned a “cost” according to their relative construction costs and participants were asked to use their \$100 “dollars” to fund projects. Participants were required to fully fund a project, either alone or in partnership with a friend, which represented real-life partnerships between entities and the challenge of having many projects but only limited funding available. The display used and results of this exercise are shown in Figure 1 and Tables 4 and 5. Complete results of the online survey are included in Appendix D.

Figure 1. Priority Money Exercise Display at Laughing Dog Ales for Trails Event.

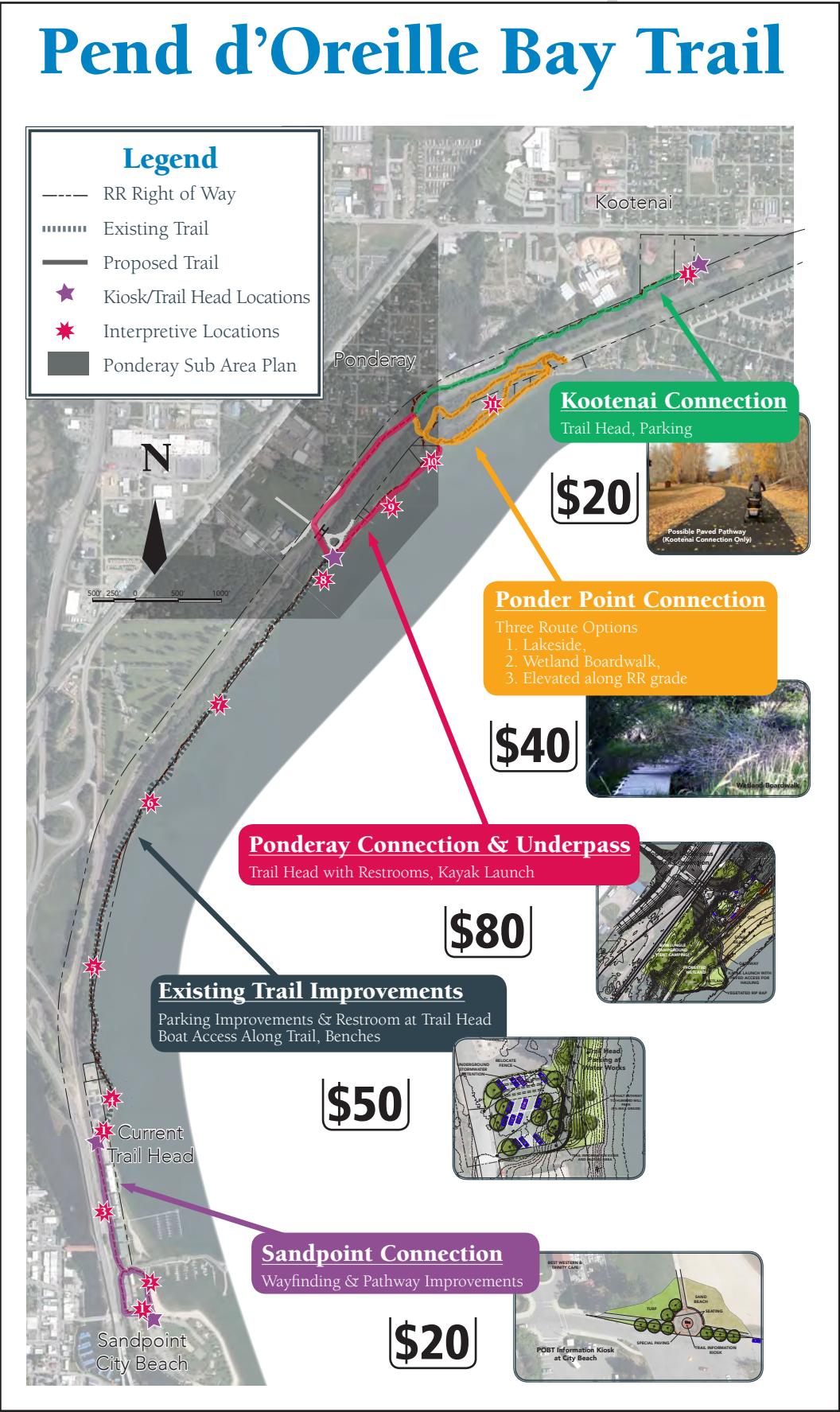


Table 4. Summary of Results of the Priority Money Exercise (in order of most “money invested”)

Priority Ranking	Project Phase	Project “Cost” (\$)	# of “Votes”	Total “Invested” (\$)
1	Ponderay Connection and Underpass – Trailhead at Ponderay with restrooms, kayak launch, and underpass under the railroad into Ponderay.	\$80	45	\$3585
2	Existing Trail Improvements – Parking Improvements and restroom at trailhead, boat access along trail, addition of benches.	\$50	21	\$1045
3	Ponder Point Connection – Connect to Ponder Point using one of three route options (lakeside, wetland boardwalk, or at the railroad grade).	\$40	24	\$975
4	Kootenai Connection – From Ponderay to Kootenai on the west side of the railroad, includes trailhead and parking in Kootenai.	\$20	37	\$740
5	Sandpoint Connection – Wayfinding and pathway improvements from City Beach to Humbird Mill Park.	\$20	25	\$500

Table 5. Summary of Results of the Priority Money Exercise (in order of most “votes”)

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1	Ponderay Connection and Underpass – Trailhead at Ponderay with restrooms, kayak launch, and underpass under the railroad into Ponderay.	\$80	45	\$3585
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3	Sandpoint Connection – Wayfinding and pathway improvements from City Beach to Humbird Mill Park.	\$20	25	\$500
4	Ponder Point Connection – Connect to Ponder Point using one of three route options (lakeside, wetland boardwalk, or at the railroad grade).	\$40	24	\$975
5	Existing Trail Improvements – Parking Improvements and restroom at trailhead, boat access along trail, addition of benches.	\$50	21	\$1045



Additional input from the community on project priorities was gathered through the online survey, which had more than 150 respondents. Respondents were asked to rank each project as “top,” “high,” “medium,” or “low” priority. Responses were weighted with “top” receiving 4 points and “low” receiving 1 point. The results of the online survey are shown in Figure 2 and Table 6.

As shown in Tables 4 and 5, although the connection into Ponderay with an underpass was the most expensive project presented during the Priority Money Exercise, it still received the most votes and the most dollars invested from the public. Likewise, the Ponderay Connection had the highest weighted score in the online survey with 80 percent of the respondents ranking it as either a “top” or “high” priority.

Using the number of “votes” during the Priority Money Exercise, the next highest ranked project was the Kootenai connection, with the Sandpoint Connection, Ponder Point Connection, and Existing Trail Improvements all receiving approximately equal number of “votes.” Using the amount of “money” invested, the next highest ranked project was existing trail improvements, although the amount was very close to the amounts for the Ponder Point, Kootenai, and Sandpoint Connections.

The respondents to the online survey ranked the Ponder Point connection as the next “top” priority with 32 percent of the vote. Improvement to the existing trail, including improvements to the existing trailhead at Humbird Mill, the Sandpoint Connection, and the Kootenai Connection all gathered approximately 15 to 19 percent of the vote for “top” priority.

Several members of the public commented that trail connections should be made first before amenities are placed along the trail. This is an indication of public desire for connecting the communities of Ponderay, Kootenai, and Sandpoint.

Figure 2. Online Survey Summary of Results

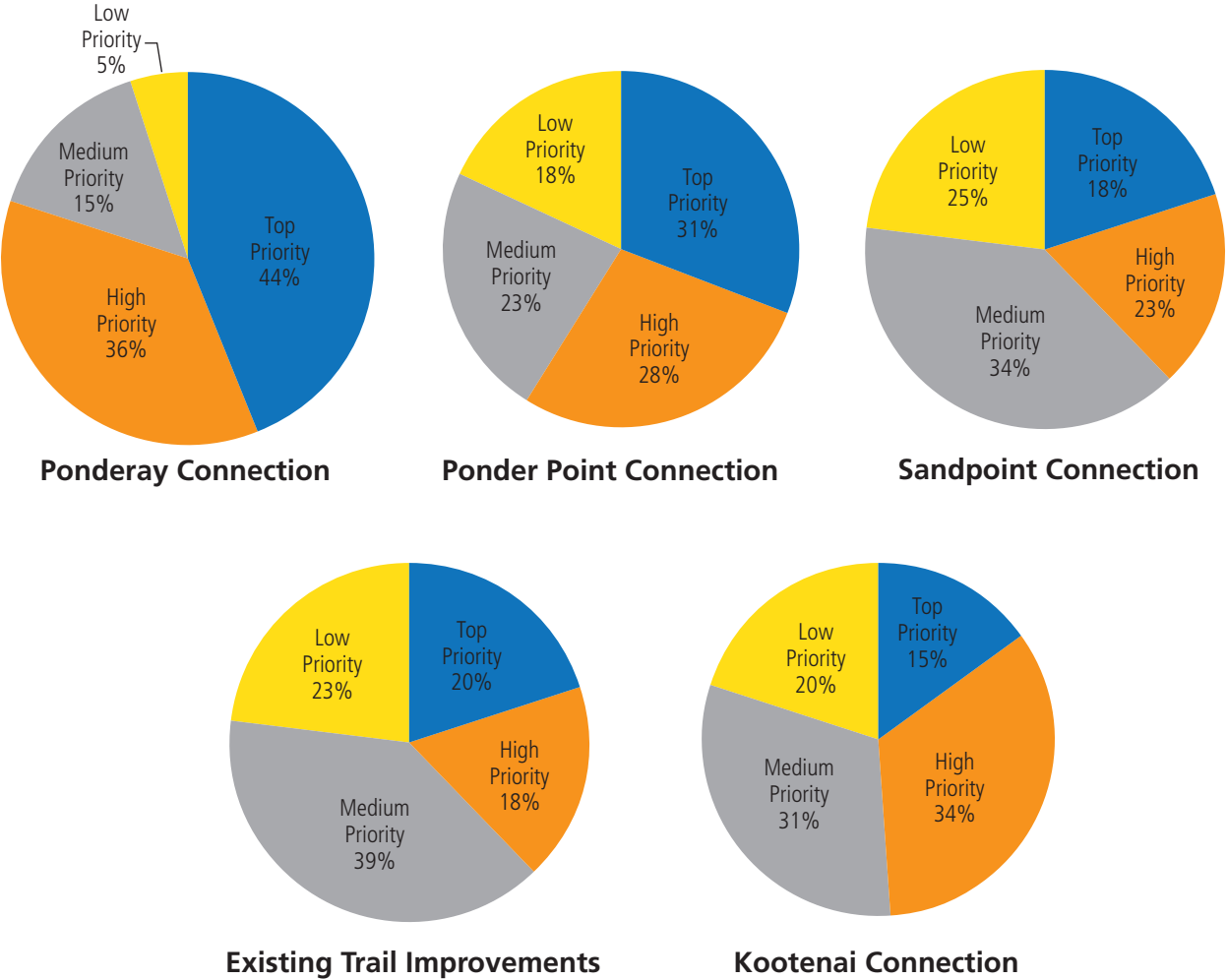


Table 6. Online Survey Summary of Results

	Top (4)	Highest (3)	Medium (2)	Low (1)	Total Weighted Score
Ponderay Connection	44.7%	35.6%	15.2%	4.6%	3.2
Ponder Point Connection	31.6%	27.8%	22.6%	18.1%	2.7
Kootenai Connection	15.0%	34.6%	30.8%	19.6%	2.5
Sandpoint Connection	18.1%	23.3%	33.8%	24.8%	2.3
Existing Trail Improvements	19.7%	18.2%	38.6%	23.5%	2.3



6.2 Friends of POBT Board Survey

In addition to gathering feedback from the general public, an online survey was distributed to the Friends of the Pend d’Oreille Bay Trail Board of Directors. This survey contained a detailed list of projects and asked Board members to rank projects as “high,” “medium,” or “low” priority. The results of this survey are included in Appendix D.

6.3 Cost Estimates

Preliminary cost estimates for various phases of the Master Plan have been developed based on the preliminary drawings and plans included in Appendix A and B. Cost estimates include construction costs for trailhead development, trail improvements, interpretive signage, and trail amenities. Costs also include estimates for the purchase of easements and appraisals, construction management and permitting, topographic and boundary surveys, final engineering design, construction staking, and materials testing. A contingency of 30% of the estimated construction costs is also included.

Note that the cost estimates are preliminary in nature and have been prepared solely as a general reference document for the information of the Friends of the Pend d’Oreille Bay Trail. Actual construction costs can vary depending on many factors including, but not limited to, contractor availability, material availability, fluctuating material costs, differences in quantities, construction season, and regional factors.

Table 7. includes a summary of the estimated cost for various phases for construction of the full Master Plan. Detailed cost estimates for various phases of the Master Plan are included in Appendix C. The POBT Concept Plan (2010) contains a detailed list of potential funding sources that are good options for funding the projects identified in the Master Plan. Options include federal, state, and local agency grants or loans, taxes and fees, and private foundation grants.

6.4 Implementation Plan

The implementation plan presented in Table 7 was developed by combining feedback from the Public Outreach Event, the Online Community Survey, and the Friends of the POBT Board of Directors Survey. Physical and practical limitations were also considered in order to develop the final priorities and the recommended list of projects.

Projects are numbered from 1 to 23 based on the recommended order of implementation. In general, over the next 1 to 10 years, focus should be on projects that have high or medium priority. Projects listed as low priority may be completed in the next 10 to 20 years. However, the exact order that projects are actually implemented may be driven largely by funding availability. For example, if a large grant or private donation was made to fund a specific project, it should be moved up in the project schedule. Also note that some projects, such as the Ponderay Connection (Project Nos. 4, 5, and 6), is dependent on external factors, such as mitigation of contaminated sites, that can delay completion of the project.

Note that the Kootenai connection was ranked higher than the Ponder Point connection during the Priority Money Exercise, but the Ponder Point connection was ranked higher in the online survey. Both of these trail connections were ranked as medium priority, but the associated underpasses were ranked as low priority by the POBT Board. We would recommended that a trail connection between Kootenai and Ponderay not be completed until at least one safe railroad underpass is constructed. Otherwise, having trails available without a safe railroad crossing will increase the amount of illegal and unsafe crossings that occur. Alternatively, if a trail connection was made between Kootenai and Ponderay, it is important that it end at another significant landmark in Ponderay and not near the railroad track and the existing illegal at-grade crossing.

Additionally, we would also recommended that the Kootenai connection be completed before the Ponder Point Connection is made so that users become accustomed to parking in Kootenai since parking will not be available at Ponder Point.

Table 7. Implementation Plan -- Priority based on Public Outreach, Community Survey, Friends of POBT Board Survey, and practical considerations

Project No.	Project ID *	Project Description	Estimated Cost *	Partners	Notes
High Priority (1-5 years)					
1	TH-HB1	Humbird Mill Park trailhead Phase 1 - Add parking at the existing utilizing the existing property (up to 9 additional spaces).	\$144,000	City of Sandpoint	
2	TH-BH2	Humbird Mill Park trailhead Phase 2 - Add parking by moving the northern fence and utilizing the stormwater retention area for the water treatment plant (up to 17 additional spaces) cost is in addition to Phase 1 costs.	\$159,000	City of Sandpoint	
3	EX	Add stone steps from the existing path down to the lake at Humbird Mill Park.	\$16,000	City of Sandpoint	
4		RR Underpass for vehicles and pedestrians in Ponderay across from the Harbison property. (Cost from 2012 study by URS)	\$2,300,000	City of Ponderay, MRL, BNSF	Recommend that the underpass be in place before trail connections are made to discourage illegal RR crossings.
5	C-EX2P	Construct trail from existing north end to Ponderay through RR underpass	\$5,181,000	City of Ponderay, MRL, BNSF	
6	TH-P	Ponderay Trailhead (signage, waste bin, restrooms, bike rack, plaza)	\$117,000	City of Ponderay	
Medium Priority (5-10 years)					
7	C-P2K	Construct trail from Ponderay to Kootenai on north side of RR tracks	\$2,499,000	City of Ponderay, City of Kootenai, MRL	
8	TH-K	Kootenai Trailhead (signage, waste bin, restrooms, bike rack, plaza, parking)	\$92,000	City of Kootenai, LDB Development LLC, Bonner County Historical Society	
9	HBM	Add new benches and picnic tables around Humbird Mill Park (cost is average for 1 table and bench set)	\$1,800	City of Sandpoint	
10	C-EX2C	Trail connection and RR underpass for pedestrians only from the existing POBT to the Creekside Trail south of the golf course.	\$5,860,000	City of Sandpoint, MRL, BNSF	
11	EX	Add new benches along the trail (cost is average for 1 bench)	\$850	varies depending on location	
12	EX	Add interpretive signage (cost is average for 1 sign)	\$2,600	varies depending on location	

*See Appendix D for Itemized cost estimates for each project.

Table 7. (continued) Implementation Plan - Priority based on Public Outreach, Community Survey, Friends of POBT Board Survey, and practical considerations

Project No.	Project ID *	Project Description	Estimated Cost *	Partners	Notes
Low Priority (10-20 years)					
13	C-P2PP	Construct trail from Ponderay to Ponder Point on south side of RR tracks	\$2,645,000	City of Ponderay, Ponder Point Community, City of Kootenai, Bonner County, Corps of Engineers	The trail connection should be constructed at the same time as the trailhead
14	TH-PP	Ponder Point Trailhead (Kiosk, no parking signage, waste bin)	\$9,500	Ponder Point Community, City of Kootenai, Bonner County	
15	C-CB2H2	Paint green the bike/ped lane on the west side of the Seasons from City Beach to the existing trailhead.	\$59,000	City of Sandpoint, The Seasons	
16	TH-CB	City Beach Trailhead (signage, waste bin, bike rack, plaza, seating, landscaping)	\$52,000	City of Sandpoint, Arts Council	The trailhead should be constructed after or simultaneously with improvements to the bike/ped lane from City Beach to Humbird Mill Trailhead
17	EX	Soften the shoreline along the existing trail with plantings within the riprap.	\$39,000	Corps of Engineers, property owners	
18	EX	Water trailheads along trail (signage & steps - cost is for 1 set)	\$16,500	Corps of Engineers, property owners	
19	HBM	Humbird Mill Park Improvements (ADA access, benches, picnic tables, trails to new viewing areas)	\$427,000	City of Sandpoint	
20	C-P2K2	Underpass for pedestrians only in Ponderay near Elm Avenue and 4th Street.	\$2,515,000	City of Ponderay, MRL, BNSF	
21		Underpass for pedestrians only from the Bridge Street Station to the Depot and Sandpoint Avenue. (cost based on per LF cost from 2012 underpass study by URS)	\$3,250,000	City of Sandpoint, MRL, BNSF	
22	C-PP2K	Underpass for pedestrians only from Ponder Point Lane to a new trail connection to Kootenai.	\$2,510,000	City of Kootenai, Ponder Point Community, MRL, BNSF	
23	C-CB2H	Reconstruct the bike/ped lane on the west side of the Seasons from City Beach to the existing trailhead using colored and stamped concrete (flush with the existing pavement).	\$218,000	City of Sandpoint, The Seasons	

*See Appendix D for Itemized cost estimates for each project.



7. OPERATIONS AND MANAGEMENT

The operations and management plan addresses trail maintenance needs, safety and security, and coordination between Bonner County, Sandpoint, Ponderay, and Kootenai. Although the trail and its amenities are designed to minimize maintenance needs, some maintenance will always be required and regular services, such as emptying trash cans and cleaning restrooms, will also be needed. Table 8 contains a summary of continuous maintenance needs. Other maintenance that will be required on an irregular basis include repairing trail surfaces, removing hazardous trees, replacing signs, weed management, clearing culverts, and removing vandalism. Table 9 contains a summary of irregular maintenance needs. Creating a culture of trail stewardship for all users will help reduce the maintenance needs and discourage littering and vandalism.

Table 8. Continuous Maintenance Needs

Item	Description	Frequency
Trail Inspection	A trail inspection should be conducted yearly to document issues that need to be addressed to insure the safety and usability of the trail. Inspection should include conditions of railings, bridges, culverts, signage, vegetation, and trail surfaces.	1x / year
Trash Removal	Litter removal is important from a safety and aesthetic viewpoint. Remove paper, cans, etc. left along the trail and around trailheads. Empty garbage containers at trailheads. Replenish pet waste disposal bags.	1x / week
Restroom Maintenance	Portable toilets will need to be cleaned and maintained as needed by an approved sanitation company.	2x / month
Weed Management	Weed control is needed especially for newly constructed sections of the trail where vegetation is being reestablished. Mechanical weed control by well-timed pulling or mowing is preferred to chemical herbicides, especially adjacent to the lake.	2x / year
Culvert Clearing	Remove debris, leave litter, grass, or other organic material that is plugging the culverts. This should be done in the fall after leaf-off and again in the spring before and after the rainy season.	2-3x / year
Green Roof Maintenance	If a green roof is placed on the restroom enclosure, it will require typical landscape maintenance, such as weed control, application of fertilizer, and supplemental irrigation. After plants are established after the first few years, maintenance needs will be greatly reduced. Inspections of the roof membrane and drainage system should continue once per year.	1-2x / year

Table 9. Irregular Maintenance Needs Completed on an As-Needed Basis

Item	Description
Tree and Shrub Removal	Trees and shrubs may need to be trimmed to keep the trail safe and accessible. After large storms, fallen trees may need to be cut and removed to clear the trail.
Trail Surface Maintenance	<p>Repair of the trail surface may be needed and should be identified during the yearly inspection. Repair methods will vary by location but should attempt to remedy the source of the problem instead of addressing the symptom (ie: improve drainage instead of just repairing a washed out section of trail). Safety hazards should be repaired immediately.</p> <p>New stabilized crusher fines surfaces may have loose aggregate appear on the surface during the first year. If this material exceeds 1/4 of an inch, redistribute the material over the entire surface. Water material thoroughly to the depth of 1", and compact with power roller of no less than 1000-lbs.</p>
Signage Repair	Safety signs should be repaired or replaced immediately as needed. Information signs should be repaired or replaced when possible.
Mapping Updates	As sections of the trail are constructed, maps will need to be updated and installed at the trailheads.
Bench/Table Repair	Benches and picnic tables may need to be repaired or refinished depending on the design chosen. Stone or concrete furniture will require less repair, but may be more prone to vandalism. Wood benches will require more maintenance and refinishing.
Vandalism Removal	To remove spray paint on concrete or other porous surfaces, use Wipe-Out Porous Graffiti Remover, paint thinner, brake cleaner, or other solvents and follow with pressure washing. Aerosol solvents may be used on smooth surfaces. Use appropriate safety precautions such as eye and breathing protection.



ORGANIZATION

A goal of the concept plan was to create mechanisms to manage and maintain the trail through municipal and private means. Currently, the Friends of POBT has private funding in place and agreements with the City of Sandpoint and the City of Ponderay to provide trail maintenance for the next 10 years. Although current maintenance efforts are being coordinated and provided primarily through private donations and volunteer efforts, over the long term as the trail expands, both private and public funding will likely be needed in order to provide reliable and consistent management.

Ideally, a single entity would be responsible for maintaining and managing the POBT so that operations can be as coordinated, continuous, and as efficient as possible. Realistically, it will require a partnership between public and private organizations. The trend throughout the country is to rely more and more on volunteers, trail advocacy groups, and alternative funding sources to protect and maintain trail resources. Thus, even if an existing or new public agency took over maintenance of the trail, there will still be the need for groups like Friends of the POBT to provide private funding for special projects, volunteers for trail maintenance, and to keep the stewardship ethic alive in the community. Options for different types of entities that could be responsible for long-term operations and maintenance include:

- Non-Profit Organization
- Joint Authority
- Single Agency
- Recreation District

The Friends of the POBT is a non-profit organization that could continue to operate and maintain the POBT through agreements with the City of Sandpoint and the City of Ponderay. The benefit of maintaining a 501(c)3 non-profit organization is that private donors receive tax benefits for making contributions. Adding contributions of resources and funds from the cities to the Friends of POBT is a good way to combine both private and public money to fund maintenance and capital improvement projects. A drawback is that the Friends of POBT does not currently have paid staff and relies heavily on volunteers. However, as the organization evolves, paid staff could be hired to provide the capacity to manage capital improvement projects, as well as routine maintenance.

A joint authority is a separate legal entity that can be created through a joint powers agreement between multiple public agencies, such as the City of Sandpoint, the City of Ponderay, the City of Kootenai, and Bonner County, in accordance with Idaho Statutes 67-2326 through and 67-2333. The joint authority could be funded by the agencies that have entered into the agreement. The organizational structure of the entity should be defined in the Joint Powers Agreement.

A single existing agency, such as the City of Sandpoint, could take on operation and maintenance of the entire trail through interagency contracts with other entities per Idaho Statute 67-2332. One benefit is that the City of Sandpoint already has a recreation department and staff that can do the work or expand in order to take on the additional tasks. A drawback to using either an existing public entity or a joint authority is that private donors may not be able to or they may not have the motivation to make donations to a governmental organization.

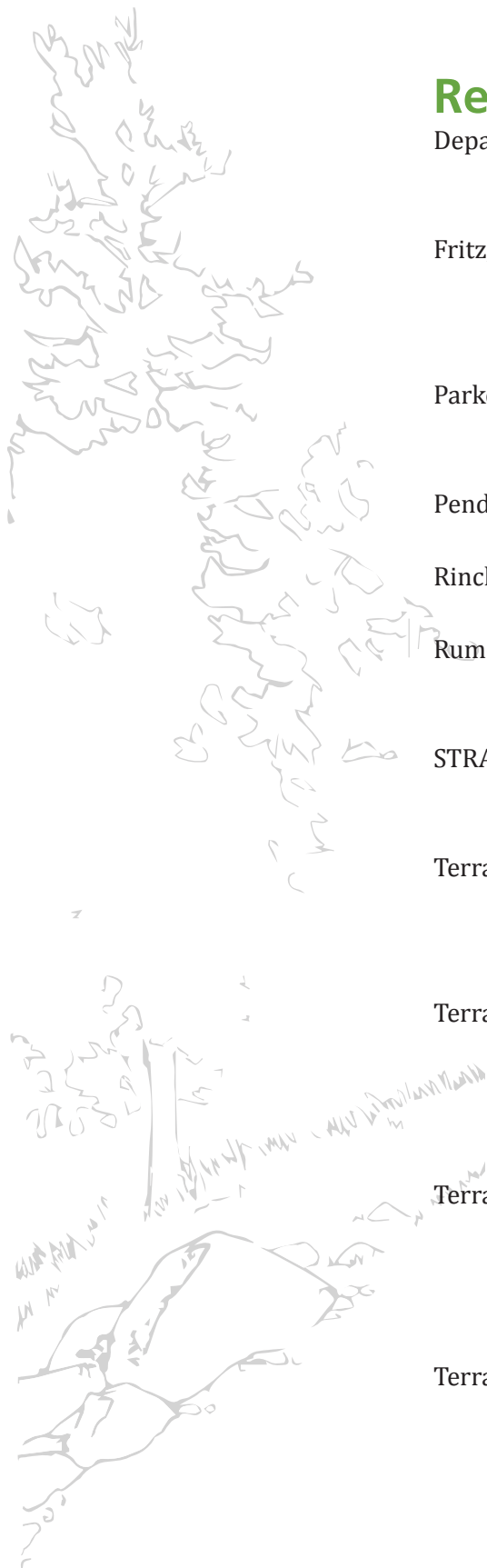
A recreation district is a separate entity that can be created through a vote of the residents in the proposed district per Idaho Statutes 31-4301 through 31-4333. A benefit of a recreation district is that it can generate new revenue in the form of a property tax that can be used for operations and maintenance as well as capital costs. Formation of a recreation district requires that a petition be signed by 20% of registered voters within the proposed district for its formation to be placed on an election ballot, and then a simple majority vote of the residents of the district is needed to pass the establishment of a district. The maximum levy rate allowed for a recreation district is 0.06%, unless a higher rate is specified on the ballot. One difficulty in creating a recreation district is determining the properties that would be included. It may be more feasible to create a Trails & Pathways District for all of Bonner County that could generate funds for all trails projects in the entire county.

BUDGET

There are many factors that will influence the cost of maintaining the POBT into the future. Currently, the Friends of the POBT has been successful in energizing volunteers to perform most maintenance needs, from removing fallen trees to completing large capital projects such as building retaining walls. However, if volunteers are not available in the future, an estimate of the probable cost of performing typical maintenance tasks is shown in Table 10. Costs are based on industry averages using contract labor, materials, and typical industry practices.

Table 10. Maintenance Estimated Costs

Description of Activity	Estimated Annual Cost
Pick up and removal of trash (52x / year)	\$2,700/mile
Replenish mutt-mitt supplies	\$800/station
Restroom Port-a-Pot Maintenance (12x / year)	\$700/restroom
Weed control (2x / year)	\$1,000/mile
Green Roof Maintenance (2x / year)	\$400/restroom
Culvert Clearing (3x / year)	\$500/mile
Vegetation Management (4x / year)	\$750/mile
Minor Repairs to trail benches, tables, and signs (1x / year)	\$750



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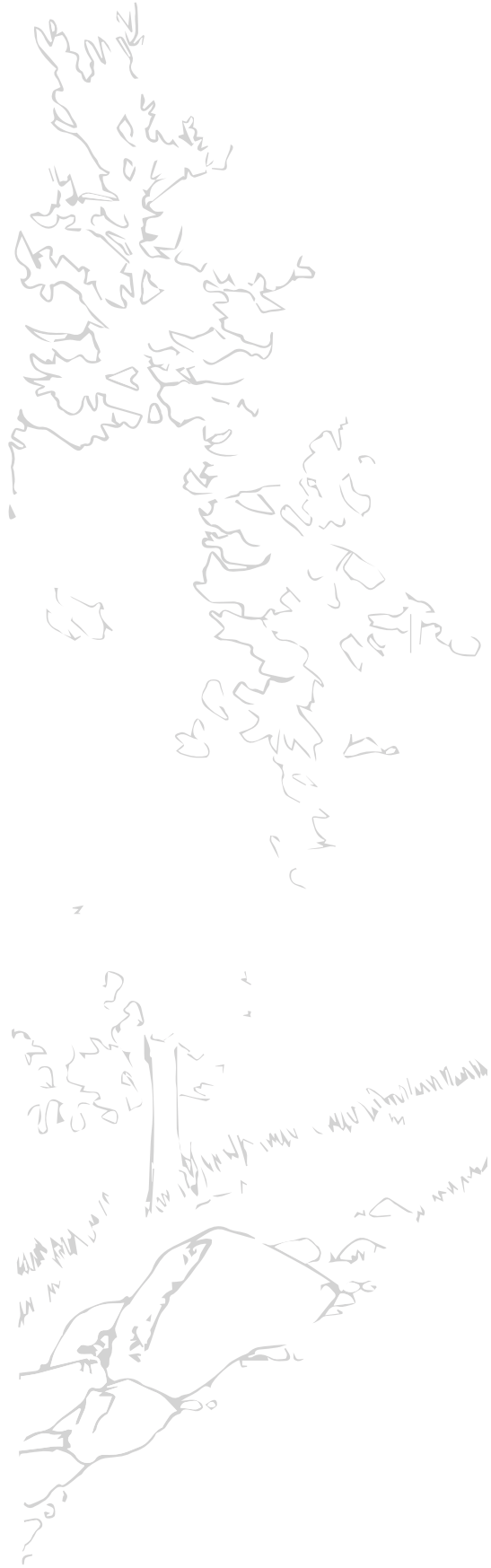
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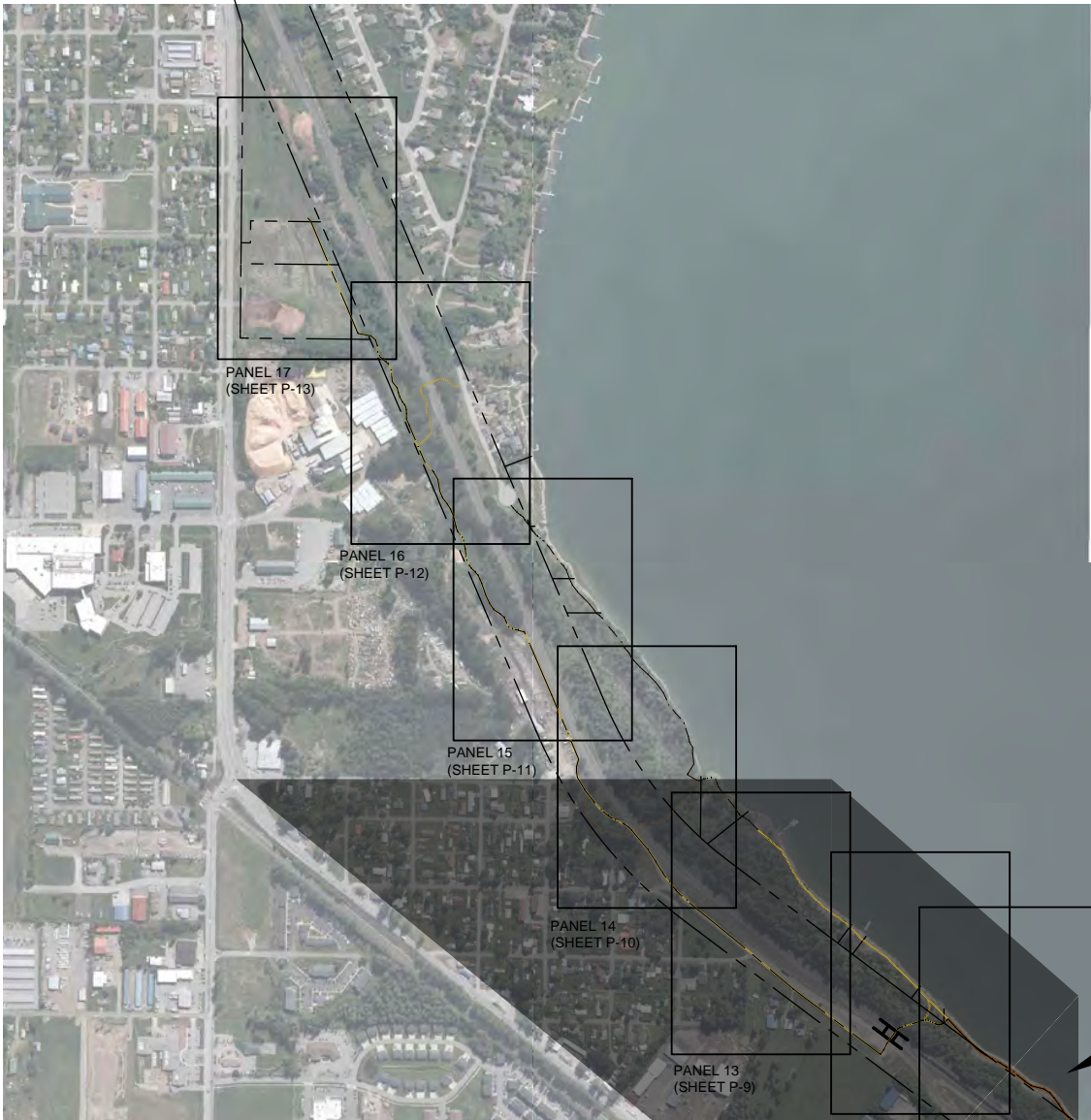
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Appendix A

Preliminary Design Drawings for the Pend d'Oreille Bay Trail

Pend d'Oreille Bay Trail Master Plan



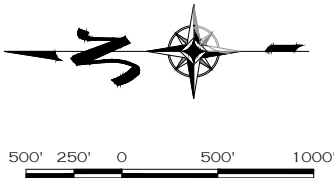
SHEET INDEX

SHEET #	TITLE
P-1	KEY PLAN AND LEGEND
P-2	PANELS 1 & 2
P-3	PANELS 3 & 4
P-4	PANELS 5 & 6
P-5	PANELS 7 & 8
P-6	PANELS 9 & 10
P-7	PANEL 11
P-8	PANEL 12
P-9	PANEL 13
P-10	PANEL 14
P-11	PANEL 15
P-12	PANEL 16
P-13	PANEL 17
D-1	SANDPOINT CITY BEACH TRAILHEAD
D-2	HUMBERD MILL PARK TRAILHEAD (PHASE 2)
D-2.1	HUMBERD MILL PARK TRAILHEAD (PHASE 1)
D-3	HUMBERD MILL AREA
D-4	TWO POINTS AREA
D-5	KOOTENAI TRAILHEAD
PR-1	TRAIL PROFILES AND SECTIONS
PROP-1	PROPERTY BOUNDARIES
R-1	RIGHT OF WAY EXHIBIT
R-2	RIGHT OF WAY EXHIBIT
R-3	RIGHT OF WAY EXHIBIT
R-4	RIGHT OF WAY EXHIBIT

LEGEND (FOR ALL SHEETS)

---	PROPERTY LINE
---	EXISTING CONTOUR (MAJOR 10' INTERVAL)
---	EXISTING CONTOUR (MINOR 2' INTERVAL)
2110	PROPOSED CONTOUR (MAJOR 10' INTERVAL)
52+00	PROPOSED CONTOUR (MINOR 2' INTERVAL)
---	TRAIL CENTERLINE WITH STATIONING
---	PAINT OR PAVERS (PEDESTRIAN LANE)
---	EXISTING 8' TO 10' WIDE TRAIL
---	PROPOSED 10' WIDE CRUSHER FINES SURFACE TRAIL
---	PROPOSED 10' WIDE STABILIZED CRUSHER FINES SURFACE TRAIL
---	PROPOSED 6' WIDE NATURAL SURFACE TRAIL
---	PROPOSED 3' WIDE NATURAL SURFACE TRAIL
---	PROPOSED BOARDWALK
---	PROPOSED FENCE
i	INTERPRETIVE INFORMATION
-	BENCH
■	PICNIC TABLE
○	PROPOSED TREE (DECIDUOUS)
⊙	PROPOSED TREE (EVERGREEN)

SHADED AREA INDICATES LIMIT OF PONDERAY SUBAREA PLAN



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PROJECT NAME

**PEND D'OREILLE BAY TRAIL
MASTER PLAN**

KEY PLAN AND LEGEND

SHEET #

P-1



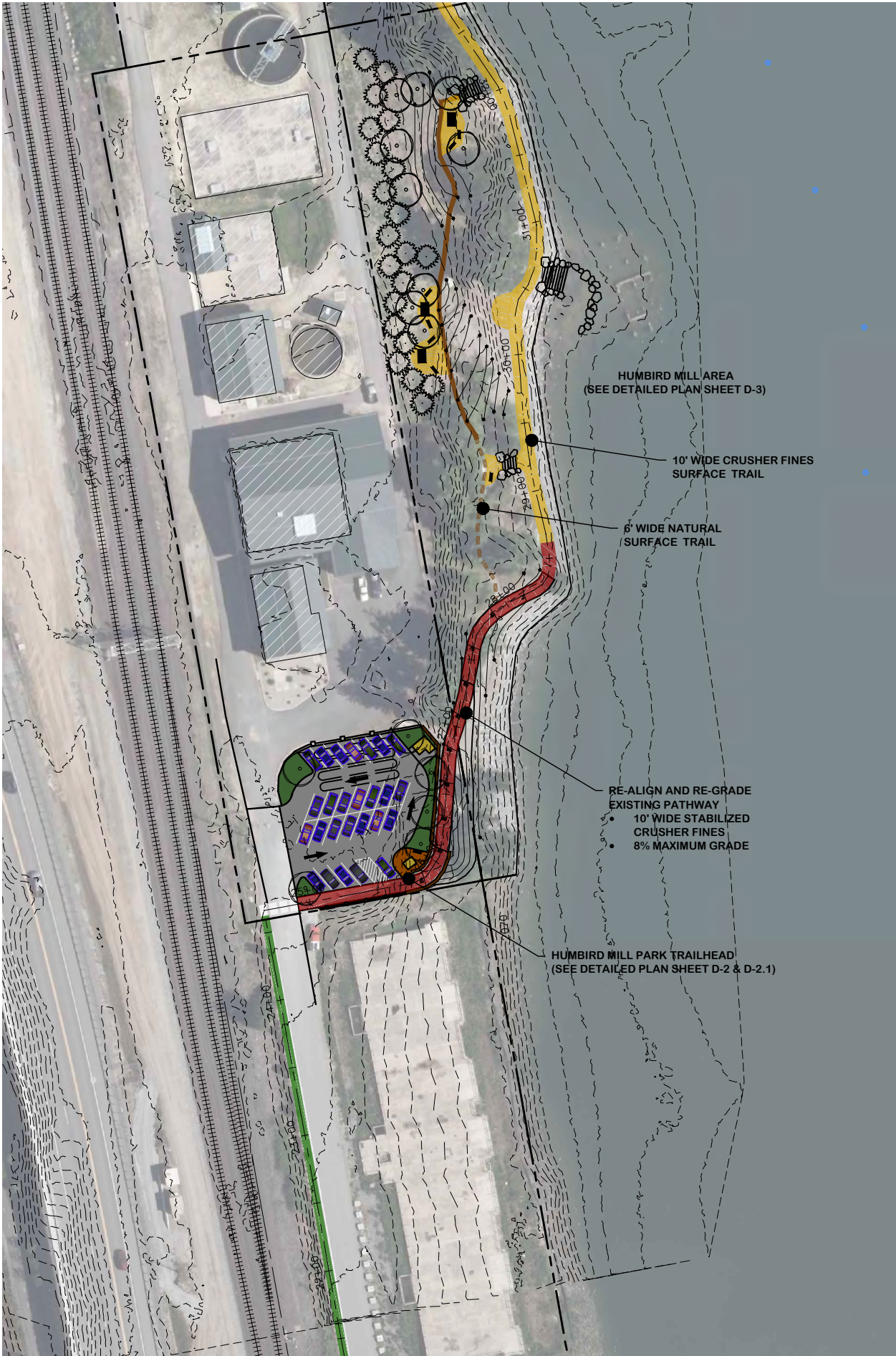
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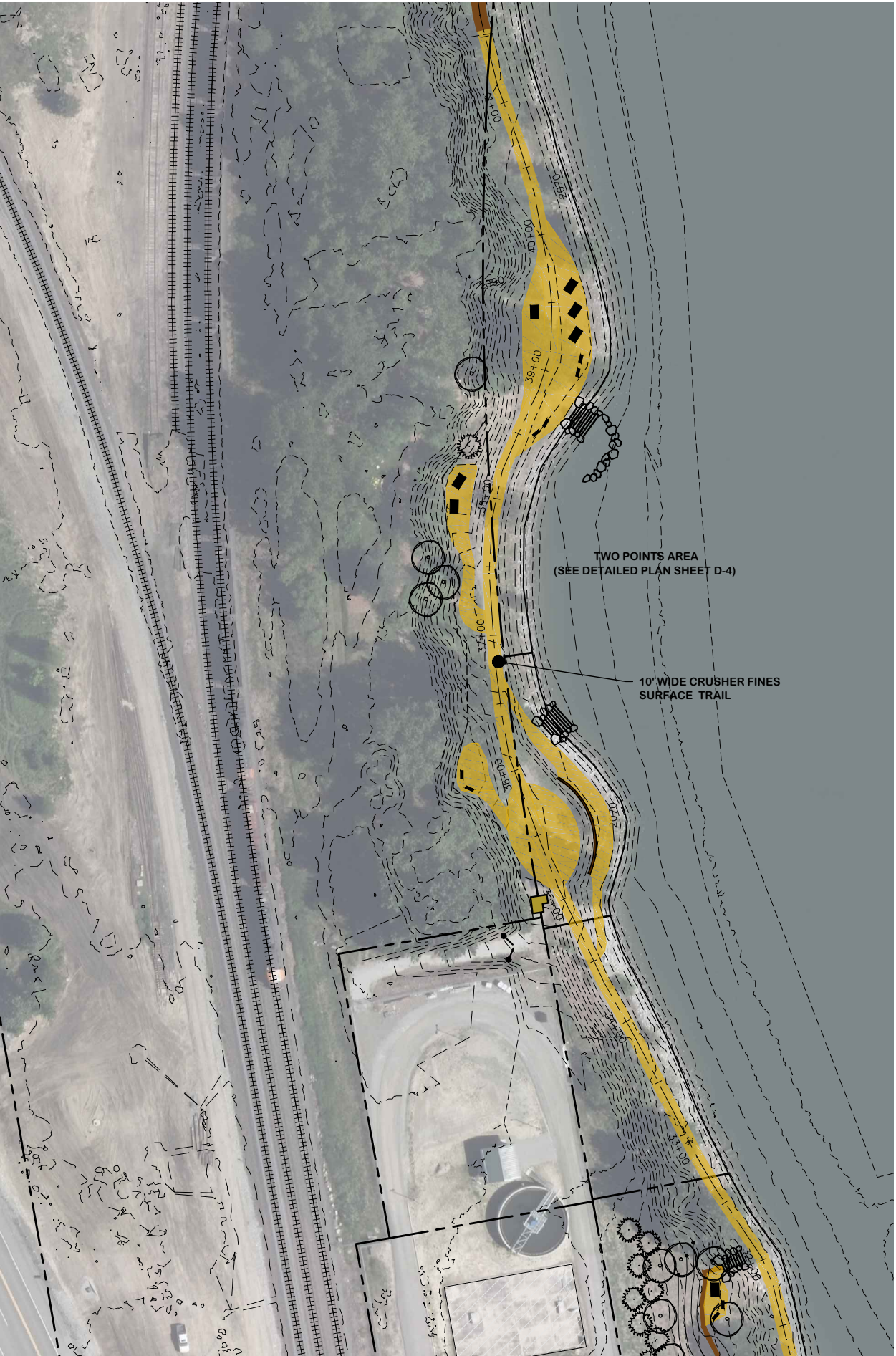
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PANEL #3



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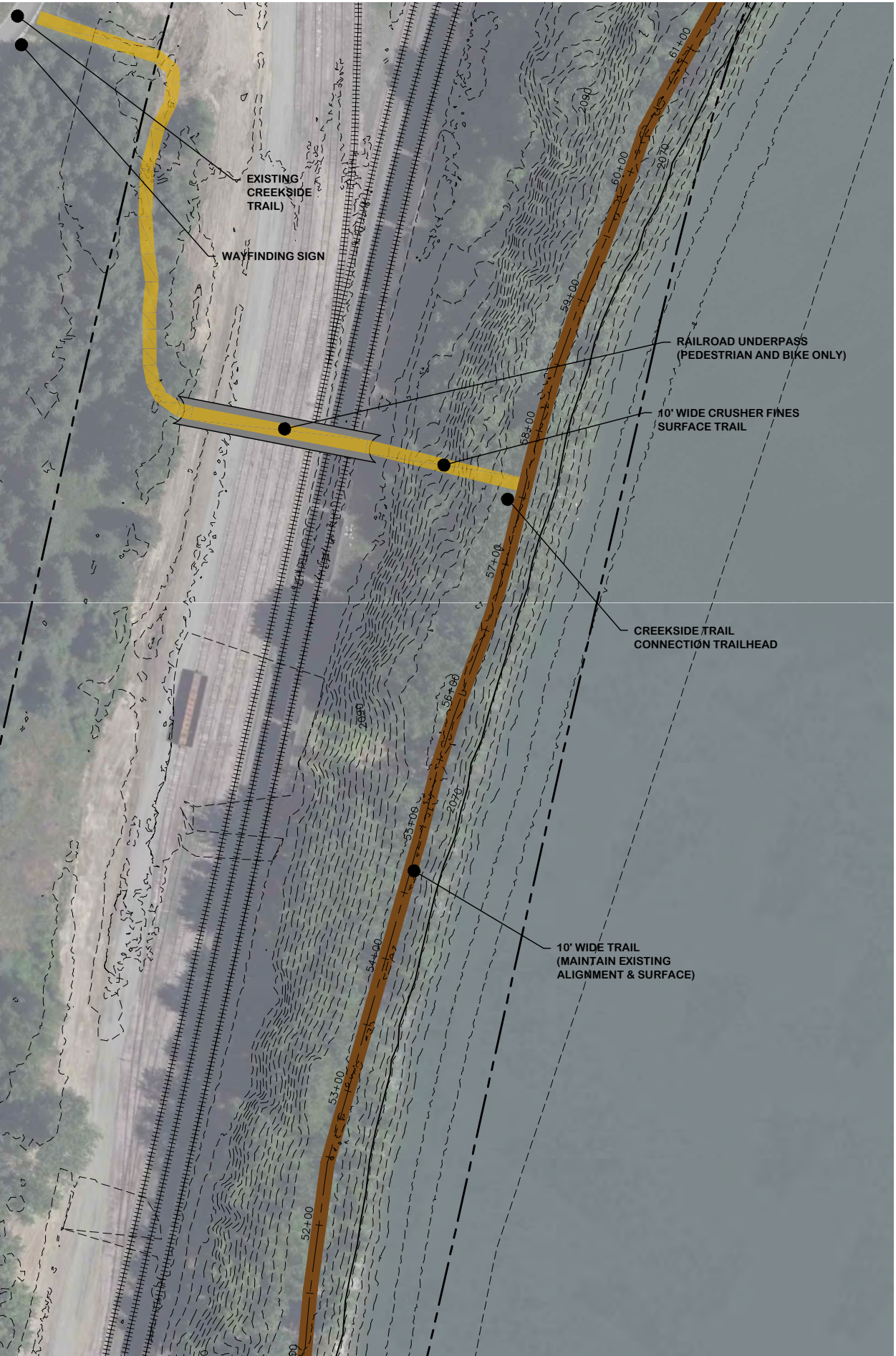
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PROJECT NAME
PEND D' OREILLE BAY TRAIL
MASTER PLAN
PANELS 3 & 4

SHEET #
P-3



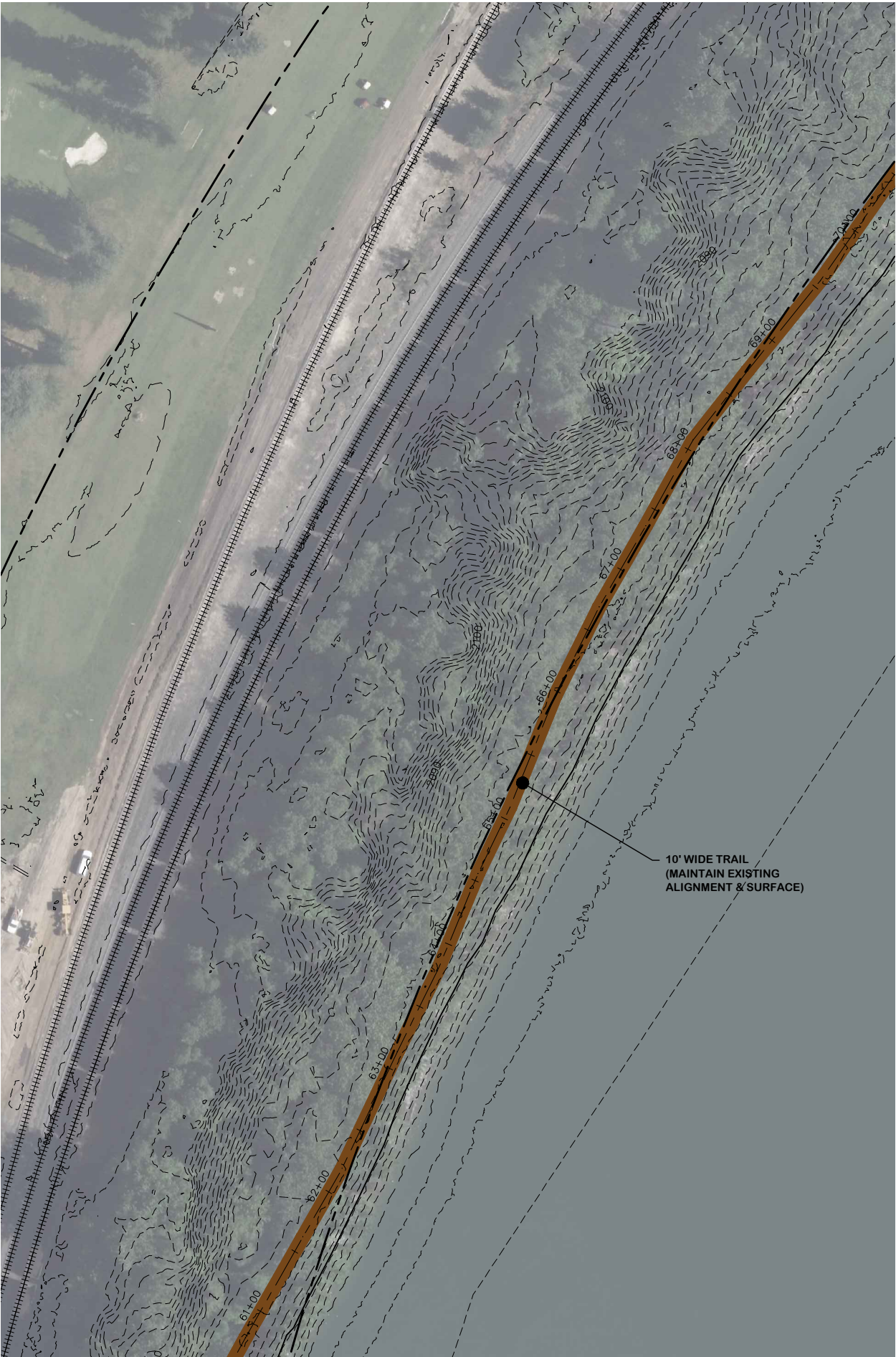
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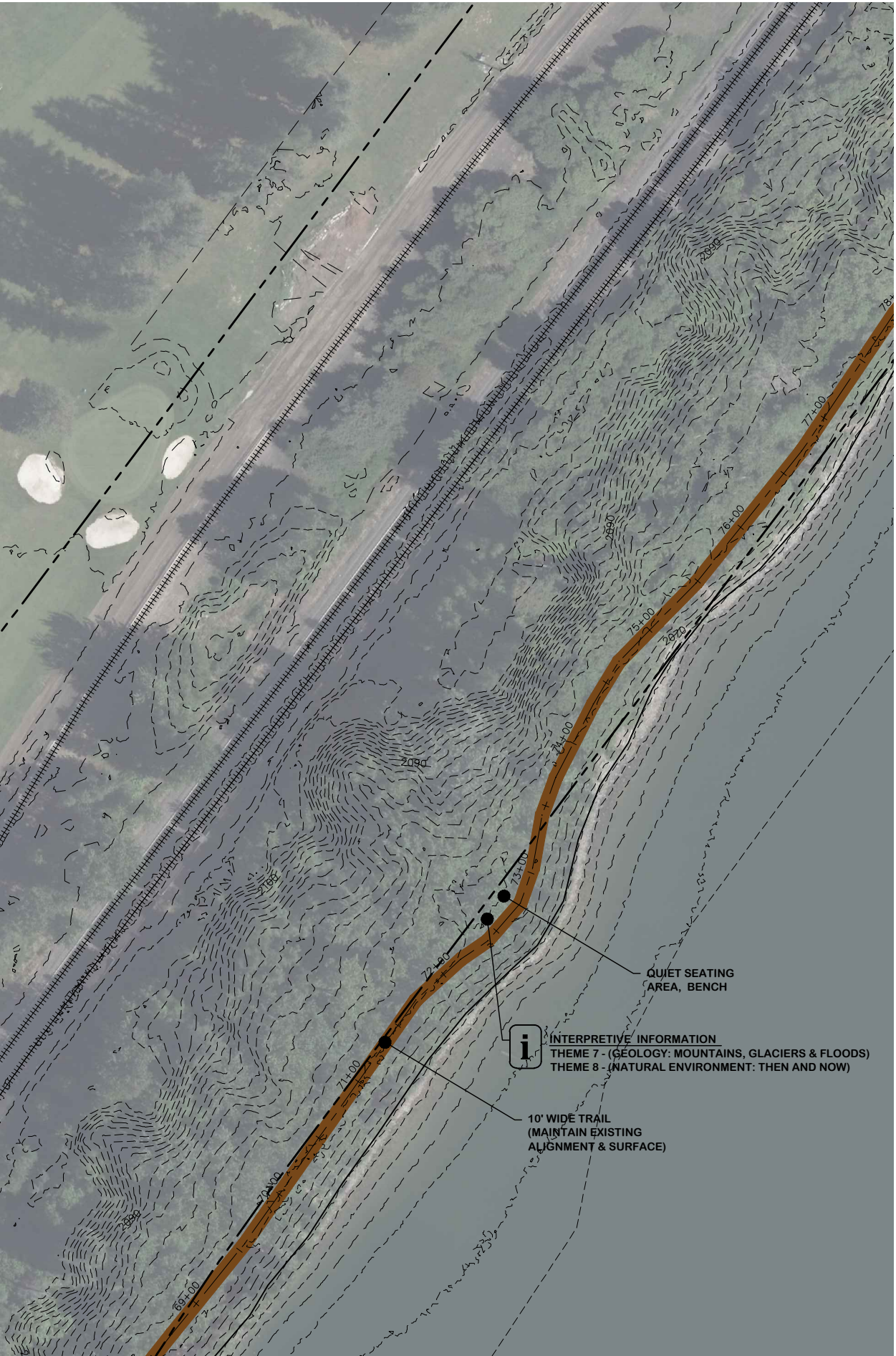
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PANEL #7



PANEL #8



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PANEL #9



PANEL #10



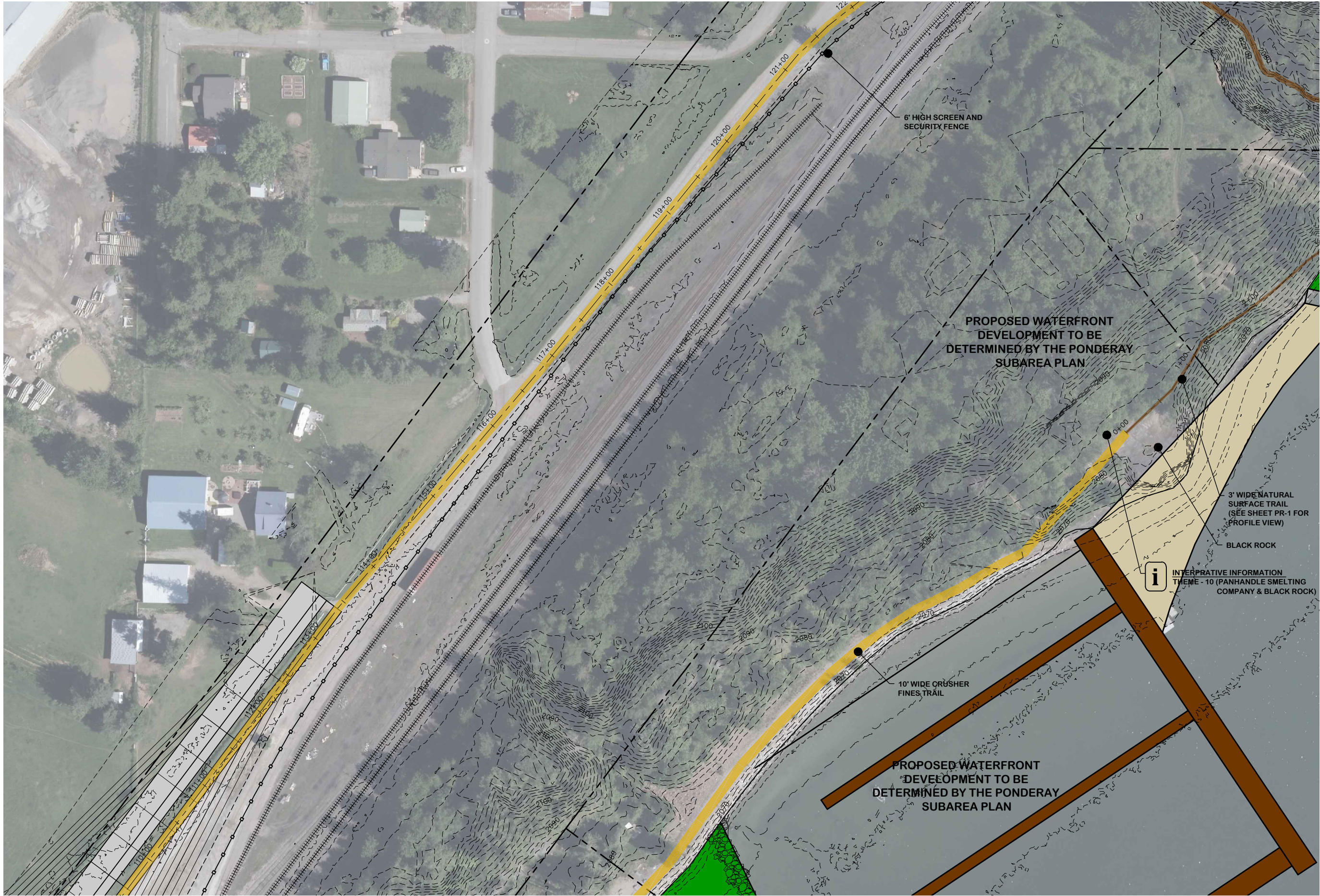
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PROJECT NAME
**PEND D' ORELLE BAY TRAIL
MASTER PLAN**
PANEL 11



PANEL #13



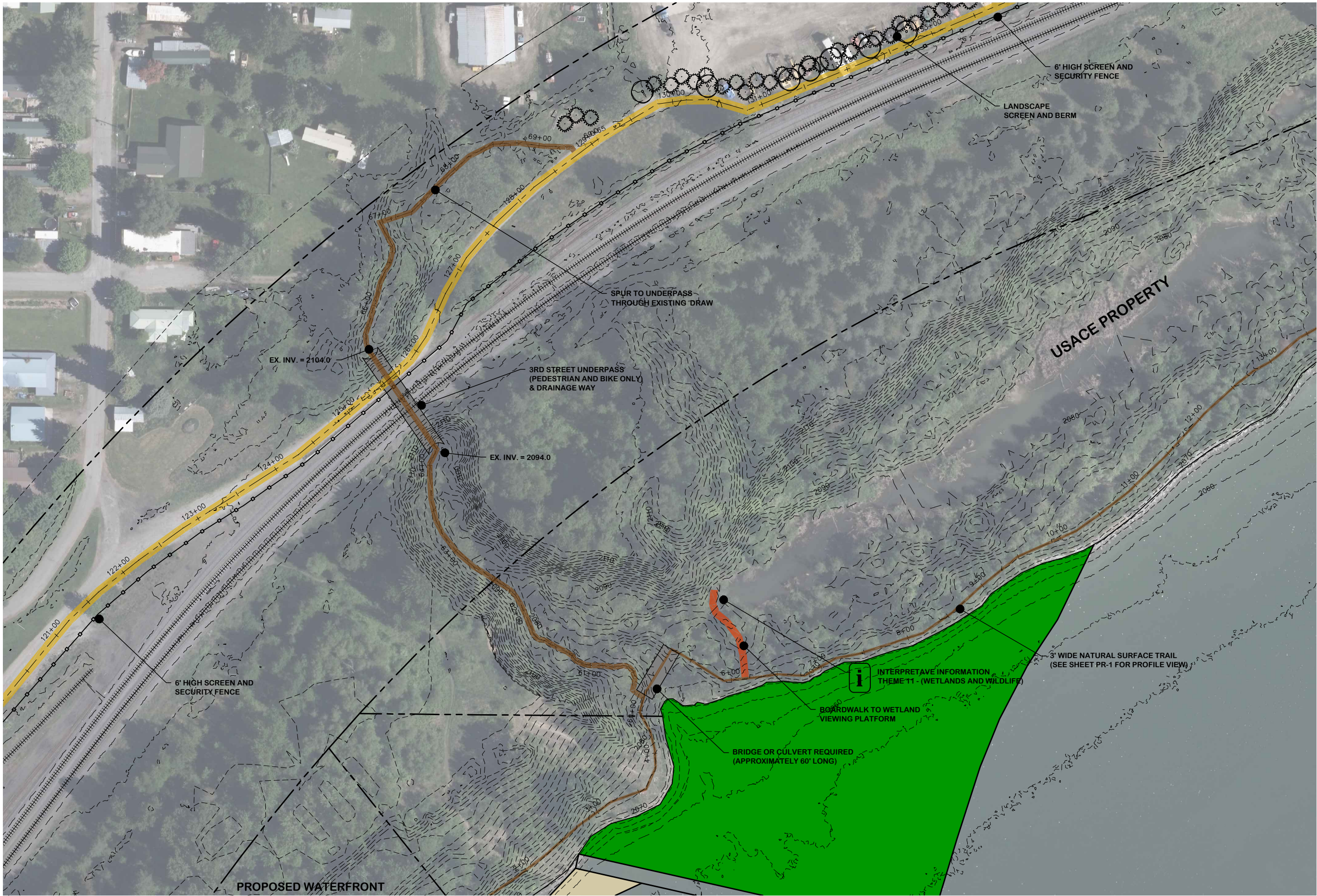
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PEND D' OREILLE BAY TRAIL
MASTER PLAN

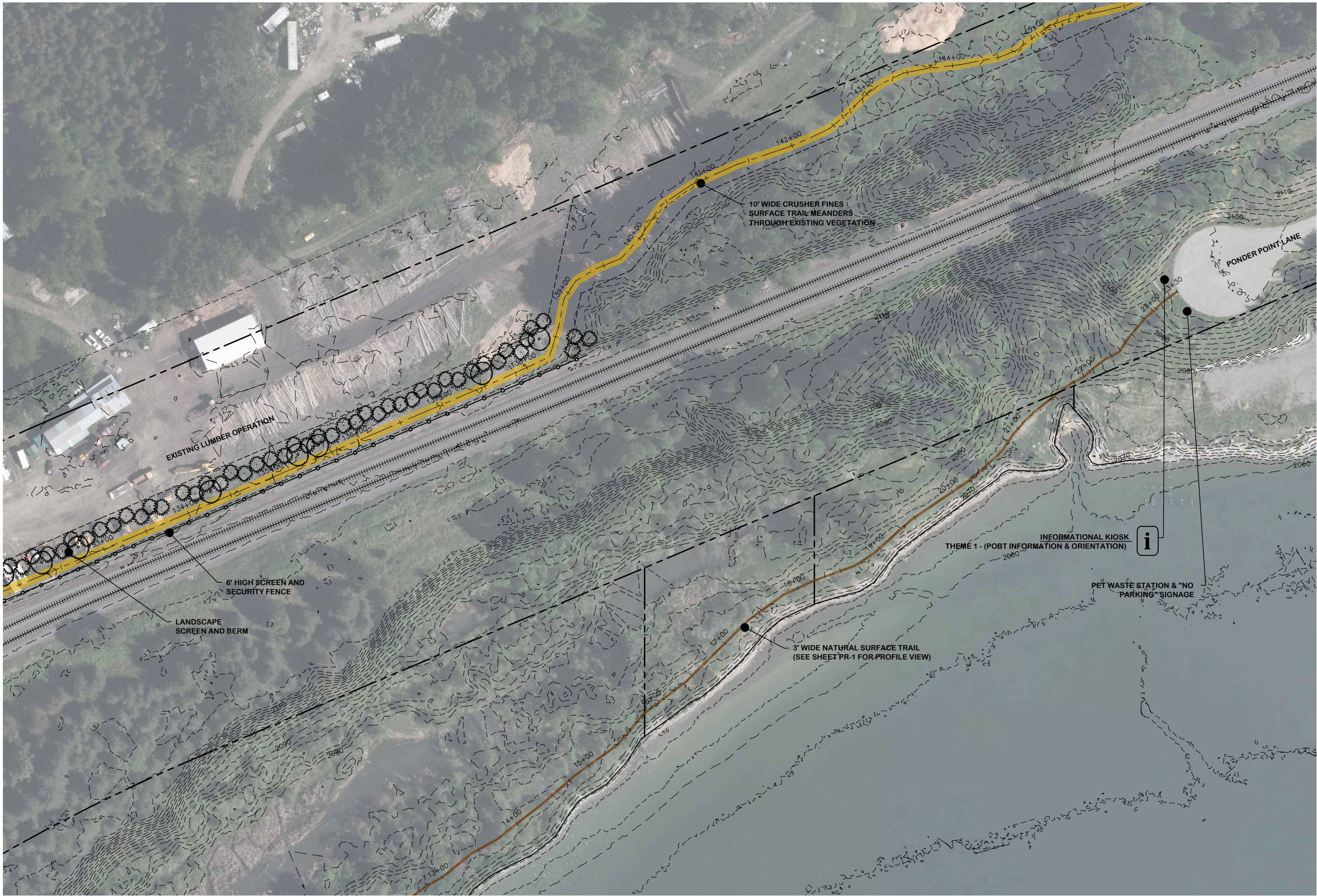
PANEL 13



PANEL #14



 <p>HARMONY DESIGN & ENGINEERING 110 E. LITTLE AVE. • DRIGGS ID 83422 T 208.354.1331 F 208.354.1332</p>	
DATE: 10-21-2015	
REVISIONS:	
SCALE: AS SHOWN	
DESIGNED BY: RGB	
DRAWN BY: RGB	
CHECKED BY: JFZ	
PROJ. #: 14010-185-1	
PROJECT NAME PEND D' OREILLE BAY TRAIL MASTER PLAN	
SHEET # P-10	
PANEL 14	



PANEL #15



DATE: 10-21-2015
REVISIONS:

SCALE: AS SHOWN
DESIGNED BY: RGB
DRAWN BY: RGB
CHECKED BY: JFZ
PROJ. #: 14010-185-1

PROJECT NAME


PEND D' OREILLE BAY TRAIL
MASTER PLAN

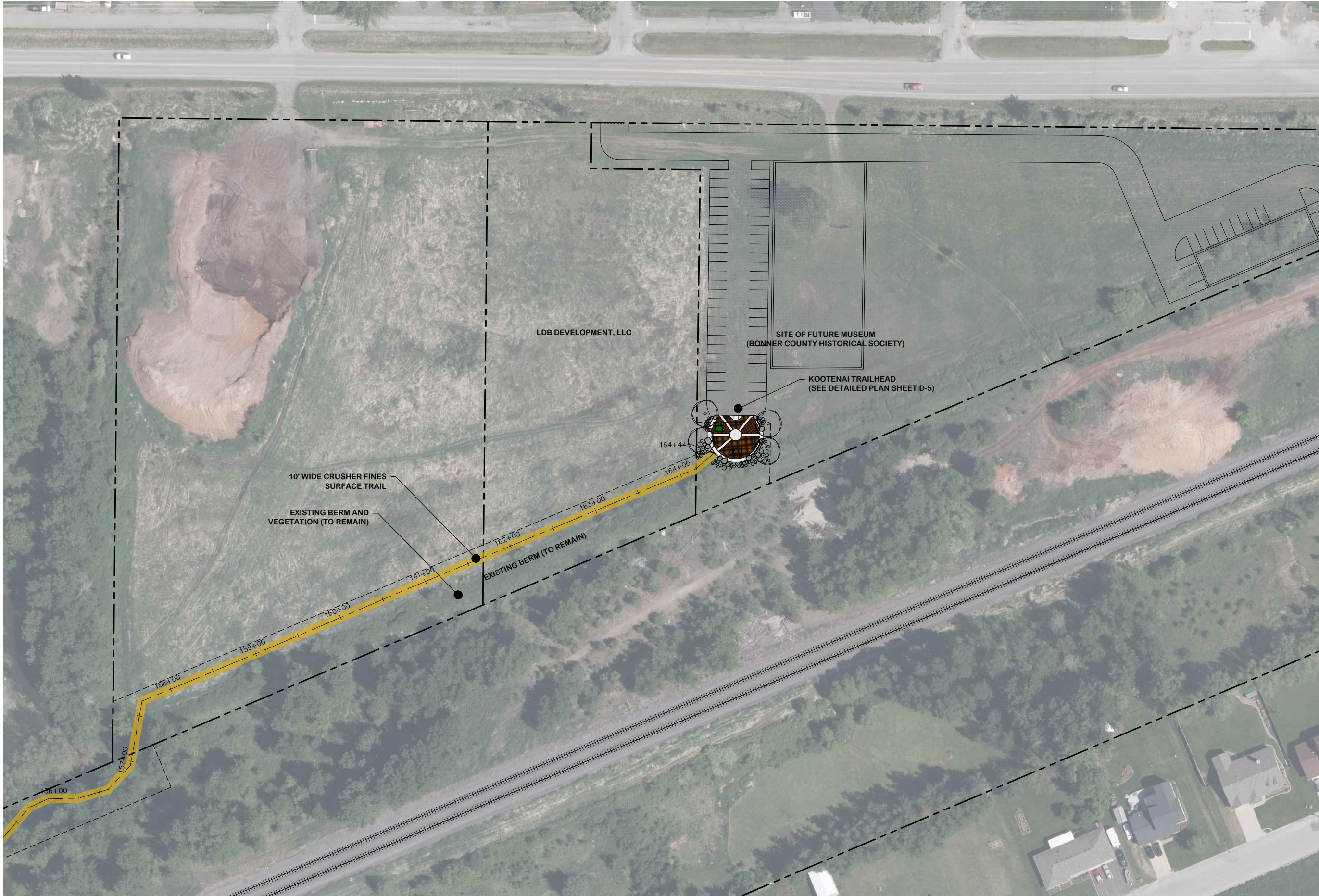
PANEL 15



PANEL #16



 HARMONY DESIGN & ENGINEERING 110 E. LITTLE AVE. • DRIGGS ID 83422 T 208.354.1331 F 208.354.1332	
DATE: 10-21-2015	
REVISIONS:	
SCALE: AS SHOWN	
DESIGNED BY: RGB	
DRAWN BY: RGB	
CHECKED BY: JFZ	
PROJ. #: 14010-185-1	
PROJECT NAME PEND D' OREILLE BAY TRAIL MASTER PLAN	
PANEL 16	
SHEET # P-12	



PANEL #17

DATE: 10-21-2015
REVISIONS:

SCALE: AS SHOWN
DESIGNED BY: RGB
DRAWN BY: RGB
CHECKED BY: JFZ
PROJ. #: 14010185-1

PROJECT NAME
PEND D'OREILLE BAY TRAIL
MASTER PLAN
PANEL 17

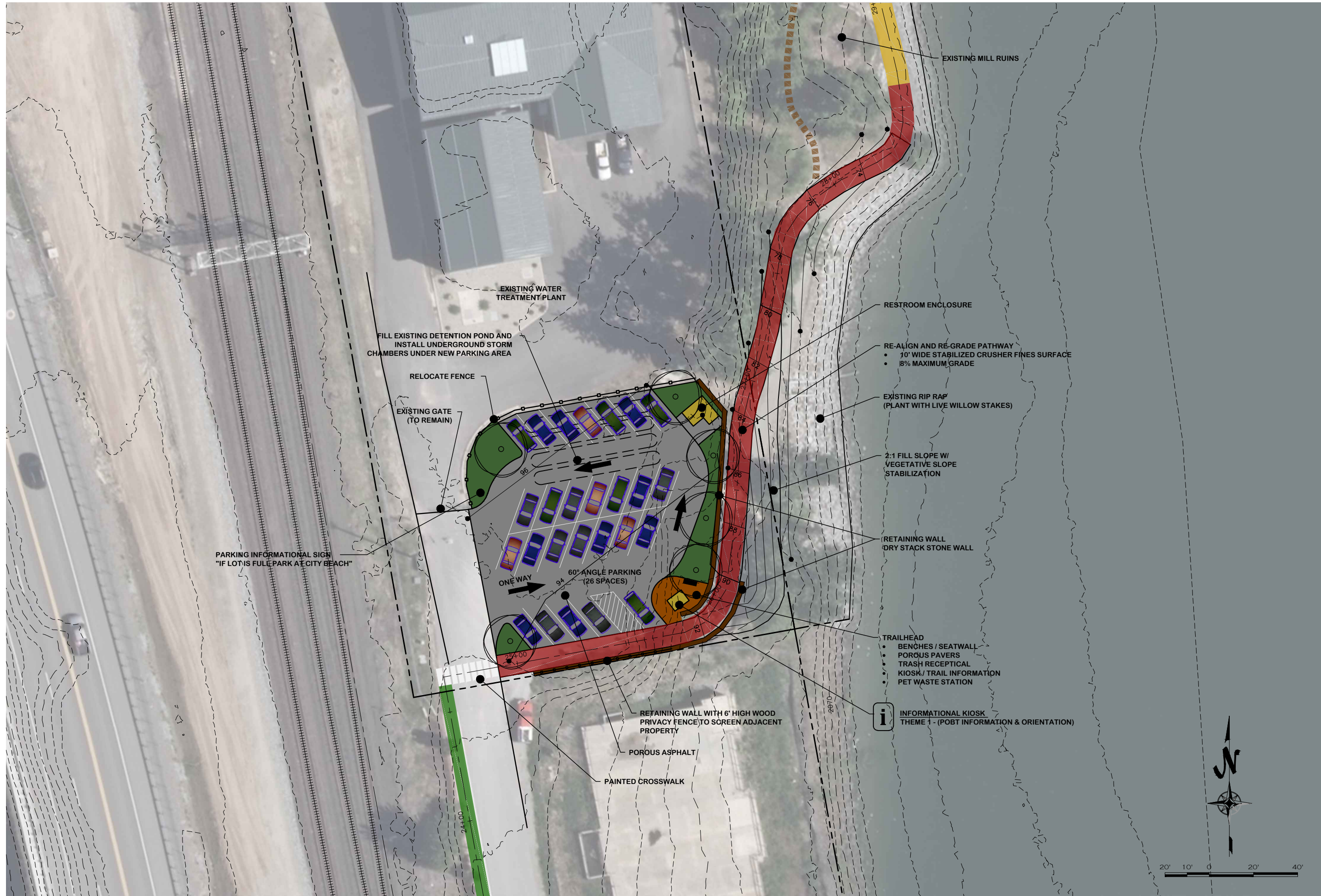
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P-13



DATE:	10-21-2015
REVISIONS:	

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PROJ. #:	14010-185-1

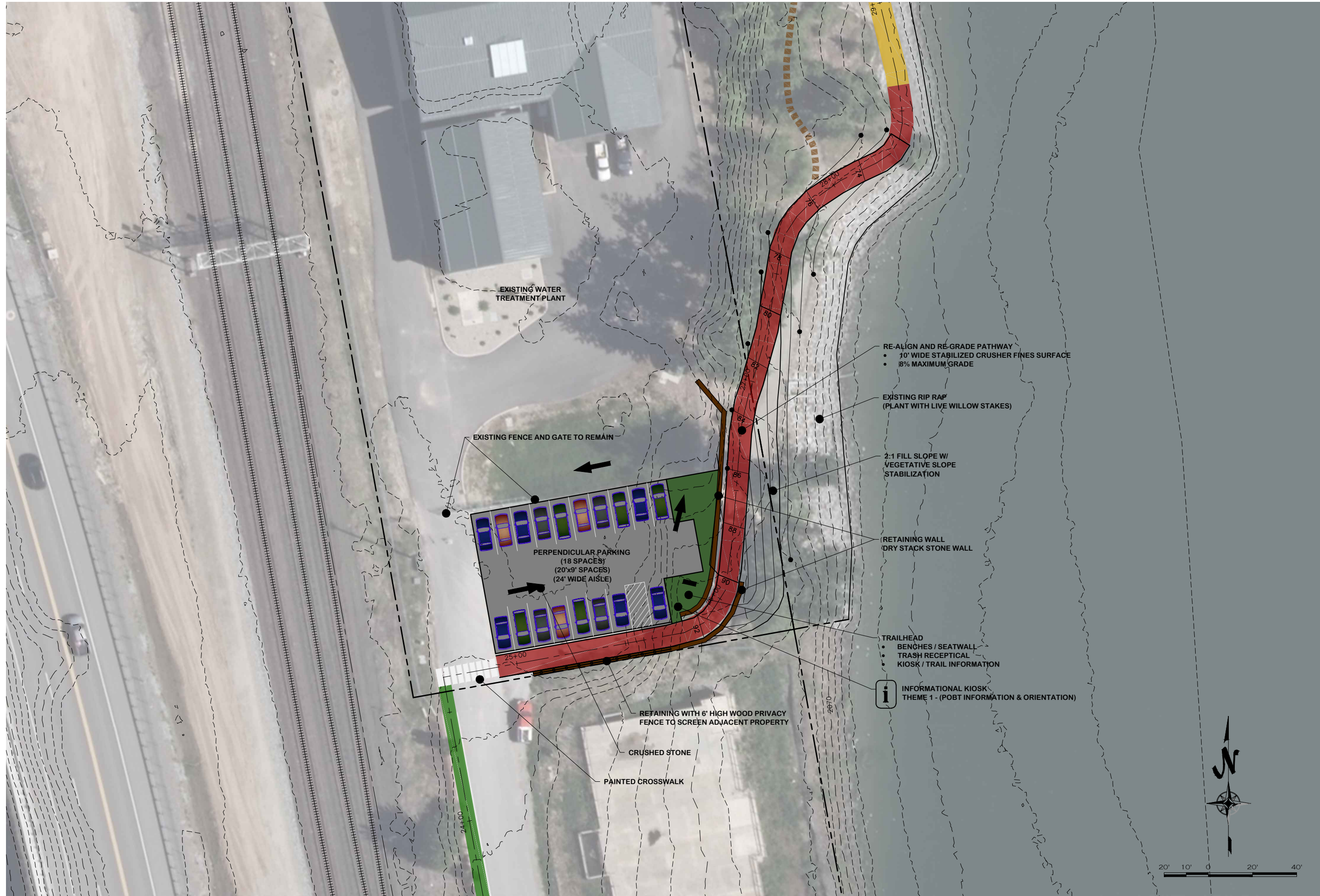
PROJECT NAME
**PEND D' OREILLE BAY TRAIL
MASTER PLAN**
SANDPOINT CITY BEACH TRAILHEAD



DATE: 10-21-2015
REVISIONS:

SCALE: AS SHOWN
DESIGNED BY: RGB
DRAWN BY: RGB
CHECKED BY: JFZ
PROJ. #: 14010-185-1

PROJECT NAME
PEND D' OREILLE BAY TRAIL
MASTER PLAN
HUMBIRD MILL PARK TRAILHEAD
(PHASE 2)



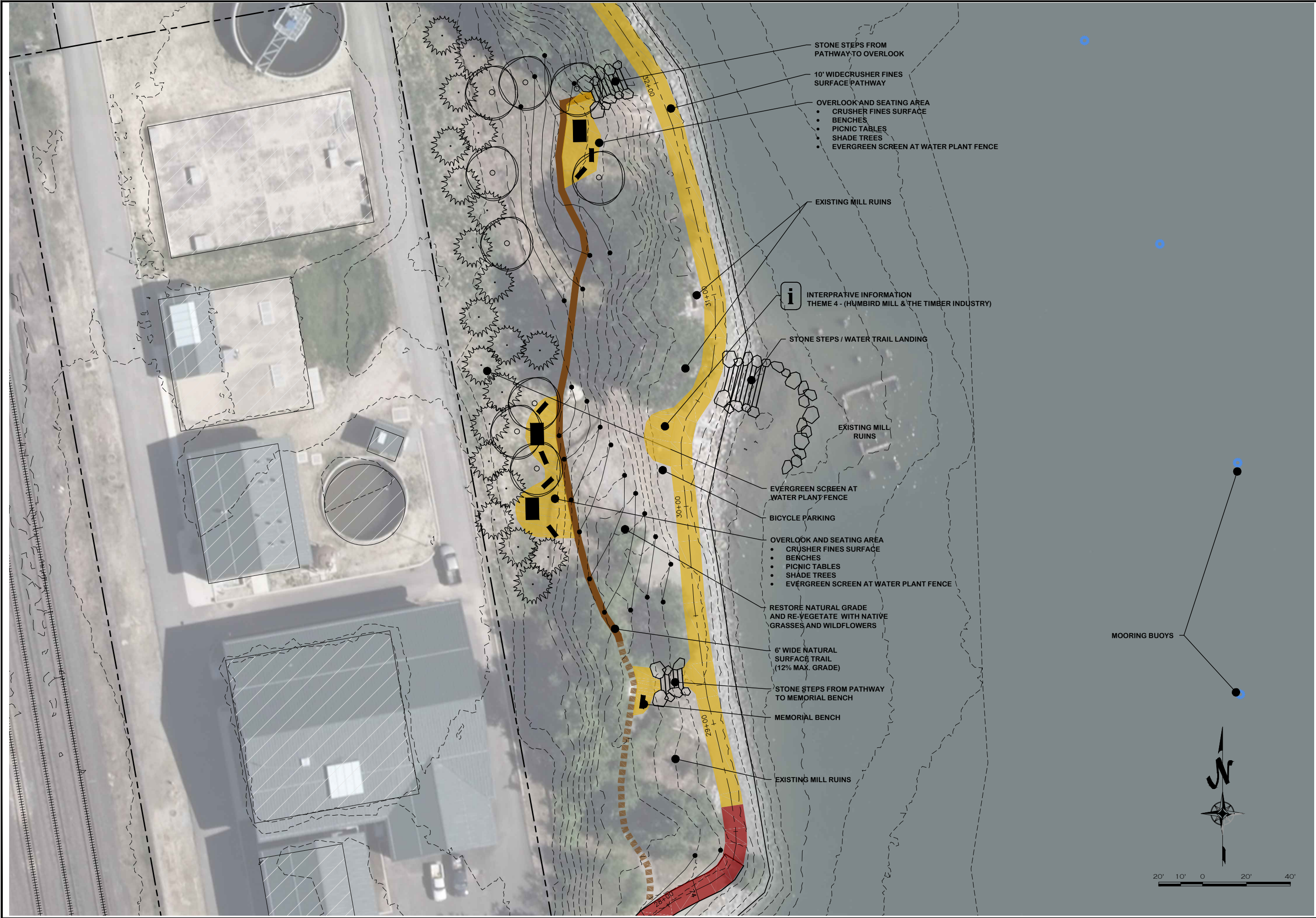
DATE: 10-21-2015
REVISIONS:

SCALE: AS SHOWN
DESIGNED BY: RGB
DRAWN BY: RGB
CHECKED BY: JFZ
PROJ. #: 14010-185-1

PROJECT NAME

**PEND D' OREILLE BAY TRAIL
MASTER PLAN**

**HUMBIRD MILL PARK TRAILHEAD
(PHASE 1)**



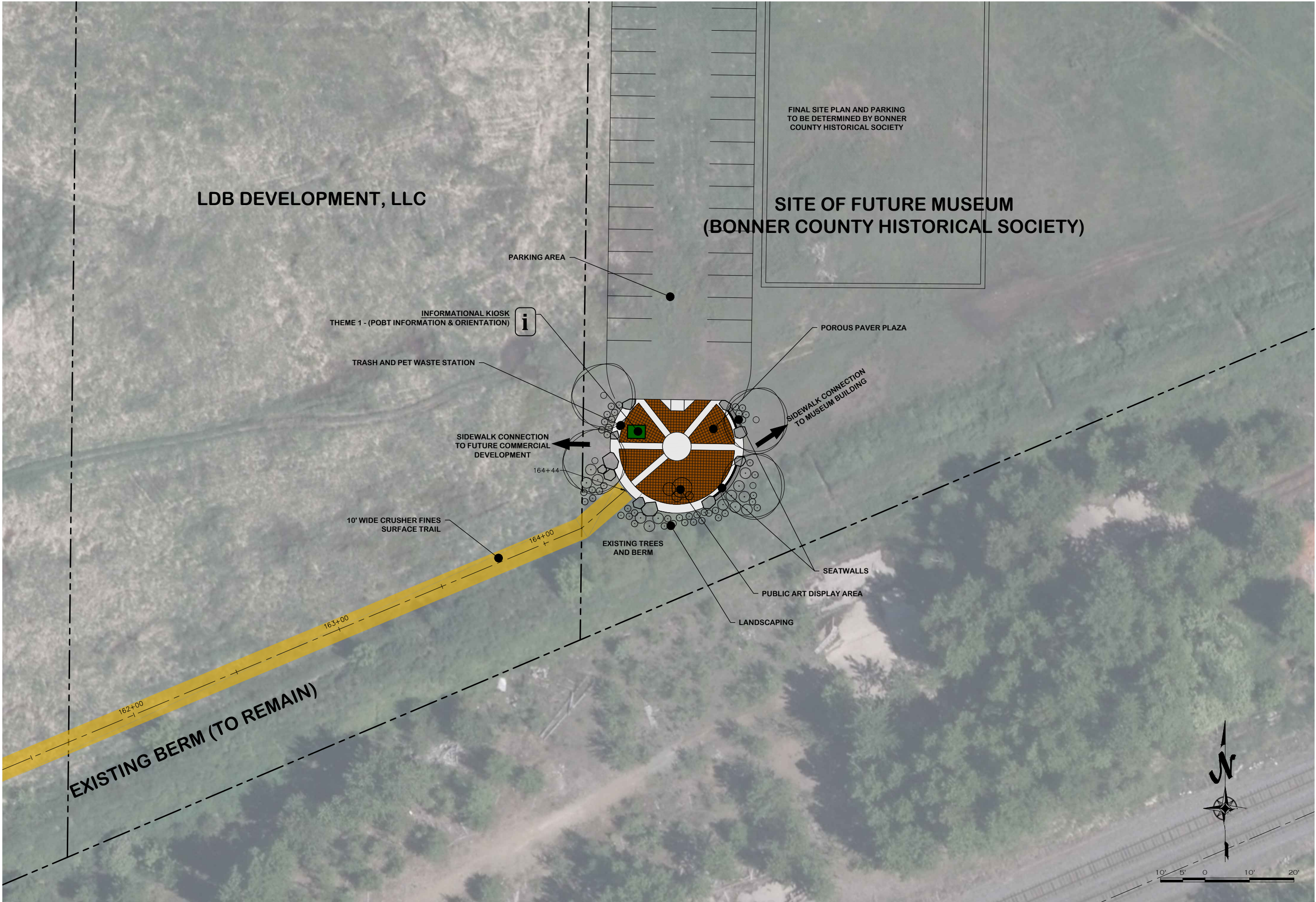
PROJECT NAME	HARMONY DESIGN & ENGINEERING 110 E. LITTLE AVE. • DRIGGS ID 83422 T 208.354.1331 F 208.354.1332	
	DATE: 10-21-2015	
SCALE: AS SHOWN	REVISIONS:	
	DESIGNED BY: RGB	
DRAWN BY: RGB	CHECKED BY: JFZ	
	PROJ. #: 14010-185-1	
PEND D' OREILLE BAY TRAIL MASTER PLAN		
HUMBIRD MILL AREA		
SHEET #		
D-3		



DATE:	10-21-2015
REVISIONS:	

SCALE:	AS SHOWN
DESIGNED BY:	RGB
DRAWN BY:	RGB
CHECKED BY:	JFZ
PROJ. #:	14010-185-1

PROJECT NAME
**PEND D' OREILLE BAY TRAIL
MASTER PLAN**
TWO POINTS AREA



DATE: 10-21-2015
REVISIONS:

SCALE: AS SHOWN
DESIGNED BY: RGB
DRAWN BY: RGB
CHECKED BY: JJPZ
PROJ. #: 14010185-1

PROJECT NAME

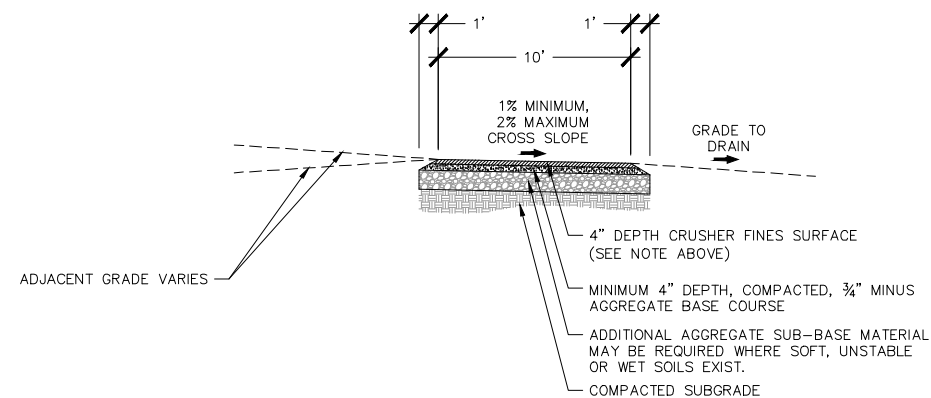
PEND D'OREILLE BAY TRAIL

MASTER PLAN

KOOTENAI TRAILHEAD

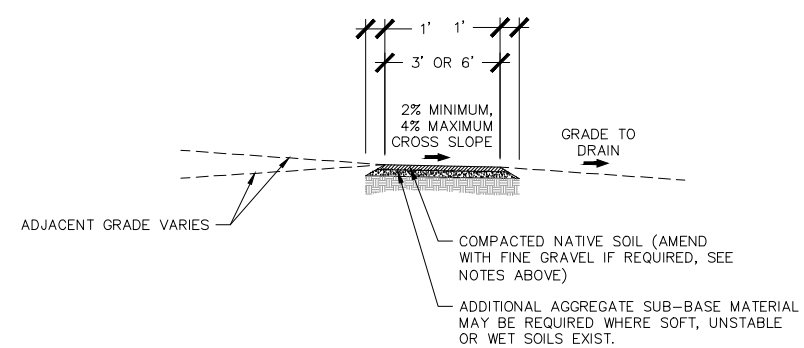


1. CRUSHER FINES SHALL BE $\frac{3}{8}$ " MINUS ANGULAR CRUSHED STONE, WITH ADEQUATE FINES TO PROVIDE AN INTERLOCKING MATRIX FOR THE LARGER PARTICLES.
2. MATERIAL SHALL BE GRANITE OR OTHER HARD, DURABLE STONE.
3. SURFACE SHALL BE COMPACTED WITH A ROLLER OR VIBRATORY PLATE COMPACTOR.
4. A BINDING AGENT SHALL BE USED WITH THE CRUSHER FINES WHERE THE TRAIL SLOPE EXCEEDS 5%, WHERE SIGNIFICANT CROSS SLOPE DRAINAGE IS EXPECTED, AND WHERE MAXIMUM ACCESSIBILITY IS DESIRED.



10' MULTIUSE PATHWAY

1. TREAD SHALL BE NATIVE, ON SITE SOIL WITH MINIMAL HUMUS (ORGANIC MATERIAL) AND A GRAVELLY LOAM TEXTURE. IF NECESSARY, $\frac{3}{4}$ " MINUS GRAVEL MATERIAL CAN BE MIXED WITH ON SITE SOILS TO ACHIEVE OPTIMUM TEXTURE.
2. NATURALLY OCCURRING ORGANIC MATERIAL (LEAF LITTER, PINE NEEDLES, ETC.) CAN BE LEFT TO ACCUMULATE ON THE TREAD SURFACE BUT SHOULD NOT BE UTILIZED AS THE STRUCTURAL TREAD.



NATURAL SURFACE TRAIL



DATE: 10-21-2015

REVISIONS:

SCALE: AS SHOWN

DESIGNED BY: RGB

DRAWN BY:	RGB
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CHECKED BY: JFZ
PROJ.#: 14010-185-1

PROJECT NAME

PEND D'OREILLE BAY TRAIL MASTER PLAN

TRAIL PROFILES AND SECTIONS

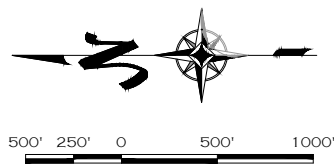
SHEET #

PR-1



Appendix B

Right-of-Way Exhibits



PROJECT NAME

**PEND D'OREILLE BAY TRAIL
MASTER PLAN**

PROPERTY BOUNDARIES

SHEET #

PROP-1

SCALE: AS SHOWN

DESIGNED BY: RGB

DRAWN BY: RGB

CHECKED BY: JFZ

PROJ. #: 14010185-1

DATE: 10-21-2015

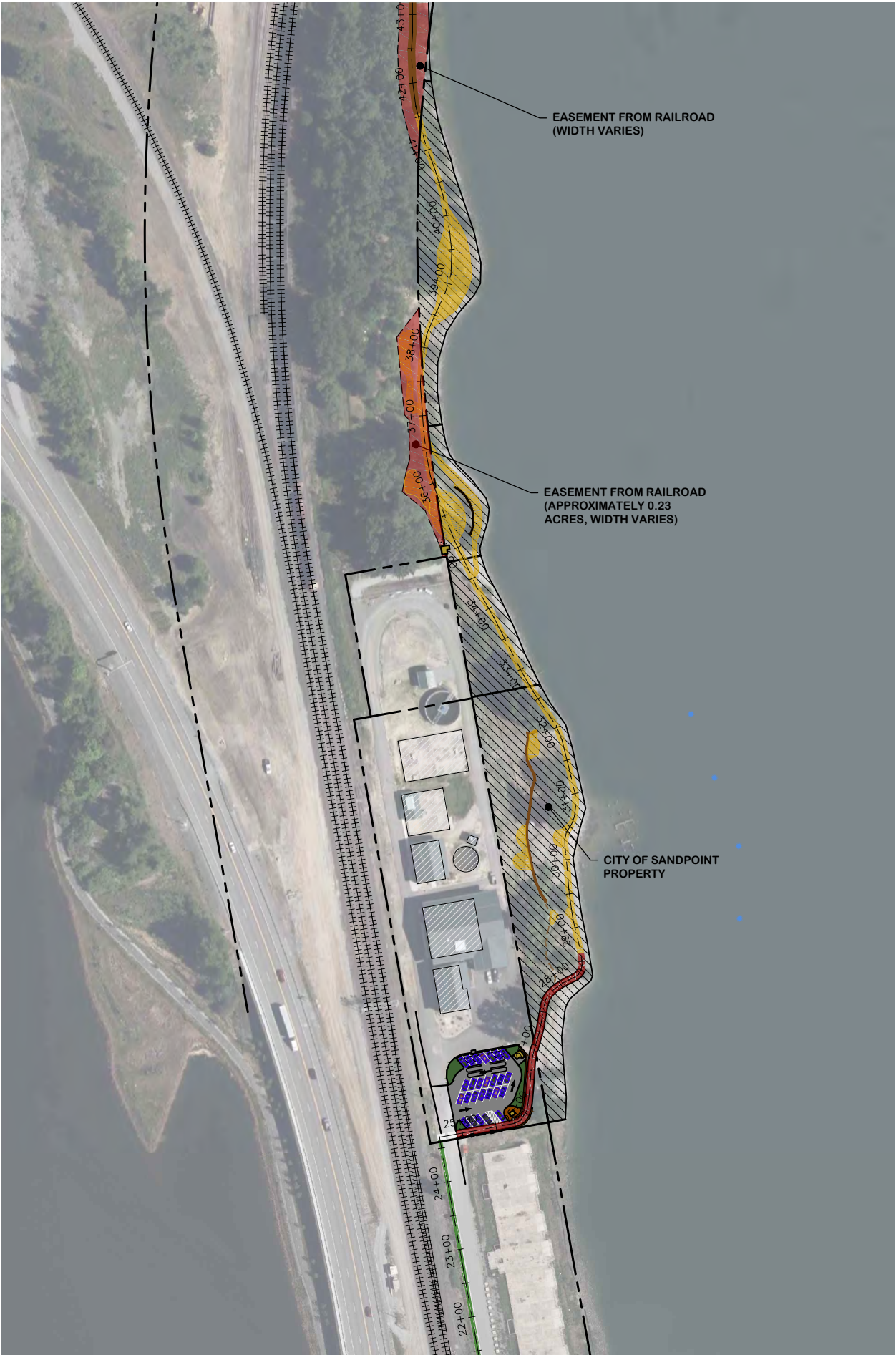
REVISIONS:



HARMONY
DESIGN & ENGINEERING
110 E. LITTLE AVE. • DRIGGS, ID 83422
T 208.354.1331 F 208.354.1332



0+00 TO 22+00



22+00 TO 43+00



PROJECT NAME
**PEND D'OREILLE BAY TRAIL
MASTER PLAN**
RIGHT OF WAY EXHIBIT

SHEET #
R-1

SCALE: AS SHOWN
DESIGNED BY: RGB
DRAWN BY: RGB
CHECKED BY: JFZ
PROJ. #: 14010185-1

DATE: 10-21-2015

REVISIONS:



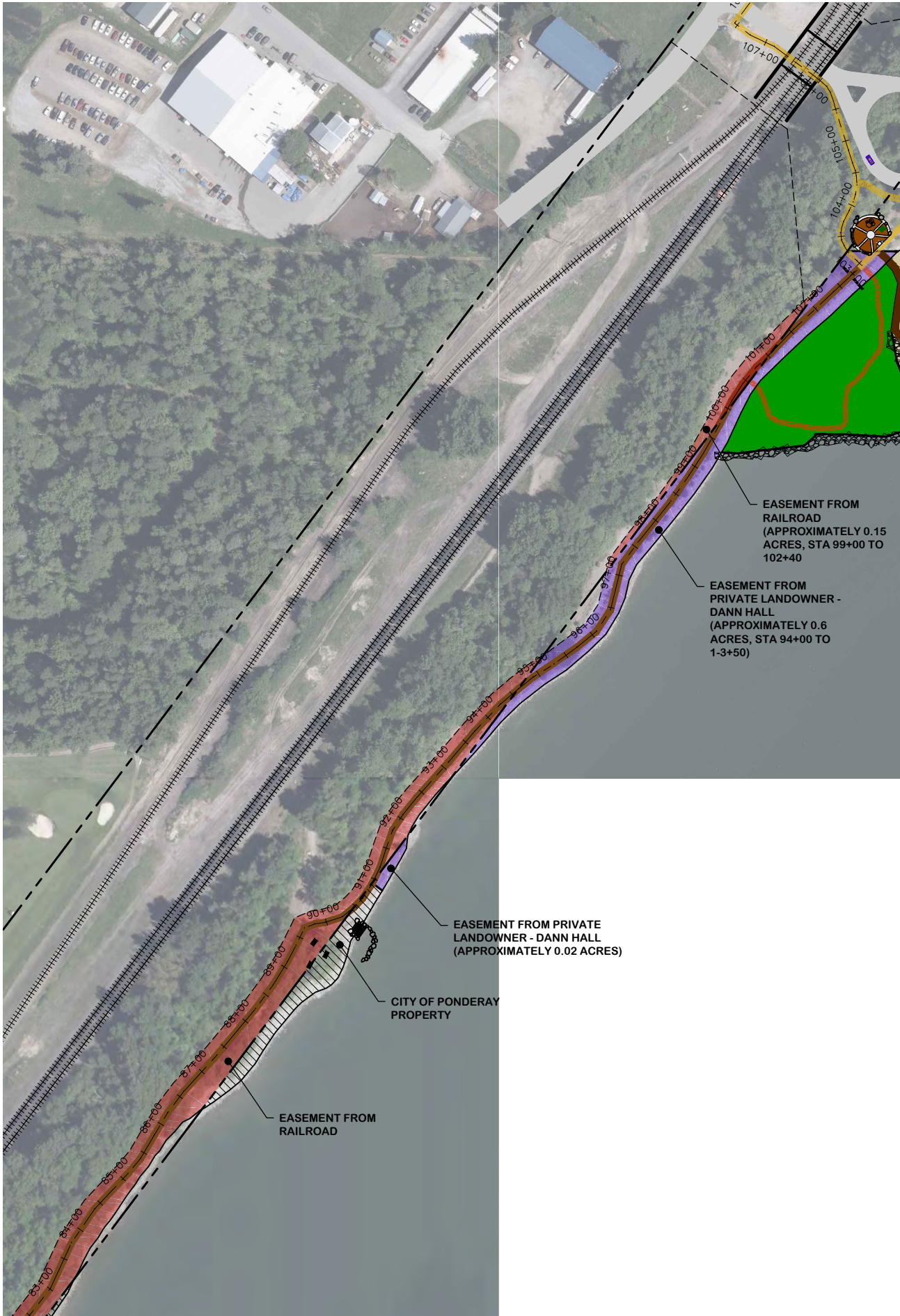
43+00 TO 63+00



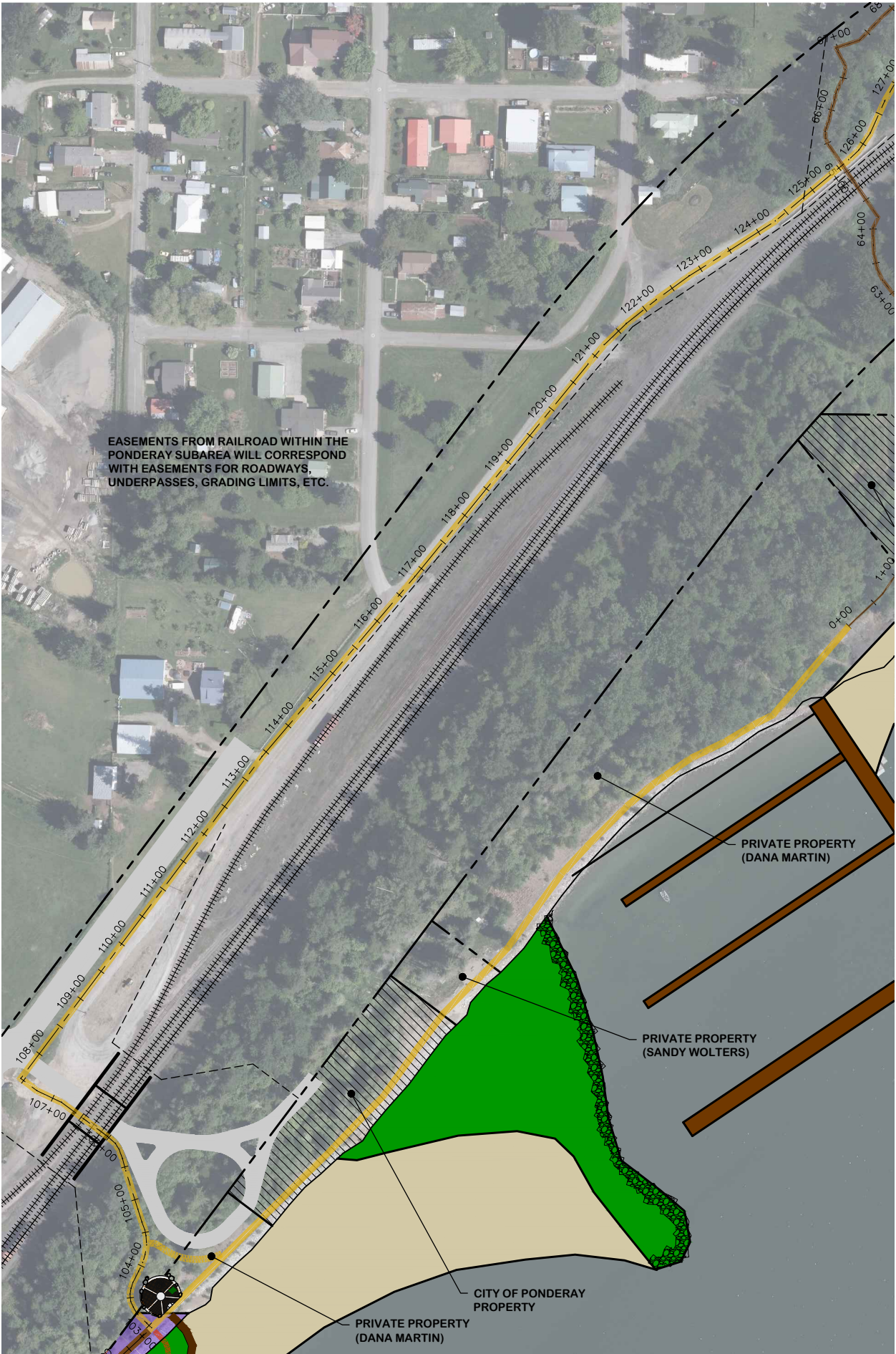
63+00 TO 85+00



<div>PROJECT NAME</div> <div>PEND D' OREILLE BAY TRAIL</div> <div>MASTER PLAN</div> <div>RIGHT OF WAY EXHIBIT</div>		<div>DATE: 10/21/2015</div> <div>REVISIONS:</div>		<div>HARMONY</div> <div>DESIGN & ENGINEERING</div> <div>110 E. LITTLE AVE. • DRIGGS ID 83422</div> <div>T 208.354.1331 F 208.354.1332</div>	
<div>SHEET #</div> <div>R-2</div>		<div>SCALE: AS SHOWN</div> <div>DESIGNED BY: RGB</div> <div>DRAWN BY: RGB</div> <div>CHECKED BY: JFZ</div> <div>PROJ. #: 14010185-1</div>			




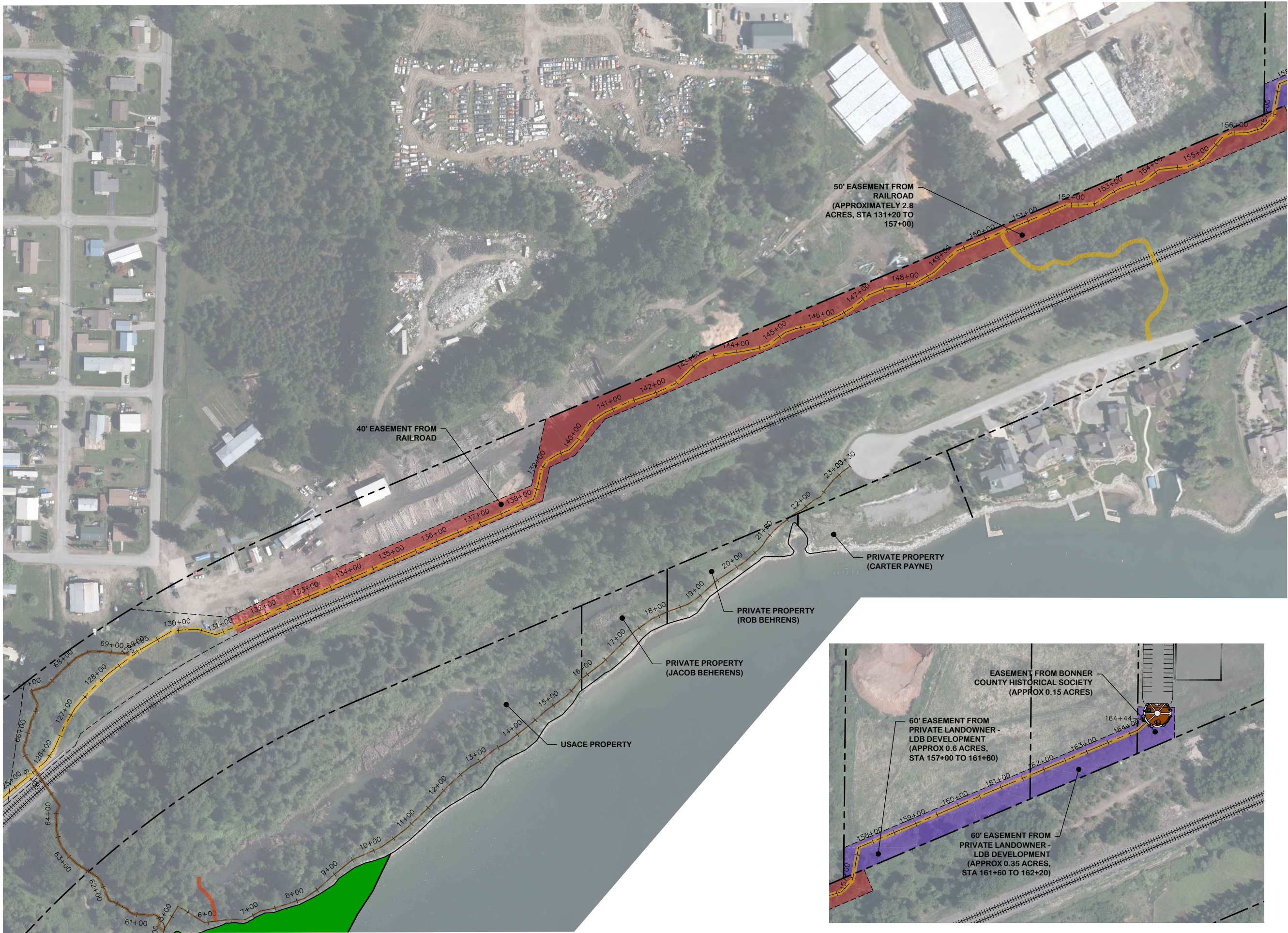
83+00 TO 103+00



103+00 TO 126+00



 HARMONY DESIGN & ENGINEERING 110 E. LITTLE AVE. • DRIGGS, ID 83422 T 208.354.1331 F 208.354.1332	
DATE: 10/21/2015	
REVISIONS:	
SCALE: AS SHOWN	
DESIGNED BY: RGB	PROJ. #: 14010185-1
DRAWN BY: RGB	CHECKED BY: JJPZ
PROJECT NAME PEND D' OREILLE BAY TRAIL MASTER PLAN	
RIGHT OF WAY EXHIBIT	
SHEET # R-3	



126+00 TO 157+00

157+00 TO END



DATE: 10/21/2015
REVISIONS:

SCALE: AS SHOWN
DESIGNED BY: RGB
DRAWN BY: RGB
CHECKED BY: JFZ
PROJ. #: 14010185-1

PROJECT NAME
PEND D'OREILLE BAY TRAIL
MASTER PLAN
RIGHT OF WAY EXHIBIT



Appendix C

Cost Estimates

(blank for correct double sided printing)

Opinion of Probable Cost
10/22/2015

Project ID: C-CB2H

Connection - City Beach to Humbird Mill Park - concrete

ITEM DESCRIPTION	QTY	UNIT	UNIT COST	Sub TOTAL
Asphalt demo	1890	SY	\$ 3.00	\$ 5,669.91
Asphalt sawcut	2126	LF	\$ 1.50	\$ 3,189.00
Colored and stamped concrete (6" crush, 6" concrete)	17000	SF	\$ 8.50	\$ 144,500.00
Paint - white 6" stripe	2126	LF	\$ 1.50	\$ 3,189.00
Paint - white crosswalks	256	LF	\$ 1.50	\$ 384.00
Bike/Ped pavement marking	5	EA	\$ 150.00	\$ 750.00
Wayfinding sign (standard)	2	EA	\$ 500.00	\$ 1,000.00
Construction Total				\$ 158,681.91
Construction Management	1	LS	4.5%	\$ 7,140.69
Materials Testing	1	LS	2.5%	\$ 3,967.05
Contingency	1	LS	30.0%	\$ 47,604.57

TOTAL \$ 217,394

NOTICE:

This opinion of probable cost has been prepared solely as a general reference document for the information of the Friends of the Pend d'Oreille Bay Trail (Client). This opinion of probable cost has not been prepared by a cost estimator or contractor and this opinion of probable cost has been fashioned in part to help meet the unique needs of the Client. Reliance on this opinion by any party other than Client is expressly forbidden, except with the express written permission of the Client and Harmony Design, Inc. Actual construction costs can vary depending on many factors including, but not limited to, contractor availability, material availability, fluctuating material costs, differences in quantities, construction season, and regional factors.

Opinion of Probable Cost
10/22/2015

Project ID: C-CB2H2

Connection - City Beach to Humbird Mill Park - paint

ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
Paint - green	12757	SF	\$ 3.00	\$ 38,271.92
Paint - white 6" stripe	2126	LF	\$ 1.50	\$ 3,189.33
Paint - white crosswalks	256	LF	\$ 1.50	\$ 384.00
Bike/Ped pavement marking	5	EA	\$ 150.00	\$ 750.00
Wayfinding sign (standard)	2	EA	\$ 500.00	\$ 1,000.00
Construction Total				\$ 43,595.25
Construction Management	1	LS	4.5%	\$ 1,961.79
Contingency	1	LS	30.0%	\$ 13,078.58

TOTAL \$ 58,636

NOTICE:

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Connection - Ponderay to Kootenai

ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
Clearing and Grubbing, grass	0.71	Acre	\$ 5,900.00	\$ 4,182.55
Clearing and Grubbing, 12" + dia trees	0.83	Acre	\$ 20,000.00	\$ 16,528.93
Earthwork, grading, and site prep	1334	CY	\$ 10.00	\$ 13,340.42
10-ft Trail (6" crush base, 6" fines surface)	3360	LF	\$ 18.00	\$ 60,480.00
topsoil 4" depth and seed each side of pathway	33440	SF	\$ 0.80	\$ 26,752.00
Trees	65	EA	\$ 250.00	\$ 16,250.00
Privacy and security fence	3000	LF	\$ 80.00	\$ 240,000.00
Construction Total				\$ 377,533.90
RR Easement/Property Acquisition	2.8	Acre	500,000	\$ 1,400,000.00
Private Easement/Property Acquisition	1.1	Acre	500,000	\$ 550,000.00
Topographic & Boundary Survey	1	Acre	\$ 3,000.00	\$ 3,000.00
Engineering Design	1	LS	6.0%	\$ 22,652.03
Construction Management	1	LS	4.5%	\$ 16,989.03
Construction Staking	1	LS	1.50%	\$ 5,663.01
Materials Testing	1	LS	2.5%	\$ 9,438.35
Contingency	1	LS	30.0%	\$ 113,260.17

TOTAL \$ 2,498,536

NOTICE:

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Connection - Existing POBT to Ponderay

ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
Clearing and Grubbing, grass	0.95	Acre	\$ 5,900.00	\$ 5,617.60
Earthwork, grading, and site prep	205	CY	\$ 10.00	\$ 2,048.15
10-ft ADA Trail (6" crush base, 6" stablized fines surface)	475	LF	\$ 20.00	\$ 9,500.00
10-ft Trail (6" crush base, 6" fines surface)	2290	LF	\$ 18.00	\$ 41,220.00
topsoil 4" depth and seed	13825	SF	\$ 0.80	\$ 11,060.00
Trees	13	EA	\$ 250.00	\$ 3,250.00
Construction Total				\$ 72,695.74
RR Easement/Property Acquisition (includes all of ex trail)	5.07	Acre	\$1,000,000	\$ 5,070,000.00
Topographic & Boundary Survey - around new underpass	2	Acre	\$ 3,000.00	\$ 6,000.00
Engineering Design	1	LS	6.0%	\$ 4,361.74
Construction Management	1	LS	4.5%	\$ 3,271.31
Construction Staking	1	LS	1.50%	\$ 1,090.44
Materials Testing	1	LS	2.5%	\$ 1,817.39
Contingency	1	LS	30.0%	\$ 21,808.72

TOTAL \$ 5,181,045

Connection - 2nd Pedestrian Connection to Ponderay

ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
Clearing and Grubbing, 12" + dia trees	0.28	Acre	\$ 20,000.00	\$ 5,509.64
Earthwork, grading, and site prep	889	CY	\$ 10.00	\$ 8,888.89
Natural Surface Trail	1000	LF	\$ 10.00	\$ 10,000.00
Railroad Underpass - pedestrian only	40	LF	\$ 25,000.00	\$ 1,000,000.00
Wayfinding sign (standard)	2	EA	\$ 500.00	\$ 1,000.00
Construction Total			\$ 1,019,888.89	
RR Easement/Property Acquisition	1	Acre	1,000,000	\$ 1,000,000.00
Engineering Design	1	LS	10.0%	\$ 101,988.89
Construction Management	1	LS	4.5%	\$ 45,895.00
Construction Staking	1	LS	1.50%	\$ 15,298.33
Materials Testing	1	LS	2.5%	\$ 25,497.22
Contingency	1	LS	30.0%	\$ 305,966.67

TOTAL \$ 2,514,535.00

NOTICE:

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Connection - Ponderay to Ponder Point

ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
Clearing and Grubbing, grass	0.67	Acre	\$ 5,900.00	\$ 3,933.33
Clearing and Grubbing, 12" + dia trees	0.10	Acre	\$ 20,000.00	\$ 2,000.00
Earthwork, grading, and site prep	538	CY	\$ 10.00	\$ 5,377.78
10-ft Trail (6" crush base, 6" fines surface)	1452	LF	\$ 18.00	\$ 26,136.00
6-ft Natural Surface Trail	2450	LF	\$ 10.00	\$ 24,500.00
Wetland Boardwalk	100	LF	\$ 280.00	\$ 28,000.00
Pedestrian Bridge	360	SF	\$ 150.00	\$ 54,000.00
topsoil 4" depth and seed each side of pathway	14520	SF	\$ 0.80	\$ 11,616.00
Construction Total			\$ 155,563.11	
Priveate Easement/Property Acquisition	2.42	Acres	1,000,000	\$ 2,420,000.00
Engineering Design	1	LS	6.0%	\$ 9,333.79
Construction Management	1	LS	4.5%	\$ 7,000.34
Construction Staking	1	LS	1.50%	\$ 2,333.45
Materials Testing	1	LS	2.5%	\$ 3,889.08
Contingency	1	LS	30.0%	\$ 46,668.93

TOTAL \$ 2,644,788.70

NOTICE:

This opinion of probable cost has been prepared solely as a general reference document for the information of the Friends of the Pend d'Oreille Bay Trail (Client). This opinion of probable cost has not been prepared by a cost estimator or contractor and this opinion of probable cost has been fashioned in part to help meet the unique needs of the Client. Reliance on this opinion by any party other than Client is expressly forbidden, except with the express written permission of the Client and Harmony Design, Inc. Actual construction costs can vary depending on many factors including, but not limited to, contractor availability, material availability, fluctuating material costs, differences in quantities, construction season, and regional factors.

Connection - Existing POBT to Creekside Trail

ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
Clearing and Grubbing, 12" + dia trees	0.65	Acre	\$ 20,000.00	\$ 12,973.37
Earthwork, grading, and site prep	915	CY	\$ 10.00	\$ 9,152.22
10-ft Trail (6" crush base, 6" fines surface)	350	LF	\$ 18.00	\$ 6,300.00
Railroad Underpass - pedestrian only	130	LF	\$ 25,000.00	\$ 3,250,000.00
Wayfinding sign (standard)	2	EA	\$ 500.00	\$ 1,000.00
Construction Total				\$ 3,266,452.22
RR Easement/Property Acquisition	1	Acre	1,000,000	\$ 1,000,000.00
Topographic Survey	3.0	Acre	3,000	\$ 9,000.00
Engineering Design	1	LS	10.0%	\$ 326,645.22
Construction Management	1	LS	4.5%	\$ 146,990.35
Construction Staking	1	LS	1.50%	\$ 48,996.78
Materials Testing	1	LS	2.5%	\$ 81,661.31
Contingency	1	LS	30.0%	\$ 979,935.67

TOTAL \$ 5,859,681.55

NOTICE:

This opinion of probable cost has been prepared solely as a general reference document for the information of the Friends of the Pend d'Oreille Bay Trail (Client). This opinion of probable cost has not been prepared by a cost estimator or contractor and this opinion of probable cost has been fashioned in part to help meet the unique needs of the Client. Reliance on this opinion by any party other than Client is expressly forbidden, except with the express written permission of the Client and Harmony Design, Inc. Actual construction costs can vary depending on many factors including, but not limited to, contractor availability, material availability, fluctuating material costs, differences in quantities, construction season, and regional factors.

Connection - Ponder Point to Kootenai

ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
Clearing and Grubbing, 12" + dia trees	0.17	Acre	\$ 20,000.00	\$ 3,305.79
Earthwork, grading, and site prep	533	CY	\$ 10.00	\$ 5,333.33
10-ft Trail (6" crush base, 6" fines surface)	600	LF	\$ 18.00	\$ 10,800.00
Railroad Underpass - pedestrian only	40	LF	\$ 25,000.00	\$ 1,000,000.00
Wayfinding sign (standard)	2	EA	\$ 500.00	\$ 1,000.00
Construction Total				\$ 1,017,133.33
RR Easement/Property Acquisition	1	Acre	1,000,000	\$ 1,000,000.00
Engineering Design	1	LS	10.0%	\$ 101,713.33
Construction Management	1	LS	4.5%	\$ 45,771.00
Construction Staking	1	LS	1.50%	\$ 15,257.00
Materials Testing	1	LS	2.5%	\$ 25,428.33
Contingency	1	LS	30.0%	\$ 305,140.00

TOTAL \$ 2,510,443.00

NOTICE:

This opinion of probable cost has been prepared solely as a general reference document for the information of the Friends of the Pend d'Oreille Bay Trail (Client). This opinion of probable cost has not been prepared by a cost estimator or contractor and this opinion of probable cost has been fashioned in part to help meet the unique needs of the Client. Reliance on this opinion by any party other than Client is expressly forbidden, except with the express written permission of the Client and Harmony Design, Inc. Actual construction costs can vary depending on many factors including, but not limited to, contractor availability, material availability, fluctuating material costs, differences in quantities, construction season, and regional factors.

Existing Trail Improvements

ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
10-ft Crusher Fine Trail realignment	150	LF	\$ 18.00	\$ 2,700.00
Revegetate old alignment, topsoil 4" depth and seed	2600	SF	\$ 0.80	\$ 2,080.00
Stone Steps Kayak Access, 8' width	1	EA	\$ 16,000.00	\$ 16,000.00
Wood bench	2	EA	\$ 200.00	\$ 400.00
Stone bench	1	EA	\$ 850.00	\$ 850.00
Stone picnic table	1	EA	\$ 900.00	\$ 900.00
Stone picnic table with stone stools	1	EA	\$ 1,600.00	\$ 1,600.00
Memeorial bench	1	EA	\$ 1,200.00	\$ 1,200.00
Interpretive Signage (36"x24" - low profile)	1	EA	\$ 2,600.00	\$ 2,600.00
Plantings within Existing Riprap, 1 plant every 3 feet	2600	LF	\$ 15.00	\$ 39,000.00
Construction Total				\$ 67,330.00
Engineering Design	1	LS	6.0%	\$ 4,039.80
Construction Management	1	LS	4.5%	\$ 3,029.85
Construction Staking	1	LS	1.50%	\$ 1,009.95
Materials Testing	1	LS	2.5%	\$ 1,683.25
Contingency	1	LS	30.0%	\$ 20,199.00

TOTAL \$ 97,291.85

NOTICE:

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Humbird Mill Park Improvements

ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
Earthwork, grading, and site prep	422	CY	\$ 10.00	\$ 4,222.78
Landscaping - topsoil, turf grass, seeded	13000	SF	\$ 0.80	\$ 10,400.00
Trees	35	EA	\$ 250.00	\$ 8,750.00
Landscape boulders & 3' wide stone steps	3	EA	\$ 3,000.00	\$ 9,000.00
Stone Steps Kayak Access, 8' width	2	EA	\$ 16,000.00	\$ 32,000.00
ADA Stablized Crusher fines surface (6" crush base, 6" stabilized fines surface) to station 40+00	19645	SF	\$ 2.00	\$ 39,290.00
Natural surface trail	360	LF	\$ 10.00	\$ 3,600.00
Dry stack stone seatwall bench	160	LF	\$ 75.00	\$ 12,000.00
Stone Bench	12	EA	\$ 850.00	\$ 10,200.00
Stone Picnic Table	7	EA	\$ 900.00	\$ 6,300.00
Wood Bench	2	EA	\$ 200.00	\$ 400.00
Construction Total				\$ 136,162.78
RR Easement/Property Acquisition	0.23	Acre	1,000,000	\$ 230,000.00
Engineering Design	1	LS	6.0%	\$ 8,169.77
Construction Management	1	LS	4.5%	\$ 6,127.33
Construction Staking	1	LS	1.50%	\$ 2,042.44
Materials Testing	1	LS	2.5%	\$ 3,404.07
Contingency	1	LS	30.0%	\$ 40,848.83

TOTAL \$ 426,755.21

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Trailhead - Humbird Mill Park Phase 2

ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
Clearing and Grubbing, grass	0.10	Acre	\$ 5,900.00	\$ 612.21
Earthwork, grading, and site prep	335	CY	\$ 10.00	\$ 3,348.15
Asphalt removal	39	SY	\$ 8.00	\$ 315.56
Asphalt parking area (12" pit run, 6" crush, 3" aspha	4025	SF	\$ 3.80	\$ 15,295.00
Add pervious asphalt	4025	SF	\$ 1.00	\$ 4,025.00
Stormwater Underground Detention - perforated C	3150	CF	\$ 20.00	\$ 63,000.00
Fence removal	120	LF	\$ 1.70	\$ 204.00
Fence installation, 5' high chain link	140	LF	\$ 29.00	\$ 4,060.00
striping, 4" stripes	660	LF	\$ 1.00	\$ 660.00
topsoil 4" depth and seed	927	SF	\$ 0.80	\$ 741.60
Trees	4	EA	\$ 500.00	\$ 2,000.00
Restroom enclosure for portable toilets	100	SF	\$ 75.00	\$ 7,500.00
Porous brick pavers at Trailhead, aggregate base	360	SF	\$ 10.00	\$ 3,600.00
Concrete pad for restroom (6" crush, 6" concrete)	240	SF	\$ 6.50	\$ 1,560.00
Bench - stone	1	EA	\$ 850.00	\$ 850.00
Trash Receptacle	1	EA	\$ 800.00	\$ 800.00
Pet Waste Station	1	EA	\$ 250.00	\$ 250.00
Construction Total				\$ 108,821.52
Topographic & Boundary Survey	1	LS	\$ 1,500.00	\$ 1,500.00
Engineering Design	1	LS	6.0%	\$ 6,529.29
Construction Management	1	LS	4.5%	\$ 4,896.97
Construction Staking	1	LS	1.50%	\$ 1,632.32
Materials Testing	1	LS	2.5%	\$ 2,720.54
Contingency	1	LS	30.0%	\$ 32,646.46

TOTAL \$ 158,747.09

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Trailhead - Humbird Mill Park Phase 1

ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
Clearing and Grubbing, 12" + dia trees	0.08	Acre	\$ 20,000.00	\$ 1,576.22
Remove and relocate ex retaining wall	1	LS	\$ 5,000.00	\$ 5,000.00
Earthwork, grading, and site prep	1208	CY	\$ 10.00	\$ 12,075.56
Retaining Walls, MSU up to 6' tall	232	LF	\$ 150.00	\$ 34,800.00
10-ft ADA Trail (6" crush base, 6" stablized fines sur	350	LF	\$ 20.00	\$ 7,000.00
Asphalt parking area (12" pit run, 6" crush, 3" aspha	5800	SF	\$ 3.80	\$ 22,040.00
Add pervious asphalt	5800	SF	\$ 1.00	\$ 5,800.00
Paint striping for parking, 4" width	460	LF	\$ 1.00	\$ 460.00
Topsoil 4" depth and seed	4986	SF	\$ 0.80	\$ 3,988.80
Trees	2	EA	\$ 500.00	\$ 1,000.00
Trailhead Kiosk	1	EA	\$ 4,200.00	\$ 4,200.00
Construction Total				\$ 97,940.57
Topographic & Boundary Survey	1	LS	\$ 2,300.00	\$ 2,300.00
Engineering Design	1	LS	6.0%	\$ 5,876.43
Construction Management	1	LS	4.5%	\$ 4,407.33
Construction Staking	1	LS	1.50%	\$ 1,469.11
Materials Testing	1	LS	2.5%	\$ 2,448.51
Contingency	1	LS	30.0%	\$ 29,382.17

TOTAL \$ 143,824.13

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Trailhead - Ponderay

ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
Clearing and Grubbing, grass	0.09	Acre	\$ 5,900.00	\$ 514.69
Earthwork, grading, and site prep	159	CY	\$ 10.00	\$ 1,592.59
Landscaping - topsoil, ground cover	1300	SF	\$ 2.00	\$ 2,600.00
Landscape boulders	7	EA	\$ 300.00	\$ 2,100.00
Porous brick pavers, aggregate base	1318	SF	\$ 10.00	\$ 13,180.00
Concrete (4" crush, 4" concrete)	805	SF	\$ 5.50	\$ 4,427.50
Seatwall bench	25	LF	\$ 64.00	\$ 1,600.00
Pet Waste Station	1	EA	\$ 250.00	\$ 250.00
Trash Receptacle	1	EA	\$ 800.00	\$ 800.00
Kiosk	1	EA	\$ 4,200.00	\$ 4,200.00
Bike Rack	1	EA	\$ 500.00	\$ 500.00
Beach Pavilion (restrooms, lockers, shelter)	300	SF	\$ 150.00	\$ 45,000.00
Gateway Structure	1	EA	\$ 3,000.00	\$ 3,000.00
Construction Total			\$ 79,764.78	
Topographic & Boundary Survey	1	LS	\$ 1,500.00	\$ 1,500.00
Engineering Design	1	LS	6.0%	\$ 4,785.89
Construction Management	1	LS	4.5%	\$ 3,589.42
Construction Staking	1	LS	1.50%	\$ 1,196.47
Materials Testing	1	LS	2.5%	\$ 1,994.12
Contingency	1	LS	30.0%	\$ 23,929.44

TOTAL \$ 116,760.11

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Trailhead - City Beach in Sandpoint

ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
Clearing and Grubbing, grass	0.13	Acre	\$ 5,900.00	\$ 789.38
Earthwork, grading, and site prep	237	CY	\$ 10.00	\$ 2,370.37
Asphalt removal	284	SY	\$ 8.00	\$ 2,273.78
Landscaping - topsoil, turf grass, seeded	2220	SF	\$ 0.80	\$ 1,776.00
Landscaping - topsoil, ground cover	1330	SF	\$ 2.00	\$ 2,660.00
Trees	3	EA	\$ 500.00	\$ 1,500.00
Perinneals	17	EA	\$ 16.00	\$ 272.00
Landscape boulders	9	EA	\$ 300.00	\$ 2,700.00
Porous brick pavers, aggregate base	869	SF	\$ 10.00	\$ 8,690.00
Concrete (4" crush, 4" concrete)	965	SF	\$ 5.50	\$ 5,307.50
Seatwall bench	20	LF	\$ 64.00	\$ 1,280.00
Trash Receptacle	1	EA	\$ 800.00	\$ 800.00
Kiosk	1	EA	\$ 4,200.00	\$ 4,200.00
Construction Total			\$ 34,619.02	
Topographic & Boundary Survey	1	LS	\$ 2,000.00	\$ 2,000.00
Engineering Design	1	LS	6.0%	\$ 2,077.14
Construction Management	1	LS	4.5%	\$ 1,557.86
Construction Staking	1	LS	1.50%	\$ 519.29
Materials Testing	1	LS	2.5%	\$ 865.48
Contingency	1	LS	30.0%	\$ 10,385.71

TOTAL \$ 52,024.49

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Trailhead - Ponder Point Lane

ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
Pet Waste Station	1	EA	\$ 250.00	\$ 250.00
Trash Receptacle	1	EA	\$ 800.00	\$ 800.00
Kiosk	1	EA	\$ 4,200.00	\$ 4,200.00
No Parking Sign	4	EA	\$ 500.00	\$ 2,000.00
Construction Total				\$ 7,250.00
Contingency	1	LS	30.0%	\$ 2,175.00

TOTAL \$ 9,425.00

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Trailhead - Kootenai



ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
Clearing and Grubbing, grass	0.09	Acre	\$ 5,900.00	\$ 514.69
Earthwork, grading, and site prep	159	CY	\$ 10.00	\$ 1,592.59
Landscaping - topsoil, ground cover	1300	SF	\$ 2.00	\$ 2,600.00
Landscape boulders	9	EA	\$ 300.00	\$ 2,700.00
Trees	4	EA	\$ 500.00	\$ 2,000.00
Perinneals	55	EA	\$ 16.00	\$ 880.00
Porous brick pavers, aggregate base	1318	SF	\$ 10.00	\$ 13,180.00
Concrete (4" crush, 4" concrete)	805	SF	\$ 5.50	\$ 4,427.50
Temporary gravel drive and parking area	13600	SF	\$ 2.00	\$ 27,200.00
Seatwall bench	25	LF	\$ 64.00	\$ 1,600.00
Pet Waste Station	1	EA	\$ 250.00	\$ 250.00
Trash Receptacle	1	EA	\$ 800.00	\$ 800.00
Kiosk	1	EA	\$ 4,200.00	\$ 4,200.00
Bike Rack	1	EA	\$ 500.00	\$ 500.00
Construction Total				\$ 62,444.78
Topographic & Boundary Survey	1	LS	\$ 1,500.00	\$ 1,500.00
Engineering Design	1	LS	6.0%	\$ 3,746.69
Construction Management	1	LS	4.5%	\$ 2,810.02
Construction Staking	1	LS	1.50%	\$ 936.67
Materials Testing	1	LS	2.5%	\$ 1,561.12
Contingency	1	LS	30.0%	\$ 18,733.44

TOTAL \$ 91,732.71

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Bench and Table Options				
Company	Estimated cost	Materials	Notes	Photos
Rustic Log Benches made by Northwest Handmade in Sandpoint, ID	Can give an estimate from drawings	Logs	<p>Contact person is Risa. info@northwesthandmade.com 208-255-1962 or 877-880-1962</p> <p>This company does custom work, and can be as simple as these benches or as fancy as you can dream up</p>	
North Idaho Log Furniture Company in Coeur d'Alene Tel. 888-762-7064	\$30/ft	Logs	Can do custom work	

Company	Estimated cost	Materials	Notes	Photo(s)
Idaho Granite Works, Inc. in Sagle and Naples, Idaho idahograniteworks.com	Simple benches start at \$800; delivery is estimated to be \$200 for an easy delivery	Locally quarried stone materials	Contact person is Laree Liermann in the showroom at 208-263-1884 This company does custom work and can make simple benches, as shown, or as rustic or fancy as you can dream up. This company mentioned that they built and installed the Cairn of Thanks.	
Tumble Stone in Hayden, Idaho Tel. 866-762-3206 tumblestone.com	Prices start around \$185 for stools, \$500 for some simple benches, \$800 for the carved boulder benches, and \$1900 for their “bus bench” (with a back). Delivery is estimated at \$200 for an easy delivery	Stone such as basalt, granite, marble, etc.	Pricing can be negotiated based on quantity. And, the more delivered at once, the better in terms of pricing for delivery. Many large benches can fit on their crane truck.	 Basalt Notch Bench

More options from
Tumblestone:



Black Dragon Table and Stools (\$1295)





Black Dragon Bench (\$650)



Green granite table and stools (\$1495)





Green granite 3 piece bench (\$515 – 650 each)

Stone Step options						
Tumblestone Tel. 208-762-3206 13131 N. Government Way Hayden, ID 83835 Tumblestone.com					\$95/hr round trip delivery fee; see landscapers for installation estimates	
Material	Edge	Size (width in Feet)	Tread and Thickness	Price	Estimated cost for steps only (3' wide steps, 5' vertical = 10 x 3' stones) (8' wide steps, 10' vertical = 40 x 4'wide stones)	Sample photo
Cut natural stone – <u>Basalt</u>	Chiseled	3'	16" x 6-8"	\$135/ea	\$1350	
		4'	16" x 6-8"	\$185/ea	\$7400	
	Natural	3'	16" x 6-8"	\$150/ea	\$1500	
		4'	16" x 6-8"	\$200/ea	\$8000	



Chiseled edge Basalt (thermal finish on tread)

10' natural face basalt

Material	Edge	Size (width in Feet)	Tread and Thickness	Price	Estimated cost for steps only (3' wide steps, 5' vertical = 10 x 3' stones) (8' wide steps, 10' vertical = 40 x 4' wide stones)	Sample photo
Cut natural stone – Montana Gold	Snap cut	3'	16" x 6-8"	\$125/ea	\$1250	
		4'	16" x 6-8"	\$165/ea	\$6600	
Irregular natural stone	Various sizes, stone types, colors, and edges available	2.5'-10'	16" average tread x up to 12" thick (the wider the stone, the thicker)	\$0.19-0.22/lb, 200-1000lbs each	<p>\$0.19-\$0.22/lb for ~3' x 6", 400lb = \$76 - \$88 per stone</p> <p>For 3' wide stairs, 10 stones = ~\$760 - \$880</p> <hr/> <p>\$0.19-\$0.22/lb for ~4' x 8", 700lb = \$133-\$154 per stone</p> <p>For 8' wide stairs, 40 stones = ~\$5,320 - \$6160</p>	

Montana Gold Stairs





Montana Bronze as a sample




Material	Edge	Size (width in Feet)	Tread and Thickness	Price	Estimated cost for steps only (3' wide steps, 5' vertical = 10 x 3' stones) (8' wide steps, 10' vertical = 40 x 4'wide stones)	Sample photo
Pre cast (concrete)	irregular	3'	18"-24" x 6" thick	\$135/ea	\$1350	
		4'	18"-24" x 6" thick	\$135/ea	\$5400	
	Regular	3'	16" x 6" thick	\$125/ea	\$1250	
		4'	16" x 6" thick	\$135/ea	\$5400	




Irregular cast stairs




Dimensional cast stairs




Idaho Granite Works Tel. 208-263-1884 1884468146 Hwy. 95 Sagle, ID 83860 idahograniteworks.com						\$100/hr round trip delivery fee; see landscapers for installation estimates
Material	Edge	Size (width in Feet)	Tread and Thickness (rise)	Price	Estimated cost for steps only (3' wide steps, 5' vertical = 8 x 3' stones) (8' wide steps, 10' vertical = 32 x 4'wide stones or 16 x 8' stones)	Contact Idaho Granite Works for Sample Photos
Gray Granite	Textured*	3'	14" x 7.5" avg	\$43.13/lin ear foot	Each 3' stone = \$129.39 Total for 3' wide staircase = \$1035.12	*Textured is recommended for increased traction
		8'			Each 4' stone = \$172.52 (need 32 stones) Each 8' stone = \$345.04 (need 16 stones) Total for 8' wide staircase = \$5520.64	
	Smooth (cut)	3'		\$36.88/lin ear foot	Each 3' stone = \$110.64 Total for 3' wide staircase = \$885.12	
		8'			Each 4' stone = \$147.52 (need 32 stones) Each 8' stone = \$295.04 (need 16 stones) Total for 8' wide staircase= \$4720.64	




Waste Receptacle Options						
Company	Website	Model Number/description	Connection to ground	Material Price	Notes	Photo
Pilot Rock	pilotrock.com	Model BPR1 - bear resistant trash receptacle - 1 module	Anchor kit included	\$798	Bear resistant Pilot Rock Price List: http://www.pilotrock.com/userdocs/240_Price_List.pdf	
		Model BPR2/CN-72	anchor kit included	\$1200	Bear resistant, includes a receptacle for recyclables. Another model is available with 3 receptacles for \$1400	
		stationary mounts for trash and ash receptacles	embedded pedestal mount (fits certain models)	\$38	This should eliminate the need for a visible concrete pad, yet provide an anchor for the receptacles	
		Side Opening Trash Kit TRH-55/SO	appears to work with stationary mount	\$309- or \$522	\$309 with yellow pine slats, \$522 with cedar colored recycled plastic slats	



Company	Website	Model Number/description	Connection to ground	Material Price	Notes	Photo
Pilot Rock continued					For simple waste receptacles, you can spend as little as \$222 for 30-36 gal Brown Thermo-plastic coated expanded steel receptacle (CN R/DW-32) or \$245 for the Park Policeman, a 48 gallon expanded steel receptacle, hot-dip galvanized (CN/G-EXP52 or CN/TN-EXP52)	
Petersen Manufacturing	petersenmfg.com	RCY3TCSF22 recycling station	heavy (1950 lbs)	\$1590	Shipping estimated to be: \$494 made of concrete for strength, flexibility and aesthetic value; come with custom signs and plastic liners; drain hole in the bottom	
		TC-SQ Square receptacle	heavy (420 lbs)	\$656+ \$60 liner	Shipping estimated to be: \$266 for one unit; drain hole in the bottom	

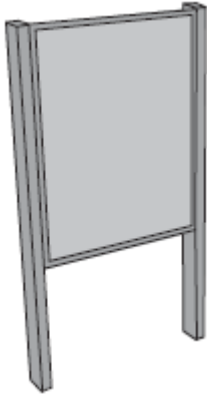
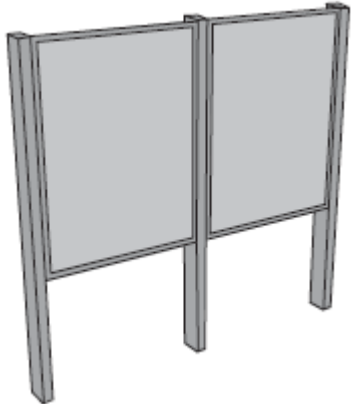
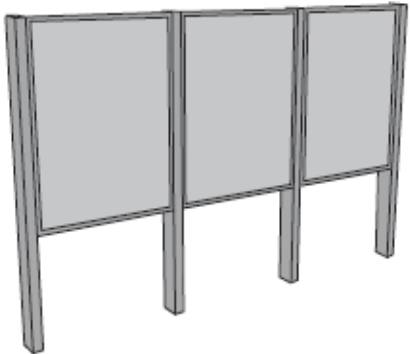
Company	Website	Model Number/description	Connection to ground	Material Price	Notes	Photo
Petersen Manufacturing continued		TCRSW Round Receptacle	heavy (275 lbs)	\$480+\$60 liner	shipping estimated to be: \$266 for one unit; drain hole in the bottom	
		Add-on snuffer	bolts to the side of the can; bolts included	\$85	purchase either the one for square trash receptacles or round trash receptacles; 30 lbs	
Sybertech Waste Reduction Ltd.	swrl.com	Millennium 2000	in-ground	\$1069	<p>Huge capacity (187 gallons), eliminating need for frequent trash removal; may consider a custom decorative skirt; price is average cost for standard color;</p> <p>installation directions http://swrl.com/images/millennium/docs/Sybertech_Millennium_Series_Installation_Instructions.pdf</p>	

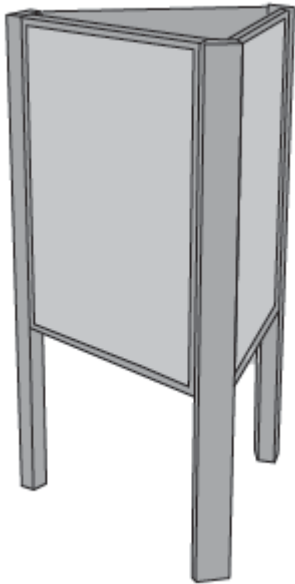
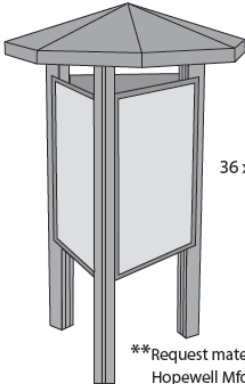

Company	Website	Model Number/description	Connection to ground	Material Price	Notes	Photo
Sybertech Waste Reduction Ltd. continued		Millennium 1000	in-ground	\$453	54 gallon capacity; average cost for standard colors	
Victor Stanley	victorstanley.com	RSDC-36; two openings; recycled steel	surface mount	\$1348	Not including tax or shipping	
		HPF-24; recycled plastic slats	freestanding, surface mount	\$1096	Not including tax or shipping. Ipe wood slats are available. However, Ipe wood comes from South America and is not guaranteed to be sustainably harvested.	


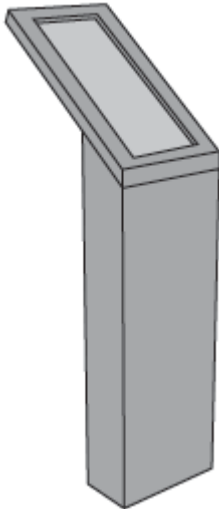
Company	Website	Model Number/description	Connection to ground	Material Price	Notes	Photo
Victor Stanley continued		RTH-24; with standard tapered lid and recycled plastic slats	freestanding, surface mount	\$848	Not including tax or shipping	
		SDC-36	recycled steel, surface mount	\$1148	Not including tax or shipping	
		NSDC-36	recycled steel, surface mount	\$1048	Not including tax or shipping	

Dog Waste Stations						
Company	Website	Model Number/description	Connection to ground	Material Price	Notes	Photo
Livin the dog life	livinthedoglife.com	Pet Waste Station Natural (DL-490-G)	Inserts into ground like a sign post	\$259	Cute dog pawprints on the waste receptacle	
Pet Pick Ups	Petpickups.com	Modern Dog Kit	Inserts into ground like a sign post	\$450	Sleek looking, gray or green, not sure why it's so expensive	
Pilot Rock	pilotrock.com	Model PWS-D006 Pilot Rock Pet Waste Station Using bags on a ROLL	Inserts into ground like a sign post	\$272	Complete pet waste station; another model is available with bags on a card (PWS-D022)	

Company	Website	Model Number/description	Connection to ground	Material Price	Notes	Photo
Sybertech Waste Reduction Ltd.	swrl.com	Dog House Station & Bags, Small	looks like it needs to be mounted to a post	\$195	Appears to be only what is shown; smaller (bags pull from bottom); box of 1000 bags per box \$49.50	
		Dog House Station & Bags, Large	looks like it needs to be mounted to a post	\$225	Appears to be only what is shown; larger (bags pull from front); box of 2000 bags per box (in bundles of 250) \$94.30	

Interpretive Sign Options					
National Park Service (NPS)-style Frames: black textured powder coated aluminum for 1/8” panels, in-ground mounting hardware and posts Estimate \$1500 for design per sign, \$200 for installation, \$150 – 300 for printing the sign, and \$200 for delivery needs to be added to the frame costs below.					
Sign type and dimensions	Image	EnviroSigns envirosigns.com	Pannier Graphics PannierGraphics.com	Hopewell Mfg. hopewellmfg.com	Interpretive Graphics interpretivegraphics.com
Upright single 36” x 48”		\$930	\$625	\$490	\$829
Upright double 36” x 48”		\$1854 in-line, \$1923 offset	\$1200/1300 inline/offset	\$910 in-line, \$930 offset	\$1674 in-line, \$1737 offset
Upright triple 36” x 48”		\$2670 in-line, \$2770 offset	\$1850-2050 inline/offset/triangular	\$1260 in-line, \$1290 offset	\$2411 in-line, \$2502 offset

Sign type and dimensions	Image	EnviroSigns envirosigns.com	Pannier Graphics PannierGraphics.com	Hopewell Mfg. hopewellmfg.com	Interpretive Graphics interpretivegraphics.com
Upright triangle kiosk, three 36" x 48"		\$2854	\$1850-2050	N/A	\$2577
Upright triangle kiosk with roof for three 36" x 48"	 <p>36 x 48</p> <ul style="list-style-type: none"> • colors : GI charcoal, medium gray, NPS brown, yorktown green, and custom colors • panel types : graphic panel or bulletin case or any combination <p>**Request materials list to see what Hopewell Mfg supplies and what your contractor will need to supply.</p>	\$3761	N/A	\$1800, roof frame only (needs shingles, aluminum, etc. to finish)	\$5530
Low profile cantilevered 36" x 24"		\$536	\$555	\$430	\$484

Sign type and dimensions	Image	EnviroSigns envirosigns.com	Pannier Graphics PannierGraphics.com	Hopewell Mfg. hopewellmfg.com	Interpretive Graphics interpretivegraphics.com
Low profile traditional 36" x 24"		\$536	\$545	\$460	\$484
Small trailside/plant ID unit				\$130	

POBT LANDSCAPING RECOMMENDATIONS

SPECIES		SOURCES				RECOMMENDED APPLICATIONS				
Common Name	Scientific Name	INPS	NRCS	USDA	ITD	Screening Trees	Shade Trees	Landscaping Ornamentals	Slope Stabilization	Wetland Reclamation
TREES-EVERGREEN										
Douglas-fir	<i>Pseudotsuga menziesii</i>	X		X	X	X				
Fir, grand	<i>Abies grandis</i>	X		X	X	X		X		
Fir, Subalpine	<i>Abies lasiocarpa</i>	X		X	X					
Hemlock, mountain	<i>Tsuga mertensiana</i>	X		X				X		
Hemlock, western	<i>Tsuga heterophylla</i>	X		X		X				
Juniper, Rocky Mtn	<i>Juniperus scopulorum</i>	X		X	X			X		
Larch, western	<i>Larix occidentalis</i>	X		X	X					
Pine, ponderosa	<i>Pinus ponderosa</i>	X		X	X	X				
Pine, lodgepole	<i>Pinus contorta</i>	X		X	X			X		
Pine, western white	<i>Pinus monticola</i>	X		X	X			X		
Redcedar, western	<i>Thuja plicata</i>	X		X	X	X		X		
Spruce, Engelmann	<i>Picea engelmannii</i>	X		X	X	X		X		
Yew, Pacific	<i>Taxus brevifolia</i>	X		X				X		
TREES-BROADLEAF										
Alders	<i>Alnus species</i>	X			X			X		
Aspen, Quaking	<i>Populus tremuloides</i>	X		X	X		X	X		
Birch, Paper	<i>Betula papyrifera</i>	X		X			X	X		
Birch, River	<i>Betula occidentalis</i>	X								X
Cottonwood, Black	<i>Populus trichocarpa</i>	X		X			X	X		
Maple, Rocky Mtn	<i>Acer glabrum</i>	X						X		
SHRUBS-LARGE										
Alder, Sitka	<i>Alnus sinuata</i>	X						X		X
Bittercherry	<i>Prunus emarginata</i>	X						X		
Cascara	<i>Rhamnus purshiana</i>	X						X		
Chokecherry	<i>Prunus virginiana</i>	X	X		X			X		
Currant, golden	<i>Ribes aureum</i>	X						X		
Hawthorn, black	<i>Crataegus douglasii</i>	X						X		
Hawthorn, red	<i>Crataegus columbiana</i>	X						X		
Juniper, Rocky Mountain	<i>Juniperus scopulorum</i>	X	X					X		
Maple, Rocky Mountain	<i>Acer glabrum</i> var. <i>douglasii</i>	X			X			X		
Mountain mahogany, curleaf	<i>Cercocarpus ledifolius</i>	X						X		
Ninebark, Pacific	<i>Physocarpus capitatus</i>	X						X		
Serviceberry	<i>Amelanchier alnifolia</i>	X			X			X		
Syringa, or mock-orange	<i>Philadelphus lewisii</i>	X						X		
Willow, Scouler's	<i>Salix scouleriana</i>	X			X			X		
Yew, Pacific	<i>Taxus brevifolia</i>	X						X		
SHRUB-MEDIUM										
Buffaloberry	<i>Shepherdia canadensis</i>	X						X		
Currant	<i>Ribes aureum</i>	X						X		
Currant, red-flowering	<i>Ribes sanguineum</i>	X						X		
Currant, snow	<i>Ribes niveum</i>	X						X		
Dogwood, red-osier	<i>Cornus sericea</i> , <i>C. stolonifera</i>	X			X			X		X
Elderberry, blackbead	<i>Sambucus racemosa</i> var. <i>melanocarpa</i>	X						X		
Elderberry, blue	<i>Sambucus cerulea</i>	X			X			X		
Mountain-ash, Rocky Mountain	<i>Sorbus scopulina</i>	X						X		
Ninebark	<i>Physocarpus malvaceus</i>	X			X			X		
Oceanspray	<i>Holodiscus discolor</i>	X			X			X		
Oregon-grape, tall	<i>Berberis aquifolium</i>	X			X			X		
Rose, baldhip	<i>Rosa gymnocarpa</i>	X			X			X		
Rose, Nootka	<i>Rosa nutkana</i>	X						X		
Rose, Wood's	<i>Rosa woodsii</i>	X						X		
Serviceberry	<i>Amelanchier alnifolia</i>	X			X			X		
Sumac, smooth	<i>Rhus glabra</i>	X			X			X		
SHRUB-SMALL										
Bearberry	<i>Arctostaphylos uva-ursi</i>	X						X		
Kinnikinnick	<i>Arctostaphylos uva-ursi</i>	X			X			X		
Oregon grape, creeping	<i>Berberis repens</i> , <i>Mahonia repens</i>	X			X			X	X	
Sagebrush, big	<i>Artemisia tridentata</i>	X	X		X			X		
Snowberry, common	<i>Symphoricarpos albus</i>	X			X			X		
FORBS										
Arnica, heartleaf	<i>Arnica cordifolia</i>				X			X		
Arrowleaf balsamroot	<i>Balsamorhiza sagittata</i>		X		X			X		
Aster, gray	<i>Aster glaucodes</i>				X			X		
Blanketflower	<i>Gaillardia aristida</i>				X			X		
Biscuitroot	<i>Lomatium dissectum</i>		X		X			X		
Camas	<i>Camassia quamash</i>		X	X				X		
Columbine, red	<i>Aquilegia formosa</i>							X		
Cowparsnip, common	<i>Heracleum sphondylium</i>				X			X		
Desert primrose	<i>Oenothera caespitosa</i>				X			X		
Dotted blazing star	<i>Liatris punctata</i>				X			X		
Dutchman's breeches	<i>Dicentra cucullaria</i>							X		
Fairy-bells	<i>Disporum hookeri</i>							X		
False Solomon's seal	<i>Smilacina racemosa</i>							X		
Geranium, sticky purple	<i>Geranium viscoissimum</i>		X		X			X		
Kittentails, evergreen	<i>Synthyris platycarpa</i>							X		
Kittentails, mountain	<i>Synthyris missurica</i> var. <i>major</i>							X		
Lupine	<i>Lupinus polyphyllus</i>							X		
Lupine, silky	<i>Lupinus sericeus</i>							X		
Meadowrue, purple	<i>Thalictrum dasycarpum</i>							X		
Meadowrue, western	<i>Thalictrum occidentale</i>							X		
Penstemon, alpine	<i>Penstemon venustus</i>				X			X		
Penstemon, firecracker	<i>Penstemon eatonii</i>		X		X			X		
Penstemon, palmer	<i>Penstemon palmeri</i>		X		X			X		
Penstemon, Rocky mountain	<i>Penstemon strictus</i>				X			X		
Phlox	<i>Phlox diffusa</i>				X			X		
Prairie flax	<i>Linum lewisii</i>				X			X		
Rosy pussytoes	<i>Antennaria microphylla</i>				X			X		
Scarlet globemallow	<i>Sphaeralcea coccinea</i>				X			X		
Small burnet	<i>Sanguisorba minor</i>				X			X		
Strawberry, wild	<i>Fragaria vesca bracteata</i>					X		X		
Tapertip hawkbeard	<i>Crepis acuminata</i>		X		X			X		

POBT LANDSCAPING RECOMMENDATIONS

SPECIES		SOURCES				Screening			RECOMMENDED APPLICATIONS			
Common Name	Scientific Name	INPS	NRCS	USDA	ITD	Trees	Shade Trees	Ornamentals	Landscape	Slope Stabilization	Wetland Reclamation	
Violet, Canada	<i>Viola canadensis</i>	X						X				
Violet, Nuttall's	<i>Viola nuttallii</i>	X						X				
Violet, pioneer	<i>Viola glabella</i>	X						X				
Western groundsel	<i>Senecia integerrimus</i>		X		X			X				
Wild ginger	<i>Asarum caudatum</i>	X						X				
Yarrow, western	<i>Achillea millefolium</i>		X		X			X				
Yellow buckwheat	<i>Eriogonum flavum</i>				X			X				
GRASSES												
Bluegrass, canada	<i>Poa compressa</i>	X	X		X			X		X		
Bluegrass, canby	<i>Poa canbyi</i>	X			X			X				
Bluegrass, kentucky	<i>Poa pratensis</i>				X			X				
Bluegrass, nevada	<i>Poa nevadaensis</i>				X			X				
Bluegrass, sandberg	<i>Poa sandbergii</i>		X		X			X				
Brome, mountain	<i>Bromus carinatus</i>	X	X		X			X		X		
Brome, smooth	<i>Bromus inermis</i>				X			X		X		
Brome, columbia	<i>Bromus vulgaris</i>				X			X		X		
Fescue, hard	<i>Festuca longifolia</i>				X			X		X		
Fescue, idaho	<i>Festuca idahoensis</i>	X	X		X			X				
Fescue, red	<i>Festuca rubra</i>		X		X			X		X		
Fescue, rough	<i>Festuca scabrella</i>				X			X				
Fescue, sheep	<i>Festuca ovina</i>		X		X			X		X		
Fescue, tall	<i>Festuca arundinacea</i>				X			X		X		
Indian Ricegrass	<i>Oryzopsis hymenoides</i>		X		X			X		X		
Pinegrass	<i>Calamagrostis rubescens</i>				X			X				
Prairie junegrass	<i>Koeleria cristata</i>		X		X			X				
Thurber's needlegrass	<i>Stipa thurberiana</i>		X		X			X				
Tufted hairgrass	<i>Deschampsia caespitosa</i>	X	X		X			X			X	
Western needlegrass	<i>Stipa occidentalis</i>				X			X		X		
Wheatgrass, crested	<i>Agropyron cristatum</i>		X		X			X				
Wheatgrass, thickspike	<i>Agropyron dasystachyum</i>		X		X			X		X		
Wheatgrass, intermediate	<i>Agropyron intermedium</i>		X		X			X				
Wheatgrass, streambank	<i>Agropyron riparium</i>		X		X			X		X		
Wheatgrass, siberian	<i>Agropyron sibericum</i>		X		X			X				
Wheatgrass, western	<i>Agropyron smithii</i>		X		X			X		X		
Wheatgrass, bluebunch	<i>Agropyron spicatum</i>	X	X		X			X				
Wheatgrass, slender	<i>Agropyron trachycaulum</i>		X		X			X				
Wheatgrass, pubescent	<i>Agropyron trichophorum</i>				X			X		X		
Wildrye, basin	<i>Elymus cinereus</i>		X		X			X				
Wildrye, blue	<i>Elymus glaucus</i>				X			X				
WETLAND												
Bulrush, Hardstem	<i>Schoenoplectus acutus</i>		X								X	
Common Reed	<i>Phragmites australis</i>		X								X	
Common spikerush	<i>Eleocharis palustris</i>		X					X			X	
Common Threesquare	<i>Schoenoplectus pungens</i>		X								X	
Rush, Mountain	<i>Juncus arcticus</i>		X		X						X	
Sedge, Nebraska	<i>Carex nebrascensis</i>		X		X						X	
Sedge, Water	<i>Carex aquatilis</i>		X								X	

Exterior Sign Materials

	Sign Material	Graphic Capability	Thickness	Requires Backing or Frame	Ability to Cut to Shape	Ability to Print Double-sided	Scratch Resistance	Graffiti Resistance	Warranty	Cost Rating	24"x36" Single-sign Cost; not incl. setup, proofs, shipping	Notes
A.	Porcelain Enamel	4-color process, 2400 dpi, vivid colors	16-gauge steel (approx 1/8")	Yes (can flange edges w/ plywood backer)	Yes	No	High	Clean with solvent	25 years	13.3	\$2,000.00	
B.	Chemically Etched Anodized Aluminum	150 dpi, 65-line screen, halftones, line art	Up to 3/8"	No, 1/4" thick or thicker	Yes	Yes	High	Clean with solvent	Lifetime	11.3	\$1,700.00	
C.	Gel-coat Laminate	Full-color, 1200 dpi	Up to 1/8"	Yes	Yes	Yes	Medium	Clean with solvent	10 years	2.3	\$350.00	Unit cost decreases as additional signs are purchased.
D.	Fiberglass Embedment	Full-color, 1200 dpi	Up to 1/4"	Yes	Yes	Yes	Medium	Clean with solvent	10 years	2.3	\$350.00	Unit cost decreases as additional signs are purchased.
E.	High-pressure Laminate	Full-color, 1200 dpi	Up to 1"	No, 1/2" thick or thicker	Yes	Yes (2 panels bonded back-to-back)	Medium	Clean with solvent	10 years	2	\$300.00	
F.	Fused Poly-carbonate	Full-color, 1200 dpi	Up to 1/2"	No, 1/2" thick	Yes	No	Medium	Clean with solvent	10 years	1.7	\$250.00	1/2" thick panels cost more.
G.	Composite	Full-color, 1200 dpi	Up to 1/8"	Yes	Yes	Yes	Low	Low	None	1.5	\$220.00	Expect life of 3 years.
H.	Fused Graphics (ImageLOC)	Full-color, 1200 dpi	Up to 1/4"	No	Yes	Yes	High	Clean with solvent	10 years	1	\$150.00	\$175.00 for double-sided. Material new on the market.

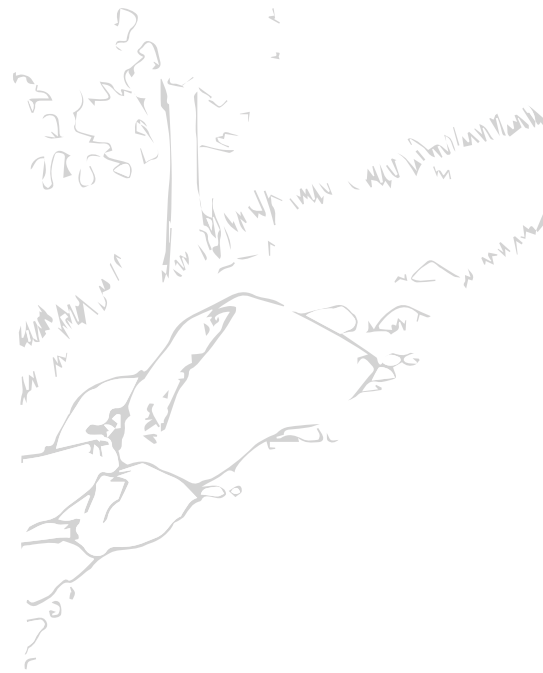
This chart compares the merits and relative fabrication costs of various exterior sign materials.

Additional selection factors

include:

- Need for color
- Likelihood of vandalism
- Type of vandalism
- Need for replacement
- Mounting system
- Replacement cost

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Appendix D

Online Survey and Results

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Pend d'Oreille Bay Trail Survey

Project connection phases

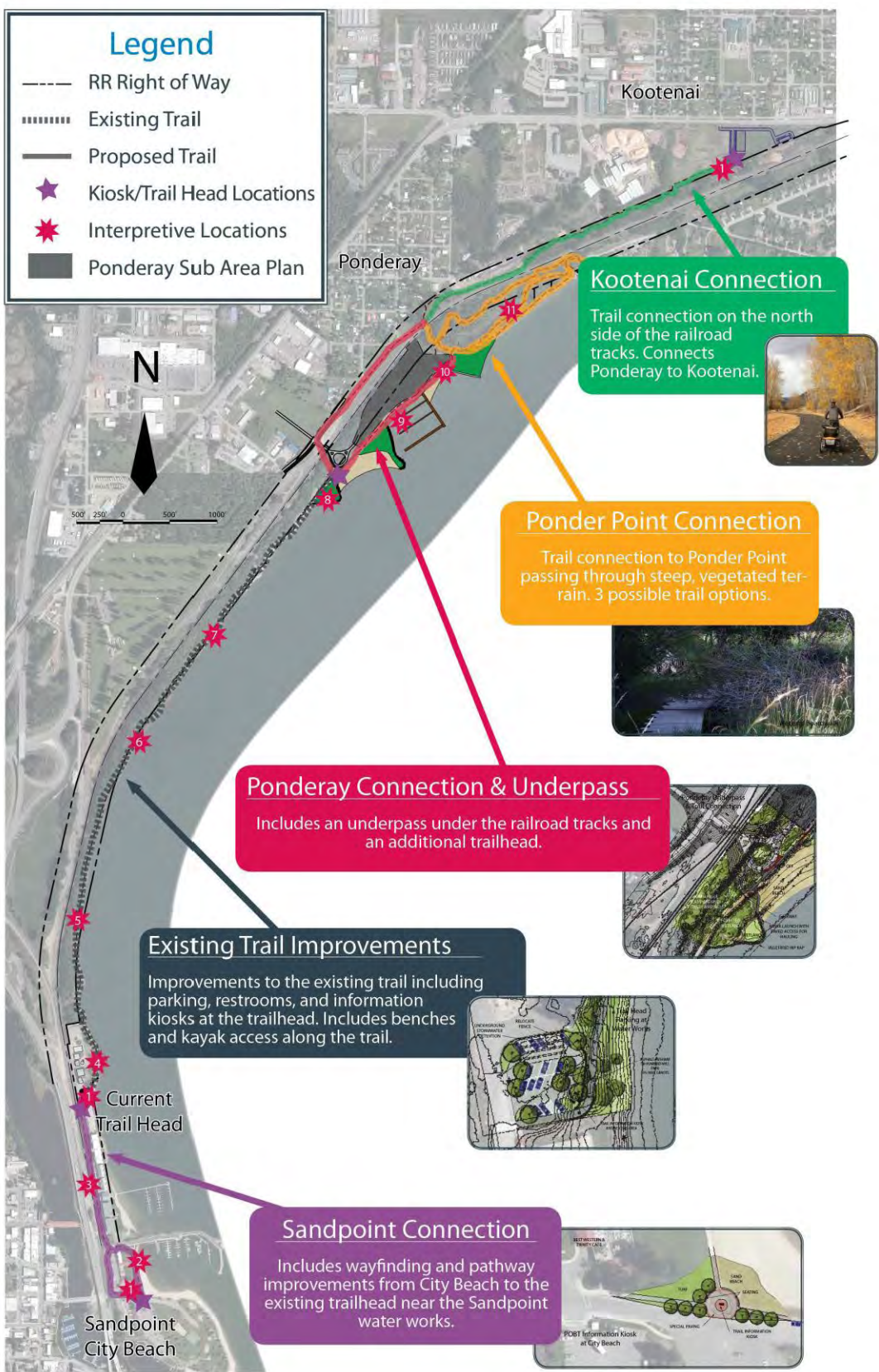
The Pend d'Oreille Bay Trail is a collaborative effort to link the cities of Sandpoint, Ponderay, and Kootenai with a wonderful public space along the shores of Lake Pend Oreille. Your input is needed to craft an appropriate look and feel for the project as well as to guide its implementation. We hope you find this survey useful and thank you for your contribution to this project!

As you can see in the map below, the Pend d'Oreille Bay Trail Project includes several trail improvement project phases, which are as follows:

1. **Sandpoint Connection.** This phase includes wayfinding and pathway improvements from City Beach to the existing trailhead near the Sandpoint water works.
2. **Existing Trail Improvements.** This phase includes improvements to the existing trail such as parking restrooms, an information kiosk at the trailhead and benches and kayak access along the trail.
3. **Ponderay Connection & Underpass.** This phase includes an underpass under the railroad and another trailhead.
4. **Ponder Point Connection.** This phase includes a trail through steep, vegetated terrain currently owned by the Army Corps of Engineers.
5. **Kootenai Connection.** This phase runs on the north side of the railroad and connects Ponderay to Kootenai.

A map of the project phases is found below:

Pend d'Oreille Bay Trail



The phases, or segments, of the overall trail system will likely be completed separately as funding becomes available. Please tell us how you would prioritize the segments in the following questions.

1) The Sandpoint Connection

- ☐ Top Priority ☐ High Priority ☐ Medium Priority ☐ Low Priority

2) Improvements to the existing trail, including parking, restrooms, benches, and/or boat access.

- ☐ Top Priority ☐ High Priority ☐ Medium Priority ☐ Low Priority

3) The Ponderay Connection and Underpass.

- ☐ Top Priority ☐ High Priority ☐ Medium Priority ☐ Low Priority

4) The Ponder Point Connection.

- ☐ Top Priority ☐ High Priority ☐ Medium Priority ☐ Low Priority

5) The Kootenai Connection.

- ☐ Top Priority ☐ High Priority ☐ Medium Priority ☐ Low Priority
-

Interpretive Elements

6) The lakeshore around the Pend d'Oreille Bay Trail has a rich history. Which of the following is most relevant to you? *(click image)*

☐ The Humbird Mill



☐ The Panhandle Smelter



☐ The Railroad



☐ The Kalispel People and Their Neighbors



7) The lakeshore around the Pend d'Oreille Bay Trail also has many unique natural features. Which of the following is most interesting to you? *(click image)*

☐ Wetlands and Wildlife



☐ Nature and the Changing Environment



☐ Geology and Flooding



8) There are many interesting stories associated with the Pend d'Oreille Bay Trail. Which of the following is most interesting to you? *(click image)*

☐ POBT Trail Stewards



☐ The boats of Lake Pend Oreille



☐ Lake Pend Oreille

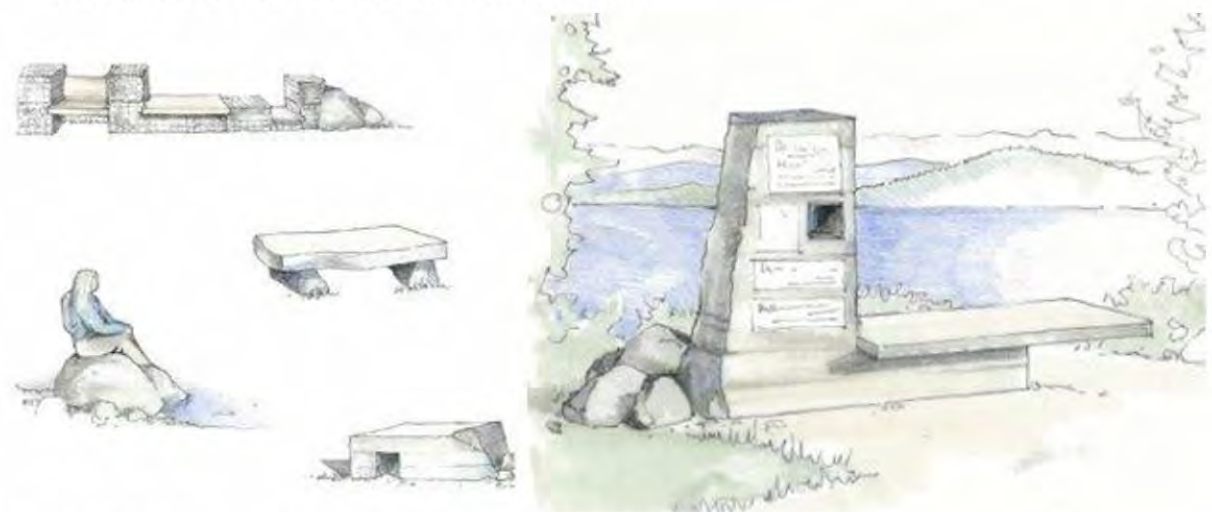


9) What other stories or interesting subjects do you think should be included along the trail?

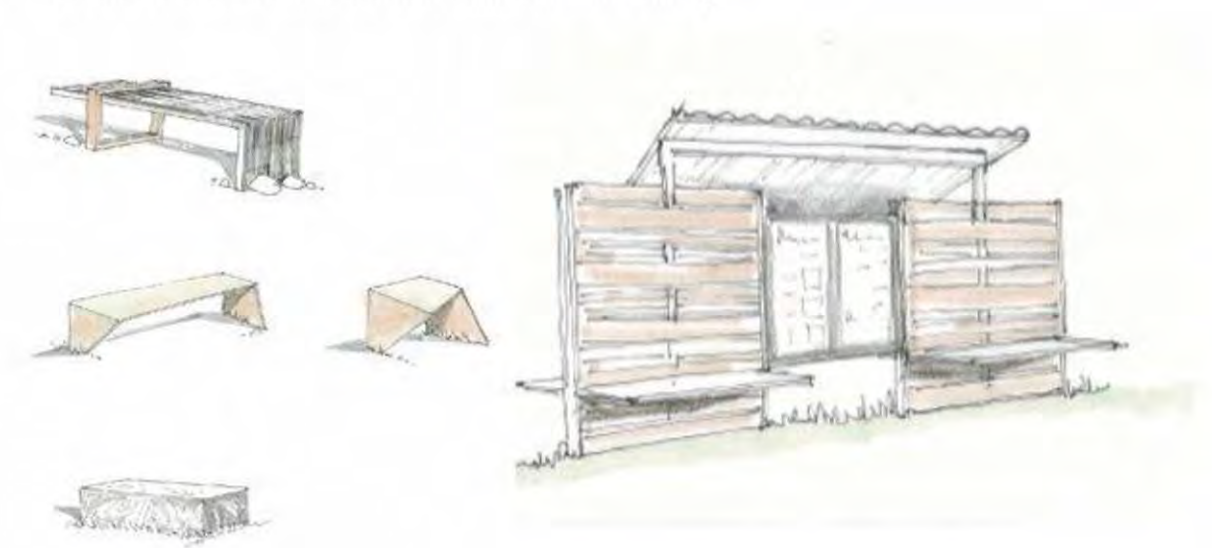
Amenities and Materials

10) What materials do you prefer for the construction of new amenities/features along the trail?
(click image)

○ Stone Features with Ties to the Humbird Mill



○ Steel Features with Ties to the Railroad and Mining



○ Wood Features with Ties to Logging and Nature



As you can see below, the portion of the trail between City Beach and the trailhead lies in a tight space between the road and the railroad tracks. Question 9 below poses two options for the treatment of this section of trail.

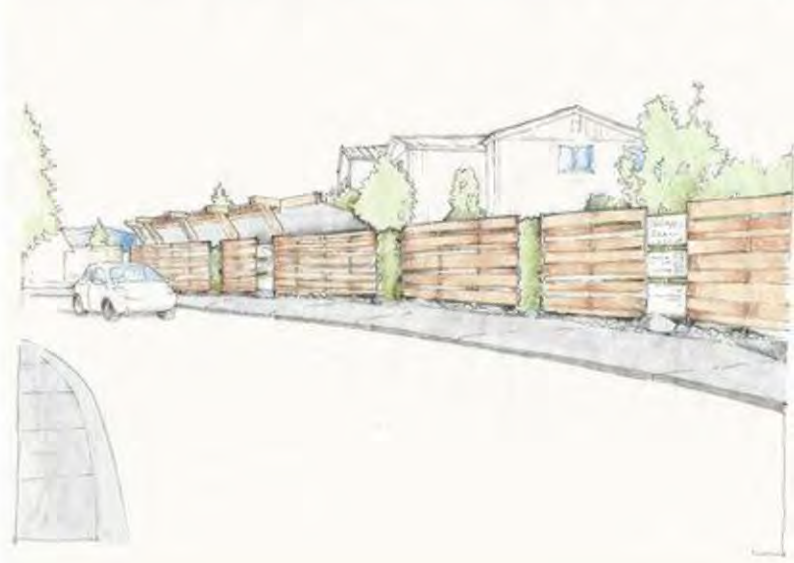


11) As a way to separate the pathway from the road and the railroad and to increase its appeal, which screening option do you prefer? *(click image)*

- Raised walk with patterned concrete, vegetative wall, and bench nooks

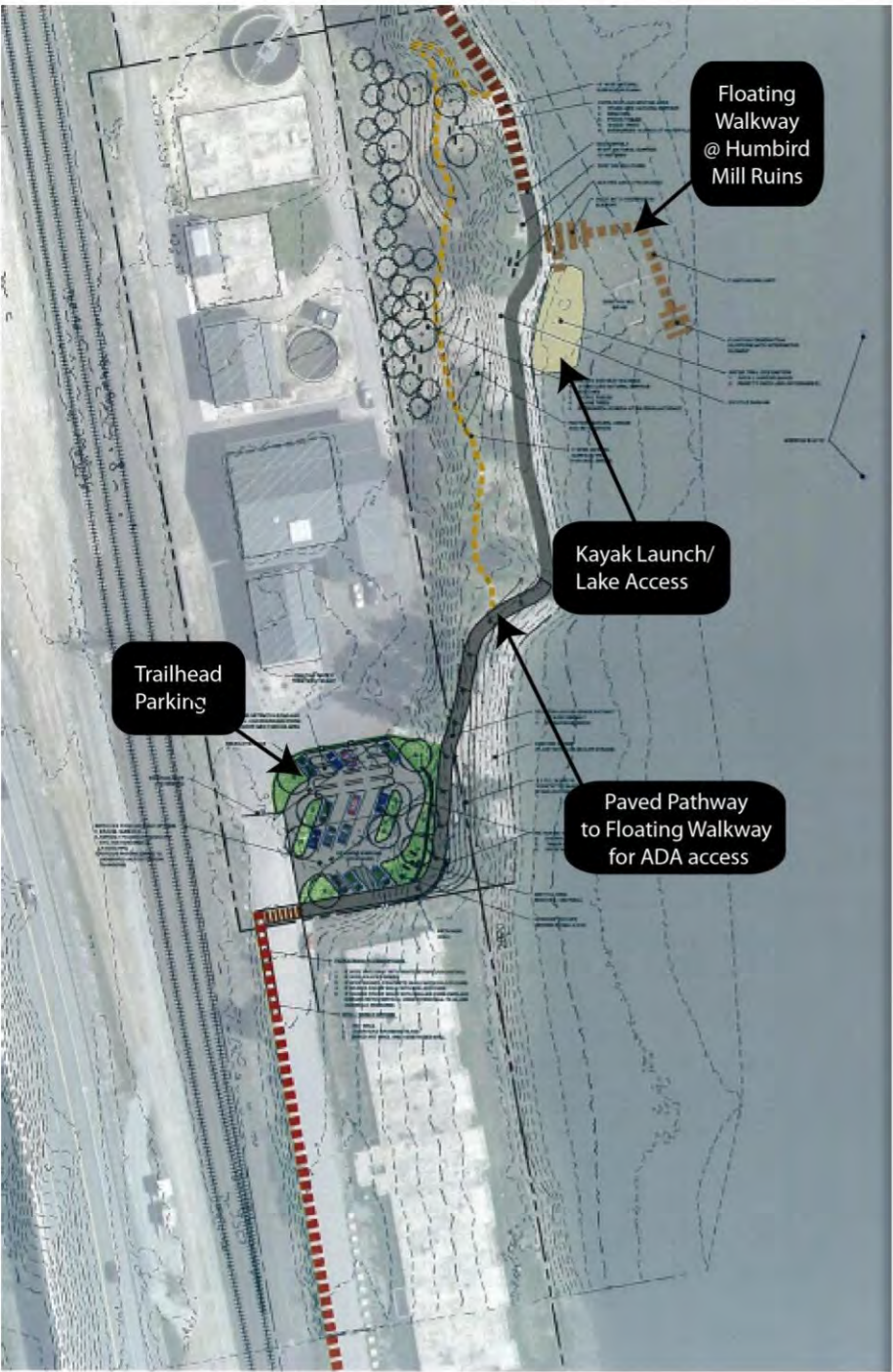


- Raised walk with woven steel fence and vertical plantings



Trail Head and Ponder Point Connection

A concept plan for improvements to the existing trail head near the Sandpoint Water Plant is found below:



12) Are restrooms needed at the trailhead?

- ☐ Absolutely.
- ☐ Maybe.
- ☐ No.

13) Is additional parking needed at the trailhead?

- ☐ Absolutely.
- ☐ Maybe.
- ☐ No.

14) What is your opinion of a paved pathway from the parking area to the floating walkway to allow ADA access?

- ☐ It's great!
- ☐ It's okay
- ☐ It's not needed

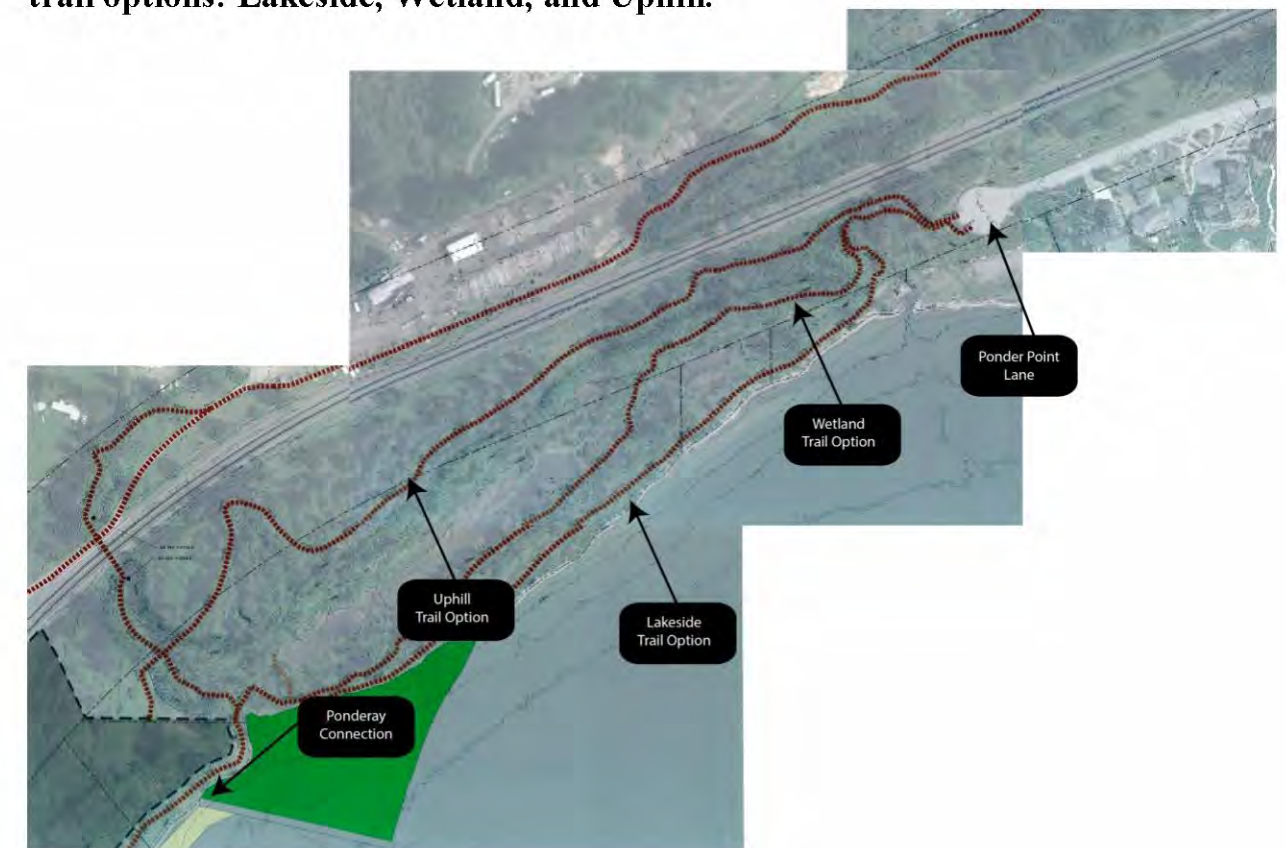
15) What is your opinion of the kayak launch/lake access amenity?

- ☐ It's great!
- ☐ It's okay.
- ☐ It's not needed.

16) What is your opinion of the floating walkway around the Humbird Mill ruins?

- ☐ It's great!
- ☐ It's okay
- ☐ It's not needed

A concept plan for the connection to Ponder Point is found below. There are 3 trail options: Lakeside, Wetland, and Uphill.



17) What is your preferred trail option?

- ☐ Lakeside
- ☐ Wetland
- ☐ Uphill

18) Should the pathway between Ponderay and Kootenai be paved to allow commuting and connection to a larger trail system in the County? Keep in mind that a paved pathway would likely be sited away from the lakeshore on the north side of the railroad tracks.

- ☐ Yes, a paved option is important.
- ☐ No, any trail connection should be gravel.

19) Do you have any other comments you'd like to add?

Do you mind telling us a bit about yourself? All responses are optional. Names and emails will be held in confidence by Friends of the Pend d'Oreille Bay Trail.

20) Your first name

21) Your last name

22) Where do you live?

- Sandpoint
- Ponderay
- Kootenai
- Dover
- Unincorporated Bonner County
- Elsewhere

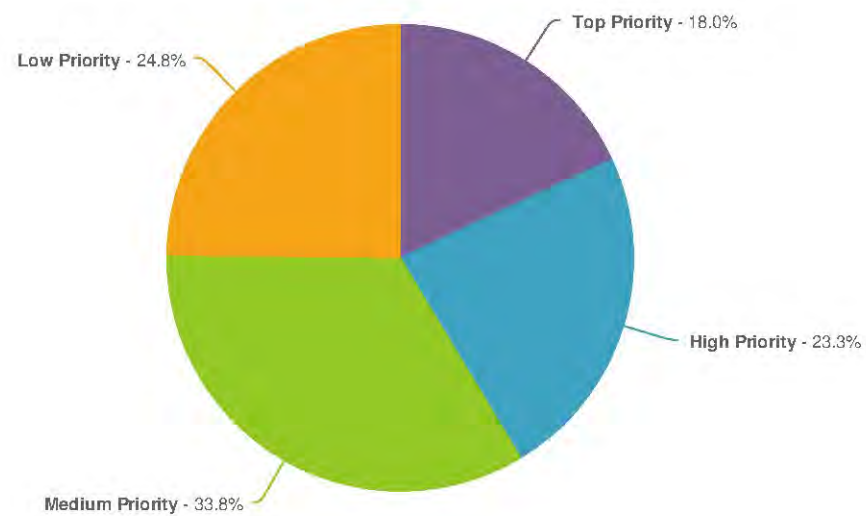
23) If you'd like to receive project updates, please enter your email below.

Thank You!

Your participation is very important to us. If you have any questions, please contact Friends of the Pend d'Oreille Trail at friends@pobtrail.org. For more information about Friends of the Pend d'Oreille Bay Trail, check out our website [">here](#).

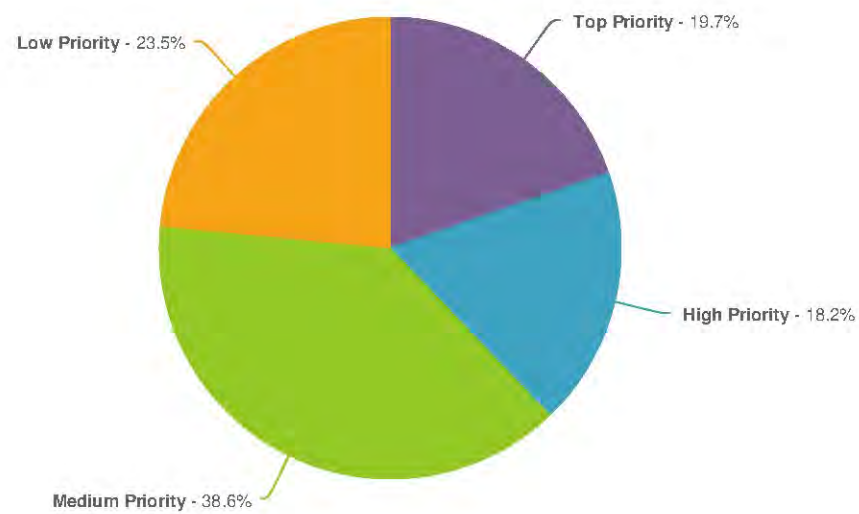
Thanks again!

1. The Sandpoint Connection



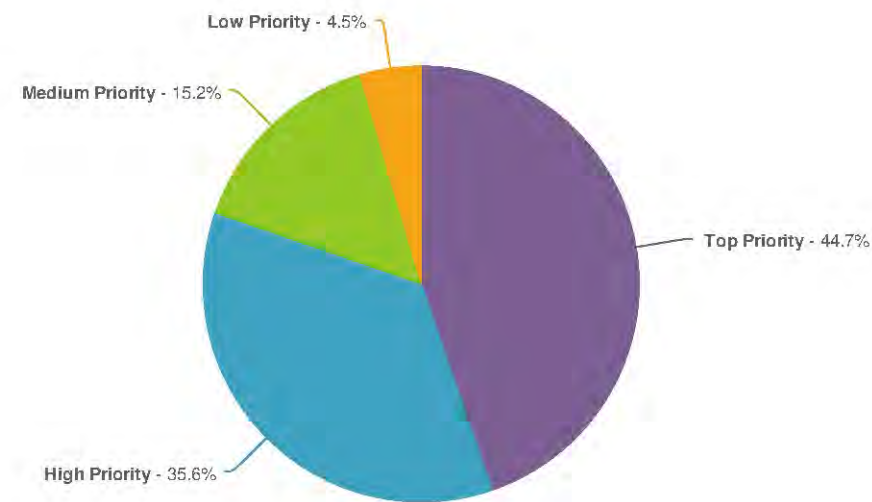
Top Priority	18.1%	<div><div></div></div>	24
High Priority	23.3%	<div><div></div></div>	31
Medium Priority	33.8%	<div><div></div></div>	45
Low Priority	24.8%	<div><div></div></div>	33
Total			133

2. Improvements to the existing trail, including parking, restrooms, benches, and/or boat access.



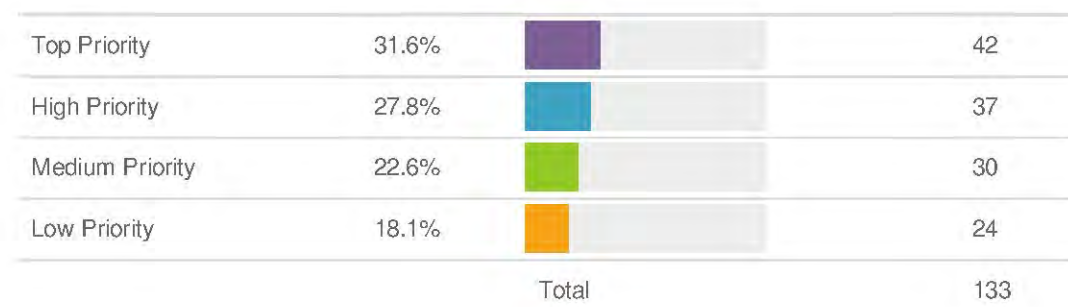
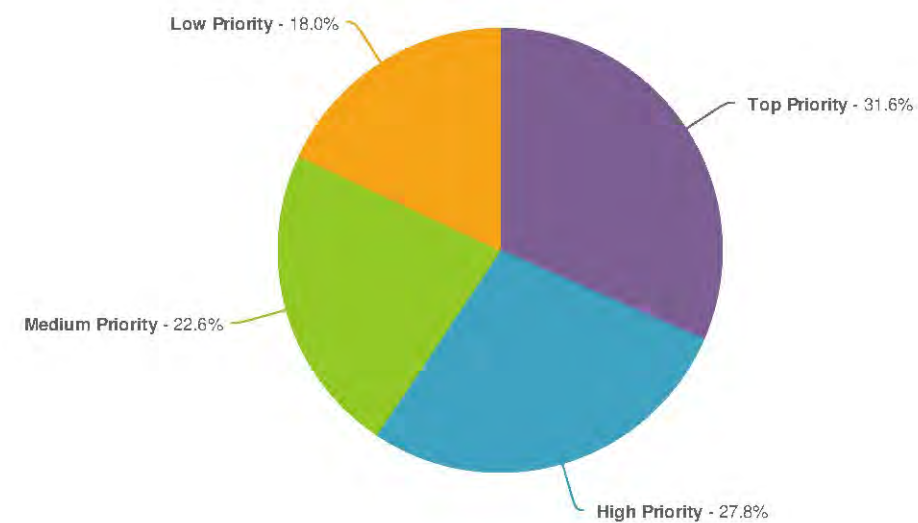
Top Priority	19.7%	<div><div></div></div>	26
High Priority	18.2%	<div><div></div></div>	24
Medium Priority	38.6%	<div><div></div></div>	51
Low Priority	23.5%	<div><div></div></div>	31
Total			132

3. The Ponderay Connection and Underpass.

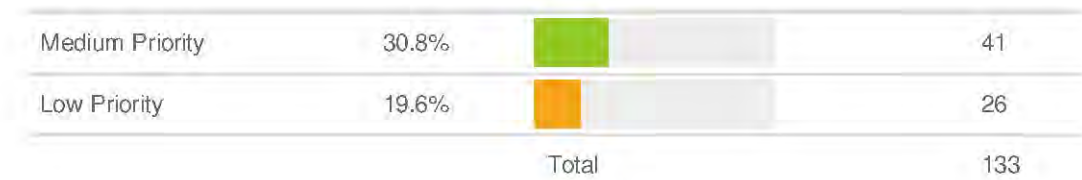
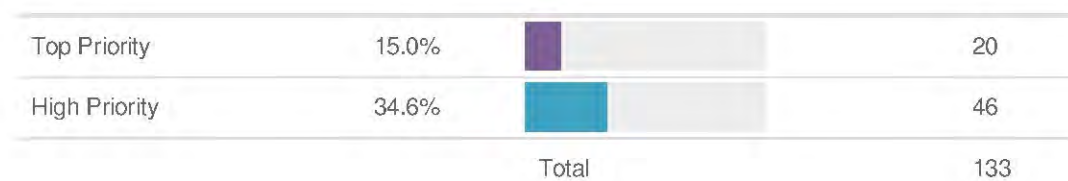
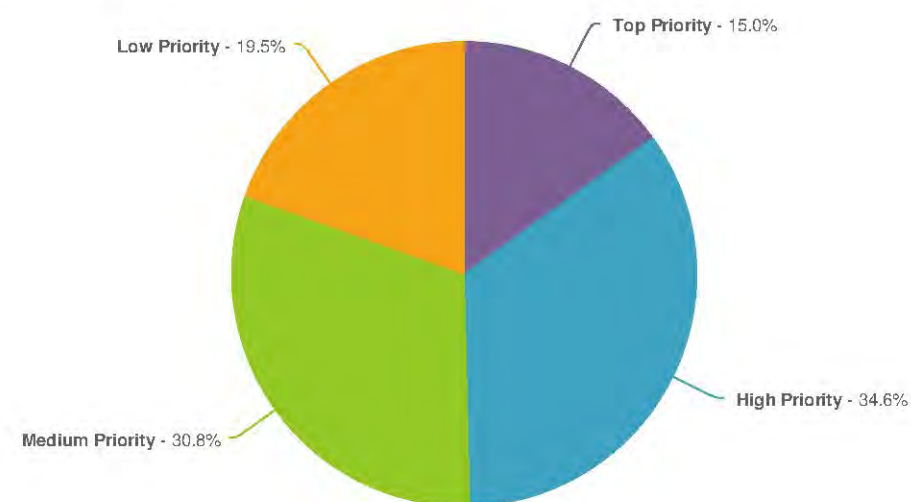


Top Priority	44.7%	<div><div></div></div>	59
High Priority	35.6%	<div><div></div></div>	47
Medium Priority	15.2%	<div><div></div></div>	20
Low Priority	4.6%	<div><div></div></div>	6
Total			132

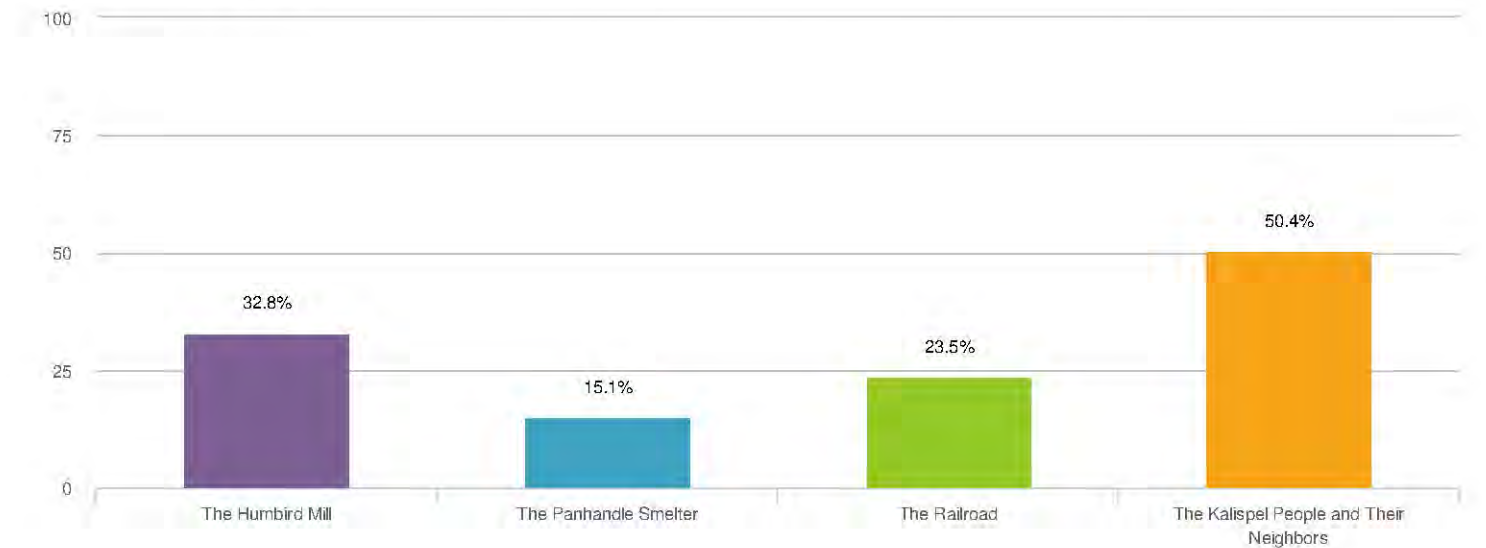
4. The Ponder Point Connection.



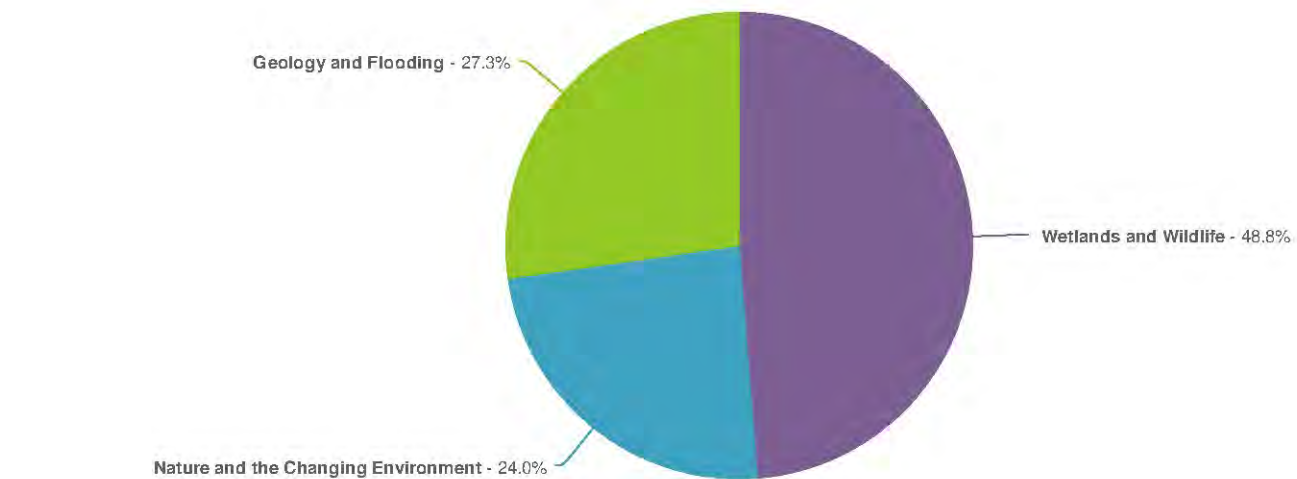
5. The Kootenai Connection.



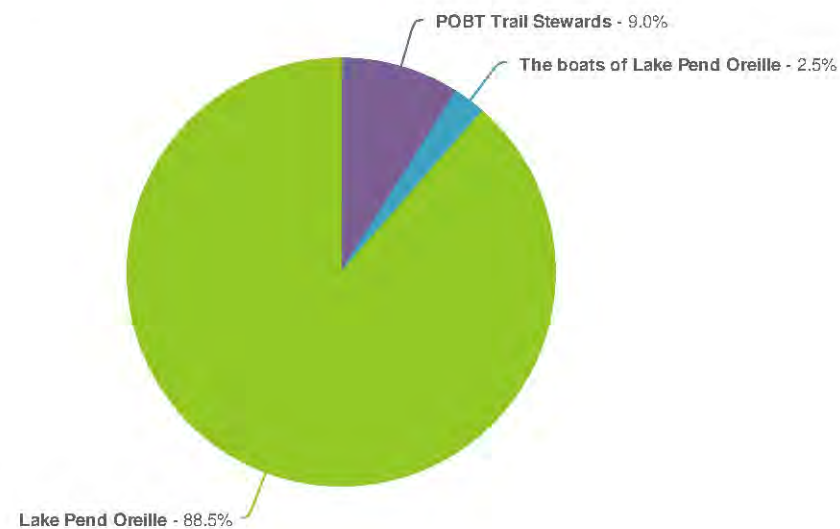
6. The lakeshore around the Pend d'Oreille Bay Trail has a rich history. Which of the following is most relevant to you? (click image)



7. The lakeshore around the Pend d'Oreille Bay Trail also has many unique natural features. Which of the following is most interesting to you? (click image)



8. There are many interesting stories associated with the Pend d'Oreille Bay Trail. Which of the following is most interesting to you? (click image)



POBT Trail Stewards	9.0%		11
The boats of Lake Pend Oreille	2.5%		3
Total			122

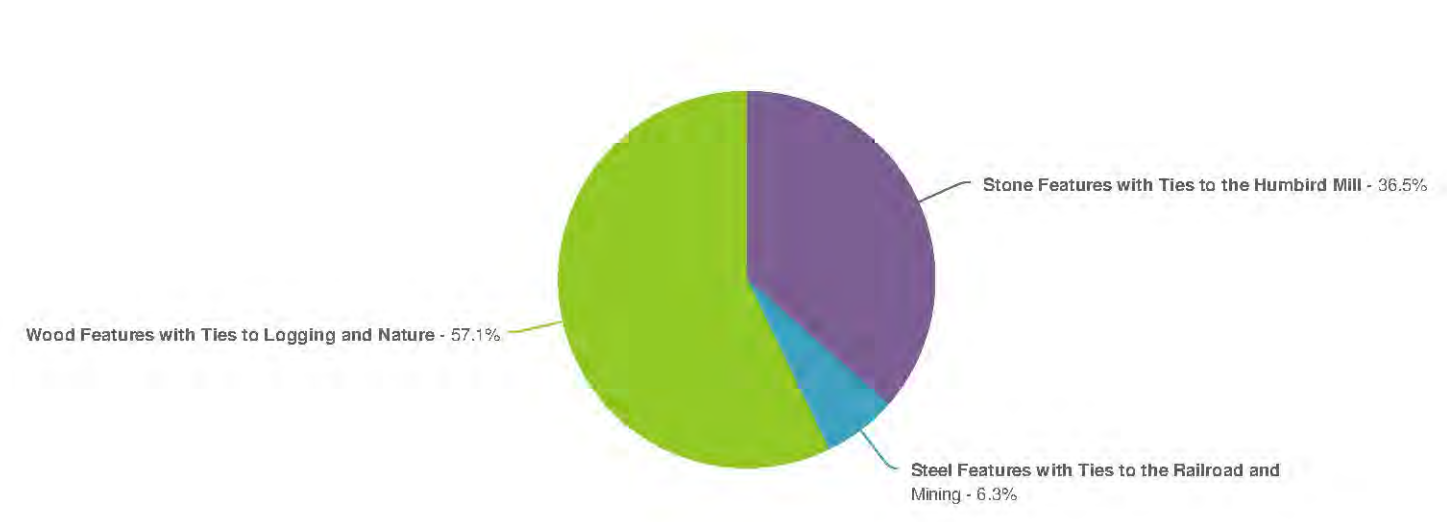
Lake Pend Oreille	88.5%		108
Total			122

9. What other stories or interesting subjects do you think should be included along the trail?

Count	Response
1	All of the items in #6 and #7. It was hard to pick just one.
1	Anything concerning the original inhabitants of this area, the Native Americans.
1	Anything that connects people to our community.
1	BUM JUNGLE
1	Black rock history.
1	Early explorers
1	History of Ponderay, Kootenai, Ponder Point and Sandpoint.
1	History of Ponderay, Kootenai, Sandpoint, and how Ponder Point came to exist.
1	History of the Trail development.
1	History of the lake fisheries.
1	Hobo Jungle, Slag Pile (Black Rock)
1	How Sandpoint, Ponderay, and Kootenai came to be.
1	How did Lake Pend Oreille contribute to the birth and growth of the communities we live in.
1	I think the beauty of the trail and the serenity of the trail speaks for itself
1	Information on the animals of that immediate area.
1	Interpretive elements are low priority. Access and parking better use of finance and labor.
1	Kalispell people
1	Lake Legends: Pend Orielle Pete and the Pend Oreille Paddler... and maybe there are others!
1	Native plant ID
1	No trail at all it just brings crime and property damage to ponder point
1	Nothing I can think of.
1	Perhaps a timeline, or station which depict the different uses of the lake and its surrounds.
1	The Ruins
1	The SandPoint Railway Depot
1	What is the history of the visible old docks/pilings?
1	Wildlife

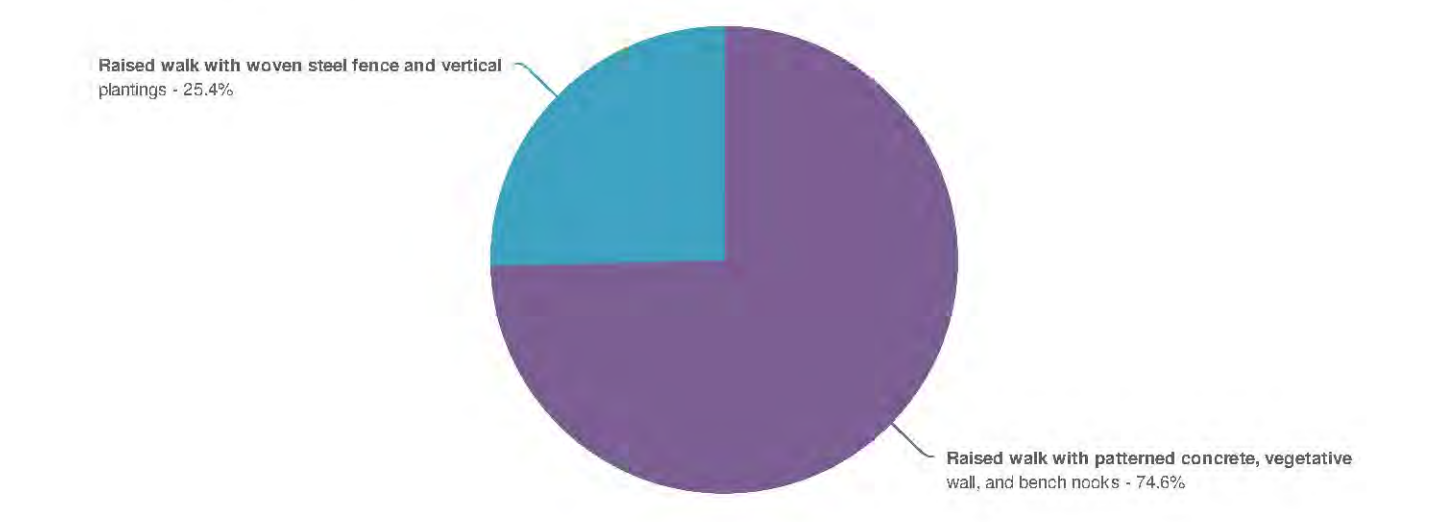
Count	Response
1	Wildlife, hx of Sandpoint, railroad
1	bum jungle
1	fish of Lake Pend Oreille
1	history of earlier explorers and logging operations
1	none
1	How some lazy, inconsiderate dog owners are reflective of a larger segment of Americans who are lazy, inconsiderate, and uninterested in anything larger than themselves.
1	Not to be disrespectful, but since it used to be known as "Bum Jungle" for so long, I'd really like to hear some stories about that time of the trail.
1	To encourage dog owners to CLEANUP after their dogs so others can also enjoy the trail. I know that isn't really a proper answer, but this dog business is a problem. I have a dog but am not sympathetic to those not wishing to pick up their dog waste.
1	Less interested in stories than just the natural beauty, appreciating the lake and woods, and exercising among them!
1	History, geology, wildlife, native vegetation and discrete suggestions to pick up after yourself.
1	Flowers/berries along the trail. More important is sparse use of signage so as not to overwhelm that natural rustic state of the trail.
1	I chose one image but found most subjects of some interest. The ice age flood, the Kalispel Indians are a close second, for example. All your choices are great. I am an avid bird watcher and would add that as a subject.
1	Bum jungle. Standpoint and Ponderay as towns created by the railroad. Early days in our cities. Depth of lake with visual of Empire State Building.
1	AI think the natural history of the plants, animals and people in a current and historical perspective gives us a change to educate the public with a view towards protecting our precious resources. Its a great opportunity to advocate for our environment!
1	All of the history items in No. 6 are of interest - actually all of Nos. 7 and 8 as well. Shame on you for requiring a Sophie's Choice.
1	The Old Humbird rough cut mill in Kootenai Bay where they pooled logs and hauled them onshore with a steam engine on a brick and rock pier to be delivered to the mill. After rough cutting they hauled them up the hill to connect with transportation to the finish mill in Sandpoint. This site is the Ponder Point Housing development in Kootenai.
1	The history of Lake PO: what the lake looked like when there was no dam down river; when Albeni dam was built; how the lake has changed over the years; etc.
1	What homes were removed to make this trail and their history (example) Dr. ? house, original Indian tribe settlement and artifacts found near by.

10. What materials do you prefer for the construction of new amenities/features along the trail? (click image)



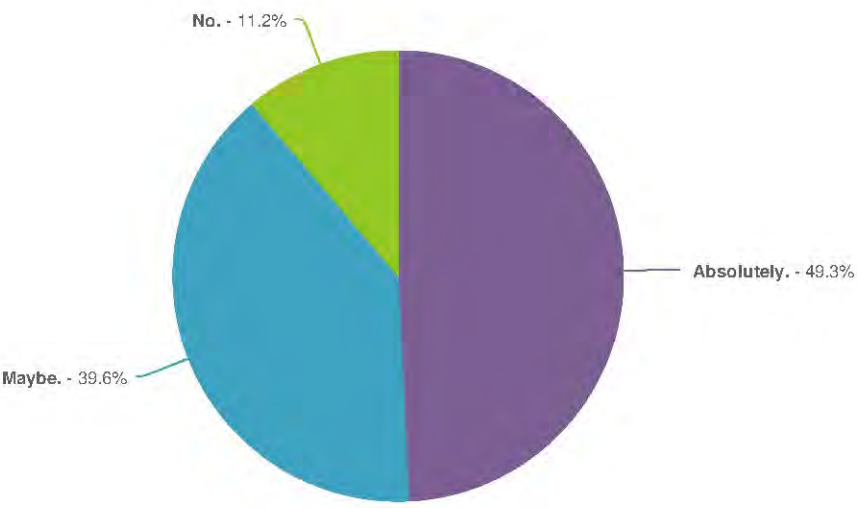
Stone Features with Ties to the Humbird Mill	36.5%	<div></div>	46
Steel Features with Ties to the Railroad and Mining	6.4%	<div></div>	8
Wood Features with Ties to Logging and Nature	57.1%	<div></div>	72
Total			126

11. As a way to separate the pathway from the road and the railroad and to increase its appeal, which screening option do you prefer? (click image)



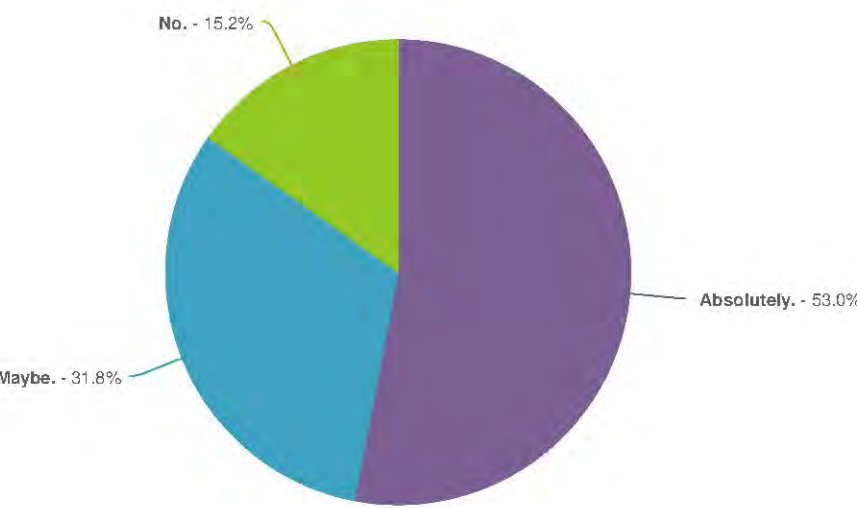
Raised walk with patterned concrete, vegetative wall, and bench nooks	74.6%	<div></div>	94
Raised walk with woven steel fence and vertical plantings	25.4%	<div></div>	32
Total			126

12. Are restrooms needed at the trailhead?



Absolutely.	49.3%	<div><div></div><div></div></div>	66
Maybe.	39.6%	<div><div></div><div></div></div>	53
No.	11.2%	<div><div></div><div></div></div>	15
Total			134

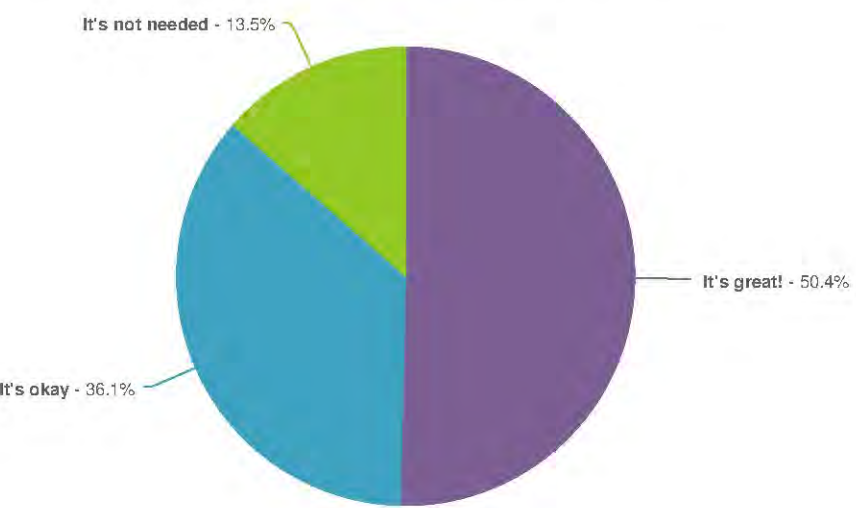
13. Is additional parking needed at the trailhead?



Absolutely.	53.0%	<div><div></div><div></div></div>	70
Maybe.	31.8%	<div><div></div><div></div></div>	42
Total			132

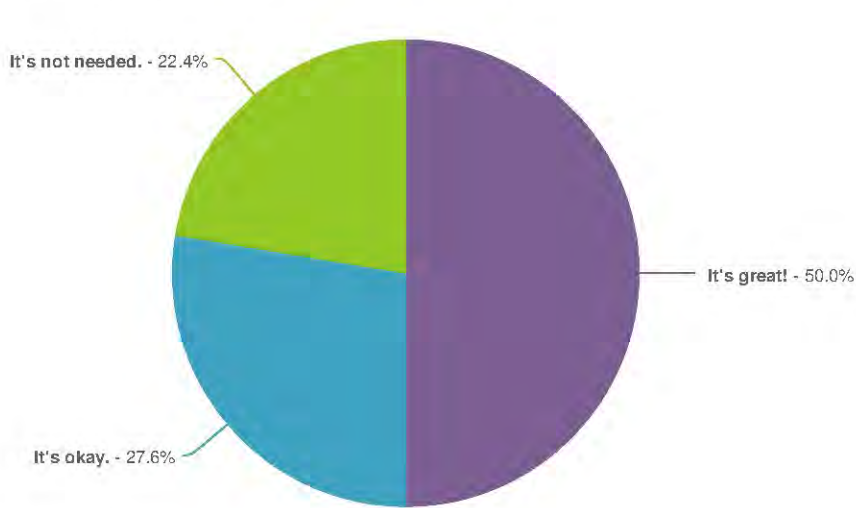
No.	15.2%	<div><div></div><div></div></div>	20
Total			132

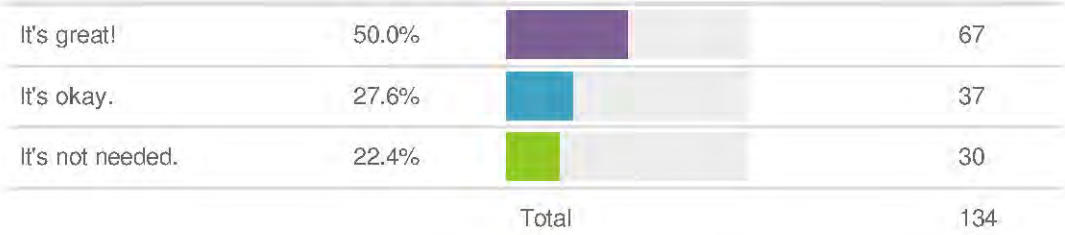
14. What is your opinion of a paved pathway from the parking area to the floating walkway to allow ADA access?



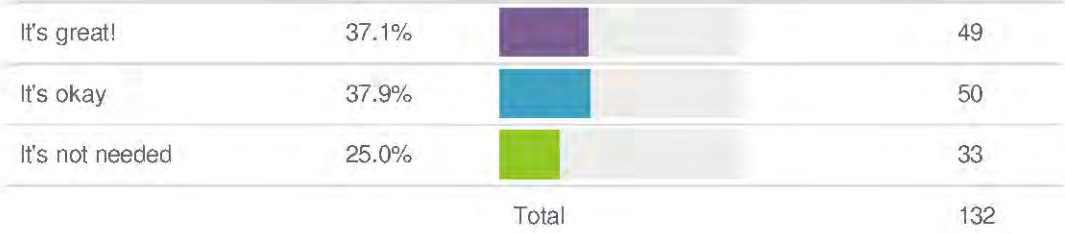
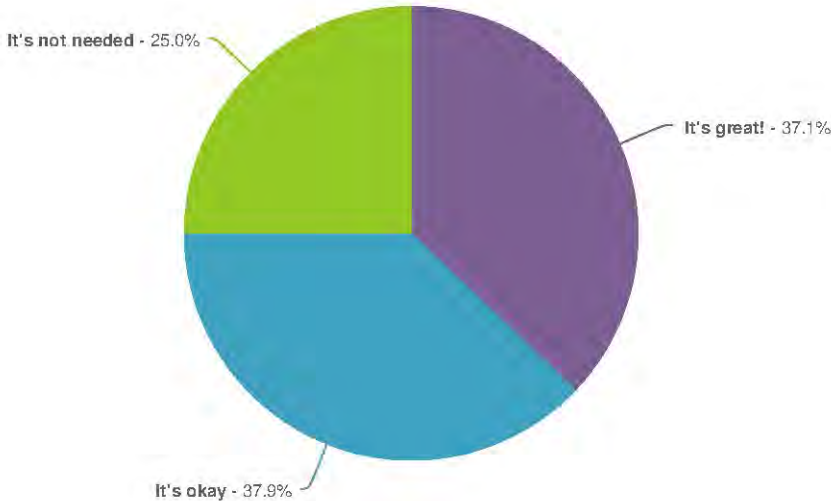
It's great!	50.4%	<div><div></div><div></div></div>	67
It's okay	36.1%	<div><div></div><div></div></div>	48
It's not needed	13.5%	<div><div></div><div></div></div>	18
Total			133

15. What is your opinion of the kayak launch/lake access amenity?

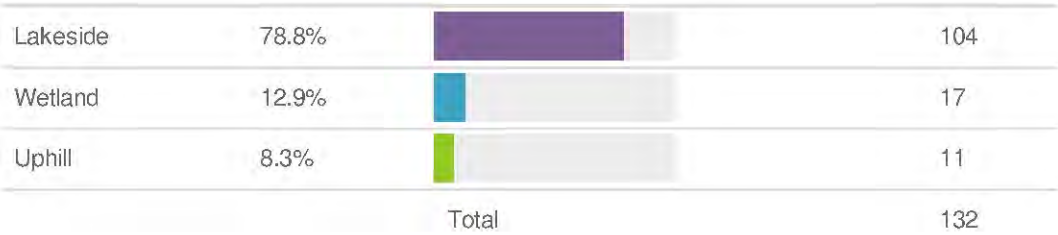
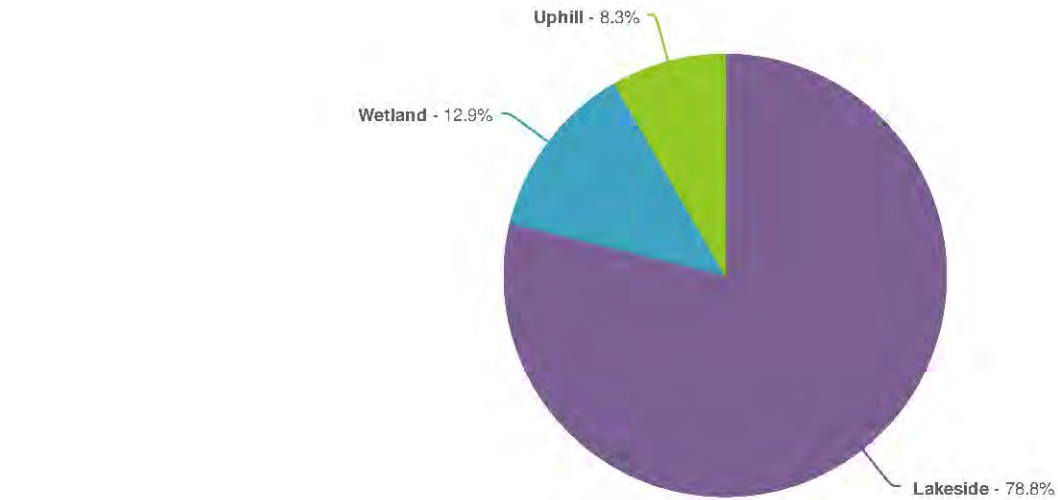




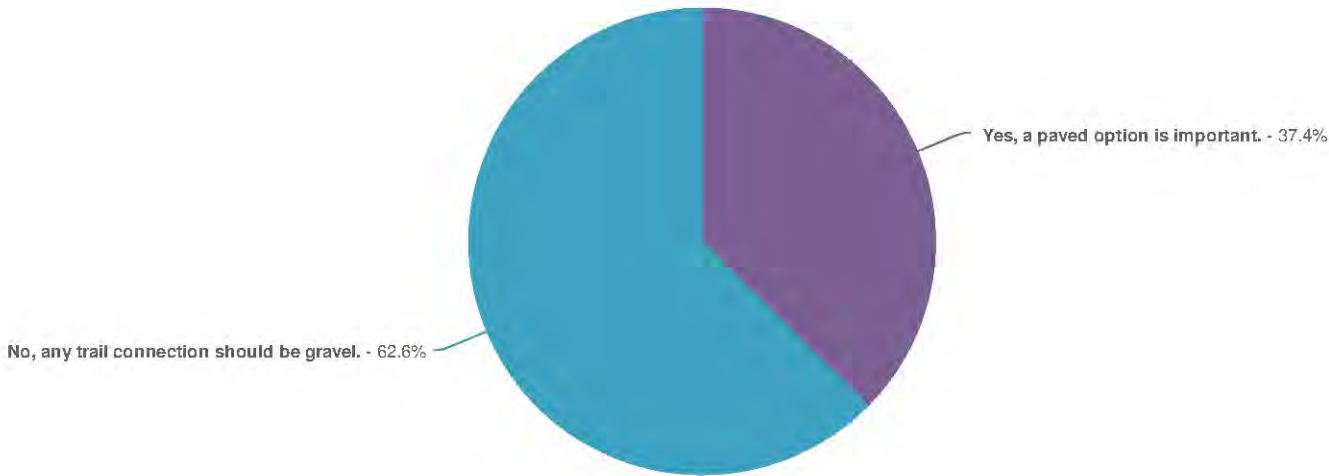
16. What is your opinion of the floating walkway around the Humbird Mill ruins?



17. What is your preferred trail option?



18. Should the pathway between Ponderay and Kootenai be paved to allow commuting and connection to a larger trail system in the County? Keep in mind that a paved pathway would likely be sited away from the lakeshore on the north side of the railroad tracks.



19. Do you have any other comments you'd like to add?

Count	Response
1	A lot of benches....traditional, rock or chair lift!
1	Gravel trail may be easier to maintain, less costly
1	Great survey, great options! Excited for all the possibilities!
1	Keep the trail as close to natural settings as possible.
1	Keep the trail rustic
1	Long range --- pave the entire trail system, but do it right and first class.
1	Multiple paths would be good if funding permits.
1	No
1	No thanks.
1	Nobody commutes via this pathway. It would be a waste of money to concrete or pave.
1	Paving pathways can happen at a later development
1	The connection is a great concept!
1	This is a thrilling addition to our communities.
1	This is so incredible!!!
1	Too many bikes on the trail. It makes walking difficult sometimes. What's wrong with walking?
1	Two paths; Both a lakeside path (gravel) and a paved path for biking.
1	initial access is more important than an overdesigned (expensive) plan
1	keep up the good work
1	where's a good spot for an outdoor classroom or ampitheater
1	The trail seems to have a significant amount of use in its current state. I'm not sure time, effort and money need to be put toward benches and interpretive resources until the entire trail is built. The prospect of being able to access a trail which runs along the lake's shore is extremely inviting and will be a huge boost to the community.
1	This trail is nothing but trouble for the people of ponder point and we are going to start sending a bill for damage to our property because of this stupid trail.
1	Tie trail network into Sandcreek Trail along with Longbridge , Sagle Trail and trail along Hwy.2 to Dover.
1	actually - referring to #18 - a paved trail is fine if necessary for vehicle travel but for commuting purposes, I think the connection trail could be a hard packed fine gravel and this would be acceptable to most cyclists and wheelchairs could navigate easily as well
1	I hope the trail will always be dog-friendly!! Despite owners who don't pick up after their pets (grr!), it would be very sad to not allow dogs.
1	This is a fabulous proposal. I surely hope to see it in my bike riding, walking lifetime. Really am all for the Ponder Point connection.

Count	Response
1	Although my knees prefer gravel on the trail, my road bike tires need the pavement. This is the only non-highway option to get to town.
1	Keep it as something that is natural and can be maintained easily. I would also like a possible outdoor space where we could host larger gatherings - i.e., outdoor classroom space.
1	Your concept for the Sandpoint trailhead should incorporate the little landing below the trailhead. There is a little gravel pathway there to a tiny forest that is against the Seasons property. Nice spot for a bench or something.
1	What is the impact to the houses in Ponder Point that are adjacent to the cul-de-sac that appears to be the where the trail ends?
1	It would be very nice to have a restroom further down the trail from the Sandpoint connection, say at the Ponderay connection possibly.
1	Parking is far too limited for this in town walk. Many people want to use it but turn away because there is no where to park.
1	FYI -- The prelude comment to Question 11 references Question 9. It should reference Q11. Otherwise, keep up the good work.
1	Don't overdo it. A gravel path with nice views is plenty. People ruin too many places by trying to make them comfortable. It's supposed to be a little uncomfortable outside, that's where the benefits are.
1	Please consider a restroom further down the trail, as well as the one at the trailhead parking area. Geezer Hikers need a place to pee ... and others too! We'll pee somewhere.
1	I walked this trail from Ponder Point to C.W.C. bridge for many years and forced my way up over the train tracks and around hobo junction. the water view would have been nicer.
1	Going back to the access road off Bridge St, I'd prefer to have a wide trail for pedestrians + bicyclists to share. The road for cars should have speed bumps to reduce the speed.
1	There were people living on the newly improved path with the porta john last summer. There was also a lot of after dark drinking and over parking. This path and parking area, like city beach should be closed at sunset and the police should be checking it. I was almost hit by a drunk driver walking my dog on Sandpoint avenue by the parking lot. Instead he hit a tree. The access road also needs to be maintained/plowed by the city if the community wants access to a park at the end of the road.
1	Keep the gravel trails as it's more natural. And please give us restrooms. I noticed last year a lot of TP behind some of the trees.
1	I am very curious as to how and where the actual trail will connect into the Ponder Pt Ln cul de sac. Based on the current map above the connection appears to be in private property where there is currently a driveway that is gated. Can details be provided on this?
1	All three options for the connection to Ponder Point are fine - lakeside is preferable. Option north of tracks is not desirable.
1	I live on Ponder Point Lane near the cul-de-sac where the trail ends . I am concerned about parking in the the cul-de-sac. What kind of plan do you have for this ? Please keep me informed. asamuelson@ak.net
1	I would prefer to see the trail continued, but not too many amenities please. Keep it simple. A few benches, maybe some swimming access points would be useful but boating access? I think there is plenty of boat access on the lake already.
1	Cities should try to work with Seasons to open lakefront access from city beach to trail. This would be incredibly powerful and greatly increase the use and value of the trail. Could use Urban Renewal funds to pay whatever the cost to complete this incredible section. Beyond the other expansions and connections to other cities, I feel this is by far the most important action we could take today.

Count	Response
1	Look forward to a pathway between Ponderay and Kootenai and lakeside is preferred. But having it is better than not, so I'm ok with Wetland or Uphill if that is the only way to make it happen Paved is fine but not necessary in my opinion. Thank you for taking my input!
1	Please don't pave!!! I understand that ADA might make you pave, but we love the graveled path. The gravel allows water to flow back into the ground. Pavement will wash away chemicals into the land.

20. Your first name

Count	Response
1	Adam
1	Alice
1	Allyson
1	Alyssa
1	Amanda
1	Arlene
1	Becca
1	Becky
2	Beth
2	Bill
1	Brad
1	CARLA
1	CB
1	Chris
1	Christine
1	Clem
1	Connie
1	Dan
1	Dave
2	David
1	Deb
1	Denise
1	Dennison
1	Don



Interpretive Survey Responses

Interpretive preferences expressed by POBT stakeholders during the spring of 2015 are summarized below. The three multiple-choice questions below were asked in the survey.

Question: The lakeshore around the Pend d’Oreille Bay Trail has a rich history. Which of the following is most relevant to you?

- Responses:
- The Kalispel People and Their Neighbors (interpretive theme 2): 50.0%
 - The Humbird Mill (interpretive theme 4): 33.1%
 - The Railroad (interpretive theme 3): 23.7%
 - The Panhandle Smelter/Black Rock (interpretive theme 10): 15.3%

Question: The lakeshore around the Pend d’Oreille Bay Trail also has many unique natural features. Which of the following is most interesting to you?

- Responses:
- Wetlands and Wildlife (interpretive theme 11): 49.2%
 - Nature and the Changing Environment (interpretive theme 8): 23.3%
 - Geology and Flooding (interpretive theme 7): 27.5%

Question: The are many interesting stories associated with the Pend d’Oreille Bay Trail. Which of the following is most interesting to you?

- Responses:
- Lake Pend Oreille (interpretive theme 6): 88.4%
 - POBT Stewards (interpretive theme 5): 9.1%
 - The Boats of Lake Pend Oreille (interpretive theme 9): 23.3%

Question: What other stories or interesting subjects do you think should be included along the trail?

NOTE: Comments received from the public are listed here, grouped as they relate to the 11 interpretive themes outlined in this plan. Some relate to more than one interpretive theme so they are listed multiple times where appropriate. A few didn’t fit into any of the 11 themes, so they are grouped separately at the end.

Theme 1 Responses: **Information/Orientation at trailheads**

- Discrete suggestions to pick up after yourself .
- To encourage dog owners to CLEANUP after their dogs so others can also enjoy the trail. I know that isn’t really a proper answer, but this dog business is a problem. I have a dog but am not sympathetic to those not wishing to pick up their dog waste.
- How some lazy, inconsiderate dog owners are reflective of a larger segment of Americans who are lazy, inconsiderate, and uninterested in anything larger than themselves.

Theme 2 Responses: **Native Peoples, The Kalispel and their Neighbors**

- I chose one image but found most subjects of some interest. The ice age flood, the Kalispel Indians are a close second, for example. All your choices are great. I am an avid bird watcher and would add that as a subject.
- Kalispell people.
- Anything concerning the original inhabitants of this area, the Native Americans.
- What homes were removed to make this trail and their history (example) Dr. ? house, original Indian tribe settlement and artifacts found nearby.

Theme 3 Responses: **Railroads**

- Sandpoint and Ponderay as towns created by the railroad. Early days in our cities. Depth of lake with visual of Empire State Building.
- Bum Jungle/Hobo Jungle. (5 responses)
- Not to be disrespectful, but since it used to be known as “Bum Jungle” for so long, I’d really like to hear some stories about that time of the trail.
- The Sandpoint Railway Depot.
- What is the history of the visible old docks/pilings?

Theme 4 Responses: **Humbird Mill & the Timber Industry**

- What is the history of the visible old docks/pilings?
- The Old Humbird rough cut mill in Kootenai Bay where they pooled logs and hauled them onshore with a steam engine on a brick and rock pier to be delivered to the mill. After rough cutting they hauled them up the hill to connect with transportation to the finish mill in Sandpoint. This site is the Ponder Point Housing development in Kootenai.
- History of earlier explorers and logging operations.

Theme 5 Responses: **Pend d’Oreille Bay Trail Stewards**

- History of the trail development.

Theme 6 Responses: **Lake Pend Oreille**

- History of the lake fisheries/fish of Lake Pend Oreille. (2)
- Lake Legends: Pend Orielle Pete and the Pend Oreille Paddler... and maybe there are others.
- Depth of lake with visual of Empire State Building.
- The history of Lake PO: what the lake looked like when there was no dam down river; when Albeni dam was built; how the lake has changed over the years; etc.
- How did Lake Pend Oreille contribute to the birth and growth of the communities we live in.
- Perhaps a timeline, or station which depict the different uses of the lake and its surrounds.

Theme 7 Responses: **Geology: Mountains, Glaciers and Floods**

- History, geology, wildlife, native vegetation and discrete suggestions to pick up after yourself.
- I chose one image but found most subjects of some interest. The ice age flood, the Kalispel Indians are a close second, for example. All your choices are great.

Theme 8 Responses: **Natural Environment: Then & Now**

- I think the natural history of the plants, animals and people in a current and historical perspective gives us a change to educate the public with a view towards protecting our precious resources. Its a great opportunity to advocate for our environment!
- The history of Lake PO: what the lake looked like when there was no dam down river; when Albeni dam was built; how the lake has changed over the years; etc.
- Native plant ID.
- Flowers/berries along the trail.
- History, geology, wildlife, native vegetation and discrete suggestions to pick up after yourself.

Theme 9 Responses: **Boats on Lake Pend Oreille**

- What is the history of the visible old docks/pilings?

Theme 10 Responses: **Panhandle Smelting Company & Black Rock**

- What is the history of the visible old docks/pilings?
- Black rock history/ Slag Pile/Black Rock (2).

Theme 11 Responses: **Wetlands & Wildlife**

- Wildlife /Information on the animals of that immediate area. (3)
- History of the lake fisheries. (2)
- Native plant ID/Native vegetation. (2)
- Flowers and berries along the trail.
- History, geology, wildlife, native vegetation and discrete suggestions to pick up after yourself.
- I am an avid bird watcher and would add that as a subject.

These final two categories of comments are important because several people have expressed similar interests:

- (1) there is a desire to have interpretation that relates to the history of the communities along the trail;
- (2) some people are concerned that interpretive signs along the trail will detract from the natural beauty and serenity of the trail as they experience it today.

Miscellaneous comments not directly related to the original 11 themes, although some of these topics can be at least partially addressed in other themes.

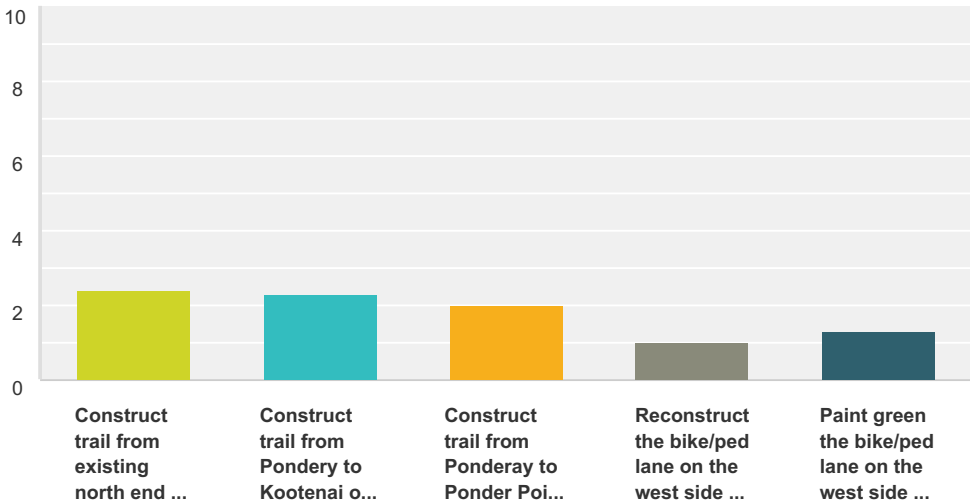
- Anything that connects people to our community
- History of Ponderay, Kootenai, Sandpoint, and how Ponder Point came to exist/early days in our cities (4)
- How did Lake Pend Oreille contribute to the birth & growth of communities we live in
- Perhaps a timeline, or station which depict the different uses of the lake and its surrounds
- History of earlier explorers (2) and logging operations
- History of Sandpoint/history (2)
- What homes were removed to make this trail and their history (example) Dr. ? house, original Indian tribe settlement and artifacts found near by.

Miscellaneous concerns about the trail and interpretation along the trail that are not related to interpretive themes

- I think the beauty of the trail and the serenity of the trail speaks for itself. Less interested in stories than just the natural beauty, appreciating the lake and woods, and exercising among the.
- More important is sparse use of signage so as not to overwhelm that natural rustic state of the trail.
- Interpretive elements are low priority. Access and parking better use of finance and labor.
- No trail at all it just brings crime and property damage to ponder point.

Q1 Please classify the priority of the following new or improved trail CONNECTIONS.

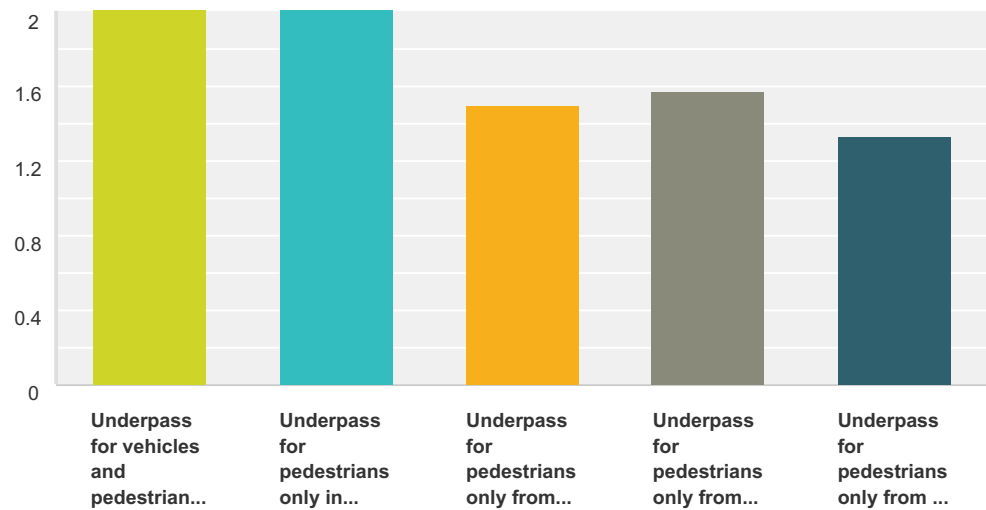
Answered: 8 Skipped: 0



	Low	Medium	High	Total	Weighted Average
Construct trail from existing north end to Ponderay	12.50% 1	37.50% 3	50.00% 4	8	2.38
Construct trail from Ponderay to Kootenai on north side of RR tracks	28.57% 2	14.29% 1	57.14% 4	7	2.29
Construct trail from Ponderay to Ponder Point on south side of RR tracks	33.33% 2	33.33% 2	33.33% 2	6	2.00
Reconstruct the bike/ped lane on the west side of the Seasons from City Beach to the existing trailhead using colored and stamped concrete (flush with the existing pavement).	100.00% 7	0.00% 0	0.00% 0	7	1.00
Paint green the bike/ped lane on the west side of the Seasons from City Beach to the existing trailhead.	71.43% 5	28.57% 2	0.00% 0	7	1.29

Q2 Please classify the priority of the following proposed RAILROAD UNDERPASS projects.

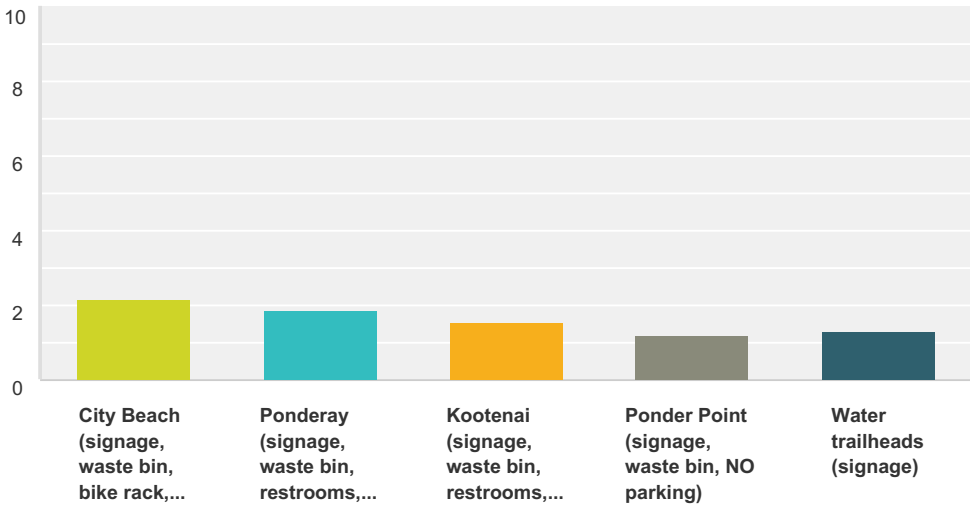
Answered: 8 Skipped: 0



	Low	Medium	High	Total	Weighted Average
Underpass for vehicles and pedestrians in Ponderay across from the Harbison property.	42.86% 3	14.29% 1	42.86% 3	7	2.00
Underpass for pedestrians only in Ponderay near Elm Avenue and 4th Street.	37.50% 3	25.00% 2	37.50% 3	8	2.00
Underpass for pedestrians only from Ponder Point Lane to a new trail connection to Kootenai.	66.67% 4	16.67% 1	16.67% 1	6	1.50
Underpass for pedestrians only from POBT to the Creekside Trail south of the golf course.	42.86% 3	57.14% 4	0.00% 0	7	1.57
Underpass for pedestrians only from the Bridge Street Station to the Depot and Sandpoint Avenue.	83.33% 5	0.00% 0	16.67% 1	6	1.33

Q3 Please classify the priority of the following proposed new TRAILHEAD development projects.

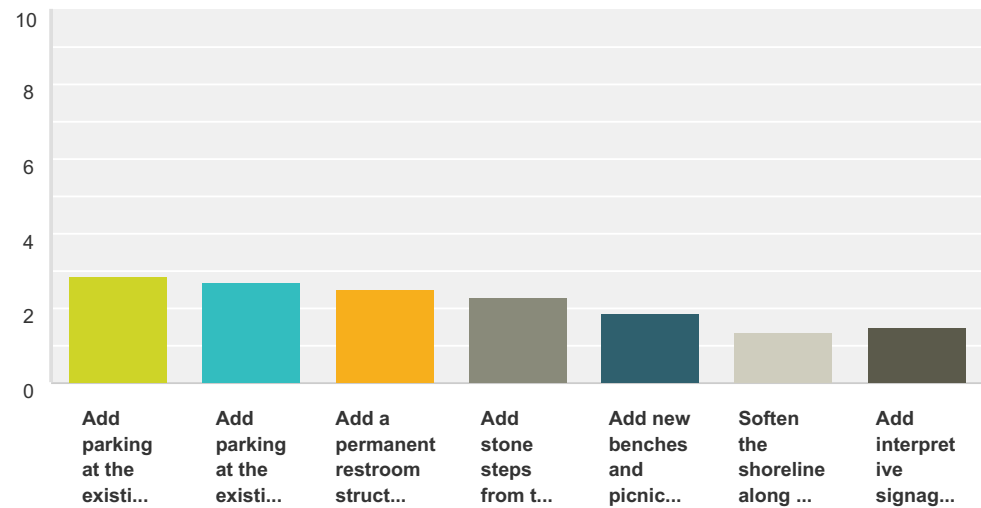
Answered: 8 Skipped: 0



	Low	Medium	High	Total	Weighted Average
City Beach (signage, waste bin, bike rack, seating)	25.00% 2	37.50% 3	37.50% 3	8	2.13
Ponderay (signage, waste bin, restrooms, bike rack, parking)	33.33% 2	50.00% 3	16.67% 1	6	1.83
Kootenai (signage, waste bin, restrooms, bike rack, parking)	57.14% 4	28.57% 2	14.29% 1	7	1.57
Ponder Point (signage, waste bin, NO parking)	80.00% 4	20.00% 1	0.00% 0	5	1.20
Water trailheads (signage)	71.43% 5	28.57% 2	0.00% 0	7	1.29

Q4 Please classify the priority of the following proposed improvements to the EXISTING TRAIL or TRAILHEAD.

Answered: 8 Skipped: 0



	Low	Medium	High	Total	Weighted Average
Add parking at the existing Humbird Mill Park trailhead utilizing the existing property (up to 9 additional spaces - Phase 1).	0.00% 0	14.29% 1	85.71% 6	7	2.86
Add parking at the existing Humbird Mill Park trailhead by moving the northern fence and utilizing the stormwater retention area for the water treatment plant (up to 17 additional spaces - Phase 2).	0.00% 0	28.57% 2	71.43% 5	7	2.71
Add a permanent restroom structure at the existing Humbird Mill Park trailhead.	0.00% 0	50.00% 3	50.00% 3	6	2.50
Add stone steps from the existing path down to the lake.	14.29% 1	42.86% 3	42.86% 3	7	2.29
Add new benches and picnic tables around Humbird Mill Park.	42.86% 3	28.57% 2	28.57% 2	7	1.86

Soften the shoreline along the existing trail with plantings within the riprap.	66.67% 4	33.33% 2	0.00% 0	6	1.33
Add interpretive signage along the existing trail.	50.00% 3	50.00% 3	0.00% 0	6	1.50

Q5 Is there any improvement or new development project not listed that you believe should be included in the Master Plan? What is its priority (low, medium, high)?

Answered: 2 Skipped: 6

#	Responses	Date
1	the survery should have place to say a person doesn't agree with some of the items.	10/15/2015 8:14 AM
2	Add new benches along the trail -- medium priority	9/28/2015 4:53 PM