



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

Received
Electronically
January 12, 2016

Environmental and Cultural Resources Branch

Ms. Rebekah Padgett
401/CZM Federal Permit Manager
Shorelands & Environmental Assistance Program
Washington Department of Ecology
3190 – 160th Avenue SE
Bellevue, Washington 98008

Dear Ms. Padgett:

The U.S. Army Corps of Engineers, Seattle District (Corps) is proposing to conduct interim repairs to maintain the White River barrier structure (barrier structure) over a five year period (2015 – 2020) until the barrier is completely replaced in 2020. The barrier structure is located at Buckley, King and Pierce counties, Washington. This action is required to maintain the structural integrity of the barrier.

This work would typically take place during the approved in-water work window of July 15 - August 31; however, multiple storms and ongoing high flow events this past fall and early-winter have resulted in heavy debris and sediment loads at the barrier structure, headworks, and the Corps' fish trap intake. During the weekend of October 31 – November 1, 2015, a storm and high-river flow event resulted in damage to the barrier structure. Approximately 25 – 30 flashboards in the center of the structure are missing and more boards are likely damaged, which has concentrated river flow through a gap in the center of the structure approximately 175 feet wide. This has resulted in heavy debris and sediment loads deposited on the left and right banks of the river. The left bank below the barrier has received substantial deposition of sediment and large woody material (LWM). As sediment and woody material continue to accumulate, the intake at the Corps fish trap on the left bank, and the intake at the Muckleshoot Indian Tribe (MIT)'s Fish Hatchery on the right bank, could become blocked and inoperable as they were during damage that occurred in December 2014 through February 2015. In addition, the damaged barrier will provide undesirable attraction flow to endangered migrating salmon.

A meeting of the Buckley Fish Barrier Work Group (barrier work group) was held at the Corps' fish trap on November 20, 2015. Attendees included the Corps, Washington Department of Fish & Wildlife (WDFW), Cascade and their contractors, and the Puyallup Indian Tribe, but not all stakeholder agencies and Tribes were able to attend. To minimize the impacts to federally listed migrating adult and juvenile salmonids, and to avoid repairs during the active flood season (November through March), it was determined that in-water work could occur from January 19 through February 14, 2016. Work is anticipated to take 4 – 6 days to complete because the extent of damage is unknown until the flow rates are dropped. The repair is needed as soon as possible, but absolutely no later than to 15 March 2015, to avoid further impacts to federally listed species.

The Corps is requesting Individual 401 Water Quality Certification (WQC) review and Coastal Zone Management (CZM) Consistency concurrence from the Washington Department of Ecology for the White River Barrier Structure apron repair. Although this project is functionally analogous to conditions of a Corps Nationwide Permit 3 Maintenance, the proposed work is unlikely to meet State Section 401 General Condition 1. Therefore, we are requesting an Individual WQC review.

Documentation enclosed to support our request includes a JARPA form and attachments, a CZM consistency determination, a water quality monitoring plan (WQMP), and Cascade's Draft Work Plan. The Corps did not include JARPA Attachment E (Aquatic Use Authorization on Department of Natural Resources (DNR) – managed aquatic lands) as a part of this submittal because there are no DNR lands in the project area.

If you have any questions or need additional information, please contact Ms. Jo Gardiner at joanne.l.gardiner@usace.army.mil or at 206-764-6878 or Fred Goetz or at fred.goetz@usace.army.mil at 206-764-3515.

Sincerely,



Evan R. Lewis
Chief, Environmental and Cultural
Resources Branch

Enclosures

Multi-Year Repair and Maintenance of the White River Barrier Structure Water Quality Certification Package

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3. Draft Water Quality Monitoring Plan
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WASHINGTON STATE

Joint Aquatic Resources Permit Application (JARPA) Form^{1,2}

USE BLACK OR BLUE INK TO ENTER ANSWERS IN THE WHITE SPACES BELOW.



US Army Corps of Engineers®
Seattle District

AGENCY USE ONLY

Date received: _____

Agency reference #: _____

Tax Parcel #(s): _____

Submitted for Information Purposes Only

Part 1—Project Identification

1. Project Name (A name for your project that you create. Examples: Smith's Dock or Seabrook Lane Development) [help]
Multi-Year Repair and Maintenance of the White River Barrier Structure

Part 2—Applicant

The person and/or organization responsible for the project. [\[help\]](#)

2a. Name (Last, First, Middle)			
2b. Organization (If applicable)			
United States Army Corps of Engineers			
2c. Mailing Address (Street or PO Box)			
P.O. Box 3755			
2d. City, State, Zip			
Seattle, WA 98124-3755			
2e. Phone (1)	2f. Phone (2)	2g. Fax	2h. E-mail
(206) 764-6878	()	()	

¹Additional forms may be required for the following permits:

- If your project may qualify for Department of the Army authorization through a Regional General Permit (RGP), contact the U.S. Army Corps of Engineers for application information (206) 764-3495.
- If your project might affect species listed under the Endangered Species Act, you will need to fill out a Specific Project Information Form (SPIF) or prepare a Biological Evaluation. Forms can be found at <http://www.nws.usace.army.mil/Missions/CivilWorks/Regulatory/PermitGuidebook/EndangeredSpecies.aspx>.
- Not all cities and counties accept the JARPA for their local Shoreline permits. If you need a Shoreline permit, contact the appropriate city or county government to make sure they accept the JARPA.

²To access an online JARPA form with [\[help\]](#) screens, go to http://www.epermitting.wa.gov/site/alias_resourcecenter/jarpa_jarpa_form/9984/jarpa_form.aspx.

For other help, contact the Governor's Office for Regulatory Innovation and Assistance at (800) 917-0043 or help@ora.wa.gov.

Part 3—Authorized Agent or Contact

Person authorized to represent the applicant about the project. (Note: Authorized agent(s) must sign 11b of this application.) [\[help\]](#)

3a. Name (Last, First, Middle)			
Gardiner, Jo			
3b. Organization (If applicable)			
U.S. Army Corps of Engineers			
3c. Mailing Address (Street or PO Box)			
P.O. Box 3755			
3d. City, State, Zip			
Seattle, WA 98124-3755			
3e. Phone (1)	3f. Phone (2)	3g. Fax	3h. E-mail
(206) 764-6878	()	()	Joanne.L.Gardiner@usace.army.mil

Part 4—Property Owner(s)

Contact information for people or organizations owning the property(ies) where the project will occur. Consider both **upland and aquatic** ownership because the upland owners may not own the adjacent aquatic land. [\[help\]](#)

- Same as applicant. (Skip to Part 5.)
- Repair or maintenance activities on existing rights-of-way or easements. (Skip to Part 5.)
- There are multiple upland property owners. Complete the section below and fill out [JARPA Attachment A](#) for each additional property owner.
- Your project is on Department of Natural Resources (DNR)-managed aquatic lands. If you don't know, contact the DNR at (360) 902-1100 to determine aquatic land ownership. If yes, complete [JARPA Attachment E](#) to apply for the Aquatic Use Authorization.

4a. Name (Last, First, Middle)			
Gagliardo, Michael			
4b. Organization (If applicable)			
Cascade Water Alliance			
4c. Mailing Address (Street or PO Box)			
520 112 th Avenue NE Suite 400			
4d. City, State, Zip			
Bellevue, WA 98004-5503			
4e. Phone (1)	4f. Phone (2)	4g. Fax	4h. E-mail
425-453-1503	()	()	mgagliardo@cascadewater.org

Part 5–Project Location(s)

Identifying information about the property or properties where the project will occur. [\[help\]](#)

- There are multiple project locations (e.g. linear projects). Complete the section below and use [JARPA Attachment B](#) for each additional project location.

5a. Indicate the type of ownership of the property. (Check all that apply.) [help]			
<input checked="" type="checkbox"/> Private			
<input checked="" type="checkbox"/> Federal			
<input checked="" type="checkbox"/> Publicly owned (state, county, city, special districts like schools, ports, etc.)			
<input type="checkbox"/> Tribal			
<input type="checkbox"/> Department of Natural Resources (DNR) – managed aquatic lands (Complete JARPA Attachment E)			
5b. Street Address (Cannot be a PO Box. If there is no address, provide other location information in 5p.) [help]			
5c. City, State, Zip (If the project is not in a city or town, provide the name of the nearest city or town.) [help]			
Buckley, Washington, 98321			
5d. County [help]			
King and Pierce counties; county line runs down the center of the White River			
5e. Provide the section, township, and range for the project location. [help]			
¼ Section	Section	Township	Range
NE	02	19N	6E
5f. Provide the latitude and longitude of the project location. [help]			
<ul style="list-style-type: none"> Example: 47.03922 N lat. / -122.89142 W long. (Use decimal degrees - NAD 83) 			
47.170045 N Latitude, -122.00444 W Longitude			
5g. List the tax parcel number(s) for the project location. [help]			
<ul style="list-style-type: none"> The local county assessor's office can provide this information. 			
Pierce County: 0619021006; King County: 3520069025, 0219069002, 352006HYDR			
5h. Contact information for all adjoining property owners. (If you need more space, use JARPA Attachment C.) [help]			
Name	Mailing Address	Tax Parcel # (if known)	
White River Fish Hatchery	25305 SE Mud Mountain Rd.	3520069024, 3520069024, 3520069024	
	Enumclaw, WA 98022		
Puget Sound Energy/Electric	P.O. Box 97034	7535000010, 7535000020 0620353001	
	Bellevue, WA 98009-9734		
Washington State Department of Social and Health Services	2120 Ryan Road	0619021000	
	Buckley, WA 98321-9115		
King County Property Services	500 Fourth Ave., Suite 830 Mailstop ADM-ES-0830	219069002, 219069002, 219069003	
	Seattle, WA 98104		

5i. List all wetlands on or adjacent to the project location. [help]
There are no wetlands in the project area.
5j. List all waterbodies (other than wetlands) on or adjacent to the project location. [help]
White River
5k. Is any part of the project area within a 100-year floodplain? [help]
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know
5l. Briefly describe the vegetation and habitat conditions on the property. [help]
The vegetation adjacent to the barrier structure is predominantly mixed riparian, which includes conifer forests and hardwood or mixed stands. Species such as willow, red alder, and cottonwood are also abundant, with the understory primarily blackberry and other species typically found in disturbed upland areas. The White River Fish Hatchery on the right bank also has a maintained grass lawn around the rearing ponds.
5m. Describe how the property is currently used. [help]
The barrier structure is owned by Cascade Water Alliance (Cascade) and acts as a diversion and intake structure on the White River. Water is diverted via flowline from the White River to the Lake Tapps Reservoir for municipal, residential, and recreational use. The barrier structure provides attraction flows to the intake for the U.S. Army Corps of Engineers (Corps) fish trap-and-haul facility on the left bank, and the intake for the Muckleshoot Indian Tribe's (MIT's) White River fish hatchery on the right bank at the barrier structure.
5n. Describe how the adjacent properties are currently used. [help]
On the left bank, there is a fish trap-and-haul facility operated by the Corps and built in 1941. There is an access road to the facility and a flume/flowline that conveys water to the Lake Tapps Reservoir. On the right bank is the White River Fish Hatchery and access road. The hatchery is owned by the MIT, which began operations in 1989. The remaining adjacent properties are undeveloped.
5o. Describe the structures (above and below ground) on the property, including their purpose(s) and current condition. [help]
The barrier structure on the White River consists of a concrete crib with timber and gravel inserts and 4-foot high flashboards installed on top of the crib structure to achieve an 11-foot overall height. Concrete abutments are present at each end to integrate the Corps trap-and-haul facility on the left bank and the MIT hatchery on the right bank. The barrier structure prevents passage of migrating adult salmon and steelhead, including threatened and endangered species. The barrier the head differential necessary to generate attraction flows needed for the fish trap and MIT hatchery. At the fish trap-and-haul facility, fish are attracted through a tunnel trap into a holding pool, loaded into a loading-hopper, and transported by truck to a release site five miles upstream of MMD. At the MIT hatchery, fish are attracted to flows at the intake to the fishway.
The flashboards in the barrier structure are designed to break under high flows to maintain the structural integrity of the barrier and adjoining infrastructure. Multiple storm and ongoing high flow events in fall and early-winter have resulted in heavy debris and sediment loads at the barrier structure, headworks, and the Corps' fish trap intake. During the weekend of October 31 – November 1, 2015, a storm and high-river flow event resulted in damage to the barrier structure. Approximately 25 – 30 flashboards in the center of the structure are missing and more boards are likely damaged, which has concentrated river flow through a gap in the center of the structure approximately 175 feet wide.
5p. Provide driving directions from the closest highway to the project location, and attach a map. [help]

Head northeast on WA-410 E toward Cemetery Road then turn right onto SE Mud Mountain Road. Follow SE Mud Mountain Road to the White River Fish Hatchery. The barrier structure is on the White River past the lower rearing pond. Please see attached map (Figure 1).

Part 6—Project Description

6a. Briefly summarize the overall project. You can provide more detail in 6b. [\[help\]](#)

The Corps is proposing to repair and maintain the White River Barrier Structure (Figure 2), as needed, over a five year period. The proposed repairs remain the same as those approved by the Washington Department of Ecology (Ecology) since 2005, and consist of the following project elements: White River flow control, excavate a temporary diversion channel, construction of temporary earthen access roads, excavate and place exposed bedload and construct earthen cofferdams and plugs, removal of accumulated sediment and debris, barrier repair, and conduct unscheduled repairs.

6b. Describe the purpose of the project and why you want or need to perform it. [\[help\]](#)

The purpose of the project is to repair the barrier structure, as needed, to maintain the structural integrity of the barrier and adjoining infrastructure.

The flashboards in the barrier structure are designed to break during high flow events to maintain the structural integrity of the barrier and adjoining infrastructure. The barrier structure is owned by Cascade Water Alliance (Cascade); however, the Corps' fish trap is reliant upon a functional barrier structure to provide flows to attract migrating adult salmon and steelhead to the trap entrance, which includes threatened and endangered species.

6c. Indicate the project category. (Check all that apply) [\[help\]](#)

- Commercial
 Residential
 Institutional
 Transportation
 Recreational
 Maintenance
 Environmental Enhancement

6d. Indicate the major elements of your project. (Check all that apply) [\[help\]](#)

- | | | | |
|---|--|--|--|
| <input type="checkbox"/> Aquaculture | <input type="checkbox"/> Culvert | <input type="checkbox"/> Float | <input type="checkbox"/> Retaining Wall (upland) |
| <input type="checkbox"/> Bank Stabilization | <input checked="" type="checkbox"/> Dam / Weir | <input type="checkbox"/> Floating Home | <input type="checkbox"/> Road |
| <input type="checkbox"/> Boat House | <input type="checkbox"/> Dike / Levee / Jetty | <input type="checkbox"/> Geotechnical Survey | <input type="checkbox"/> Scientific Measurement Device |
| <input type="checkbox"/> Boat Launch | <input type="checkbox"/> Ditch | <input type="checkbox"/> Land Clearing | <input type="checkbox"/> Stairs |
| <input type="checkbox"/> Boat Lift | <input type="checkbox"/> Dock / Pier | <input type="checkbox"/> Marina / Moorage | <input type="checkbox"/> Stormwater facility |
| <input type="checkbox"/> Bridge | <input type="checkbox"/> Dredging | <input type="checkbox"/> Mining | <input type="checkbox"/> Swimming Pool |
| <input type="checkbox"/> Bulkhead | <input type="checkbox"/> Fence | <input type="checkbox"/> Outfall Structure | <input type="checkbox"/> Utility Line |
| <input type="checkbox"/> Buoy | <input type="checkbox"/> Ferry Terminal | <input type="checkbox"/> Piling/Dolphin | |
| <input type="checkbox"/> Channel Modification | <input type="checkbox"/> Fishway | <input type="checkbox"/> Raft | |

Other: Fish Passage Barrier Structure and adjoining infrastructure

6e. Describe how you plan to construct each project element checked in 6d. Include specific construction methods and equipment to be used. [\[help\]](#)

- Identify where each element will occur in relation to the nearest waterbody.
- Indicate which activities are within the 100-year floodplain.

White River Flow Control

To safely conduct the unscheduled repair work, the maximum flow rate in the White River at the barrier structure must be 350 cubic feet per second (cfs) or less. For the unscheduled repair work, typically in mid-February/mid-March the flow rate would be between 800 and 1,100 cfs; however, flow rates have been recorded between 2,000 and 7,000 cfs in recent years. Therefore, management of White River flow at Mud Mountain Dam (MMD) will be conducted in accordance with the ramping guidelines specified in the MMD Water Control Manual. Managing river flow will last only as long as the period required to complete the in-water work, the time required to ramp down flow to meet the target flow rate, and to ramp up the flow rate to release the water stored behind MMD.

Proposed repairs remain the same as those approved since 2005. The proposed work consists of the following five project elements.

1. Excavate a Temporary Diversion Channel

Cascade would excavate a temporary low-flow diversion channel using a trackhoe or backhoe through the gravel bar, and then open it to the river flow to route water to the right bank. Routing water to the right bank would enable repairs to be conducted along the length of the barrier structure (Figure 3). Although the work would be below the ordinary high water mark (OHWM), the gravel bar would be in-the-dry due to managed flow rate by the Corps at MMD. We anticipate the temporary channel will be no more than 100 feet long, 40 feet wide and 4 feet deep; however, the actual size and alignment will be determined in the field by Cascade and Corps engineers and biologists, to take advantage of the natural topography and to avoid existing vegetation. Tracks will remain out of flowing water to the extent practicable, although some river crossings will be required.

2. Construction of Temporary Earthen Access Roads

Construct a temporary access road across right bank diversion channel, upstream of barrier structure, to provide access during upstream cofferdam construction. All temporary access roads will be removed as part of the project.

3. Excavate and Place Exposed Bedload and Construct Earthen Cofferdams and Plugs

The combination of flow management at MMD and temporary flow diversion will leave the work area along the barrier structure in-the-dry. Existing exposed material will be used to construct two temporary earthen cofferdams, one upstream and one downstream of the barrier structure using a track hoe or back hoe, and a bulldozer or bobcat. Ecology blocks may be placed to support the upstream earthen coffer dam. All temporary cofferdams will be removed at the end of the project. Equipment tracks would remain outside of flowing water to the extent practicable; river crossings would be limited to those required to initially divert water through the temporary channel and to restore flow into the river bed once the work is complete.

Any changes to river flow associated with Cascade's diversion through Cascade's headgates located on the left bank at the barrier structure, will be conducted in accordance with the ramping rates outlined in *Cascade's Lake Tapps Reservoir Water Rights*, and the *White River Management Agreement* among Cascade, the Muckleshoot Indian Tribe (MIT) and Puyallup Tribe of Indians (PTI). Cascade and the Corps will jointly determine if any river flow should be diverted through the flowline, and Cascade would set the headgates, rock chutes and fish screen intake to accommodate any agree upon flow diversion.

4. Remove Accumulated Sediment and Debris

On the left bank, sediment and debris would be removed from the area around the headgates and fish trap intake to facilitate water movement through these pathways. Sediment and debris will also be removed from the area of the steel flashboards so that the frames and flashboards can be reinstalled. All excavated material will be placed above the OHWM. Following sediment removal, as necessary, near the headgates and the Corps fish trap intakes, additional flow (approximately 20 cfs) could be routed through the Corps fish trap.

Below the barrier, work will be conducted to clear material around the release end of rock chute #1 to minimize fish attraction to rock chute #1 flows.

On the right bank, sediment and debris would be removed to allow replacement of steel flashboards and

provide adequate flow to fishway at the MIT Hatchery. Tracks will remain out of flowing water to the extent practicable, although some river crossings will be required.

5. Barrier Repairs

Cascade will repair any failed flashboards across width of barrier. Repairs may include installation of new posts, support tie rods and knee braces; replacement of timber and steel flashboards; install the boards in the barrier structure; evacuate equipment from the channel; and install metal panels from land at each end of the barrier structure. If necessary, a steel wedge may be temporarily placed in the river via an overhead crane, immediately in front of the upstream side of a post, to temporarily isolate the work area.

Unscheduled Repairs

Multiple storm and ongoing high flow events in fall and early-winter have resulted in heavy debris and sediment loads at the barrier structure, headworks, and the Corps' fish trap intake. During the weekend of October 31 – November 1, 2015, a storm and high-river flow event resulted in damage to the barrier structure (Figures 4 – 7). Approximately 25 – 30 flashboards in the center of the structure are missing and more boards are likely damaged, which has concentrated river flow through a gap in the center of the structure approximately 175 feet wide. This has resulted in heavy debris and sediment loads deposited on the left and right banks of the river. The left bank below the barrier has received substantial deposition of sediment and large woody material (LWM). As sediment and woody material continue to accumulate, the intake at the Corps fish trap on the left bank, and the intake at the Muckleshoot Indian Tribe (MIT)'s Fish Hatchery on the right bank, could become blocked and inoperable as they were during damage that occurred in December 2014 through February 2015. In addition, the damaged barrier will provide attraction flow to endangered migrating salmon.

A meeting of the Buckley Fish Barrier Work Group (barrier work group) was held at the Corps' fish trap on November 20, 2015. Attendees included the Corps, Washington Department of Fish & Wildlife (WDFW), Cascade and their contractors, and the Puyallup Indian Tribe, but not all stakeholder agencies and Tribes were able to attend. To minimize the impacts to federally listed migrating adult and juvenile salmonids, and to avoid repairs during the active flood season (November through March), it was determined that in-water work could occur from January 19 through February 14, 2016. Work is anticipated to take 4 – 6 days to complete because the extent of damage is unknown until the flow rates are dropped. The project elements are described above.

Removal of Large Woody Material

The amount of large woody material (LWM) accumulated along the left bank in the vicinity of the Corps fish trap intake is unusual and will require significant effort to remove (Figures 4 – 7). If possible, removal of the LWM will be completed in advance of the managing White River flow for the repair of the damaged barrier structure. The actual method of large woody debris removal would require use of a crane positioned on the left bank. The crane operator could lift the debris and reposition it more toward the center of the river, so that river flow would carry the LWM downstream. If this is not feasible, the crane operator could lift the material out of the river and place it in uplands on the left bank. The LWM would be transported to a location downstream of the barrier structure and placed in the river no later than March 31, 2016.

The method of removing the LWM from the barrier structure and the Corps' fish trap intake will be determined just prior to the beginning of the proposed work. In either removal scenario, the LWM will be kept whole, to the extent practicable. Cutting would only occur on the small end (top) so that the rootwad and large diameter end are part of the longest sections.

If the LWM is not able to be removed prior to the Corps management of the White River flow for the unscheduled barrier repairs, the LWM will be moved downstream using a track hoe (or similar equipment) prior to the barrier repairs.

Proposed Work Schedule for the Unscheduled Repairs:

- The Corps will begin to gradually reduce White River flow at Buckley to 350 cfs three to four days from notification to proceed.
- Site preparation and staging of necessary equipment and materials will begin upon receipt of notification

to proceed; to be completed when river flow is reduced to 350 cfs.

- The Corps will maintain White River flow at Buckley at 350 cfs (or less as required) for the duration of flashboard replacement and other repair activities.
- In-water work is estimated to take 4 to 6 days because the extent of damage will not be known until the river flow is reduced to 350 cfs.
- In-water work would be completed in 7 to 10 days, but no later than February 15, 2016.
- After the work is complete, the Corps will begin to gradually release water stored at MMD.
- Demobilization and clean-up will take approximately 8 to 11 days.

6f. What are the anticipated start and end dates for project construction? (Month/Year) [\[help\]](#)

- If the project will be constructed in phases or stages, use [JARPA Attachment D](#) to list the start and end dates of each phase or stage.

Start date: January 2016 End date: December 2020 See JARPA Attachment D

6g. Fair market value of the project, including materials, labor, machine rentals, etc. [\[help\]](#)

\$100,000-\$1,000,000

6h. Will any portion of the project receive federal funding? [\[help\]](#)

- If **yes**, list each agency providing funds.

Yes: U.S. Army Corps of Engineers No Don't know

Part 7–Wetlands: Impacts and Mitigation

Check here if there are wetlands or wetland buffers on or adjacent to the project area.
(If there are none, skip to Part 8.) [\[help\]](#)

7a. Describe how the project has been designed to avoid and minimize adverse impacts to wetlands. [\[help\]](#)

Not applicable

There will be no impacts to wetlands.

7b. Will the project impact wetlands? [\[help\]](#)

Yes No Don't know

7c. Will the project impact wetland buffers? [\[help\]](#)

Yes No Don't know

7d. Has a wetland delineation report been prepared? [\[help\]](#)

- If **Yes**, submit the report, including data sheets, with the JARPA package.

Yes No

7e. Have the wetlands been rated using the Western Washington or Eastern Washington Wetland Rating System? [\[help\]](#)

- If **Yes**, submit the wetland rating forms and figures with the JARPA package.

Yes No Don't know

7f. Have you prepared a mitigation plan to compensate for any adverse impacts to wetlands? [\[help\]](#)

- If **Yes**, submit the plan with the JARPA package and answer 7g.
- If **No, or Not applicable**, explain below why a mitigation plan should not be required.

Yes No Not applicable

Not Applicable, no wetlands are in the project area.

7g. Summarize what the mitigation plan is meant to accomplish, and describe how a watershed approach was used to design the plan. [\[help\]](#)

Not applicable.

7h. Use the table below to list the type and rating of each wetland impacted, the extent and duration of the impact, and the type and amount of mitigation proposed. Or if you are submitting a mitigation plan with a similar table, you can state (below) where we can find this information in the plan. [\[help\]](#)

Activity (fill, drain, excavate, flood, etc.)	Wetland Name ¹	Wetland type and rating category ²	Impact area (sq. ft. or Acres)	Duration of impact ³	Proposed mitigation type ⁴	Wetland mitigation area (sq. ft. or acres)

¹ If no official name for the wetland exists, create a unique name (such as "Wetland 1"). The name should be consistent with other project documents, such as a wetland delineation report.
² Ecology wetland category based on current Western Washington or Eastern Washington Wetland Rating System. Provide the wetland rating forms with the JARPA package.
³ Indicate the days, months or years the wetland will be measurably impacted by the activity. Enter "permanent" if applicable.
⁴ Creation (C), Re-establishment/Rehabilitation (R), Enhancement (E), Preservation (P), Mitigation Bank/In-lieu fee (B)

Page number(s) for similar information in the mitigation plan, if available: _____

7i. For all filling activities identified in 7h, describe the source and nature of the fill material, the amount in cubic yards that will be used, and how and where it will be placed into the wetland. [\[help\]](#)

Not applicable.

7j. For all excavating activities identified in 7h, describe the excavation method, type and amount of material in cubic yards you will remove, and where the material will be disposed. [\[help\]](#)

Not applicable.

Part 8–Waterbodies (other than wetlands): Impacts and Mitigation

In Part 8, “waterbodies” refers to non-wetland waterbodies. (See Part 7 for information related to wetlands.) [\[help\]](#)

Check here if there are waterbodies on or adjacent to the project area. (If there are none, skip to Part 9.)

8a. Describe how the project is designed to avoid and minimize adverse impacts to the aquatic environment. [\[help\]](#)

Not applicable

To minimize any impacts to fish species, the unscheduled work will occur sometime between January 19 and February 14, 2016. The work is expected to occur over 4 – 6 days, but no more than one week.

The work will be conducted in-the-dry due to flow management by the Corps.

BMPs will be used to avoid and minimize impacts to the environment. The following BMPs will be in place to prevent discharge of pollutants and promote the maintenance of water quality. Oil will be changed in equipment to environmentally friendly substance prior to start of work. Equipment will be inspected for leaks each work day prior to start of work. No fueling, oil changing, or maintenance of equipment will occur within 50 feet of waters of the US. Spill cleanup supplies and equipment will be maintained on site throughout the period of work, and construction personnel will be instructed in their proper use. A Corps barrier monitor will observe removal actions to ensure BMPs are in place.

To avoid generating unnecessary turbidity, during in-water work the bucket will be lifted slowly through the water column and will pause at the water surface to allow water to drain and avoid generating additional turbidity. Impacts to water quality would be minimized by placing the bucket as close to the surface as possible, and opening the bucket slowly when placing the material.

The Corps will monitor turbidity as outlined in the water quality monitoring plan (WQMP).

8b. Will your project impact a waterbody or the area around a waterbody? [\[help\]](#)

Yes No

8c. Have you prepared a mitigation plan to compensate for the project's adverse impacts to non-wetland waterbodies? [\[help\]](#)

- **If Yes**, submit the plan with the JARPA package and answer 8d.
- **If No, or Not applicable**, explain below why a mitigation plan should not be required.

Yes No Not applicable

The proposed work consists of repairs to an existing structure that is critical to upstream migration of fish in the White River, including threatened and endangered species. Any impacts during repair activities will be minimized through the implementation of BMPs, and would be temporary and of short duration. The Multi-Year Repair and Maintenance of the White River Barrier Structure is an interim measure to maintain the structural integrity and barrier function for fish passage until a new fish barrier and trap can be completed. Once the barrier and adjoining infrastructure is replaced, the long-term effects are expected to improve to the White River and associated biota. The current schedule for the new facilities is to have all components complete and operational by December 2020.

8d. Summarize what the mitigation plan is meant to accomplish. Describe how a watershed approach was used to design the plan.

- If you already completed 7g you do not need to restate your answer here. [\[help\]](#)

Not applicable.

8e. Summarize impact(s) to each waterbody in the table below. [\[help\]](#)

Activity (clear, dredge, fill, pile drive, etc.)	Waterbody name ¹	Impact location ²	Duration of impact ³	Amount of material (cubic yards) to be placed in or removed from waterbody	Area (sq. ft. or linear ft.) of waterbody directly affected
Temporary water diversion. Contractor builds an earthen cofferdam upstream of barrier, places ecology blocks as necessary along channel side of cofferdam to prevent material from scouring away, and excavates a right bank flow channel upstream of barrier to direct water to the right side of barrier.	White River	Upstream of barrier structure towards right bank	Approximately 4-10 days	Ecology blocks as necessary	Approximately 0.4 acres

<p>Contractor creates an earthen plug in previously excavated right bank channel, thereby providing access to middle of river from right bank upstream of barrier and builds an earthen cofferdam upstream of barrier. Ecology blocks are placed as necessary along channel side of cofferdam to prevent material from scouring away. Contractor excavates a left bank flow channel upstream of barrier to direct water to the left side of barrier.</p>	<p>White River</p>	<p>Upstream of barrier structure</p>	<p>Approximately 4-10 days</p>	<p>Ecology blocks as necessary</p>	<p>Approximately 0.4 acres</p>
<p>Contractor removes temporary earthen cofferdam and earthen plug placed previously to restore right bank upstream flow channel and re-grades excavated channels to original level.</p>	<p>White River</p>	<p>Right bank upstream of barrier structure</p>	<p>Approximately 1 day</p>	<p>Material already present</p>	<p>Approximately 0.6 acres</p>

¹ If no official name for the waterbody exists, create a unique name (such as "Stream 1") The name should be consistent with other documents provided.

² Indicate whether the impact will occur in or adjacent to the waterbody. If adjacent, provide the distance between the impact and the waterbody and indicate whether the impact will occur within the 100-year flood plain.

³ Indicate the days, months or years the waterbody will be measurably impacted by the work. Enter "permanent" if applicable.

8f. For all activities identified in 8e, describe the source and nature of the fill material, amount (in cubic yards) you will use, and how and where it will be placed into the waterbody. [\[help\]](#)

The temporary fill materials are comprised of accumulated bedload on site. The number of ecology blocks necessary depends on existing site conditions during each repair event.

8g. For all excavating or dredging activities identified in 8e, describe the method for excavating or dredging, type and amount of material you will remove, and where the material will be disposed. [\[help\]](#)

Any required excavation of the upstream gravel bar will not remove any material from the river but will reposition the exposed bedload material to divert water and allow for construction. This will be achieved with the use of a track hoe or backhoe, and a bulldozer or bobcat to manipulate the material. Equipment tracks will remain outside of the flowing water to the extent practical but some river crossing may be required. When construction is complete, the area upstream of the barrier structure will be re-graded by natural river processes. Please see the attached work plan for more information.

Part 9—Additional Information

Any additional information you can provide helps the reviewer(s) understand your project. Complete as much of this section as you can. It is ok if you cannot answer a question.

9a. If you have already worked with any government agencies on this project, list them below. [help]			
Agency Name	Contact Name	Phone	Most Recent Date of Contact
Washington Department of Ecology	Rebekah Padgett	(425) 649-7129	December 14, 2015
National Oceanic and Atmospheric Administration	Steve Fransen	(360) 753-6038	November 20, 2015
Cascade Water Alliance	Michael Gagliardo	(425) 453-1503	November 20, 2015
US Fish and Wildlife Service	Martha Jensen	(360) 753-9000	
Puyallup Tribe	Russ Ladley	(253) 680-5568	November 20, 2015
Muckleshoot Tribe	Holly Cocolli	(253) 876-3360	November 20, 2015
Washington Department of Fish and Wildlife	Doug Wiedemeier	(360) 902-2526	November 20, 2015
9b. Are any of the wetlands or waterbodies identified in Part 7 or Part 8 of this JARPA on the Washington Department of Ecology's 303(d) List? [help] <ul style="list-style-type: none"> • If Yes, list the parameter(s) below. • If you don't know, use Washington Department of Ecology's Water Quality Assessment tools at: http://www.ecy.wa.gov/programs/wq/303d/. 			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

Impairments of water quality have been documented as follows (from the Washington Department of Ecology's interactive mapping tool, <https://fortress.wa.gov/ecy/wqamapviewer>).

As of 2012, immediately downstream of the barrier structure there is a Category 4C (impaired by a nonpollutant) rating for instream flow levels.

Listing ID	Name	Parameter	Medium	Category	Waterbody ID	Lower Address	Upper Address
6193	WHITE RIVER	Instream Flow	Habitat	4C	1222573471997	36.634	37.984

In addition, as of 2012 there is a Category 4a (has a total maximum daily load (TMDL): water bodies that have an approved TMDL in place and are actively being implemented) rating infor fecal coliform levels not far downstream, below, and influenced by, the confluence with Boise Creek.

Listing ID	Name	Parameter	Medium	Category	Waterbody ID	Lower Address	Upper Address
16708	WHITE RIVER	Bacteria	Water	4A	1222573471997	34.937	36.634

The proposed work will not contribute to excursions from standards. The short term nature of the work and minor turbidity releases are unlikely to elevate temperatures above thresholds for core summer salmonid habitat (60.8 F), reduce dissolved oxygen below thresholds (9.5 mg/l) or affect pH. No aspect of the project will contribute to fecal coliform levels.

9c. What U.S. Geological Survey Hydrological Unit Code (HUC) is the project in? [\[help\]](#)

- Go to <http://cfpub.epa.gov/surf/locate/index.cfm> to help identify the HUC.

17110014

9d. What Water Resource Inventory Area Number (WRIA #) is the project in? [\[help\]](#)

- Go to <http://www.ecy.wa.gov/services/gis/maps/wria/wria.htm> to find the WRIA #.

WRIA 10

9e. Will the in-water construction work comply with the State of Washington water quality standards for turbidity? [\[help\]](#)

- Go to <http://www.ecy.wa.gov/programs/wq/swqs/criteria.html> for the standards.

Yes No Not applicable

9f. If the project is within the jurisdiction of the Shoreline Management Act, what is the local shoreline environment designation? [\[help\]](#)

- If you don't know, contact the local planning department.
- For more information, go to: http://www.ecy.wa.gov/programs/sea/sma/laws_rules/173-26/211_designations.html.

Rural Urban Natural Aquatic Conservancy Other _____

9g. What is the Washington Department of Natural Resources Water Type? [\[help\]](#)

- Go to http://www.dnr.wa.gov/BusinessPermits/Topics/ForestPracticesApplications/Pages/fp_watertyping.aspx for the Forest Practices Water Typing System.

Shoreline Fish Non-Fish Perennial Non-Fish Seasonal

9h. Will this project be designed to meet the Washington Department of Ecology's most current stormwater manual? [\[help\]](#)

- If No, provide the name of the manual your project is designed to meet.

Yes No

Name of manual:
9i. Does the project site have known contaminated sediment? [help] <ul style="list-style-type: none"> If Yes, please describe below.
<input type="checkbox"/> Yes <input type="checkbox"/> No
There is no contaminated sediment in the project area.
9j. If you know what the property was used for in the past, describe below. [help]
The property was originally used for water diversion for hydropower (Puget Sound Energy) and to provide upstream passage for adult salmon.
9k. Has a cultural resource (archaeological) survey been performed on the project area? [help] <ul style="list-style-type: none"> If Yes, attach it to your JARPA package.
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
The barrier dam, which is a component of the White River Diversion Dam/Headworks, a contributing historic district in the larger White River Hydroelectric Project, was previously documented pursuant to standards of the Historic American Engineering Record (HAER). In 2008, the Corps prepared a detailed historic context and evaluation of the Headworks resources in order to augment the minimal recordation provided in the original HAER document. From 2007 to 2014, the Corps conducted archaeological survey and investigation of access and staging areas necessary to conduct the Project and has not identified resources eligible for listing in the National Register.
9l. Name each species listed under the federal Endangered Species Act that occurs in the vicinity of the project area or might be affected by the proposed work. [help]
Chinook salmon Steelhead trout Bull trout Canada Lynx Golden Paintbrush Marsh Sandwort
9m. Name each species or habitat on the Washington Department of Fish and Wildlife's Priority Habitats and Species List that might be affected by the proposed work. [help]

Instream habitat would be affected. All anadromous fishes in the White River are affected including coho, sockeye, chum, Chinook, and pink salmon, bull trout, and steelhead trout. Other animals include bald eagle and elk.

(<http://apps.wdfw.wa.gov/phsontheweb/>)

Part 10–SEPA Compliance and Permits

Use the resources and checklist below to identify the permits you are applying for.

- Online Project Questionnaire at <http://apps.ecy.wa.gov/opus/>.
- Governor’s Office for Regulatory Innovation and Assistance at (800) 917-0043 or help@ora.wa.gov.
- For a list of addresses to send your JARPA to, click on [agency addresses for completed JARPA](#).

10a. Compliance with the State Environmental Policy Act (SEPA). (Check all that apply.) [\[help\]](#)

- For more information about SEPA, go to www.ecy.wa.gov/programs/sea/sepa/e-review.html.

A copy of the SEPA determination or letter of exemption is included with this application.

A SEPA determination is pending with _____ (lead agency). The expected decision date is _____.

I am applying for a Fish Habitat Enhancement Exemption. (Check the box below in 10b.) [\[help\]](#)

This project is exempt (choose type of exemption below).

Categorical Exemption. Under what section of the SEPA administrative code (WAC) is it exempt?

Other: _____

SEPA is pre-empted by federal law.

10b. Indicate the permits you are applying for. (Check all that apply.) [\[help\]](#)

LOCAL GOVERNMENT

Local Government Shoreline permits:

Substantial Development Conditional Use Variance

Shoreline Exemption Type (explain): _____

Other City/County permits:

Floodplain Development Permit Critical Areas Ordinance

STATE GOVERNMENT

Washington Department of Fish and Wildlife:

- Hydraulic Project Approval (HPA) Fish Habitat Enhancement Exemption – [Attach Exemption Form](#)

Effective July 10, 2012, you must submit a check for \$150 to Washington Department of Fish and Wildlife, unless your project qualifies for an exemption or alternative payment method below. **Do not send cash.**

Check the appropriate boxes:

- \$150 check enclosed. Check # _____
Attach check made payable to Washington Department of Fish and Wildlife.
- My project is exempt from the application fee. (Check appropriate exemption) _____
- HPA processing is conducted by applicant-funded WDFW staff.
Agreement # _____
 - Mineral prospecting and mining.
 - Project occurs on farm and agricultural land.
(Attach a copy of current land use classification recorded with the county auditor, or other proof of current land use.)
 - Project is a modification of an existing HPA originally applied for, prior to July 10, 2012.
HPA # _____

Washington Department of Natural Resources:

- Aquatic Use Authorization
Complete [JARPA Attachment E](#) and submit a check for \$25 payable to the Washington Department of Natural Resources.
Do not send cash.

Washington Department of Ecology:

- Section 401 Water Quality Certification

FEDERAL GOVERNMENT

United States Department of the Army permits (U.S. Army Corps of Engineers):

- Section 404 (discharges into waters of the U.S.) Section 10 (work in navigable waters)

United States Coast Guard permits:

- Private Aids to Navigation (for non-bridge projects)

Part 11—Authorizing Signatures

Signatures are required before submitting the JARPA package. The JARPA package includes the JARPA form, project plans, photos, etc. [\[help\]](#)

11a. Applicant Signature (required) [\[help\]](#)

I certify that to the best of my knowledge and belief, the information provided in this application is true, complete, and accurate. I also certify that I have the authority to carry out the proposed activities, and I agree to start work only after I have received all necessary permits.

I hereby authorize the agent named in Part 3 of this application to act on my behalf in matters related to this application. _____ (initial)

By initialing here, I state that I have the authority to grant access to the property. I also give my consent to the permitting agencies entering the property where the project is located to inspect the project site or any work related to the project. _____ (initial)

Applicant Printed Name

Applicant Signature

Date

11b. Authorized Agent Signature [\[help\]](#)

I certify that to the best of my knowledge and belief, the information provided in this application is true, complete, and accurate. I also certify that I have the authority to carry out the proposed activities and I agree to start work only after all necessary permits have been issued.

Authorized Agent Printed Name

Authorized Agent Signature

Date

11c. Property Owner Signature (if not applicant) [\[help\]](#)

Not required if project is on existing rights-of-way or easements.

I consent to the permitting agencies entering the property where the project is located to inspect the project site or any work. These inspections shall occur at reasonable times and, if practical, with prior notice to the landowner.

Property Owner Printed Name

Property Owner Signature

Date

18 U.S.C §1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious, or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious, or fraudulent statement or entry, shall be fined not more than \$10,000 or imprisoned not more than 5 years or both.

If you require this document in another format, contact the Governor's Office for Regulatory Innovation and Assistance (ORIA) at (800) 917-0043. People with hearing loss can call 711 for Washington Relay Service. People with a speech disability can call (877) 833-6341. ORIA publication number: ENV-019-09 rev. 08/2013

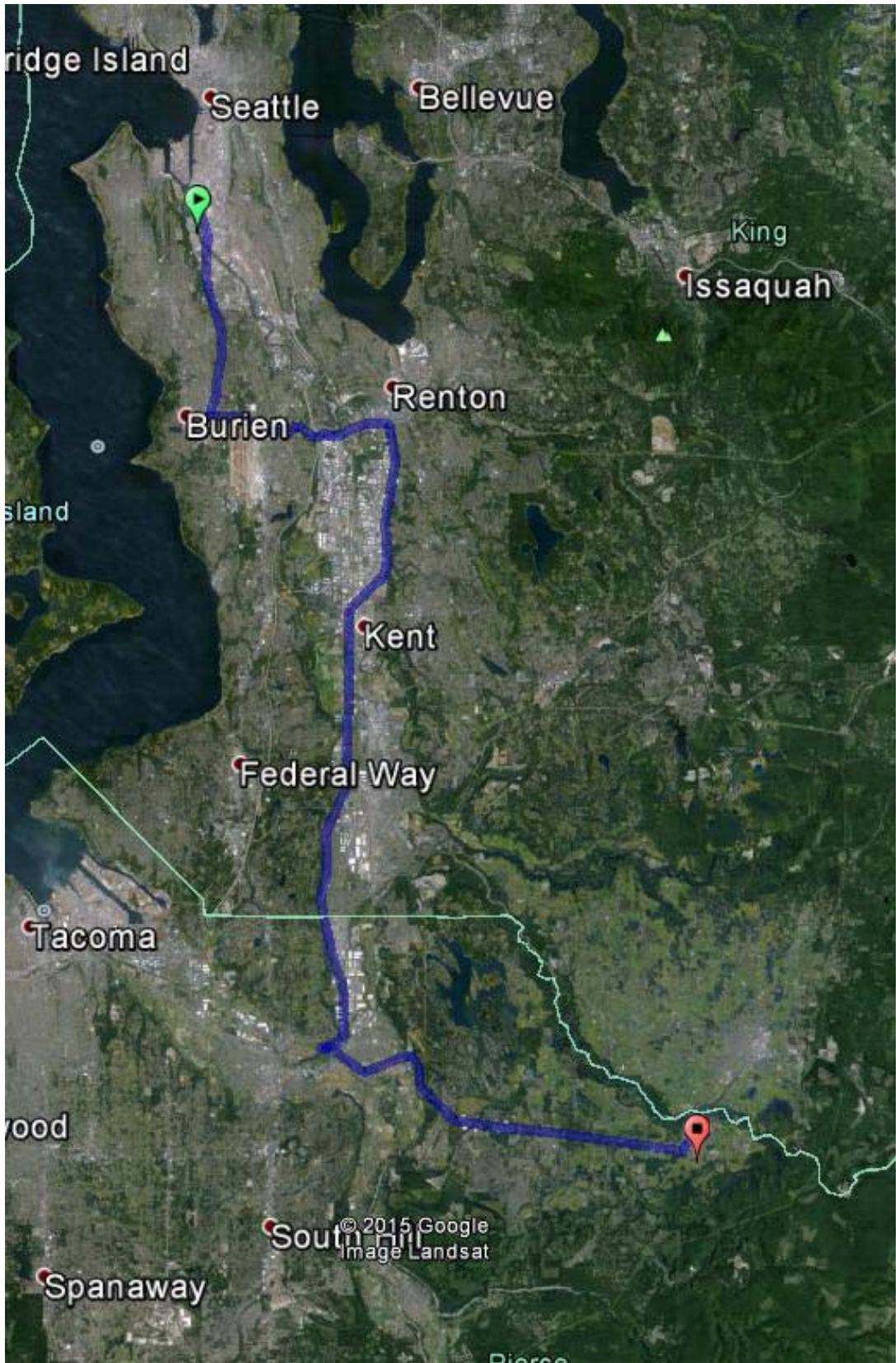


Figure 1. Driving directions to project site in Buckley, Washington.



Figure 2. Photo of Barrier structure and adjacent facilities taken on April 19, 2015, at Buckley, Washington. The county line that divides King and Pierce counties runs down the center of the White River.

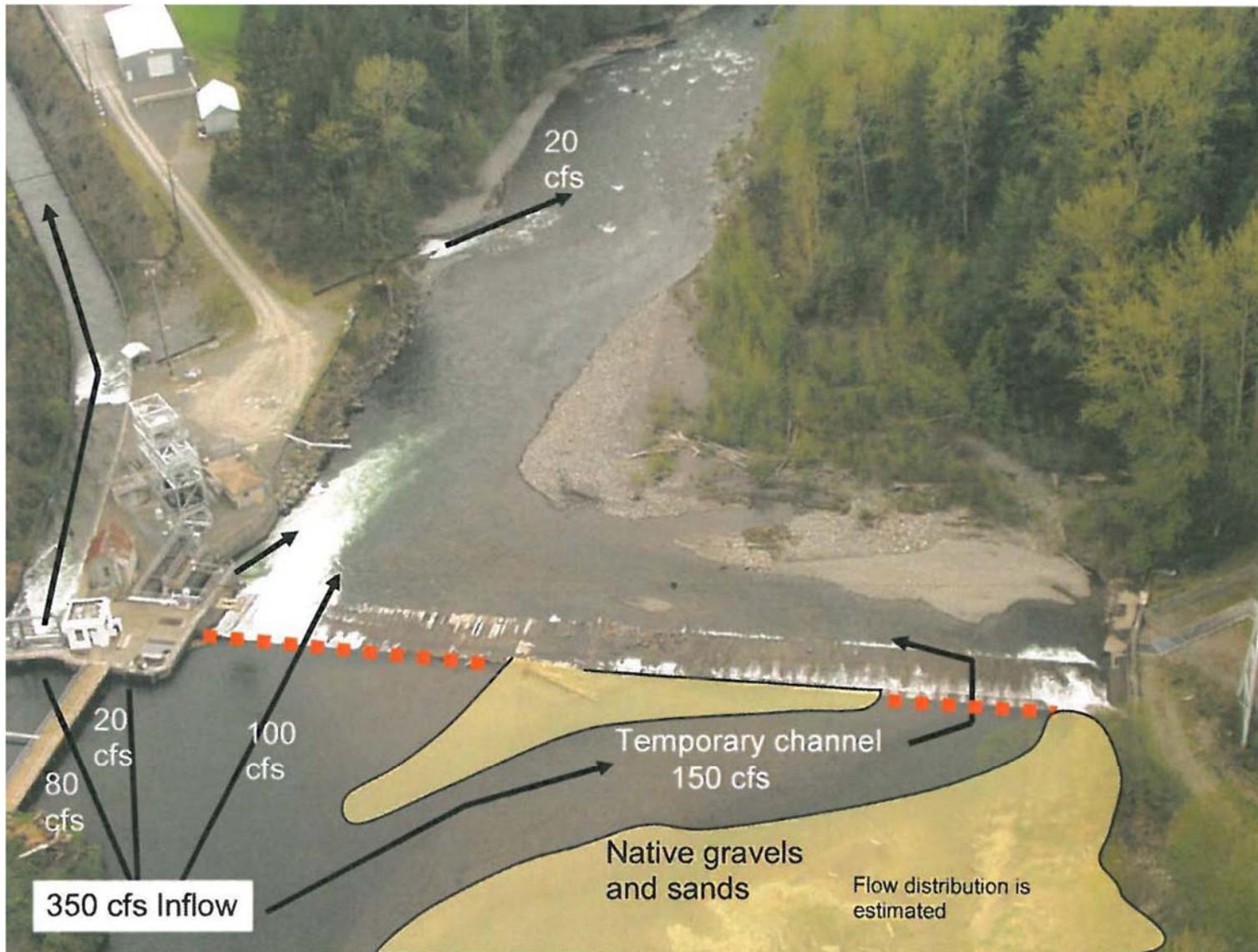


Figure 3. Diagram of work site and flow management.

Barrier Structure Damage Photos

November 20, 2015



Figure 4. View from left bank looking upstream.



Figure 5. View from left bank looking downstream



Figure 6. View from left bank looking across.



Figure 7. View from left bank looking upstream.



MEMORANDUM

DATE: December 2, 2015
TO: Dan Johnson, Operations Manager, Mud Mountain Dam
Roger D. Williams, Chief, Contracting Division, Seattle District
Monique Paano, Grants Specialist, Contracting Division, Seattle District
FROM: Michael A. Gagliardo, Director of Planning
Joe Mickleson, Operations Manager
SUBJECT: Work Plan for Not Regularly Scheduled Activities – Barrier Structure Repair and Large Woody Debris Removal

The Seattle District US Army Corps of Engineers (USACE) has requested that Cascade Water Alliance (Cascade) complete a work plan for needed Not Regularly Scheduled Activities as defined in the Scope of Work and Budget for Ordinary Operation and Maintenance of the White River Diversion Dam, Diversion Structure and Headworks, CY 2014-2015 (January 30, 2014). Cascade has based this work plan on the Non-dewatering Alternative and the work plans previously implemented by Cascade. In developing this plan, Cascade has consulted with the USACE and Veolia Water NA (Veolia, Cascade's contract operator for the White River/Lake Tapps Project, the Project) and has gathered recommendations from the following:

Commented [MG1]: Need proper reference to the 2015 Cooperative Agreement

1. The Puyallup Tribe of Indians (PTI)
2. The Muckleshoot Indian Tribe (MIT)
3. National Marine Fisheries Service (NMFS)
4. US Fish & Wildlife Service (USFWS)
5. Washington State Department of Fish & Wildlife (WDFW)
6. Washington Department of Ecology (DOE)

Background and Current Situation

Multiple storm and ongoing high White River flow events in the fall and winter resulted in heavy debris and sediment load around the Barrier Structure, Headworks and USACE's fish trap intake. Approximately 25 - 30 timber flashboard sections appear to have been damaged. The damaged timber flashboards are near the center of the structure, resulting in river flow concentrated in the center (approximately 175 foot width) of the channel. In addition, the Left Bank has experienced significant deposition of sediment and large woody debris (Figure 1.1, 1.2, 1.3 and 1.4). The result is that water

Memorandum to Dan Johnson, David Williams and John Perez
Re. Work Plan for Not Regularly Scheduled Activities
December 2, 2015
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flow for normal and reliable operation of the USACE's Buckley fish trap could be adversely impacted. The missing timber flashboards also provide attraction flow for upstream migrating fish.

All three steel flashboards and the steel flashboard frame have been removed from the Left Bank. One steel flashboard section has been removed on the Right Bank.

Such conditions presents an imminent risk that fish (including Puget Sound Chinook salmon, Puget Sound steelhead and Coastal/Puget Sound bull trout, all listed as threatened under the Federal Endangered Species Act) will not be attracted into the trap or will pass over the Barrier Structure and thereafter encounter Mud Mountain Dam (MMD) as an impassable barrier to further upstream migration. Fish must be trapped in the USACE's fish trap facility and transported upstream of Mud Mountain Dam with minimal delay and stress.

Based upon coordination with the stakeholder agencies and Tribes identified above, it was determined by the USACE that the time to conduct repairs of the Barrier Structure would be between January 19 and February 15, 2016. It is preferable to conduct the work as early as possible. To implement this recommendation, Cascade worked with interested parties to develop a plan for repairing the structure.

In order to safely affect in-water repairs and maintenance, flow in the White River should be at a maximum 350 cfs (or possibly less) at the Barrier Structure location. Cascade cannot make a final determination of maximum flow to ensure safety of workers until work is initiated. In absence of flow regulation at MMD, it is anticipated that White River flows at the Barrier Structure will be in the range of 900 - 1600 cfs in mid-January/mid-February. However, depending on precipitation events and other weather conditions, flows as high as 3,000 - 6,000 have been recorded during this time period in recent years (due to upstream White River flow management at MMD). The USACE has indicated that MMD can be available and could (depending on weather and MMD flood management actions) maintain appropriate water discharges to ensure a safe flow at the Barrier Structure based on coordination with the NMFS, USFWS, MIT, PTI, WDFW, and WDOE. The USACE will work with the stakeholder agencies (NMFS, USFWS, WDFW, and WDOE), the PTI, the MIT and Cascade to ensure that the repairs result in improved fish passage conditions while maintaining safe flow conditions for repair crews.

Cascade submits the following for USACE review and for dissemination to the above-referenced agencies and Tribes. Cascade, pursuant to § 2.3 of the 2010 Cooperative Agreement between the USACE and Cascade, will implement this plan as indicated by the USACE. Such indication by the USACE confirms that Cascade is performing the work pursuant to the Cooperative Agreement with the purpose of addressing the USACE fish passage obligations. All steps taken by Cascade to implement the plan will be undertaken by Cascade pursuant to the USACE's indications. The USACE is responsible for environmental/regulatory coordination and obtaining all applicable environmental authorizations necessary to carry out the repair work. The USACE will provide Cascade with written documentation that all applicable for environmental/regulatory coordination and authorizations necessary to carry out the repair work have been obtained and that written acceptance/acquiescence of the Work Plan has been received from with the NMFS, USFWS, MIT, PTI, WDFW, and WDOE.

Commented [MG2]: Need proper reference to the 2015 Cooperative Agreement

The USACE, with assistance from Cascade, is performing coordination with stakeholder agencies and Tribes. Cascade, as indicated by the USACE and at the expense of the USACE, will direct and manage crews from Veolia to actually perform the necessary work, pursuant to the White River-Lake

Tapps Reservoir Project Operating and Maintenance Agreement dated December 2011, between Veolia and Cascade.

Commented [MG3]: Update with reference to 2016 Veolia contract

Scope of Work to be Completed

The USACE will be expected to manage White River flows to allow repair work to be completed. Initially, White River flows will need to be managed to approximately 500 cfs and then to no more than 350 cfs (or as otherwise agreed based on actual conditions) as measured at the downstream gage closest to the work site. Managing White River flow will last only as long as the period required to accomplish in-water work (anticipated being 4 to 6 days), in addition to the time required to ramp-down flows to meet desired target flows, as well as the time required to ramp-up flows following repairs to release stored water from MMD.

Any management of White River flows by the USACE will be accomplished in accordance with the ramping guidelines listed in the MMD Water Control Manual, which apply at river discharges of less than 2,000 cfs. Any changes to White River flows associated with Cascade's diversion through the Headgates (Left Bank) at the Barrier Structure will be accomplished in accordance with the Ramping Rates contained in Cascade's Lake Tapps Reservoir Water Rights [Lake Tapps Water Rights] and the White River Management Agreement [WRMA] among Cascade and the MIT and PTI. Cascade and the USACE will jointly determine if any stream flow can or should be diverted through the Flowline, and Cascade will set the Headgates, rock chutes, and fish screen intake to accommodate any agreed to flow diversion.

At the site of the Barrier Structure, as has been the case since 2005, Cascade will, to the extent necessary, excavate a temporary channel through the gravel bar (which will be dry under USACE managed streamflow rates) to route sufficient water (up to about 150 – 200 cfs) to the Right Bank of the River, thus creating an opportunity to perform needed repairs along the entire Barrier Structure (Figure 1). Following sediment removal activities (as necessary) near the Headgates and USACE fish trap intakes (Left Bank), additional flow (about 20 cfs) could be routed through the USACE fish trap.

The proposed temporary ditch to the middle of the river is anticipated to be about 100 feet in length, 40 feet wide and 4 feet deep. The size and alignment of the temporary channel on the Right Bank of the river shown in Figure 1 is approximate. The actual alignment and size of the temporary channel will be marked in the field by Cascade engineers and biologists to take advantage of the natural topography and to avoid vegetation.

The scope of the work includes removal of debris and excavation and movement of sand, gravel and cobble material within the Ordinary High Water Mark (OHWM) of the White River. Equipment will include a track hoe or backhoe and bulldozer or bobcat to manipulate the material. This work would require the equipment to be within the OHWM. Equipment tracks would remain outside of the flowing water to the extent practical, but some river crossing may be required. Equipment would be in good working order and oil spill response kits would be on hand. Environmentally friendly oil will be used in all equipment.

On the Left Bank of the River; sediment and debris would be removed from the area around the Headgates and fish trap intake to facilitate water movement through these pathways. Sediment and debris will also be removed from the area of the steel flashboards so that the frames and flashboards can be reinstalled. Downstream work will be conducted to clear material around the release end of Rock Chute #1 to minimize the fish attraction potential of Rock Chute #1 flows.

The amount of large woody debris accumulated along the Left Bank (in the vicinity of the USACE fish trap intake) is unusual and will require significant effort to remove. If possible, removal of this debris will be completed in advance of the USCE managing White River flow for the Barrier Structure timber flashboard repair activity. The actual method of large woody debris removal will require use of a crane positioned on the Left Bank. The crane operator could lift the debris and reposition it more toward the center of the River so that River flow will carry the material downstream. If this is not possible, the crane operator could lift the material out of the River and place it on the Left Bank. If this is the scenario, the material would be transported to a location downstream of the Barrier Structure and placed in the River not later than March 31, 2016.

The actual method of removing the large woody debris from the Barrier Structure and USACE fish trap intake will be determined just prior to the beginning of the work. In any event, the large woody debris will be kept whole, to the extent practicable. Cutting will on the small (top) end so that the rootwad and large diameter end are part of the longest sections.

If the large woody debris (or some portion thereof) is not removed prior to the USCE managing White River flow for the Barrier Structure timber flashboard repair activity, the material will be moved (using a track hoe or similar equipment) downstream of the Barrier Structure prior to the timber flashboards being replaced.

On the Right Bank of the River; sediment and debris would be removed to allow the replacement of steel flashboards and to provide adequate attraction flow to the MIT stayway.

Repair work may include: installation of new timber flashboards (including mounting plates, support tie-rods and knee braces); replacement of steel posts; and replacement of timber and steel flashboards and frames. If necessary, a steel wedge may be temporarily placed in the River, from an overhead crane, immediately in front of the upstream side of a steel post, to temporarily divert water from the work area.

Excavated materials would be regraded to original riverbed contours after the repair work is completed, similar to prior years.

Safety

Top priority will be given at all times to the safety of the field crew. At the discretion of the field manager (to be designated by Cascade), the work may be modified or postponed if work site conditions are unsafe; provided however, Cascade shall have the sole discretion to determine whether work site conditions are safe for Cascade field crews.

Monitoring and Spill Prevention

Based upon the recommendation of NOAA Fisheries, a team of field monitors (including a USACE biologist) will be deployed and coordinated with 2-way radios during field operations. The monitoring team will include agency and Tribal representatives (as available) and the team will be deployed prior to

excavation of the channel. Additional monitors will be posted at the fish trap and at the Barrier Structure.

Monitoring by biologists should include notation of physical parameters such as flows, turbidity, and biological indicators, particularly presence of fish, including stranding, injury, mortality and stress. Conditions should be documented and photos taken. Fish found stranded should be captured using dipnets and/or a pond seine, and placed back in the river, using a cooler if needed.

The following Best Management Practices will be in place to prevent discharge of pollutants and promote the maintenance of water quality.

- Oil will be changed in equipment to environmentally friendly substance prior to start of work
- Equipment will be inspected for leaks each work day prior to start of work.
- No fueling, oil changing, repairs or maintenance of equipment will occur within 50 feet of waters of the US.
- Spill cleanup supplies and equipment will be maintained on site throughout the period of work, and construction personnel will be instructed in their proper use.

The USACE will visually monitor turbidity downstream of the Barrier Structure, in the mixing zone as required by State and Federal agencies. If a visible plume is observed, turbidity readings will be made. If excursions outside of applicable criteria are observed, the USACE will notify Cascade and work will stop until the cause is determined, and if necessary, corrected. Cascade will resume work when notified by the Corps.

Work Sequence

Cascade has incorporated the recommendations from agency and Tribal biologists with respect to work at the site of the Barrier Structure, and Cascade proposes to undertake this repair work, as instructed by the USACE, in the following approximate sequence:

Large Woody Debris Removal

1. Reserve heavy equipment and have oil changed to environmentally friendly, if necessary.
2. Coordinate delivery of heavy equipment to site.
3. Removal of large woody debris by positioning toward center of River so it will be carried downstream, or alternatively, by removing material from the River and placing it on the Left Bank.
4. Transport material to a location downstream of the Barrier Structure and place in the River (not later than March 31, 2016).
5. Demolition and cleanup.

Timber Flashboard Repairs

Site Preparation

This work will be completed prior to excavation:

1. Reserve heavy equipment and have oil changed to environmentally friendly.
2. Coordinate delivery of heavy equipment to site.
3. Complete dry site prep work, including debris removal and staging of heavy equipment.

During time of excavation:

1. Deploy monitoring team between Rock Chute #1 and Rock Chute #2, if the rock chutes are used to control flow through the Barrier Structure.
2. Field team to mark temporary channel.
3. Mobilize heavy equipment to work location.
4. Excavate the temporary channel and remove debris as directed by field team.
5. Excavate sediment and debris in the area of the Headgate, fish trap intake, MIT Fishway and Rock Chute #1, as directed by field team.
6. Removal of large woody debris, if not accomplished earlier
7. Deploy materials for repair of Barrier Structure.

After excavation activities are completed

1. Perform needed flashboard repairs.
2. Position steel flashboard sections and frames.
3. Demobilization and cleanup.

Field Team

Cascade, as indicated by the USACE and at the expense of the USACE, will direct and manage crews from Veolia (and any contractors selected by Veolia) to actually perform the necessary work, pursuant to the White River-Lake Tapps Reservoir Project Operating and Maintenance Agreement dated December 2011, between Veolia and Cascade.

Commented [MG4]: Update with reference to 2016 Veolia contract

Schedule

The repair work will begin, upon written notification from the USACE to Cascade that all required environmental and regulatory coordination has been completed and that all environmental and budgetary authorizations have been obtained. The Contracting Officer must provide to Cascade notification to proceed with the repair work in accordance with the 2010 Cooperative Agreement. The estimated budget for the work is \$xxx,xxx (see attached). Costs incurred by Cascade may not exceed the amount authorized by the Contracting Officer.

Commented [MG5]: Need proper reference to the 2015 Cooperative Agreement

Commented [MG6]: Budget under development

It is the intention of Cascade to begin the large woody debris removal work as soon as written notification to proceed, as described above, is received from the USACE. Once notification is received, the removal of large woody debris would be carried out in accordance with the following estimated schedule:

- Site preparation and staging of necessary equipment – three to four days from notification to proceed
- Repositioning or removal of Large woody debris – two to three days from necessary equipment available on site
- Transport of any material placed on the Left Bank to a location downstream of the Barrier Structure and placement in the River (not later than March 31, 2016)
- Demobilization and clean-up – two to three days from completion of work

It is the intention of Cascade to begin the timber flashboard repair work no sooner than January 19, 2016 and to have the repair work completed no later than February 15, 2016. The decision to begin the work will be based on the extended weather forecast, White River flows and MMD operations and will be made by the USACE, in consultation with Cascade, the Tribes and the other stakeholder agencies. The USACE will provide Cascade with written notification to proceed, as described above. In the event that removal of large woody debris has not been accomplished prior to Cascade receiving notification to proceed with the timber flashboard repair work, this work will be accomplished during the time allocated for timber flashboard repairs. Once notification is received, the repair work would be carried out in accordance with the following estimated schedule:

- USACE begin to gradually reduce White River flow at Buckley to 350 cfs (or as otherwise agreed) – Three to four days from notification to proceed.
- Site preparation and staging of necessary equipment and materials – upon receipt of notification to proceed: to be completed when River flow is reduced to 350 cfs
- USACE to maintain White River flow at Buckley at 350 cfs (or less as required) for the duration of flashboard replacement and other repair activities
- In-water work – Estimated 4 to 6 days from when River flow is reduced to 350 cfs
- Complete in-water work – 7 to 10 days from notification to proceed; but no later than February 15, 2016
- USACE begin to gradually release water stored at MMD – 7 to 10 days from notification to proceed; but no later than February 15, 2016
- Demobilization and clean-up – 8 to 11 days from notification to proceed; but no later than February 16, 2016

In the event that written notification from the USACE is not received with sufficient time to complete the work prior to February 15, 2016, the Tribes and stakeholder agencies will be notified and alternate plans developed.

COASTAL ZONE MANAGEMENT ACT CONSISTENCY DETERMINATION

Coastal Zone Management Act Consistency Determination Multi-Year Repair and Maintenance of the White River Barrier Structure, 2015-2020 07 January 2016

The Coastal Zone Management Act of 1972, as amended, requires federal agencies to carry out their activities in a manner that is consistent to the maximum extent practicable with the enforceable policies of the approved state Coastal Zone Management (CZM) Programs. The Shoreline Management Act (SMA) of 1972 (RCW 90.58) is the core of authority of Washington's CZM Program. Primary responsibility for the implementation of the SMA is assigned to local governments.

The emergency and maintenance actions discussed herein are activities undertaken by a Federal agency; the following constitutes a Federal consistency determination with the enforceable provisions of the Washington Coastal Zone Management Program.

This document concerns the proposed action of the *Multi-Year Repair and Maintenance of the White River Barrier Structure near Buckley, Washington in waters of King and Pierce counties.*

1. INTRODUCTION

The proposed Federal action applicable to this consistency determination is the Multi-Year Repair and Maintenance actions at the *White River Barrier Structure* in the White River, with a duration of five years. The barrier structure is located in an area where the river itself is on the county line between both King and Pierce Counties. The barrier structure spans the width of the river; therefore, this determination of consistency with the Washington CZMA is based on review of applicable sections of the State of Washington Shoreline Management Program and policies and standards of the Shoreline Master Plans for King and Pierce counties, Washington.

The U.S. Army Corps of Engineers, Seattle District (USACE), proposes to conduct Multi-Year Repair and Maintenance of the White River Barrier Structure, in the White River, King County, Washington, as needed for a period of five years. The purpose of the project is to repair the barrier structure, as needed, to maintain the structural integrity of the barrier and adjoining infrastructure. The flashboards in the barrier structure are designed to break during high flow events to maintain the structural integrity of the barrier and adjoining infrastructure. The barrier structure is owned by Cascade Water Alliance (Cascade); however, the Corps' fish trap is reliant upon a functional barrier structure to provide flows to attract migrating adult salmon and steelhead to the trap entrance, which includes threatened and endangered species.

The barrier structure is a concrete and rock-filled timber crib structure. Steel vertical members and wooden flashboards are attached to the top of the crib creating a pool behind the structure (providing for diversion into Lake Tapps and to the USACE fish trap intake) and providing a "jump barrier" for upstream migrating fish. The downstream section of the crib structure is capped with an apron

White River Barrier Structure and Apron Multi-Year Emergency and Maintenance Repair

comprised of concrete and steel plates. The apron is made up of an angled and horizontal section extending 350 ft from the right bank to the left bank. The concrete and steel apron replaced the previous timber and rebar apron in 2015, as specified by the NMFS 2014 Biological Opinion.

The barrier flashboards are designed to break during periods of high flows to protect the structural integrity of the barrier. Missing and damaged flashboards can provide attraction flows which keep fish from entering the trap-and-haul facility. In addition, replacing the flashboards following damage or loss requires in-water work with flows reduced to very low levels, leading to fish stranding and possible mortality. Several species of fish are present in the White River, including Endangered Species Act (ESA) listed fall and spring Chinook salmon, steelhead, and bull trout. The USACE is required under Section 7 of the ESA to provide safe, timely and effective fish passage. Instead of passing upstream, migrating fish enter the USACE Fish Trap, which is located adjacent to the barrier structure on the left bank. Trapped fish are hauled by truck and released above MMD. This is the only method for fish to access spawning habitat above the dam.

The Corps is proposing to repair and maintain the White River Barrier Structure, as needed, over a five year period. The proposed repairs remain the same as those approved by the Washington Department of Ecology (Ecology) since 2005, and consist of the following project elements: White River flow control, excavate a temporary diversion channel, construction of temporary earthen access roads, excavate and place exposed bedload and construct earthen cofferdams and plugs, removal of accumulated sediment and debris, barrier repair, and conduct unscheduled repairs.

Proposed repairs remain the same as those approved since 2005. See the Joint Aquatic Resources Permit Application (JARPA) and JARPA Figure 3 attachment (Cascade Work Plan) for detailed work description.

The USACE has determined that the proposed actions are consistent with applicable coastal zone and shoreline management regulations as shown below. Applicable goals and policies of the State of Washington, King County, and Pierce County SMPs are presented below with the Corps consistency evaluation indicated in *bold italics*.

2. STATE OF WASHINGTON SHORELINE MANAGEMENT PROGRAM

The SMA is the core of authority of Washington's CZM Program. Primary responsibility for the implementation of the SMA is assigned to local government. King County, in which the proposed maintenance project is located, fulfilled this requirement with the Shoreline Management Program for King County, which was revised on January 28, 2013.

Washington Shoreline Management Act

Section 173-27-040 (2) (b) of the Washington Administrative Code exempts normal maintenance and repair (including replacement) of existing structures from substantial development permit requirements:

Pursuant to WAC 173-24-40(2) (b), the USACE considers that Multi-Year Repair and Maintenance of the White River Barrier Structure is consistent to the maximum extent practicable with the State of Washington Shoreline Management Program.

KING COUNTY SHORELINE MANAGEMENT PROGRAM

Chapter 5 (Shorelines) of the King County SMP identified the MMD Reservoir and the White River from river mile 15.5 to river mile 46 (excluding the Muckleshoot Indian Tribe Reservation between RM 8.9 to RM 15.5) as a water body that qualifies as a “Shoreline of Statewide Significance” a category in which specific priority uses are preferred (pg 5-13 in King Co. SMP dated December 2012). The location of the repair is at RM 24.3 at the barrier structure and associated fish trap, which is used to collect upstream migrating salmon and trout and transport those fish above MMD.

Elements of the King County SMP

S-203: The King County SMP describes shoreline preferred uses which include areas reserved for water-related uses that are compatible for ecological protection and restoration.

The Multi-Year Repair and Maintenance of the White River Barrier Structure action provides the ecological function of improving upstream fish passage to the upper White River for salmon and trout. Thus, USACE considers this to be consistent to the maximum extent possible with the State of Washington Shoreline Management Program.

S-515: Includes conservancy shoreline environment designation criteria where elements of the shoreline include an area where important ecological processes have not been substantially degraded or where the shoreline is in public ownership. Areas included in the Conservancy include shorelines in public ownership and managed for public access or recreation.

The proposed action includes areas in public ownership and provides ecological process of sustaining upstream migration of salmon and trout. Thus, USACE considers this to be consistent to the maximum extent possible with the State of Washington Shoreline Management Program.

S-516: Includes shoreline environment management policies that sustain the shoreline area’s physical and biological resources. The Conservancy Shoreline allows uses for water-dependent if significant adverse impacts to the shoreline are mitigated.

The proposed action sustains biological resources by improving upstream fish passage. Thus, USACE considers this to be consistent to the maximum extent possible with the State of Washington Shoreline Management Program.

S-740: “In-water structures shall provide for protection and preservation of shoreline ecological processes and functions, and cultural resources, including, but not limited to, fish and fish passage,

White River Barrier Structure and Apron Multi-Year Emergency and Maintenance Repair

wildlife and water resources, shoreline critical areas, hydro-geological processes, and natural scenic vistas.”

The proposed action improves upstream fish passage. Thus, USACE considers this to be consistent to the maximum extent possible with the State of Washington Shoreline Management Program.

SW-74: “The location and planning of in-water structures shall give due consideration to the full range of public interests and shoreline ecological processes and functions, with special emphasis on protecting and restoring habitat for threatened and endangered species.”

The proposed action improves survival of all fish, including ESA listed species, requiring upstream fish passage. Thus, USACE considers this to be consistent to the maximum extent possible with the State of Washington Shoreline Management Program.

The Multi-Year Repair and Maintenance of the White River Barrier Structure is a normal maintenance or repair and is considered by the USACE to be an allowable activity consistent to the maximum extent practicable with the local shoreline plan. The repair of the barrier will improve ecological function and restore biological resources by reducing the harm to upstream migrating salmon and trout.

PIERCE COUNTY SHORELINE MANAGEMENT PROGRAM

Elements of the Pierce County SMP

Chapter 20.14: The Conservancy Environment is designed to protect, conserve and manage existing natural resources and valuable historic and cultural areas in order to ensure a continuous flow of recreational benefits to the public and to achieve sustained resource utilization. The Pierce County SMP describes shoreline preferred uses that include areas for outdoor recreation activities.

The proposed action improves upstream fish passage to the upper White River for salmon and trout. Therefore, USACE considers the proposed work to be consistent to the maximum extent possible with the State of Washington Shoreline Management Program as it would not have any adverse effects to outdoor recreation activities.

Chapter 20.66.030: Shoreline Protection Actions includes the Conservancy Environment, which in turn includes dams and holding basins. These are permitted subject to the general regulatory standards and Conditional Use requirements.

The proposed action protects and improves the functional stability of the barrier structure. Therefore, USACE considers this to be consistent to the maximum extent possible with the State of Washington Shoreline Management Program.

Chapter 20.24: Aquaculture is described as the commercial culture and farming of food fish, shellfish, and other aquatic plants and animals in lakes, streams, inlets, estuaries, and other natural or artificial water

bodies. Aquacultural Practices include the hatching, cultivating, planting, feeding, raising, harvesting, and processing of aquatic plants and animals, and the maintenance and construction of necessary equipment, buildings, and growing areas. Methods of aquaculture include but are not limited to fish pens, shellfish rafts, racks and longlines, seaweed floats and the culture of clams and oysters in tidal and other shoreline areas.

The Muckleshoot Indian Tribe Fish Hatchery is dependent upon a functioning barrier structure. The proposed action protects and improves the functional stability of the barrier structure. Therefore, USACE considers this to be consistent to the maximum extent possible with the State of Washington Shoreline Management Program.

Chapter 20.34: Educational and Archeological Areas and Historic Sites includes significant archeological sites or excavations, ghost towns, military forts, old settlers homes, historic trails, kitchen middens, interpretive centers, or any other site, facility, or structure that is educationally significant. Regulations that apply to Educational and Archeological sites and Historical areas in all Shoreline environments include the protection, rehabilitation, restoration and reconstruction of districts, sites, buildings, structures and objects significant in American and Washington history, architecture, archeology or culture.

The barrier structure is eligible for listing under the National Historic Preservation Act of 1966 and Chapter 43.51 RCW to provide for the protection, rehabilitation, restoration and reconstruction of districts, sites, buildings, structures and objects significant in American and Washington history, architecture, archeology or culture. The barrier structure is part of the White River Hydroelectric Project (WRHP) Historic District. The site has been evaluated and the USACE is currently working with the Washington State Historic Preservation Officer to prepare a Memorandum Of Agreement on the buildings, structures or places of historic significance that comprise the barrier structure and developing appropriate actions that will mitigate any adverse effects from the proposed action. Therefore, the USACE considers this to be consistent to the maximum extent possible with the State of Washington Shoreline Management Program.

4. OTHER STATUTES

The State Environmental Policy Act (SEPA)

SEPA is not applicable to this action as this is a federal project; the proposed action has been reviewed under the National Environmental Policy Act criteria, with all applicable laws and regulations reviewed under its provisions.

Ocean Resources Management Act

As per Section 43.143.010 of the Washington Ocean Resources Management Act, the proposed project area is not defined as a coastal county or coastal water, thus this Act is not applicable.

Clean Water Act

The USACE is analyzing the project under Section 404 and is submitting a request to the Department of Ecology for Section 401 Water Quality Certification.

Clean Air Act

The proposed action was analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. The proposed activities will have temporary impacts to local air quality due to the emissions of construction vehicles, however the short duration of construction and the lack of any exceed de minimis levels of direct emissions of a criteria pollutant or its precursors long-term recurring emissions from the work is unlikely to exceed de minimis levels of direct emissions of a criteria pollutant or its precursors.

Washington State Energy Facility Site Evaluation Council

The proposed action is a single-purpose project designed to improve upstream passage for fish species in the White River and does not qualify as an energy project or energy facility, therefore this section is not applicable.

DRAFT

Water Quality Monitoring Plan

Multi-Year Repair and Maintenance of the White River Barrier Structure
Buckley, Washington
2015 – 2020

Water Quality Certification #

Prepared by:

J. Gardiner, F. Goetz, L. Wallace
U.S. Army Corps of Engineers, Seattle District
December 2015

US Army Corps of Engineers, Seattle District

WATER QUALITY MONITORING PLAN

Multi-Year Repair and Maintenance of the White River Barrier Structure Buckley, Washington 2015-2020

BACKGROUND

The U.S. Army Corps of Engineers, Seattle District (Corps) is proposing to conduct maintenance and repairs at the White River Barrier Structure (barrier structure), as needed, over a five year period 2015 – 2020. The barrier structure is in the White River, at Buckley Washington. The King/Pierce County line runs down the center of the river in this location (Figure 1; Attachment 1).

The flashboards in the barrier structure are designed to break during high flow events to maintain the structural integrity of the barrier and adjoining infrastructure. The barrier structure is owned by Cascade Water Alliance (Cascade); however, the Corps' fish trap is reliant upon a functional barrier structure to provide flows to attract migrating adult salmon and steelhead to the trap entrance.

The following methods for water quality monitoring have been approved by the Washington Department of Ecology (Ecology) in the past, as well as by the U.S. Fish and Wildlife Service (USFWS) and NMFS (the Services), to ensure the protection of salmonids (Puget Sound Chinook salmon, Puget Sound steelhead, and Coastal/Puget Sound bull trout) listed as threatened under the Endangered Species Act (ESA). The water quality monitoring requirements of the Services regarding the proposed in-water work below the ordinary high water mark (OHWM) are outlined in the Biological Opinions (Attachment 2). Based on site-specific monitoring data collected during previous repairs (Attachment 3), and in an effort to align monitoring requirements by the Services with Washington State water quality standards for surface water, the Corps is proposing to extend the mixing zone point of compliance to 1,000 feet for specific sediment generating project activities.

PURPOSE

The purpose of the Water Quality Monitoring Plan (WQMP) is to track the performance of Best Management Practices (BMPs) used during in-water work, as described in this document. This WQMP identifies the appropriate parameters to be monitored, includes a monitoring schedule, monitoring locations, monitoring and sampling procedures, and contingency sampling procedures.

US Army Corps of Engineers, Seattle District

OBJECTIVES

- Document the performance of BMPs used within waters of the proposed work will occur in by monitoring water quality. *No wetlands occur in the project area.*
- Determine if State water quality standards are being met at the edge of the point-of-compliance.

Any changes in the proposed monitoring will be submitted to Ecology for approval prior to making the changes.

IN-WATER/OVER-WATER ACTIVITY DESCRIPTION

White River Flow Control

To safely conduct the repair work, the maximum flow rate in the White River at the barrier structure must be 350 cubic feet per second (cfs) or less. Typically, in mid-February/mid-March the flow rate would be between 800 and 1,100 cfs; however, flow rates have been recorded between 2,000 and 7,000 cfs in recent years. Therefore, management of White River flow at Mud Mountain Dam (MMD) will be conducted in accordance with the ramping guidelines specified in the MMD Water Control Manual. Managing river flow will last only as long as the period required to complete the in-water work, the time required to ramp down flow to meet the target flow rate, and to ramp up the flow rate to release the water stored behind MMD.

Removal of Large Woody Material

The amount of large woody material (LWM) accumulated along the left bank in the vicinity of the Corps fish trap intake is unusual and will require significant effort to remove. If possible, removal of the LWM will be completed in advance of the managing White River flow for the repair of the damaged barrier structure. The actual method of large woody debris removal would require use of a crane positioned on the left bank. The crane operator could lift the debris and reposition it more toward the center of the river, so that river flow would carry the LWM downstream. If this is not feasible, the crane operator could lift the material out of the river and place it in uplands on the left bank. The LWM would be transported to a location downstream of the barrier structure and placed in the river no later than March 31, 2016.

The method of removing the LWM from the barrier structure and the Corps' fish trap intake will be determined just prior to the beginning of the proposed work. In either removal scenario, the LWM will be kept whole, to the extent practicable. Cutting would only occur on the small end (top) so that the rootwad and large diameter end are part of the longest sections.

US Army Corps of Engineers, Seattle District

If the LWM is not able to be removed prior to the Corps management of the White River flow for the unscheduled barrier repairs, the LWM will be moved downstream using a track hoe (or similar equipment) prior to the barrier repairs.

Excavate a Temporary Diversion Channel

Cascade would excavate a temporary low-flow diversion channel using a trackhoe or backhoe through the gravel bar, and then open it to the river flow to route water to the right bank. Routing water to the right bank would enable repairs to be conducted along the length of the barrier structure (Figure 2; Attachment 3). Although the work would be below the ordinary high water mark (OHWM), the gravel bar would be in-the-dry due to managed flow rate by the Corps at MMD. We anticipate the temporary channel will be no more than 100 feet long, 40 feet wide and 4 feet deep; however, the actual size and alignment will be determined in the field by Cascade and Corps engineers and biologists, to take advantage of the natural topography and to avoid existing vegetation. Tracks will remain out of flowing water to the extent practicable, although some river crossings will be required.

Construction of Temporary Earthen Access Roads

Construct a temporary access road across right bank diversion channel, upstream of barrier structure, to provide access during upstream cofferdam construction (Figure 2). All temporary access roads will be removed as part of the project.

Excavate and Place Exposed Bedload and Construct Earthen Cofferdams and Plugs

The combination of flow management at MMD and temporary flow diversion will leave the work area along the barrier structure in-the-dry (Figure 2). Existing exposed material will be used to construct two temporary earthen cofferdams, one upstream and one downstream of the barrier structure using a track hoe or back hoe, and a bulldozer or bobcat. Ecology blocks may be placed to support the upstream earthen coffer dam. All temporary cofferdams will be removed at the end of the project. Equipment tracks would remain outside of flowing water to the extent practicable; river crossings would be limited to those required to initially divert water through the temporary channel and to restore flow into the river bed once the work is complete.

Any changes to river flow associated with Cascade's diversion through Cascade's headgates located on the left bank at the barrier structure, will be conducted in accordance with the ramping rates outlined in *Cascade's Lake Tapps Reservoir Water Rights*, and the *White River Management Agreement* among Cascade, the Muckleshoot Indian Tribe (MIT) and Puyallup Tribe of Indians (PTI). Cascade and the Corps will jointly determine if any river flow should be diverted through the flowline, and Cascade would set the headgates, rock chutes and fish screen intake to accommodate any agree upon flow diversion.

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Remove Accumulated Sediment and Debris

On the left bank, sediment and debris would be removed from the area around the headgates and fish trap intake to facilitate water movement through these pathways. Sediment and debris will also be removed from the area of the steel flashboards so that the frames and flashboards can be reinstalled. All excavated material will be placed above the OHWM. Following sediment removal, as necessary, near the headgates and the Corps fish trap intakes, additional flow (approximately 20 cfs) could be routed through the Corps fish trap.

Below the barrier, work will be conducted to clear material around the release end of rock chute #1 to minimize fish attraction to rock chute #1 flows.

On the right bank, sediment and debris would be removed to allow replacement of steel flashboards and provide adequate flow to fishway at the MIT Hatchery. Tracks will remain out of flowing water to the extent practicable, although some river crossings will be required.

Barrier Repairs

Cascade will repair any failed flashboards across width of barrier. Repairs may include installation of new posts, support tie rods and knee braces; replacement of timber and steel flashboards; install the boards in the barrier structure; evacuate equipment from the channel; and install metal panels from land at each end of the barrier structure. If necessary, a steel wedge may be temporarily placed in the river via an overhead crane, immediately in front of the upstream side of a post, to temporarily isolate the work area.

Unscheduled Repairs

Multiple storm and ongoing high flow events in fall and early-winter have resulted in heavy debris and sediment loads at the barrier structure, headworks, and the Corps' fish trap intake. During the weekend of October 31 – November 1, 2015, a storm and high-river flow event resulted in damage to the barrier structure. Approximately 25 – 30 flashboards in the center of the structure are missing and more boards are likely damaged, which has concentrated river flow through a gap in the center of the structure approximately 175 feet wide. This has resulted in heavy debris and sediment loads deposited on the left and right banks of the river. The left bank below the barrier has received a substantial deposition of sediment and large woody material (LWM). As sediment and woody material continue to accumulate, the intake at the Corps fish trap on the left bank, and the intake at the Muckleshoot Indian Tribe (MIT)'s Fish Hatchery on the right bank, could become blocked and inoperable as they were during damage that occurred in December 2014 through February 2015. In addition, the damaged barrier will provide attraction flow to endangered migrating salmon.

A meeting of the Buckley Fish Barrier Work Group (barrier work group) was held at the Corps' fish trap on November 20, 2015. Attendees included the Corps, Washington Department of Fish & Wildlife (WDFW), Cascade and their contractors, and the Puyallup Indian Tribe; not all

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stakeholder agencies and Tribes were able to attend. To minimize the impacts to federally listed migrating adult and juvenile salmonids, and to avoid repairs during the active flood season (November through March), it was determined that in-water work could occur from January 19 through February 14, 2016. The work is expected to take 4 – 6 days to complete because the extent of damage is unknown until the flow rates are dropped. The project elements are discussed below.

WATER QUALITY STANDARDS FOR SURFACE WATERS

The project is located in WRIA (Water Resources Inventory Area) 10 (Puyallup/White), in the White River. The White River is designated as Core Salmonid Summer Habitat use below the barrier structure, which requires monitoring the following parameters.

- **Turbidity:** Shall not exceed 5 NTU over background when the background is 50 NTU or less; or 10 percent increase in turbidity when the background turbidity is more than 50 NTU: as outlined in Washington Administrative Code (WAC) 173-201A-200(1)(e) for Core Salmonid Summer Habitat.
- **Oil and Grease:** No visible sheen

MONITORING PLAN

Monitoring Contacts

J. Gardiner and F. Goetz will be responsible for providing Ecology with the necessary notifications and results of the water quality monitoring per the frequency specified in the Section 401 Water Quality Certification (WQC).

A number of Corps employees will be conducting the WQC monitoring. The primary contacts for water quality monitoring will be J. Gardiner and F. Goetz, available at 206-764-6878 and 206-764-3515, respectively. Dan Johnson is the MMD Operating Project Manager, available at 206-764-3717.

Additional Contacts: Matt Harrington, Section Chief (206-764-6169) and Evan Lewis, Branch Chief (206-764-6922).

Monitoring Schedule

The monitoring parameters and schedule for all work below the OHWM is outlined in Table 1.

Monitoring Duration

Water samples and visual observations will be collected and recorded for as long as work activities below the OHWM continues.

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Visual monitoring will be conducted continuously for all work below the OHWM, but not within the wetted perimeter, and for all over-water work activities.

Contingency Sampling

If sample results confirm that water quality is out of compliance with State standards, the project will modify or stop the activity causing the problem and commence contingency sampling as outlined in Table 2, until standards are met for two consecutive sample periods.

Once compliance with water quality standards is achieved, the project shall return to its standard sampling schedule.

Non-Compliance

If either visual or physical monitoring indicates that water quality standards have been exceeded, the required reporting will be initiated.

SAMPLING PROTOCOL

Sampling Locations

Monitoring sites are identified on the Figure 3 for activities below the OHWM (Attachment 1).

Sampling Procedures

A background sample will be collected outside the area of influence and as close as possible to the start of in-water work.

Water quality samples will be collected and analyzed for the parameters outlined in the Monitoring Schedule (Table 1), and the equipment and sampling guidelines below.

1. Turbidity will be monitored using a turbidimeter.

Calibration of the turbidimeters will be conducted per the manufacturer's instructions.

The first compliance sample for turbidity will be taken approximately 1 hour after the in-water activity starts, unless there is a visual plume at the point of compliance prior to 1 hour.

A turbidimeter will be used to collect a representative sample that accurately reflects the actual condition of the White River at the sampling station. The following protocol will be used to ensure a standardized sample is collected and analyzed.

- A clean container will be used to obtain the water sample.

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- The sample will be collected with care to avoid disturbance of sediments and collecting surface contaminants.
 - The sample will be gently and thoroughly mixed before pouring it into the vial used in the turbidimeter.
 - The sample will not be allowed to settle prior to the turbidity reading and will be analyzed per the manufacturer's instructions.
2. Oil and grease will be monitored continuously for a visible sheen on the water's surface throughout the monitoring time period.

Turbidity samples and visual observations will be collected for as long as the construction activity is occurring.

When work is occurring behind the cofferdam, the Corps will conduct visual monitoring. If turbidity is observed escaping the cofferdam, BMPs will be adjusted and physical monitoring would commence as described in Table 1.

If turbidity measurements show that turbidity is approaching State criteria threshold limits (Table 1), the monitoring team will notify the contracting officer or their representative (COR) to ensure that all BMPs are in place; BMPs may need adjusting. Physical monitoring will continue as described in Tables 1 and 2 during the monitoring period.

If BMPs are in place and monitoring indicates turbidity is at or exceeds State criteria, the Corps will notify the Corps' barrier monitor and Contingency Sampling as described in Table 2 will begin.

Monitoring sites are shown in Figure 3. If turbidity measurements exceed State standards, sequential monitoring will begin as described in Table 1.

If WQC turbidity thresholds are exceeded, the Corps will notify Ecology within 24 hours as outlined in the Reporting Section of this plan.

If no exceedances are detected, the results of the monitoring will be provided to Ecology on a monthly basis.

Monitoring Methods

Turbidity measurements will be taken above and below the barrier structure before construction begins and during construction activities below the OHWM; Monitoring Form is Attachment 4. Measurements for background turbidity will be collected upstream of the barrier structure (site

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A; Figure 2). Alternative sampling methods may be deployed for background levels, which could also include data from the USGS gage located on the left bank immediately upstream of the barrier, or a Corps logger (if installed).

Monitoring will consist of one observer at or above the barrier structure who will conduct background monitoring and a team of two people who will monitor the downstream sites. The construction observer will radio information on construction activity, especially the start and stop of in-water work, to the turbidity monitoring team. This information will be recorded on the field data forms.

Turbidimeters will be calibrated per the manufacturer's instructions and a baseline turbidity sample will be collected at the 1,000 feet site before work below the OHWM begins (right bank). The turbidimeters will be the same make as those used in field work for repairs in July 2014, February 2015 and June – August 2015. Downstream monitoring will occur on the same bank where work is occurring if possible; site D is on the right bank (no access on left bank) and site E is on the right bank due to ease of access there.

A temporary in-stream data logger may be installed at the barrier structure for periodic monitoring. The Corps will let Ecology know if this device is deployed.

A permanent turbidity monitoring station is at MMD approximately 3 miles upriver and will provide an additional upstream point for tracking ambient turbidity conditions.

During activities below the OHWM, the Corps will provide visual observations of turbidity at 300 feet (site B), as well as documenting any visible sheen throughout the project area during all construction activities. This information will be included in the monitoring reports submitted to Ecology.

REPORTING

All water quality monitoring results, visual and physical, will be recorded on the monitoring form (Attachment 4).

All sample results will be submitted to the Ecology Federal Permit Manager/Coordinator within 24 hours of collection (Attachment 5). If sample results or visual monitoring indicate an exceedance of State standards, notification will be made within 24 hours to Ecology's Federal Permit Manager/Coordinator.

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Attachments

Attachment 1 – Biological Opinions USFWS and NMFS

Attachment 2 – Turbidity Report June-August 2015 with Appendices

Attachment 3 – Figures

Attachment 4 – Water Quality Monitoring Form

Attachment 5 – Exceedance Summary Form

Attachment 1. Biological Opinions from USFWS and NMFS.

Available for download at: <https://safe.amrdec.army.mil/SAFE/> Details about how to download these documents is available upon request.

Attachment 2. Turbidity Report June-August 2015 with Appendices

Available for download at: <https://safe.amrdec.army.mil/SAFE/> Details about how to download these documents is available upon request.

Attachment 3. Figures

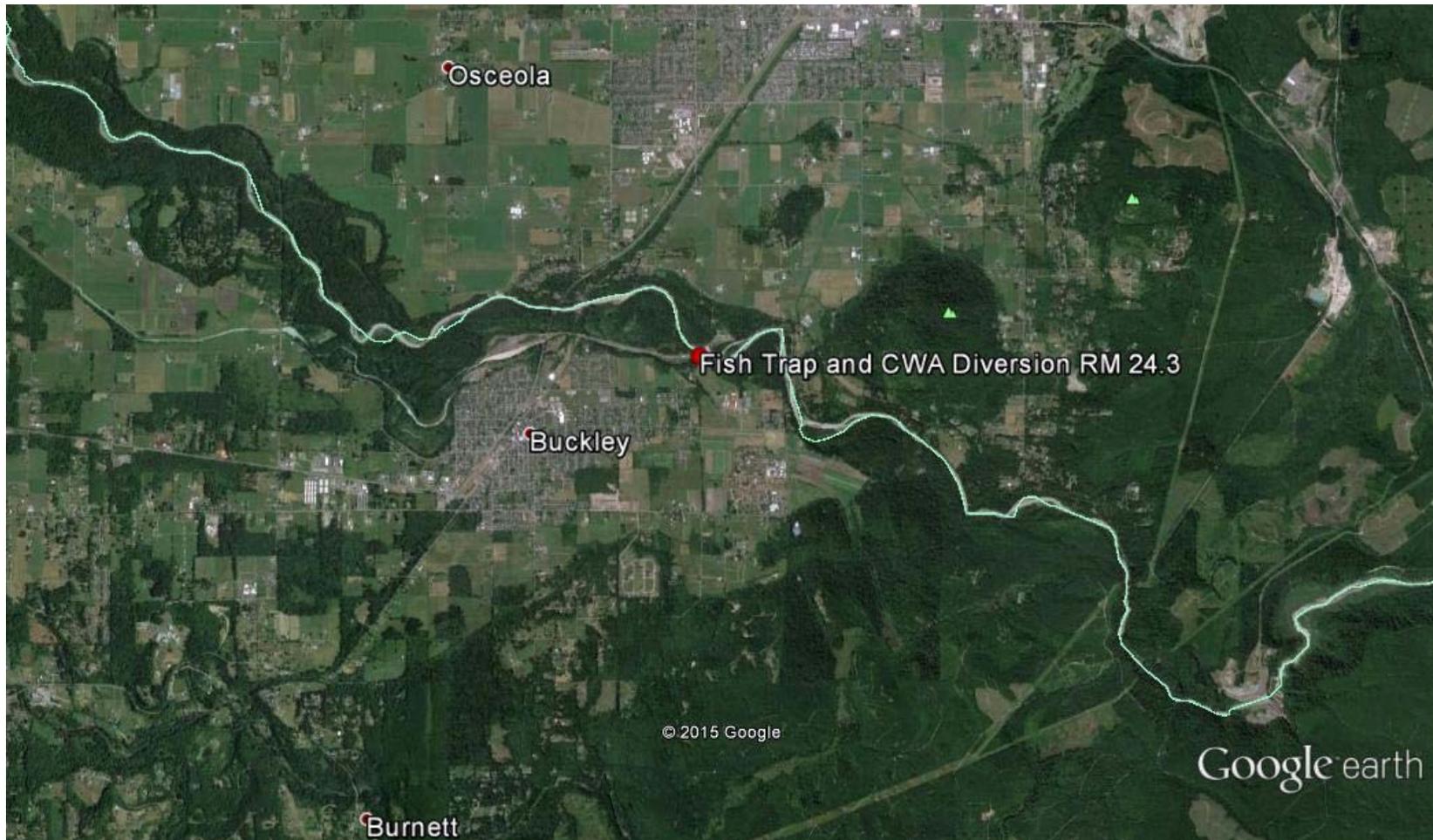


Figure 1. Vicinity Map for the White River Barrier Structure at Buckley, Washington.

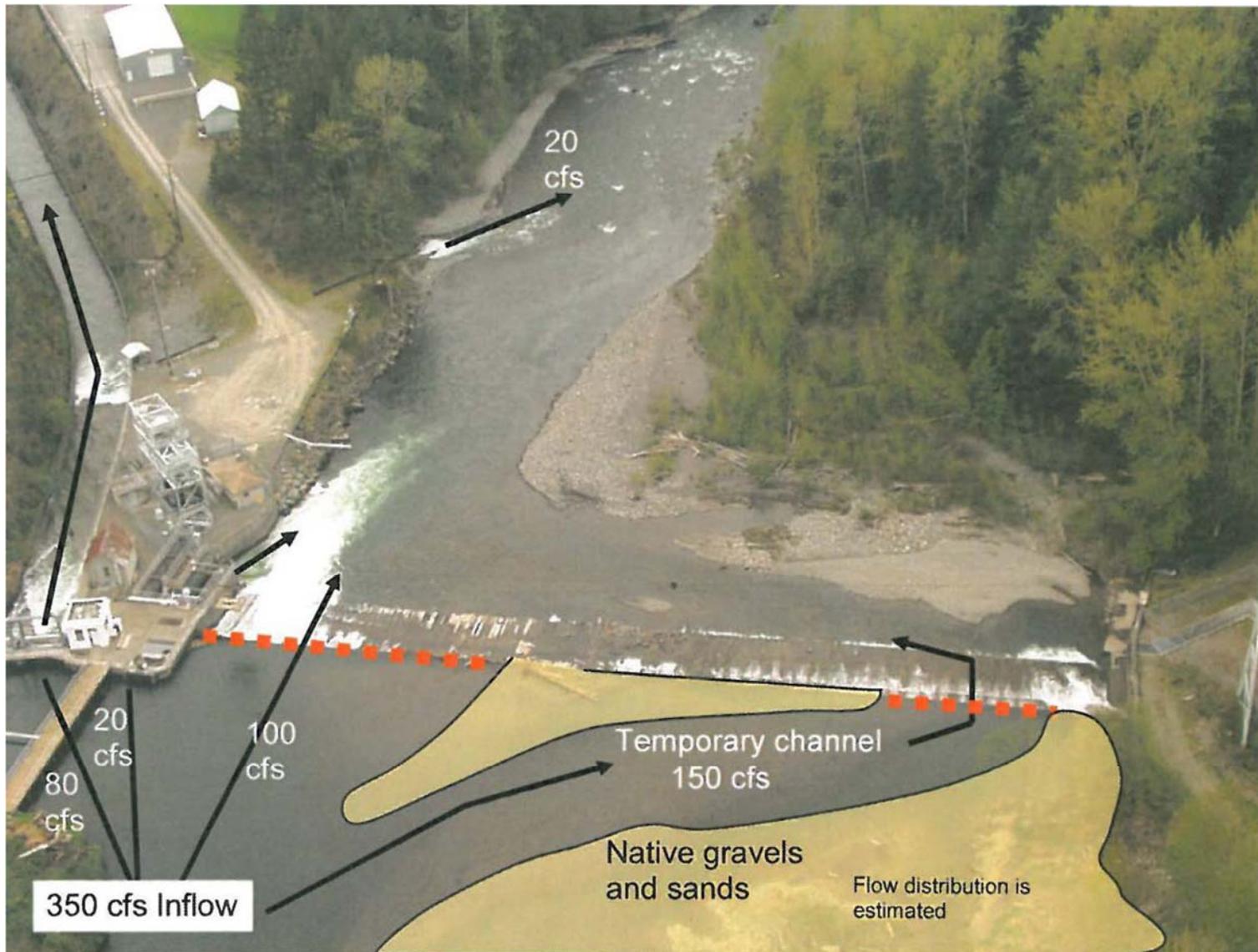


Figure 2. Depiction of proposed work.

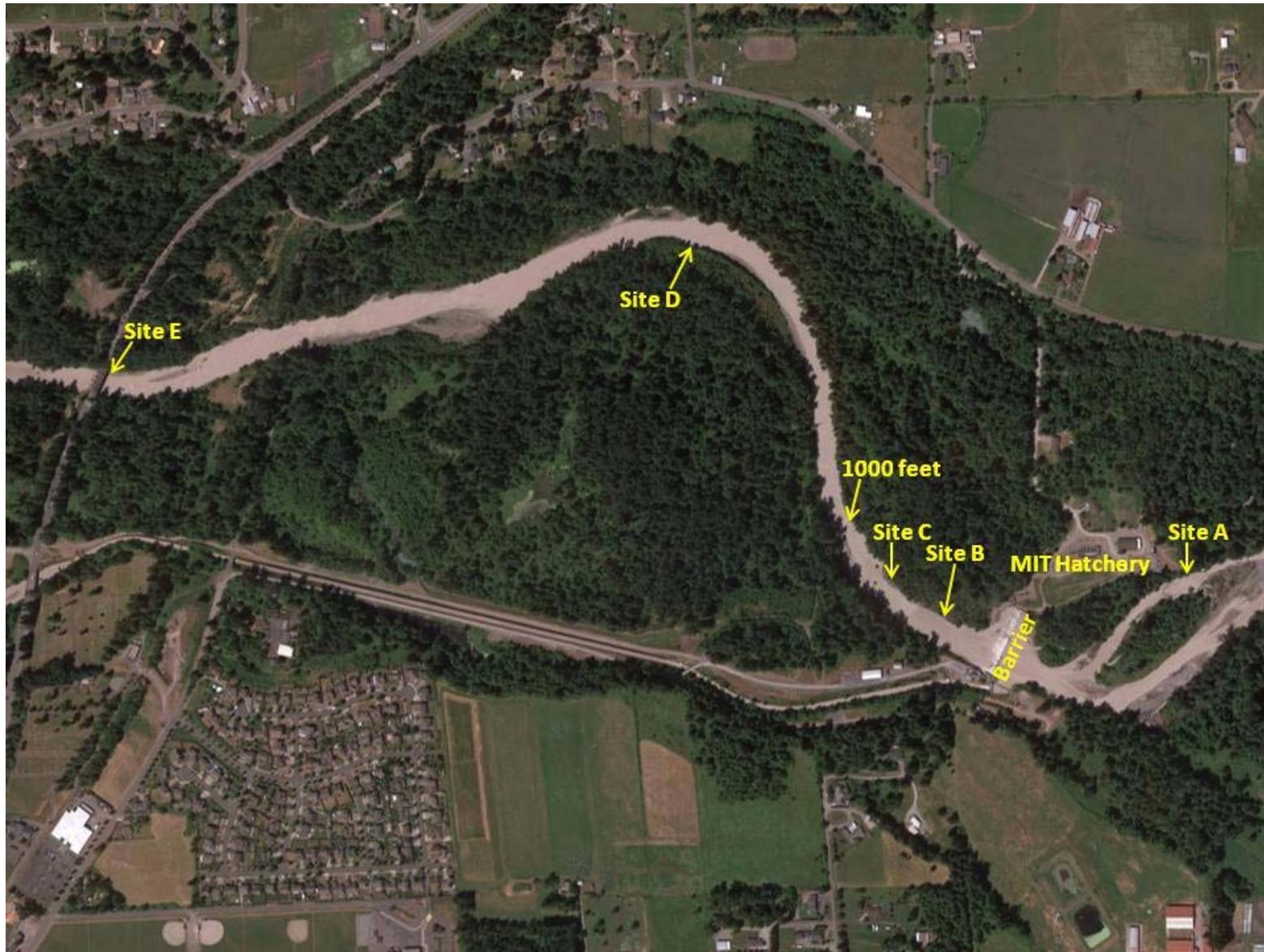


Figure 3. All monitoring sites above and below the barrier structure.

Attachment 4. Water Quality Monitoring Form

Attachment 5. Exceedance Summary Form

