

OFFICIAL COORDINATION REQUEST FOR NON- ROUTINE OPERATIONS AND MAINTENANCE

COORDINATION TITLE- 17BON59 WA Shore LPS Flow Sensors Retrofit

COORDINATION DATE- 26 July 2017

PROJECT- BONNEVILLE Lock and Dam

RESPONSE DATE- 10 August 2017

Description of the problem- Bonneville Powerhouse 2 Washington shore Lamprey Passage Structure (LPS) flow sensors need to be replaced. The flow sensors currently in place are not reliable and will be replaced with a new system to ensure proper notification to dam operators that a pump has failed. Currently there are two pumps that operate concurrently to provide design flow to the LPS and associated rest boxes. If one pump fails the system will provide enough water to maintain lamprey and allow enough time for replacement of the failed pump.

Type of outage required- The work is scheduled to occur during a portion of the work window coordinated under MOC 17BON20. The work will require the LPS pumps to be shut off periodically over the course of 1 to 2 days (14 AUG to 15 AUG) and therefore will be out of service for up to 2 days. The work will occur within 50 feet of the fish ladder adjacent to the AWS on the outside of the wall for up to 5 days (Figure 1). The remaining 3 days will be used to pull wire for the new flow sensors, test new sensors, and demobilize.



Figure 1. Bonneville Washington Shore Fish ladder exit. The location where new conduit will be installed to replace existing flow sensors.

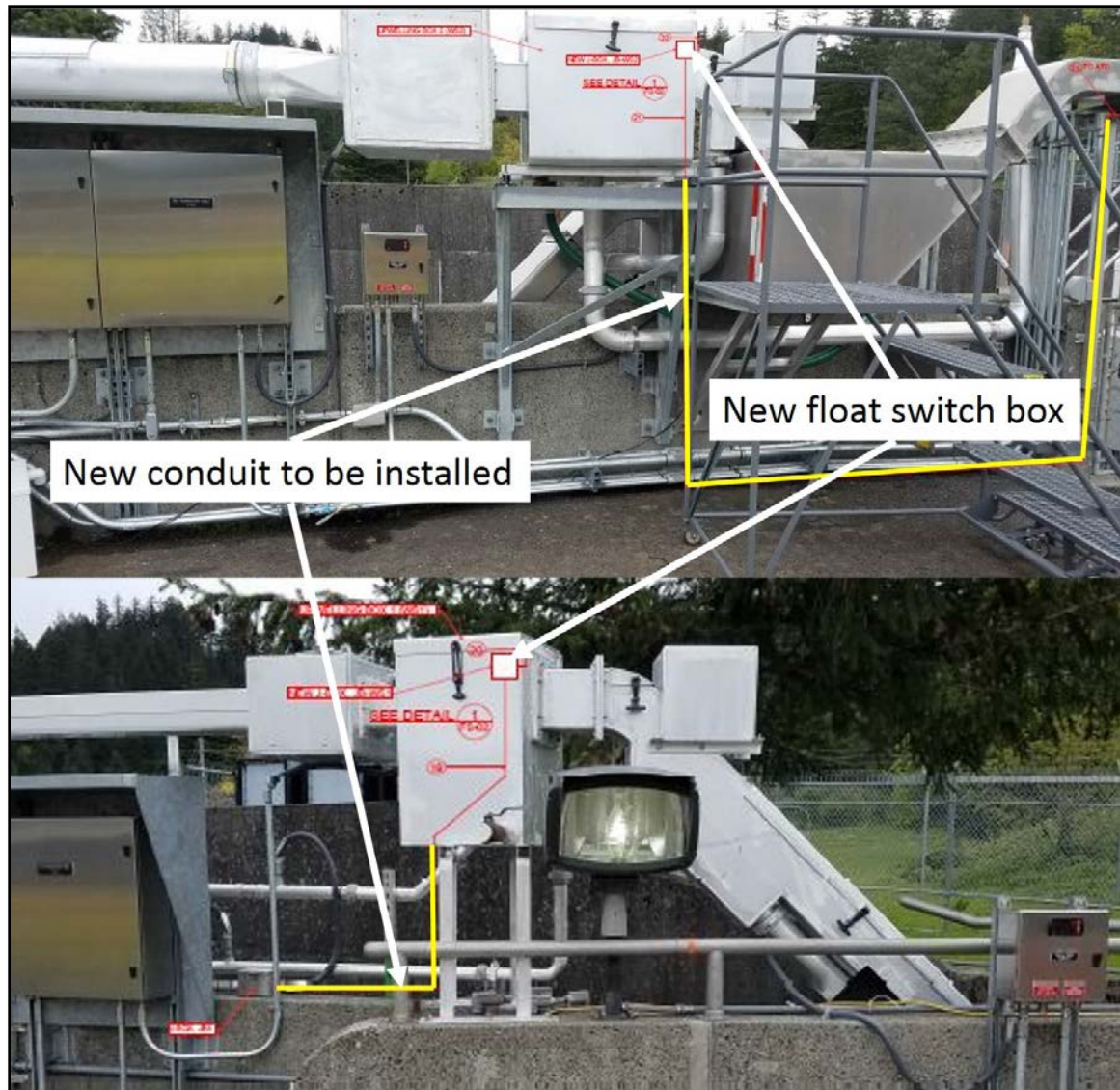


Figure 2. The Washington Shore LPS upwelling boxes to be retrofitted with new flow sensors (white boxes) and associated conduit (yellow lines) to be installed.

Impact on facility operation- The WA shore LPS will be out of service for ~2 days.

Dates of impacts/repairs- August 14-18, 2017.

Length of time for repairs- 5 days total.

Expected impacts on fish passage-

Bull Trout-

Of the five distinct population segments (DPS) of bull trout listed as threatened by the USFWS, the Columbia River DPS is the only one that is likely to occur in the vicinity of the proposed project. Historically, bull trout of the Columbia River DPS likely

ranged through much of the Columbia River Basin with spawning and rearing occurring in the coldest creeks, often at higher elevations. Presently, bull trout of the Columbia River DPS are distributed in a more fragmented pattern throughout the Columbia River Basin with fewer adult migratory fish and fewer, more compressed spawning reaches than historically occurred.

WDFW and Corps personnel provided a list of anecdotal sightings/captures of bull trout in the mainstem Columbia River. From 2000 through 2012 there were eleven bull trout reported. Three were downstream of Bonneville Dam, with two at the mouth of Hamilton Creek (RM 143) and one in 2005 at the Bonneville Dam Smolt Monitoring Facility (RM 144). Upstream of the dam, one bull trout was found at Cascade Locks (RM 149), two at Drano Lake (RM 162), two at the mouth of the Klickitat River (RM 180.5), one in 2002 at the John Day Dam Smolt Monitoring Facility (RM 215), and one sighting at Dog Creek Falls by a reputable WDFW creel sampler who observed 18- to 24-inch cuts or dollies working old redds below the splash pool over the course of two weeks.

Fish passage data from the Bonneville Dam fish ladders (Corps, unpublished) show only three sightings of bull trout moving through the fish ladders for 2000 through 2011 during the fish counting season (April 1 through October 31). These sightings occurred between May 30, 2009 and June 2, 2009 and were reported as '12-inch bull trout moving upstream' through the count window on each occasion.

Downstream passage- No impacts are anticipated to downstream passage of salmonids or juvenile lamprey.

Upstream passage- Work within 50 feet of the fish ladder could impact adult salmonid passage. However impacts are expected to be minimal as the work consists of pulling wire, through mostly existing conduit, along the outside of the WA shore AWS adjacent to the fish ladder. Some spot welding will also occur on the outside of the LPS upwelling boxes, not directly over the fish ladder, to attach a mounting bracket for new flow sensor boxes (Figure 2). The welding will likely take less than a total of 1 hour (not consecutive) over the course of 1 day. Hand tools will be used on the outside of the fish ladder to attach a short piece of conduit that will require ~15 (.25 inch O.D.) anchors below the two upwelling boxes (Figure 2).

Pacific Lamprey – There will be impacts to adult migrating Pacific Lamprey at the WA shore LPS as this route will not be available during the day for up to 2 days. Project biologist will follow dewatering protocols prior to beginning work and ensure no lamprey are stranded in the LPS. The LPS may be watered up during the night to provide lamprey passage. Lamprey passage through the fish ladder proper will not be impacted by this work. Also lamprey numbers during the proposed work window are trending downwards (Figure 3). However this year there has been a large increase in lamprey passage at Bonneville. The counts presented are only window counts and do not include LPS counts.

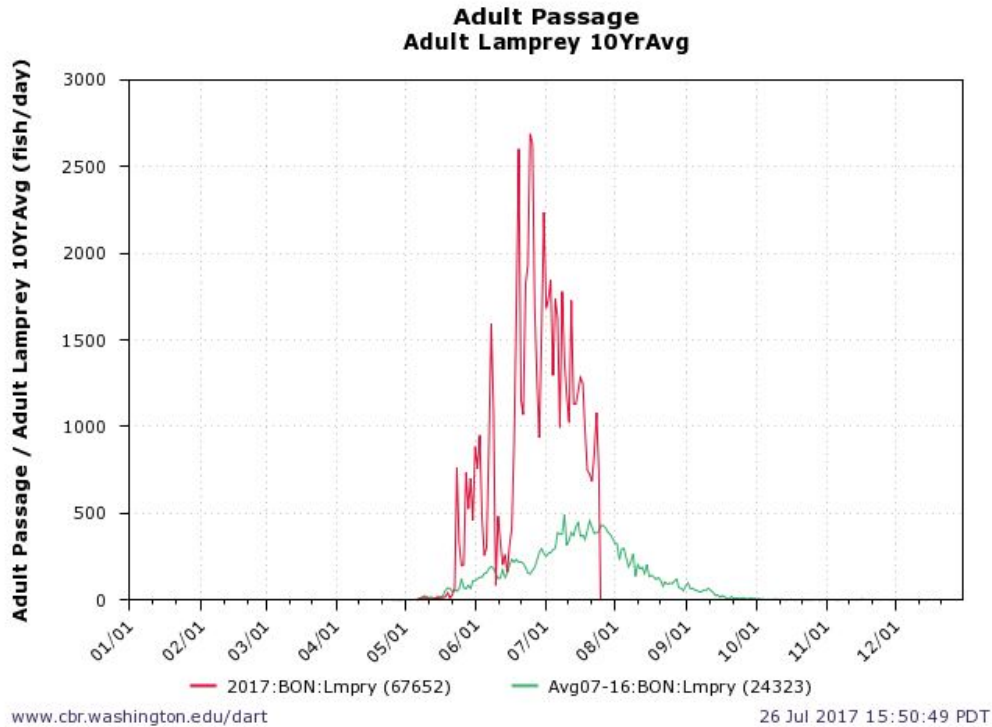


Figure 3. Counts for adult Pacific Lamprey at Bonneville Dam. The current 2017 window counts are in red and the 10 year average is (2007 – 2016) shown in green. Data pulled from Dart at www.cbr.washington.edu/dart.

Impacts to out migrating juvenile Pacific Lamprey are anticipated to be unaffected.

Below are tables showing adult salmonid fish passage estimates (by species) for the outage periods.

Table 1. Washington Shore 10 year average for August 14th-19th (2007-2016).

Washington Shore 10 Year Average						
Date	CHN	STT	COHO	SOC	CHUM	PINK
14-Aug	772	3,579	45	5	0	0
15-Aug	790	2,952	39	6	0	0
16-Aug	767	2,535	50	3	0	1
17-Aug	969	2,349	71	4	0	1
18-Aug	1,453	2,383	121	3	0	1
19-Aug	1,938	2,428	149	6	0	1

Comments from agencies-

-----Original Message-----

From: Swank, David [mailto:david_swank@fws.gov]

Sent: Friday, August 11, 2017 10:29 AM

To: Walker, Ricardo W CIV USARMY USACE (US) <Ricardo.W.Walker@usace.army.mil>

Cc: Kovalchuk, Erin H CIV USARMY CENWP (US) <Erin.H.Kovalchuk@usace.army.mil>; Mackey,

Tammy M CIV USARMY CENWP (US) <Tammy.M.Mackey@usace.army.mil>
Subject: [Non-DoD Source] Re: 17BON59 MOC

Hi Ricardo,

I certainly agree that the flow sensors need to be repaired, and that the lamprey counts have been declining, but when I look at the passage graph from last year, we had a late season surge on August 28th. The run this year is earlier than last year, so who knows if we'll get that type of late bump again this year, but it's certainly a possibility, and it could be even larger than last year given that the run this year has been larger. I understand that there is some risk in waiting another three weeks to replace the sensors, but I would be more concerned if it was the pumps themselves that were troublesome, or if we only had one pump instead of two.

I didn't realize that you could do the work in just a few hours each day, that's good to hear. I had been under the impression that the LPS would need to be shut off for 48 hours. Overall, I would still prefer to wait another three weeks to do this repair, but if you are able to do the work while leaving the LPS running at night I'm okay with that.

Dave

On Fri, Aug 11, 2017 at 9:19 AM, Walker, Ricardo W CIV USARMY USACE (US)
<Ricardo.W.Walker@usace.army.mil <mailto:Ricardo.W.Walker@usace.army.mil> > wrote:

Good morning Erin and David,

The flow sensors are a critical part of the LPS and it is something the Project Delivery Team wants to get corrected as soon as reasonably possible. If we have a pump failure there is a chance that the current flow sensors will not operate correctly and notification (through PLC system) will not be sent to the appropriate dam personnel. The system has two pumps that supply water to the upper portion of the LPS. If one pump goes down the LPS is supplied with half flow which is enough to keep water temps stable and oxygenated water for lamprey while the failed pump is repaired. If two pumps go offline without notification then the LPS will not have flow through water and there is risk to lamprey stranded in the system. This is unlikely to occur considering the pumps are new but there is still some risk.

The numbers of lamprey using the WA Shore LPS has dropped considerably, we are at the tail end of the run at Bonneville, and we do not expect many lamprey will be impacted by this outage. This outage is likely to only be a few hours during the day and will likely not require the system to be shut down overnight when most lamprey would use it. However the worst case scenario is it is down overnight.

Please let me know if you have any additional questions or concerns.

Ricardo Walker
Fish Passage Section
Environmental Resources Branch
The U. S. Army Corps of Engineers, Portland District

Ricardo.Walker@usace.army.mil <mailto:Ricardo.Walker@usace.army.mil>
Office: 503.808.4709

Final coordination results- This action will move forward as coordinated.

After Action update – This work was completed as coordinated.

Please email or call with questions or concerns.

Thank you,

Erin
Erin Kovalchuk
NWP Operations Division Fishery Section
Columbia River Coordination Biologist
Erin.H.Kovalchuk@usace.army.mil

Ricardo Walker
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