

MEMORANDUM FOR THE RECORD

Subject: Final minutes for the 07 September 2017 FFDRWG meeting.

The meeting was held in the Fireside Conference Room of the USACE office in Portland, OR. In attendance:

Last	First	Agency	Email
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On the phone: Baus, Bettin, Conder, Fielding, Fredricks, Hesse, Hutson, Kiefer, Kovalchuk, McIlraith, Meyer, Morill, Peterson, Swank, Van Dyke, and Wharf.

Link to FFDRWG folder:<http://www.nwd-wc.usace.army.mil/tmt/documents/FPOM/2010/FFDRWG/FFDRWG.html>

1. Final decisions made at this meeting.
 - 1.1. June meeting minutes were approved.
 - 1.2. AFF lamprey trap - The plan is to move forward with either the 18" removable or 12" fixed ramp depending on the engineering involved.
 - 1.3. TDA AWS - NOAA and CRITFC concurred with the additional bedrock removal.
2. ERDC spill modeling update (Bonneville, The Dalles, John Day) and pre-trip discussion for September trip (Ament/Ebner/Schlenker/Lynn/Rerecich/Royer) – The COE only trip was the week of 17 July. This was an engineering evaluation to look at the potential impacts from erosion and structural integrity in preparation for the outside agency trip in September.
 - 2.1. ERDC agenda for the 17-22 September ERDC trip – The plan is to go back forth between the BON and TDA models Monday- Wednesday. When arriving at ERDC, check in at the main office at the gate and park at the BON model. Be prepared to walk to both TDA and BON models. Mechanical problems at the TDA model have been worked out already so high flows can be tried.
 - 2.2. BON: The idea is to look at the current FPP spill pattern under different tail water elevations. The BON model doesn't have powerhouse flow capability just spill flow. Sometime will have to be spent on the metrics of the model. Having two different elevations of the flow deflectors has been identified as a problem that should be looked at. **ACTION:** Ebner will write up the method for examining the effect of the two different elevations of the BON spillway flow deflectors. Ebner would like people to be familiar with the bathymetry of the tail race before going down. The first deflectors (elevation 14) in bays 4-15 were installed in the 70s and designed to remove gas at high flows. The second round of deflectors in the outside bays were built in 2000 to help remove gas at low flows for fish passage (elevation 7). Bay 18 deflector was rebuilt. The hydraulics of the two deflectors are different and this trip will highlight the variances. As more water is pushed through the four bays at a lower tail water, the difference is greater. Modifications to the spill pattern based on tail water may occur but the goal is not to change the pattern. Rocks have been moving into the stilling basin via the outside bays and then move inwards toward the center. From here, the rocks jump into the stilling basin. The rocks roll around the stilling basin destroying the concrete. Rocks need to be moved manually under a contract. The rocks move when the spill is above 150kcfs and as tail water drops. The district management has been briefed on this issue but they have not given any guidance yet. The B-branch ladder survey is not until September 26 so the results will not be available for the trip. Modify the agenda based on findings. Van Dyke would like to see a flat pattern tested. Fredricks said that the current pattern is as flat as they could make it from past trips. Lorz suggested providing the past reports on the pattern for saving time. Ebner recommended Van Dyke to come up with the patterns that he would like to test before going down. The previous trip reports will be provided to anyone who needs them. **ACTION:** The Corps (Ebner/Rerecich) will look for past trip reports and make them available to the region.

2.3.TDA: The construction of the spill wall was driven by good egress for juveniles going over the spill way. Fish are supposed to pass through the bays within the wall. The model is too shallow but should not affect the hydraulics of the model. Sometime will be spent showing non uniform patterns vs uniform flow. The model will use the working bays only, no tagged out bays. For people who weren't involved with the design of the wall, the non-uniform pattern will show the benefits of the wall and keeping the flow within the wall. Ebner wants to point out the conditions on the shelf which shows why the tailrace has to be monitored/surveyed.

2.4.All spill levels can be looked at. Two issues that could affect the spill in the future are the rocks at BON and structural problems with the wall at TDA. There is a physical limit through the TDA eight bays of 21Kcfs per bay to protect the stilling basin.

3. Lamprey Passage Structure (LPS) and Minor Mods (Turaski/Schroeder/Walker)

3.1.LPS: The team is updating the exit portion on the LPSs. Phase 3 did include extending the JDA LPS to upper 180° bend in the fish ladder but that has now been de-scoped. The exit will still be updated.

3.2.Minor mods – FFU proposed the cut be at 4, 6 & 8 or 3, 5 & 7 for the lamprey orifices because of so many lamprey going up and downstream. FFU observed that the first orifice had the most back and forth issues so they are suggesting moving the orifice up. The proposal is for a shift in location of the three orifices with the same monitoring. NOAA did not have any issues with the proposal. The PDT still needs to consult with the lamprey groups to make sure it will help and not just move the problem. There is a monitoring advantage on the other side of the ladder. The original weir is just upstream of the count station and the fall back is most extreme at that first two orifices based on WA SH count station video of lamprey. The velocities are different in different weirs. The results from the salmon interaction summary will be presented at AFEP. A rest box in WA SH ladder came loose. One of the anchors came loose. As it moved up and down in the flow, several other anchors came loose. The rest box is now lodged against the wall. It will be fixed this winter taking about 5 days. The anchors were supposed to be epoxied and it will be verified during the dewatering.

4. AFF lamprey trap – The dimensions of the trap were in the update. The ramp is 22" wide. NOAA thought the ramp was closer to 12". Walker said that the smaller the ramp the less effective the trap will be and suggested an 18" as a compromise. The 22" ramp was modeled already but it can be changed to 18". NOAA is completely against a 22" ramp because it would take away half a weir in the ladder. Ramps as small as 12" have not been studied. The trap is intended to collect lamprey for studies and relocation projects. It will not be removed after the studies are completed. Lorz suggests a removable ramp in place at night and taken out during the day. A 12" fixed or 18" removable was suggested and NOAA was okay with this. The engineers will have to decide which is better. Conder stressed no sharp edges. The number of captures per the size of the ramp is unknown. The WA SH LPS has a 22" ramp and lamprey are being counted. Zorich will present these preliminary numbers at FPOM. The plan is to move forward with either the 18" removable or 12" fixed ramp

depending on the engineering involved. The design has to be done quickly to be installed in Mid-March – April.

5. Lamprey Wetted Wall at Bonneville – Bradford Island Ladder (Tackley/Walker) – The location was coordinated several years ago. Three locations were originally proposed. NOAA had preferred another location but this location was chosen because flows could be adjusted for the wetted wall in this area. A camera may need to be installed to see the interactions with flow or hydraulic shadow. A refuge box is in the design (Figure 2). NOAA does not want a water fall to attract fish. **ACTION:** Walker or Tackley will check on the expected flow range (max and min) for the wetted wall structure and provide this information to FFDRWG. On Figure 3, there is a conduit running down the center which may be for a PIT antenna but it will not be included on the final design. The shroud length is not yet decided. Walker will work on getting the details and send them out as soon as possible.
6. Quick updates (<5 min each):
 - a. Turbine Survival Program (Medina/Rerecich) – This project is being phased out and is only funded through FY18. There is 250K to finish the IT work that was started. Medina is looking to partner with BPA for funding but no interest so far. FFDRWG members have concern about future issues that come up with cavitation or blade lock. JDA has three or four units with severe cavitation that need to be looked and this project is the link between turbine maintenance and turbine fish passage. The PDT has expressed these concerns to division and recommends that anyone who feels that this issue is important to let Division know.
 - b. Bonneville B2 FGE (Medina/Knowles/Rerecich) Construction was finished in April but upon follow up inspection, the bolts on the flow control devices have loosened up. The nuts will be tack welded so they won't back out. Every unit that has these flow control devices will need to be double checked.
 - c. Bonneville B2 Orifices (Medina/Kuhn/Rerecich/Royer) – A site visit was conducted on manual operation of the orifices. Cost increases for the PLC system have made the project no longer feasible. Some jets did improve but it wasn't significant enough for the cost of the improvements. The decision was not to add air to the jets or change the PLC and the notes from the site visit will be included in the EDR. The completed report will be available by the end of October.
 - d. John Day Avian Line Improvements – Phase II (Medina/Zyndol/Macdonald) This year, the project will be replacing key lines plus all the antiquated lines. JDA will have a complete array of lines. The project will provide JDA with the documentation (manual) in order to do maintenance on the lines. The project is on schedule and expect to complete work by March.
 - e. Bonneville Major Rehab (Cutts/Lynn/Rerecich) – The plan was to finish the report by end of FY but now all three major components need more time with different funding strategies. The swing bridge and the fish ladder will be funded through O&M requests and the spillway would continue to look for funding in the MRR process. The team will be putting a budget cycle request in FY18 for funding in FY20 to start the design for the fish ladders. The spill way analysis will

remain as MRR and needs funding by 2018. The environmental component is being worked as days out of compliance for the MRR and it is considered a high priority project.

- f. The Dalles Fish Unit Turbine Rehab (Bluhm/Schroeder/Rerecich) – The PDT is in between the 30% and 60% EDR reports. This will be completed by next October. The project is expecting an overall time frame of less than five years.
- g. John Day North Ladder PIT Detection (Richards/Walker) – The construction of the building is on schedule and as planned. The internet service is still needs to be solved in order to upload to PIT TAGIS. A solution is underway.
- h. TDA AWS – The most current version of the MOC coordinated under FPOM was a vibration trigger to start spill to attract fish to the north fish ladder. The contractor may be able to do the common excavation work faster than two weeks but still needs that time to stay on schedule. The next step would be to remove bedrock in that area. The contractor would like to use a rock ripping technique rather than hydraulic fracturing technique to remove the bedrock. This work is at night work during the last week of October. Eppard suggest starting further out and moving inwards. The work area is below the ladder. NOAA and CRITFC concurred with the additional bedrock removal. **ACTION:** Rerecich will update the MOC and coordinate with FPOM on the proposed changes.

Next NWP FFDRWG Meeting: 5 October 2017, from 09:00-12:00 (Location TBD)