CENWP-PM-E 06 August 2020

MEMORANDUM FOR THE RECORD

Subject: Draft minutes for the 06 August 2020 FFDRWG meeting.

The meeting was held via Web-Ex and conference call.

In attendance:

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1. Final decisions or recommendations made at this meeting.
   1. Hausmann will provide an update of the Cascade Island PIT detection system at FPOM.
   2. Next meeting is October 6, 2020.
2. The following documents are provided or discussed at this meeting. All documents can be found at: <http://pweb.crohms.org/tmt/documents/FPOM/2010/FFDRWG/FFDRWG.html>.
   1. Agenda
   2. FFDRWG updates
   3. PIT Barge presentation (NOAA)
   4. Rock Removal PDT presentation (NWP)
3. Ongoing project updates:
   1. Bonneville PIT detection – *Jeff Hicks (PM), Brandt Bannister (TL), Ida Royer (FL)*
      1. The EDR is complete. The PDT is awaiting funding for the next phase of the design.
      2. Update on BPA-funded PIT barge (Gabe Brooks, NOAA) - For the last few years, they have leased a half width barge from West Corps Environmental. The 2018 study was the feasibility test. It was moored near the Columbia River trawl. The main issue was debris. In 2019, the auto debris shedder was installed. The barge was not put into the water until the end of June due to the government shut down. The barge had a bit of wondering because the velocities were higher closer to the dam than the previous location. The fence around the barge worked to exclude the sea lions. The goal for this year was to have the barge deployed for longer, in higher velocity water and try a different fin configuration. In 2020, the fin was modified to prevent wondering. The barge sampled the entire time regardless of water velocity. The anchor was upgraded after the barge moved two miles downstream. The barge identified 625 unique detections. In comparison, the trawl picked up an average of ~11,240 over the last three seasons. The pattern of detections from the barge followed the pattern of the detections at the corner collector. They knew that there were more fish on the Oregon side than the Washington side but the other conditions were better for barge placement on the Washington side. Brooks feels confident that the barge can withstand high velocity and high debris. They don’t have funding for renting this barge for next year but have identified several locations that this technology could be used in the future – BON PH1 forebay, Drano Lake, and several Willamette locations. Van Dyke asked if the goal was to see an equal distribution across the barge. Brooks said that they were hoping to get an equal distribution but fish were avoiding the center fins. The contractor did testing with dummy fish but NOAA wasn’t able to go out to the barge to do an efficiency test due to COVID-19 concerns. Van Dyke said the goal should be to detect the passage as it occurs not change the route of the fish. The fins are 1m apart and about 4” thick. It is possible that fish could feel the pressure between the fins causing avoidance. Most fish were detected on the outside fins. Brooks thinks they saw avoidance but he can’t say for sure since they didn’t test it. Conder saw a similar issue with adult fish in another study and suggested that fish might just be avoiding any obstacle in the water. The flexible antenna helped with preventing the avoidance issues but there is still need to go in with some underwater sonar to get better data. Morrill asked how many arrays would need to be distributed below Bonneville reach the same level of detections as the trawl. Brooks said that if the barge was full size that you could extrapolate that there would be twice as many detections. This would be mean that it would require 9 PIT barges but there are some assumptions that would need to be explored.
      3. Cascade Island PIT detection system – Warf is looking for a status update on the Corps ability to provide the structural requirements for the new PIT system going in on the Cascade Island ladder. PSMFC submitted drawings to BON engineers. They have been in discussions with Hausmann. PSMFC is ready to put the antennas out for bid but need to make sure that Corps side is ready. This topic will be added to the FPOM agenda.
   2. Bonneville Second Powerhouse FGE – *Jim Adams (PM), Bridget Bell (TL), Jon Rerecich (FL)* -The contract is out for solicitation right now. The PDT is hoping that the bids are low enough that several options can be done as well. The construction window is December- February. MU 15 will be the first unit completed. The contract has four options including MU11. The options will only be exercised after the hydraulic testing is complete. The hydraulic testing is scheduled for the spring. The additional construction would occur in 2021-22. Conder has concerns about MU11 construction due to the proximity to the corner collector. MU 11 and 18 need to be done in the IWWP. The others units will be done one at a time throughout the year.
   3. John Day Turbine Rehab – *Steve Sipe (PM), Curtis Lipski (TL),* *Jon Rerecich (FL)* The physical model work was delayed due to COVID. ERDC is now back to work. There is an economic model for Kaplan and fixed blade units that is computer generated that they have been able to work on. The physical model will address tailrace egress. CFD modeling will be done as well. The 60% DDR/Plans and Specs will be out for review 28 August-18 September. The PDT will have model results and comments from the review to discuss at the October FFDRWG meeting.
4. New and upcoming projects for FFDRWG coordination:
   1. The Dalles AWS Trash Rake – *Mark Dasso (PM), Artem Kuryachy (TL), Jon Rerecich (FL)* - the focus of the AWS back-up system was on short duration use during an outage. Now with the upcoming fish unit rehab, the AWS might run for up to 2 years. After the debris issues on the last run, the PDT is reconvening. They need to review the data that was gathered to see if this runtime was enough or if they need to run it longer. The ROV showed a gap in the trash racks. Cordie will update the region at FPOM.
   2. *Bonneville Spillway Rock Removal* – *Jeremiah Woodard (PM), Max Wilson-Fey (TL), Ida Royer (FL)* - Rocks have been moving upstream into the spilling basin. Emergency contracts need to be awarded during the winter before spill begins. A PDT has been formed to determine if a structural alternative can be identified to prevent rocks from moving into the stilling basin. The structural alternative will be compared to doing an emergency contract to physically remove rocks from the stilling basin. This effort will not address problems in the apron or structural issues on the spillway. The problem stems from the flow deflectors that were added to degas the spillway. The flow deflectors are good for fish but causes side velocities or jets that push the rocks into the middle of the apron. Once the rocks are in the stilling basin, they can’t be flushed out and can only be manually removed. Survey results show about 3000 cubic yards of material that could move upstream. The team has identified some preliminary criteria and constraints like spill volumes, in water work windows, can’t impact fish, no additional O&M, and must be able to withstand the 100yr flood event (500Kcfs). All alternatives must be constructed in the wet; no coffer dam will be used. The team has come up with three alternatives.
5. Road block set on the apron in the rock pathway. The shape is undecided. A triangular base with pyramid shape like a current road barrier is a possible shape. The barriers will prevent the rocks from moving into the stilling basin but they would still need to remove the rocks from downstream of the road block. From the apron, the rocks could be removed manually or flushed off and it could be done before spill starts.
6. Extending the continuous baffle also called a Jersey barrier. Conder has concerns that the rocks could build up and make their own ramp if the height wasn’t high enough. Ebner said that the height is pretty high almost to the elevation of the baffle blocks. Bettin asked if there is an in season pattern that would flush off the rocks from there. Ebner would need to look at it more but it would require a very high volume like 450.
7. Raising the apron to prevent rocks from jumping up to the apron. This alternative would be the most costly and would require a lot of cement. The team will model this alternative to see if it would be more economical in the long run. Conder asked if it would require a coffer dam. The idea was to make concrete molds and place on top of the current apron.

Van Dyke asked about the 2012 modeling and if there was an orientation of the block that could have self-cleaning effect. It was not looked at in 2012 and it was not proposed in the numerical model either. Ebner said that the angle of the block is for flow and being able to withstand a very high event like 500Kcfs. Different angles were not modeled because they couldn’t get a good seal on the model apron in 2012. Van Dyke asked what the difference is between high spill and flushing spill. The flushing spill is done at the beginning of April and only three bays are used. It is not part of the spill pattern and would not be good for juvenile fish. During the season, a flushing spill can only be done under a high freshet. The spill volume would be high but only a short duration. Morrill asked for the presentation to be posted to the website. It is posted [here](http://pweb.crohms.org/tmt/documents/FPOM/2010/FFDRWG/2020%20August%20FFDRWG). CFD modeling is underway. The physical model will be dependent on the COVID situation. The Phase 1 report will be ready for the December meeting. There may be a site visit to ERDC but it depends on the pandemic. Bettin asked if a live recording could be shown. Ebner said there are technical restrictions with live feed. They have to record trials and send a video. Van Dyke asked if they could record flushing operations and share the video. Ebner said that she hasn’t tried to flushing operations so she doesn’t have video. Ebner said she still needs to run the flushing trails. She did measure what it takes to override the deflectors but hasn’t tried to flush those rocks back off.

* 1. Fish Accords Adult Lamprey Passage Improvements – *Bob Winters (PM), Jacob Macdonald (FL)*
     1. Multiple design efforts beginning in FY21 for FFDRWG coordination
     2. Initial priorities being considered include extensive minor modifications to the Bradford Island fishway, a complete redesign of the Washington Shore control section, entrance improvements at B-Branch and John Day South, and new lamprey passage structures in the transition pools at all the ladders. Van Dyke asked if the funding was O&M or another source. Royer said that this is part of the Tribal Accords funding. It is separate from CRFM and specific to lamprey. The serpentine section might be partially O&M. The details will be discussed as we move forward.
     3. More detail at October 6th FFDRWG and as design teams are initiated.

**Upcoming FFDRWG Meetings:** 10/6/2020, 12/3/2020