CENWP-PM-E 06 December 2018

MEMORANDUM FOR THE RECORD

Subject: Draft minutes for the 06 December 2018 FFDRWG meeting.

The meeting was held at the Lobby Conference Room, Block 300 USACE office in Portland, OR.

In attendance:

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| --- | --- | --- | --- |
| **Last** | **First** | **Agency** | **Email** |
| Axel | Gordon | NOAA |  |
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| Bettin | Scott | BPA | [swbettin@bpa.gov](mailto:swbettin@bpa.gov) |
| Brooks | Gabe | NOAA |  |
| Conder | Trevor | NOAA | [trevor.conder@noaa.gov](mailto:trevor.conder@noaa.gov) |
| Ebner | Laurie | NWP | [Laurie.L.Ebner@usace.army.mil](mailto:Laurie.L.Ebner@usace.army.mil) |
| Eppard | Brad | NWP-PME | [Mathew.B.Eppard@usace.army.mil](mailto:Mathew.B.Eppard@usace.army.mil) |
| Kovalchuk | Erin | NWP- ODT-F | Erin.H.Kovalchuk@usace.army.mil |
| Medina | George | NWP-PM-F | George.J.Medina@usace.army.mil |
| Peterson | Christine | BPA | [chpetersen@bpa.gov](mailto:chpetersen@bpa.gov) |
| Rerecich | Jon | NWP-PME | [Jonathan.G.Rerecich@usace.army.mil](mailto:Jonathan.G.Rerecich@usace.army.mil) |
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| Tackley | Sean | NWP-PM-E | Sean.C.Tackley@usace.army.mil |
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| Warf | Don | PSMFC | [DLWarf@psmfc.org](mailto:DLWharf@psmfc.org) |
| Wilson-Fey | Max | NWP-ENC-HD | Max.P.Wilson-Fey@usace.army.mil |

On the phone: Axel, Bettin, Brooks, Swank, Thompson, VanDyke and Warf.

1. Final decisions or recommendations made at this meeting.
   1. October minutes were approved.
2. Updates on Bonneville experimental PIT barge – Results from 2018 and future plans (Gordy Axel and Gabe Brooks, NOAA Fisheries) – The test barge fished the upper six feet of the water column using deployed fins. The barge was developed by West Corps Environmental. The goals were to see if they could detect fish and if the barge would stay in one position. The barge was located near Jones beach. An anti-sea lion fence was installed around the barge. The fins were designed to break away to release debris but they were breaking away too easily at first and their breakaway weight had to be increased. There were three anchors altogether to make sure the barge stayed in place. The movement was very little overall. In a sixty day deployment, 253 PIT tagged fish were detected. Most of the fish detected were hatchery fish and 65% of the fish were not detected at BON. A larger version of the barge has been developed to fish 18’ of the water column. Fish were detected across the whole array indicating that fish were not trying to avoid the barge. All equipment stays on board and data is sent electronically. New locations were proposed closer to BON but the anchoring system will have to be adjusted. Axel gave a total barge development project cost estimate of $149,750 for a barge with an 18’ detection system. Conder asked what the restrictions were to be closer to BON. Axel said flow and debris are big concerns. Ten trips were made to clear debris on the test barge. Also, the barge has to be outside of the BRZ so that the team can have access to the barge at all times. Brooks is looking for a method to remove debris automatically. Otherwise, they would put it up by the JBS outfall pipe. Bettin asked about a locator beacon but they were not that concerned about it sinking but they have concerns about debris moving it. There is some decking on the barge for personnel but they tried to limit the decking. The fence to keep the sea lions off worked and no sea lions used it. The cost would be higher to purchase ~250-300K but West Corp is planning on constructing and leasing. The 150K doesn’t include West Corp in-kind engineering work. Peterson asked if the detection rates were biased to higher in the water column. Brooks said the location was a poor choice and they would detect more in a better spot. There were no arrays down near Ives Island to compare the results. Eppard asked if adding detectors to other BON locations to increase detections was still part of the plan or if the barge would replace those ideas. The JBS outfall is still a plan with a flexible antenna. The pins in the map are the planned locations for next year but after that they would like to cover at least the JBS, if not the ITS and B2CC. Bettin asked about the forebay. Axel says it could be possible but it would need a proper anchoring system. Bettin thinks it could increase the first powerhouse detections that are going through the sluiceway. The pin locations are not for permanent installation; they are the test sites for 2019. Eppard asked about how this data can be used for system estimated survival since this is a spot 2 miles downstream of BON and the historical data is at BON. Conder said that this is a benefit; there is an initial spot and a recapture spot. Eppard pointed out that the estimating system survival would have to be aware of the change. Conder asked where the COE is on this project. Eppard said that the COE has written a charter and is aligning funds but that the main focus for the COE is detections at BON. Bettin thinks that this will augment the lower PIT trawl numbers that estimate system survival. More detections increase the confidence of the system survival. Eppard thought the percentage of the fish detected at BON was higher with the barge than the percent detected at the trawl. **ACTION: Axel will send the PIT trawl numbers to Tackley for distribution**. Conder asked if each fin had multiple antenna to determine depths. Each fin has two paired antennas with one reader. Peterson said that BON detection is a top priority so even though the funds are not in place she thinks it will work out.
3. Outstanding action items:
   1. Lamprey Passage Minor Fishway Modifications - **ACTION:** Walker will follow up with FFU and the project and then communicate the status of the redistribution of the rest boxes to FFDRWG. **STATUS: The boxes will not be redistributed at WA shore this winter. The monitoring needs to go through a more formal SRWG study. The orifice cuts are going forward.**
   2. The Dalles Back-Up AWS - **ACTION:** Rerecich will identify the testing dates. **STATUS: Successful testing of backup AWS and one fish unit completed on 11/28.**
   3. The Dalles Back-Up AWS - **ACTION:** Rerecich make sure the risks of running the AWS unscreened compared to running one fish unit with minimal criteria is evaluated in the alternatives report. **STATUS: Evaluation strategy is in development.**
   4. Turbine Survival Program - **ACTION:** Rerecich will post the TSP report when available. **STATUS: A few B2 report hard copies are available.**
   5. B2 orifices - **ACTION:** Eppard and Rerecich will have another conversation with Medina on the status of the B2 orifice project and report back to the group. **STATUS: The COE has not identified any known problem so they can’t move forward. The PLC upgrades have been completed.**
4. Quick updates:
   1. Lamprey Minor Fishway Modifications (Turaski/Knowles/Walker) – BON project will cut the orifices in the rest of the odd numbered weirs this winter.
   2. Lamprey Passage Structures (Bluhm/Schroeder/Walker) – The pumps are being upgraded, installing wet wells and upgrading some electrical work at JDA-N this winter. The PDT is discussing building a bigger collection box for JDA-N LPS in the future.
   3. Bonneville PIT Feasibility - NEW (Ament/Bannister/Royer). The PDT is being formed and funding is being set up. No meetings have occurred yet.
   4. The Dalles Fish Unit Turbine Rehab (Bluhm/Schroeder/Rerecich) –
   5. The Dalles East Fish Ladder AWS Backup (Wright/Rerecich) - The AWS back up was re-tested along with the one fish unit operation and both tests were a success. Air entrainment was observed in the junction pool. The 7’ penstock vent was closed to alleviate the problem but it started cavitation issues. The bubble problem is better than the vibration. With one fish unit at 2500 and the AWS, two entrances were in criteria and one was out but close to being in. Some simple velocity testing was being done. The turbine rehab PDT will meet to discuss the options available using the results of these tests. The tail water was at 75’ which is low. The air bubbles might be better under higher flows/ tail water level. The AWS intake opening is elevation 123-113’. Forebay is 158’ usually, ranging 157-160’. Bettin pointed out that the range is back to 5’. The fish units are not screened and the intake opening is at elevation 130-58’. Bellerud had suggested a hydro acoustic study to look at the AWS intake. Conder asked about the significance of the bubbles. Schlenker did not think it would be issue and will look at adding vents to target the cavitation noise. The 7’ butterfly valves were going to open sequentially but the PDT changed the operation to opening simultaneously. Now that the parts have been lubricated more, the valves will open easier. Tackley requested that a trip report be sent out to the group.
   6. John Day Turbine Rehab (Medina/Lipski/Rerecich) Medina said the Phase 1A report will be out for review in March. The team is looking at total replacements and partial replacements with fish friendly units. The project has to look at assembling in place and check on the feasibility of support/transport of the delivery of the units. The team is assessing the current conditions of the generators and recommending to rewind the units. The cranes also need some work. JDA will be replacing transformers and even though this is outside of the scope of work, it needs to be thought about in conjunction with this project. Bettin asked if the transformers can be bigger. Medina said that it is possible. Conder asked if screens were being looked at. Medina said that screens are not part of this project and the turbines will be designed as if there were no screens. There will be a combination of fixed blade and Kaplan units but the number of each has not been determined.
5. Bonneville B2 FGE Final DDR Discussion (Medina/Roshani/Rerecich) - The DDR was sent out and comments were received. Rerecich said that the modified VBS only changes the material of the flow control structure. The results from the previous study had good quality data. The hydraulic criteria which is directly linked to the survival will not change. The decision was made to change the material of the flow control structure after the anchor bolts came off the steel plates. Conder asked if the flow will be remain the same. Schlenker said there is a range but it should be about the same flow. Ebner presented the CFD modeling results and the flow is very similar. The goal was to have the same gatewell hydraulic conditions in 15ABC with 15kcfs at 18kcfs. The target flow is below 232cfs. The initial corbel lengths in slot A was 20” and slot B was 11” but the team recommended 18” slot A and 11” slot B corbel length. Steel plate velocities taken by Alden is very similar to the corbels CFD modeling results that Ebner ran. Rerecich said that they received comments about the schedule and the PDT recognizes that there is risk in this schedule. The flow is highly dependent on the weather conditions but the tests need to match the data collected with the steel plates. Bettin said that 17 should be achievable. Ebner said that 12, 15 and 18 were the flows in the first test which has to be the flows in the second test. Ideally 18.3 but only if they can. Conder asked about moving out of the 1% but Ebner said that it is net head. Ebner will update the chart to indicate the risks of going outside of the 1% and manipulating the forebay. Rerecich feels that there is good biological data and doesn’t think that additional biological testing is necessary. Conder said if the conditions are 5% different and there is no plan for a biological testing than the project is a year behind schedule. Rerecich said that the hydraulic testing cannot be done at the same time as the biological testing due to space. Conder brought up the missing fish estimate where the fish could be lost or presumed dead. Rerecich said that they have data collected from 2014 and 2015 and agree that they did have missing fish. The post construction evaluation design will intensively study gap loss. In the year 1 results, there was higher gap loss in slot A than C but Rerecich feels that the data is looking promising to operate in the full 1% range. Conder is worried about targeting a flow that is a little higher plus the error range might give conditions that are different than before. Ebner changed the target flow from 232cfs to what the conditions were under the biological testing and will add the current target to the chart. Ebner is also modeling a -4” difference in addition to the -2” to make sure the target is being achieved. Outfitting the whole powerhouse with concrete would be complete in 2021. Bettin asked about the schedule for planned outages for transformers but it was not known. Bettin asked if it was built in place or brought in. The concrete will be built in place and go onto the existing rebar. Concrete will not be as susceptible to vibration as the steel was.

**Next NWP FFDRWG Meeting:** 7 February 2019, from 09:30-12:00