

MEMORANDUM FOR THE RECORD

Subject: Final minutes for the 05 May 2020 Willamette Fish Facility Design Work Group meeting.

The meeting was held via conference call. In attendance:

Last name	First Name	Agency	Email
Budai	Chris	NWP	Christine.M.Budai@usace.army.mil
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Ziller	Jeff	ODFW	Jeffrey.S.Ziller@state.or.us

Meeting Purpose:

Finalize previous meeting notes. Provide an update on status of active design projects and discussions/presentation from the Foster Ladder PDT.

1. Final decisions or recommendations made at this meeting.
 - 1.1. Mullan requested one additional day to review the April meeting minutes
2. Review Dates

Document	Review Dates
Foster Ladder 30%DDR Report	May
Foster DSP with modeling results	coming soon
Cougar DSP 70% Plans and Specs	June
High Head Bypass 60% report	comments due 15 May

3. Updates on active design/construction projects

- 3.1. Fall Creek AFF – The first CHS came in on 20 April and the count is now up to 27. More than 60 STW have returned as well. After the season, the contractor will resume work on the pipe liner. The PDT is still working out if one or two coats of the liner will be acceptable.
- 3.2. Cougar DSP 2.0 – The AE contract is in the process of being modified to bring three alternatives forward instead of one to the 90%. The three alternatives are: diversion tunnel at 1290, diversion tunnel with pool at 1340 and modified penstock to pass fish and the diversion tunnel to pass flow. The team is working on addressing the comments received on the prior report.
- 3.3. Detroit Temp Control and DSP – no new update. The physical model has not started yet because ERDC is on a telework policy due to the COVID-19 restrictions. CFD modeling is continuing.
- 3.4. High Head Bypass – No major updates. The 90% report is out for review and comments are due 15 May.
- 3.5. Foster DSP - Fish Weir Design Improvements – Litzenberg presented the CFD modeling results last month showing very little benefit for the plunge pool design. The PDT is not going forward with the proposed plunge pool design because of very little benefit to fish survival, considering the construction and costs. Instead, the PDT is evaluating other alternatives for improving downstream passage. Litzenberg is working on the CFD modeling results report for the proposed plunge pool for the fish weir. The report will be out in a couple of weeks. The interim nighttime spill operations for downstream fish passage are ongoing from March 1- May 31. The fish weir has a benefit of passing warm surface water for warming up the river downstream of Foster Dam and improving adult upstream passage back to the fish facility. The fish weir will be installed and operated starting 01 June to July 31 to pass the warm water for attracting adult salmon back to the fish facility. Juvenile downstream passage is usually over by the end of May, so the fish weir operations in June and July will not affect downstream passage.
- 3.6. Cougar DSP – updates and discussion on the 70% P&S. Tarbox gave a 3-D model presentation on the FSS. The report should be out in June for review; the team will give a more in-depth discussion at the June meeting. Mullan asked if there were any issues with moving the vessel in emergencies or with the flow. The vessel will move up and down with the forebay level. The temperature control tower has a hydraulic connection so that will move as well. Changes in outflow from the dam are minimal but the vessel has ballasts to help with balance. If there was a major change that was predicted then they could set the collector to prepare for it. Emergency situations may require the tower to be opened fully and no fish collection would take place. Mullan asked if there is still a connection to the high head bypass pipe. Tarbox showed the port at the back of the vessel. The expectation is that there would be three to five people on the vessel at a time to move the fish. Kelley asked if the vessel could be less complicated if the passage was volitional. Khan said that they still have to collect the fish even if they used the bypass system. The FSS could be slightly less complicated but they are certain that they need to collect the fish. The structure would still need to be maintained especially with debris issues. They would still

need 5-7 workers during the day; at night, they could go down to 2 workers. Ziller said that if the passage was volitional, it wouldn't be collecting the fish but rather dewatering the fish. Khan said even in a by-pass situation, the vessel has to attract the fish and bring them into the system. Budai said a sample of fish will also be collected to evaluate the system.

- 3.7. Foster AFF ladder Improvements – presentation/discussion on the 30% DDR. The 30% DDR has gone through the internal review and will be sent out to the region soon. Dunlop gave an overview of the report. The PDT has identified the water temperature as the problem at the adult fish ladder. The water is too cold which creates a temperature block for the fish attempting to ascend the ladder. The alternative chosen from the EDR process is to create a new water supply intake and mix water from different elevations to produce the temperature targets. The targets are based on the S. Santiam River above Foster. Dunlop showed drawings of the proposed system. For the 60% DDR, CFD modeling will be used to predict the hydraulic conditions in front of the screen of the proposed intake. The juvenile holding tank location is not known yet. The DDR is still early in the process. Ziller asked why they didn't go with a water supply location that could move to draw water at the desired temperature. A fixed location is a simpler design. The temperature of the water will result from mixing several sources of water. To change the temperature, the amount of the warmer or cooler water would change. The depths of the three intakes are: 630 (proposed), 599.25 (old) and 584.25 (old). USGS did some temperature modeling of the forebay to identify the location of the upper intake. Ziller asked how this fits in with the weir operations. Khan said the new intake shouldn't interfere with the weir operation. In fact, the sweeping flow from the weir might help to pull debris from the intake screen. When the weir is not running there will be no sweeping flow, so they are looking at back spray and brush cleaning.

- 3.7.1. Green Peter (GPR) reservoir will be full this year. The PDT is considering a spill test at GP to pass warm surface water downstream into the Foster reservoir to warm up the water. The USGS modeling work indicated warm water from GPR could warm up the Foster reservoir at the elevation where the intakes for the fish facility water supply are located. The PDT would like to validate the USGS model with a spill test at GPR to see if the water temperature will increase in the Foster fish ladder and attract fish into the ladder. The proposed test is a 3 week spill operation, approximately the end of May-beginning of June. The water should take a week to get down to Foster and mix in the reservoir. Temperature loggers will be placed in the ladder to monitor temperatures and the ladder will be monitored to see if fish are responding to the warmer water. The average flow out of GPR will remain the same per Water Management. The flow will shift from power flow to spill flow, approximately a 60% spill/40% power. The PDT wanted to do this test last year, but the GPR reservoir did not fill to the spillway and there were some dam safety issues that needed to be addressed first. Khan needs to confer with Boyd (ODFW) to make sure this operation would not affect the hatchery pipe before implementing the spill test. The operation would have to begin in the next couple of weeks for it to be successful. It is a combined operation of the GPR spill and the weir operation. Adult Chinook salmon start returning to Foster about Mid-May. This special spill operation is being coordinated internally with the Corps and with BPA and implementation is contingent on approvals. Khan will update the WFFDWG during the June 2 meeting if this special spill operation was approved and is occurring this year.

Next WFFDWG meeting currently scheduled for June 2