

MEMORANDUM FOR THE RECORD

Subject: Final minutes for the 07 May 2019 Willamette Fish Facility Design Work Group meeting.

The meeting was held in the Steelhead Room, ODFW Building in Salem, OR (NWP). In attendance:

Last name	First Name	Agency	Email
Boyd	Brett	ODFW	Brett.h.boyd@state.or.us
Dishman	Diana	NOAA	Diana.Dishman@noaa.gov
Fortuny	Kristy	NWP-ENC-HD	Kristina.R.Fortuny@usace.army.mil
Fielding	Scott	NWP	Scott.D.Fielding@usace.army.mil
Hudson	Mike	USFWS	michael_hudson@fws.gov
Jundt	Melissa	NMFS	melissa.jundt@noaa.gov
Kelley	Elise	ODFW	elise.x.kelley@state.or.us
Khan	Fenton	NWP-PM-E	Fenton.o.khan@usace.army.mil
Kovalchuk	Erin	NWP-ODT-F	Erin.H.Kovalchuk@usace.army.mil
Lofflink	Ken	ODFW	Ken.j.loffink@state.or.us
Mullan	Anne	NMFS	Anne.Mullan@noaa.gov
Murauskas	Josh	Four Peaks Consulting	jmurauskas@fourpeaksenv.com
Neuenhoff	Rachel	NWP-PME	Rachel.D.Neuenhoff@usace.army.mil
Reis	Kelly	ODFW	Kelly.E.Reis@state.or.us
Rerecich	Jon	NWP-PM-E	Jonathon.G.Rerecich@usace.army.mil
Richards	Natalie	NWP	Natalie.A.Richards@usace.army.mil
Royer	Ida	NWP-PM-E	Ida.M.Royer@usace.army.mil
Schlenker	Steve	NWP	Stephen.J.Schlenker@usace.army.mil
Schwabe	Lawrence	Grand Ronde Tribe	Lawrence.Schwabe@grandronde.org
Tarbox	Erica	NWP	Erica.M.Tarbox@usace.army.mil
Woolbright	Ryan	NWP-ENC-HD	Ryan.C.Woolbright@usace.army.mil
Ziller	Jeff	ODFW	Jeffrey.S.Ziller@state.or.us

On the phone: Boyd, Fielding, Hudson, Kovalchuk, Murauskas, Neuenhoff, Richards, Royer, Tarbox, Woolbright and Ziller.

Meeting Purpose:

Finalize previous meeting notes. Provide an update on status of active design projects and a presentation and discussion of the Detroit FSS 95% DDR. All documents are located at:

http://pweb.crohms.org/tmt/documents/FPOM/2010/Willamette_Coordination/Willamette%20FPT/

1. Final decisions or recommendations made at this meeting.
 - 1.1. April meeting minutes were approved.
 - 1.2. Detroit 95% DDR – Khan will set up a meeting to specifically discuss the stresses on juvenile fish and the potential of sedating them to alleviate impacts. This meeting will occur after the 95% document has been reviewed.

2. Upcoming Reviews

Document	Review Dates
Cougar DSP 30% Plans and Specs	Closes 15 May
Cougar DSP 60% Plans and Specs	August
Cougar physical model site visit	1-May
Detroit SWS DDR90%	8-May
Detroit FSS DDR 95% new tower location	Mid-May
Detroit EIS	Closes 30-April
Foster Ladder Draft Assessment Report	end of June
Foster Ladder DSP supplemental EDR Report	Mid-May
High Head By-pass 90% parameters report	June

3. Updates on active design/construction projects

3.1. Fall Creek AFF – No new updates. The pipe lining is on hold until next year. Fall Creek is not funded for next year in the President’s budget but Richards is working on getting funds.

3.2. Foster DSP and AFF ladder

3.2.1.DSP-The PDT selected the plunge pool alternative and are currently doing the hydraulic modeling. Obermeyer has been engaged to start designing for custom weirs. The June meeting will have an update and supplemental EDR for review. The Foster Project is continuing the 7pm-7am special spill through 15 June for fish passage while the weir is out of service and generating during the day. Foster has to generate for station service during the nighttime spill, which has a benefit of reducing TDG downstream. OSU was able to partially spawn winter steelhead at Minto for eggs for surrogates for the weir study in 2021 that requires two year old fish.

3.2.2.Ladder – The PDT is focusing on structural alternatives and investigating potential for operational alternatives. For potential operational alternatives, one suggestion was to not raise the pool to summer elevations, but the low pool did not warm up the water enough and it would change the authorized purpose of the Foster Project. Another suggestion was to use Green Peter spill which worked better but the temps still fell short in May/June by ~4° and by summer, the water going to the holding ponds would be too warm. The temperature targets for the ladder are warmer than what is desired for the holding ponds. The PDT is focusing on a structural system that can have a different ladder temperature than the holding ponds. Royer said that they will be designing the system for a higher temperature so that they have flexibility, but plan on using mid-50°s for the ladder. Kelley asked if the structural design would have two different sources of water. Schlenker said the mixing would occur after the holding ponds. Khan wants to discuss more on the location of the intake. Boyd asked for the temperature mixing to be available for the truck transport as well to temper fish. The EDR will be out by the end of the fiscal year.

3.3. Cougar DSP

3.3.1. Q&A on the 30% Plans and Specs that was distributed for review - Comments are due by 15 May.

3.3.2.Recap of the visit to the Cougar physical model – Three flows were modeled: 405, 1060, and 655 cfs. There were no red flags. The model is 1 to 10 scale. The zone of influence and

how far it extends outside of the model was the key feature. Lofflink thought the flows and velocities looked good but thinks that the environmental conditions may influence the collector more. The model showed four primary screens but the prototype will have twenty so there will be some flexibility for operations. The collector is designed for surface oriented fish. Mullan also noted that the prototype is expected to be optimized as the elevation changes. Fielding would like each group to send him comments to compile by next week. Mullan asked about adding debris to the model. Ziller asked if there were plans to retest the model with guiding nets. Fielding said the contract allows for only a couple of changes so they are prioritizing head loss and entrance configuration but no nets or guidance barriers. Alden Labs suggested that there was some recirculation from Rush Mountain and Rush Creek. The recirculation from Rush Mountain and Creek are small and this portion of the model domain was omitted from the physical model. **ACTION: Fielding will pass the Alden Lab presentation to Kovalchuk for posting to the website.**

- 3.4. High Head Bypass – The team is trying to award the task order for an A/E contractor to develop alternatives for the EDR for Cougar and if funding is available then award for Detroit as well. The PDT will hold a workshop with WFFDWG and the A/E contractor to develop alternatives for bypass at Cougar. Khan will send out the invite.
4. Detroit revised FSS 95% DDR presentation
 - 4.1. Detailed walk through of the FSS 95% DDR to prepare the group for the upcoming DDR review. Fortuny gave an overview of the facility. The size was reduced by increasing the velocities at the top end of the screens which made the facility narrower. The change in screen size would keep the facility in criteria except above 4500cfs. Both the buildings are on the floating platform so the buildings and FSS would move together. The PDT has decided against the amphibious vehicles. Fortuny pointed out a change in the new configuration which is that the flow path loops around and goes under the screen section where there is a hydraulic connection into the SWS. The size of the facility is deceiving on paper. The structure is about 70' tall and when it comes up for maintenance, the yellow belly tanks will need to be ~60' out of the water. There are three screen system operation scenarios. The first is the normal operation, the second with the entrance weir all the way open and the third with flexibility to throttle the plenum gates. Schlenker explained the hydraulic profiles for each of these scenarios with three different flows. The charts shown were not in the report but the presentation was sent out to the group. R2 created a technical memorandum on increasing the approach velocities on the primary screens with the goal to reduce the length of the FSS. The plan is to design to NMFS criteria and they need also to look at construction feasibility, cost and geo technical issues. Jundt asked about the timing of when the flows that go over 4500cfs. Rerecich said that the data hasn't been compared to the biological data. Jundt said that this is a major shift in operation going from 3500 to 4500cfs. Rerecich said that they want to look at the time of year and how often they will exceed criteria. Khan clarified that this Technical Memo is a possible alternative in the future not a completed decision. This report will be in the Appendices. Although the document is a 95%, there will be another version of the DDR that will come out in a couple of years with lessons learned from Cougar. The biological assessment will be completed before then. **Jundt requested that the COE continue to engage the agencies throughout the decision process.** The entrance configuration change is that the gate leaf is now one solid gate instead of three leaves. After looking at the CFD modeling, the outlet for the pumps could attract fish. An avoidance net will

be necessary to keep fish out if/when using the pumps. Fortuny said that dam safety is worried about blasting next to the dam. Reducing the size of the FSS would greatly lower the amount excavated. The geotechnical staff is not sure how much rock is in the corner next to the dam. Dishman suggested moving the fish handling facility to reduce the need to excavate. When the contractor comes on, they will do exploratory borings first. Having the early contractor status is a huge benefit and an unusual situation. Both FSS and SWS excavation will be done at once. Schlenker gave an overview of the CFD modeling without pumps. If pumps are necessary, then nets will be added. Kelley asked what the concerns are about fish behavior with the pump aided flows. The concerns are mainly about creating confusion so that the fish turn around and go back upstream. Having the flows recirculate could push fish back to the collector. Jundt said the net should have a solid piece for the top 30' to restrict flow. The net was modeled with a mesh top and Rerecich suggested making that comment on the report. The fish handling facility was moved from the back to the side of the FSS. There is an emergency shut off gate that is not pictured. Rerecich didn't think that the rotating vertical screens would work as well as they do on the North Fork and suggested a stationary screens in his review. Jundt agreed with this comment and thought it could lead to injury in that section. Kelley said that the adult fish in the tank should be sedated before crowding but it would be very difficult in a tank this size. Kelley also said that Carl Schrek's report showed that even the juveniles should be sedated. Jundt disagreed and said that at the Clackamas Facility, they had contradictory results. This topic needs a proper discussion with all the stressors involved. Kelley would like Schrek to be invited to the meeting. Jundt said it is important to have the strategy of handling worked out prior to deciding on the operations. Subsampling and expanding out the index is preferable to more intensive sampling and handling. Jundt recommended using cameras instead of personnel to check on adult fish in the holding tank and keeping a lid/dark mesh on the tank. The PIT tag detection is not included now but will be in the 100% report. **Rerecich would like to have the discussion on sedating juvenile fish soon after the 95% review is complete. ACTION: Khan will set up this meeting.** Fortuny said that the fish handling facility was elevated to help save space for personnel. There are some configurations constraints on the fish handling facility layout. For instance, the anesthetic tanks can't be in a position where they could be flooded so they have to be elevated. The AE contract is coming to a close and Fortuny can't keep extending it. Khan stressed the importance of the agency comments on the review being completed in the comment period. The comments will be sent to the AE contractor and they will need to address them. If comments come in after the contract has finished then the contractor will not address them. Kelley brought up noise as an additional stressor and wondered if any thought had been put into how noisy this system will be. Other facilities have had vibrations issues. Schlenker said that there was a vibration analysis on the ramp downstream of the FSS intake but that seems to be the only one. The velocities are at lot slower than at JDA or BON which had vibration/ringing issues. Jundt had a comment on how difficult it will be to keep the stairs clean. Dishman asked what would happen under very high flows like 8-9K flows. Schlenker said that there would be flow through the FSS, spill and RO. The FSS has the full range of flow and can go to the max flood stage.

5. Next Steps

- 5.1. Next WFFDWG meeting currently scheduled for June 4. The Foster DSP supplemental EDR will be sent out before the next meeting and the PDT will give a presentation on it.

5.2. Upcoming reviews- The Detroit review comes out in a week. The SWS and FSS are at the same time. Khan will discuss internally and see if the reviews can be staggered so the agencies will not be overwhelmed with reports. HHB 90% that addresses the comments in the 60% will be out in a few weeks. Detroit is a higher priority than the other reviews.