

Lewis River Fish Passage Subcommittee Meeting

Agenda

Thursday November 10, 2022

2:30 to 4:30 pm

Teams

2:30	Introductions, Review Agenda and Approve Meeting Notes	All
2:40	Presentation: Dam Safety Issues at Merwin	Peter Martins
2:55	Update on Status of Draft "Elements of Fish Passage" <ul style="list-style-type: none">Identify remaining topics that may require more discussion	Todd Olson / All
3:10	Alternative Analysis <ul style="list-style-type: none">Brainstorming Objectives/Criteria for Alternative ReviewCourse level review of Alternatives in comparison to draft objectives/criteria	All
4:10	Preview of 30% Design Review <ul style="list-style-type: none">December 14th 30% Design Presentation	Chris Karchesky
4:25	Next meeting – December 8 th <ul style="list-style-type: none">Agenda	All
4:30	Adjourn	

**FINAL Meeting Notes
Lewis River License Implementation
ACC Fish Passage Subcommittee Meeting
November 10, 2022
MS Teams Meeting**

Attendees

Christina Donehower – Cowlitz Indian Tribe
Amanda Froberg – Cowlitz PUD
Steve West – Lower Columbia Fish Recovery Board
Beth Bendickson – PacifiCorp
Eric Hansen – PacifiCorp
Nathan Higa – PacifiCorp
Chris Karchesky – PacifiCorp
Peter Martins – PacifiCorp
Todd Olson – PacifiCorp
Jim Byrne – Trout Unlimited
Bryce Glaser – WDFW
Josua Holowatz – WDFW
Peggy Miller – WDFW
Erin Peterson – WDFW
Jeffrey Garnett – USFWS
Keely Murdoch – Yakama Nation Fisheries
Bill Sharp – Yakama Nation Fisheries

Introductions, Review Agenda and Meeting Notes

Bryce Glaser, WDFW, briefly reviewed the meeting agenda. A round of introductions was made. The June, July and August subcommittee meeting notes were approved. There will be a 7-day approval period, November 17, 2022, for those not able to attend the meeting. Beth Bendickson, PacifiCorp, will send out a reminder. If there are substantial comments, we'll discuss them at the next meeting; if not, they will be finalized.

Presentation: Dam Safety Issues at Merwin

Peter Martins, PacifiCorp, presented the PowerPoint *Lewis River Hydroelectric Projects Dam Safety Risk Reduction Program Schedule Update* (Attachment A).

Comments

Regarding Peter's described aspects of the proposed spillway, Jeff Garnett, USFWS, asked if there were any sketches or drawings that the group could take a look at. Peter replied not at this time. In the conceptual phase, PacifiCorp is doing a semi-qualitative risk analysis to come up with the correct hydraulic and seismic loading to address the risk. Conceptual designs can start from there.

Todd Olson, PacifiCorp, asked Jeff if he was referring to the conceptual fish passage facility? Jeff said, no, he was just trying to envision what it would look like. Peter said he would anticipate a spillway at least as long as the current one. Instead of the tainter gates opening up from the bottom, we envision they would be something like an Obermeyer style which drop down out of way. The only time the new gates would be operated would be during a very significant flow event that exceeds the capacity of the current spillway gates.

Regarding the new Merwin plant access bridge, the question was asked if it would go across the top of the dam or be a floating bridge. Peter said the bridge orientation will be part of the conceptual design. He envisions it would be a longer, single span bridge at an angle to where it terminates now by the fish passage building. However, one challenging aspect with spillway operations is there is a significant amount of mist when spilling so driving across the bridge is not desirable. Thus it may not be the way it ends up but that will all be figured out during the conceptual design process.

Bryce expressed his thanks to Peter and said the presentation was beneficial as it helped with other aspects of fish passage and how it overlays with how everything fits into it.

Peter said if folks have any questions to please check with Todd who will relay them to Peter.

Update on Status of Draft “Elements of Fish Passage”

Todd thanked everyone for providing comments on the last revision. WDFW provide redlines and Christine Donehower, Cowlitz Indian Tribe, Steve West, LCFRB, and others gave a lot of good input. Todd said he is currently going through and adding text to address all comments. The next version will demonstrate that we’re working well as a group on the sections to get clarity. He is putting all comments in a matrix table that hopes to get it distributed the week of November 14, 2022. It will be in redline so everyone can see where changes have been made. There are a few remaining topics to be discussed. Hopefully, we can agree on text in certain sections and then focus on the remaining items that need further discussion.

These include: 1) Proposal to delay Merwin downstream to 2032 (Todd is interested to see both USFWS and NMFS comments), 2) Type of downstream facility, 3) Funding amount, 4) Design, and 5) Kokanee mitigation (WDFW and PacifiCorp will meet in early December for a discussion). He asked if there are other items that should be added.

Bryce said the only thing he would suggest get added are the questions that need to be addressed for each topic.

Bryce would also like to touch upon timelines. He understands the pressure from FERC to show progress and we are all wanting to help show progress but need to complete the due diligence on the remaining topics. He is hoping to get more direction from USFWS and NMFS. Our timeline to get agreement/alignment with ACC might not happen for a little while longer. His idea included having this group or at the ACC level write something to FERC letting them know we are working on the elements and making progress. Todd said that would be appreciated and valuable as FERC has asked if we are going to be done by the end of the year. A letter from the ACC would be great to pass on to FERC. The Utilities fourth quarter update is due to FERC by December 31. If he could include a letter, it would be good timing. Bryce said it wasn’t touched upon at the ACC

meeting today, but we could put it on December agenda. Todd will talk with Erik Lesko, PacifiCorp, about adding it. From WDFW's viewpoint, Bryce added that we don't want FERC pressure or deadlines to keep us from completing due diligence. If we can have some time without slowing things down, that's our goal. Todd said the letter doesn't have to be long - what's more impactful is listing the people who are in agreement with the request. Bill Sharp, Yakama Nation Fisheries, said he likes the idea of the letter and particularly for NMFS to come back and be up to speed. Bryce asked if Todd could take a first stab at a draft. Jeff asked if this would identify a specific time delay or is it a yet to be determined? Todd doesn't want to tell FERC "we'll be done by March," rather it's more to let them know we're working on it. He's open to suggestions. Bryce hopes we can work through the issues (he doesn't want it open ended) and by December we may have a better feel for how much more time is needed.

Alternative Analysis

From a WDFW perspective, Bryce said this communication of information was what they had initially requested. This alternative analysis does that. We expected there might be a step two (deeper dive) into alternatives but want to try to strike a balance. We don't want to bog down the process of design work but want it to be robust enough for folks to be comfortable with the design. At the last meeting, we talked about having a workshop to get engineers together to work through things, to help get us closer. He has been trying to go back to respective groups to see if there were any "no go" or other alternatives. They heard from the LCFRB that it would be helpful to get a clear set of potential objectives or criteria that we would stack alternatives up against. "This might clarify as to if an alternative should or shouldn't move forward. Today, we can brainstorm."

Todd said perhaps we can spend time quickly identifying the key drivers for consideration. For example, Peter talked about dam safety. Bryce added the Settlement Agreement (SA) requirements. Another option would be to start with the selective reservoir release strategy but have ability to increase facility capacity for swim through passage. If we are leaning toward that option, we could eliminate other alternatives based on that. Todd added that the technology has to be approvable by the Services. Bryce said once NMFS staff is engaged there might be "unacceptable" technologies for them which could eliminate certain alternatives. We want to make sure we have chosen the right pathway with the reasoning around how we got there. He deferred to Steve West, LCFRB, who stated their most recent comments were to move the alternative analysis into a more structured format to enable comparing alternatives to objectives. If fish self-sorting is a goal, some objectives may lend better than others. He agrees it's a good strategy. Jeff Garnett also agreed it's a good plan to go through the alternatives in consideration of objectives. Bryce asked if we should go through them by project. Todd suggested staying at a high level, like cost and weather for instance. Some facilities may not work in cold weather. What happens if there is a mechanical failure? Fish stranding? For PacifiCorp, the top three are dam safety, accepted technology, and no impact to reservoir operations (flood control, high water events, generation, etc.). The fish passage facility, in this case, Yale downstream and Merwin downstream, need to be able to operate over a range of reservoir elevations. Bryce added, passing fish along with safety, timely and effective passage, and cost (SA language). Passage standards – collective efficiency and survival. The facilities need to be able to monitor that. Passage mortality through some alternatives may not be acceptable. Chris Karchesky, PacifiCorp, added that operational reliability is a big one and paramount to the alternatives discussion. One thing we have learned is that we want to build facilities that can accommodate debris management, access for safe and efficient working environments, and ability to sample fish. Bryce said initially it wasn't

clear if consideration of the alternatives would be in the 30% design meeting. Once we get through the that meeting, if we did have a follow-up meeting afterwards, we might have already heard some of the information. Chris said the 30% design meeting will be a analysis on facility aspects (mooring for example). The related documents will include the design team's rationale. Following review of the 30% design package, we can identify the items we all can agree on, and those we might want to discuss.

The group discussed and came up with a list of the following potential objectives:

- Cost - in context of SA language
 - Capital, design, construction, maintenance costs
- Operational reliability – Weather (wind, rain, snow, freezing conditions)
 - Required maintenance frequency and duration.
 - Ease of maintenance and repair (i.e. local parts acquisition, less technical expertise needed)
 - Low risk of mechanical failure and not strand fish
- Debris management
- Function under all flows and during all seasons (see SA for exceptions).
- Dam Safety – design can't compromise dam safety.
- Acceptable technology that is approvable by Services
- No impact to project operations – in particular, generation, operation for various reservoir levels and flood control – need to be able operate over different reservoir levels
- Safe, timely and effective passage for all transport species (at a minimum)
 - Ability to have adequate attraction flows over a range of conditions and at different reservoir levels
- Ability to meet and monitor performance standards
 - Evaluate facility recruitment/minimize delays
 - Collect all life stages (check to see if this applies to upstream and downstream)
- Employee/staffing safety.
- Ability to collect, handle, mark fish as required for evaluation and management.
- Transport fish (e.g., provide access for people, maintenance staff and fish trucks)
- Facility location
 - Operations – safe access to facility
 - Biological performance – is it in the best location that can catch/pass fish.
- Provide added capacity for subsequent expansion or for facility adjustments.

Other than what is listed in the matrix, Bryce asked if there is list of the initial criteria that the design team used that we could build on? Todd will work to put a list together that Chris, Eric Hansen, PacifiCorp, and Nathan Higa, PacifiCorp, can review and add any other items. Bryce will look at the SA for language and also pull from the Draft Elements Document. We need to have a facility that provides for selecting, marking, monitoring, and managing future fish returns. We can flush out those types of things and get a list out for others to review. The USFWS has the same objective as WDFW in terms of being able to mark, distribute, and monitor fish.

Bill inquired about operational history. Chris said the facilities were designed to operate 365 days a year/7 days a week. We've learned that the downstream collector at Swift has a natural outage in the summer. The Merwin upstream trap runs year-round. The only conditions that shut down

the facilities, beyond high flow spill, is freezing rain or icing. Fortunately, when those conditions typically occur, fish passage is slow.

Preview of 30% Design Review

Chris gave a preview of the upcoming 30% design review meeting. The approach that the design team has been working on is providing a narrative for the design as well as technical submittals for the Yale downstream facility as well as both of the Yale and Swift upstream facilities. The general theme is a presentation to go over the technical documents. The submittals will step through the design aspects and lay out how the design team came up with the design. This includes hydraulic modelling work to date along with consideration of various alternatives (locations, and rationale for selecting different aspects). This design information has been divided into several technical memorandums so it will be easier to work through and review them. All memorandums will be provided for review after the presentation. Per the SA, there will be 45 days for review. Then we can discuss and gather your input.

Eric added that a third component which is to provide a high level project completion schedule. Peggy Miller, WDFW, asked if there is any way to get the material before the meeting to review and ask questions? Chris said there is a time constraint. If we can, we will but it's coming down to the wire to give more time to the design team. At the meeting, we will step through the documents to make sure everyone is informed.

Jim Bryne, Trout Unlimited, asked if there was any chance that NOAA Fisheries may be able to participate in the meeting? Chris expects NMFS will have a representative (engineer) at the meeting. Bryce asked if the 45-day review was at the ACC level or at this subgroup review level. From a formal process standpoint Todd said, per the SA, he believes the 30% design will be shared as an announcement to the ACC, WDFW, and Services with a request for review and comments by a certain date. Peggy noted the SA states review by WDFW and Services. Todd added that PacifiCorp will also share it with the ACC via formal announcement.

Action Items from November 10, 2022	Status
Review September and October meeting notes and provide comments to Beth Bendickson for finalization at the December meeting.	

Action Items from October 13, 2022	Status
Review June, July, August, and September meeting notes and provide comments to Beth Bendickson for finalization at the November meeting.	June-Aug Complete
Review and provide feedback/questions on specific alternatives to Todd Olson.	Complete
Jeff Garnett will share a master/PhD document about bull trout criteria with the group.	

Action Items from September 21, 2022	Status
Review historical documents from original Swift Downstream construction.	

Next meeting: December 8, 2022

The meeting adjourned at 4:30 pm.

FINAL Meeting Notes
Lewis River License Implementation
ACC Fish Passage Subcommittee Meeting
November 10, 2022
MS Teams Meeting

Attachment A

Lewis River Hydroelectric Projects Dam Safety Risk Reduction
Program Schedule Update

Lewis River Hydroelectric Projects Dam Safety Risk Reduction Program Schedule Update

November 2022



Background

- 2012 PMP/PMF Study

- PMF = 199,600 cfs

- (500,000 < 1,000,000 years)

- Swift overtops by 1.3 feet
 - Yale overtops by 3.1 feet
 - Merwin overtops by 9.2 feet

- Seismic Hazard Assessment

- Swift 1 SHA submitted to FERC on December 9, 2021
 - Yale SHA submitted to FERC on October 14, 2021
 - Merwin SHA submitted to FERC on February 24, 2022

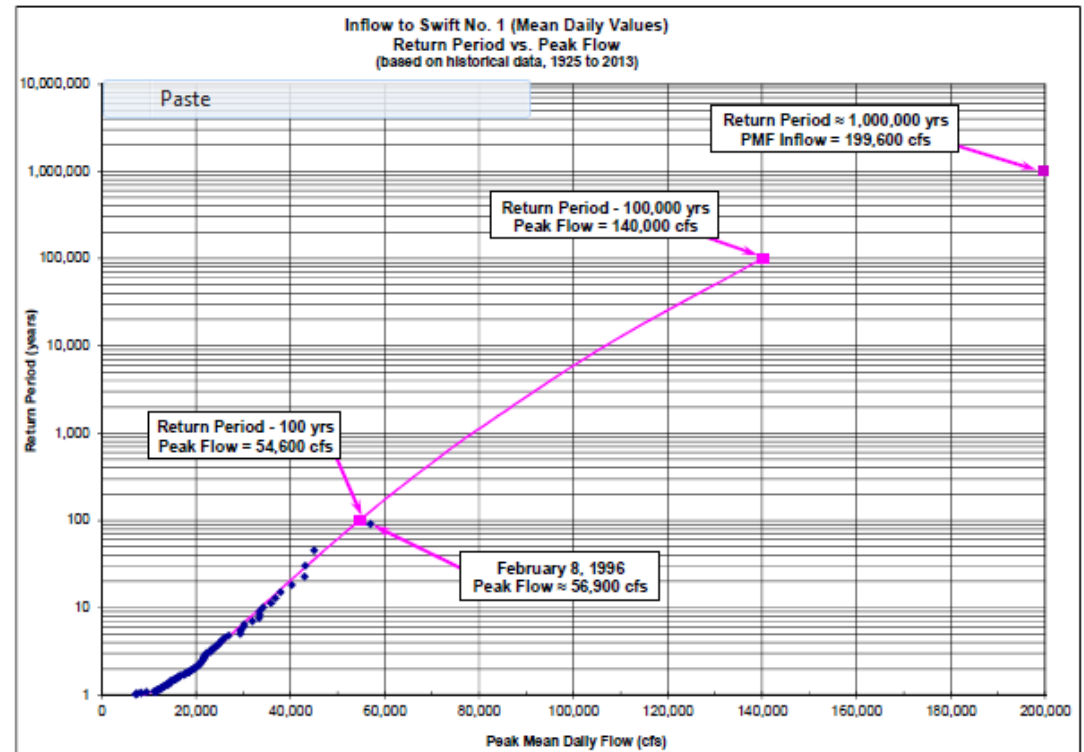


Figure 3-3. Estimated Return Frequency for Probable Maximum Flood

Overall Schedule

Lewis River PMP/PMF/Seismic Project Update	BOC	TAB	IA/PR	Complete	Active	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Swift SHA				█														
Swift Stability Analysis				█														
Swift Spillway Access				█														
Swift Bulkhead			X		X	█	█	█	█									
Swift Spillway Gates			X		X	█	█	█	█	█	█							
Swift Spillway (Near Term)					X	█	█											
Swift Spillway (Long Term)			X				█	█	█	█	█	█	█	█				
Swift Crest							█	█	█									
Yale SHA				█														
Yale Spillway (Near Term)				█														
Yale Saddle Dam	X				X	█	█	█	█	█	█	█						
Yale Gates 1-4							█	█	█	█	█	█						
Yale Gates 0,5 & Spillway & Speelyai (PMF)	X		X		X	█	█	█	█	█	█	█	█	█	█	█		
Yale Main Dam	X				X	█	█	█	█	█	█	█						
Yale Intake												█	█	█	█	█	█	█
Merwin SHA				█														
Merwin Spillway Gates				█														
Merwin Spillway Access				█	X	█	█											
Merwin Spillway (& PMF Passage)		X	X		X	█	█	█	█	█	█	█	█	█	█	█	█	█
LR PMP/PMF Update (LR SQRA & Flood)	X				X	█	█	█										
Investigation/Analysis/Design																		
Construction																		
Complete																		

Merwin Execution

Lewis River PMP/PMF/Seismic Project Update	BOC	TAB	IA/PR	Complete	Active	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Merwin Spillway (& PMF Passage)		X	X		X													
LR PMP/PMF Update (LR SQRA & Flood)	X				X													

- Participating in SQRA

- Prioritize dam safety projects and assist with evaluating appropriate PMF and Seismic load conditions.
- SQRA contracts executed

- Merwin Spillway

- Technical Advisory Board (TAB) under contract.
- TAB will review and provide feedback on analysis
- Add spillway bay/gates for PMF passage
- Address any potential spillway chute wall height to contain PMF
- Address any potential spillway slab jacking





Merwin Execution Detailed

Merwin Spillway (& PMF Passage)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Conceptual Design	Active	Active	Active										
Geotechnical Exploration Plan		Active	Active										
FERC Review and Approval			Active	Active									
Field Exploration				Active	Active								
Analysis					Active	Active							
FERC Review and Approval						Active	Active						
Final Design							Active	Active	Active				
FERC Review and Approval								Active	Active	Active			
Construction									Active	Active	Active	Active	Active

Questions???

