Pacific Power |
Rocky Mountain Power
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FINAL Meeting Notes
Lewis River License Implementation
ACC Fish Passage Subcommittee Meeting
October 13, 2022
MS Teams Meeting

Attendees

Christina Donehower – Cowlitz Indian Tribe
Rudy Salakory - 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
Erik Lesko - PacifiCorp
Todd Olson – PacifiCorp
Jonathan Stumpf – Trout Unlimited
Sam Gibbons – WDFW
Bryce Glaser – WDFW
Josua Holowatz – WDFW
Erin Peterson – WDFW
Jeffrey Garnett – USFWS
Bill Sharp – Yakama Nation Fisheries

Introductions, Review Agenda and Meeting Notes

Bryce Glaser, WDFW, briefly reviewed the meeting agenda. Regarding the finalization of the June-September meeting notes, everyone should provide comments, using track changes, to Beth Bendickson, PacifiCorp. Beth will then compile and distribute final versions for group review and approval at the November meeting. For today, after updates, the group will review the latest version (9/19/2022) of the Elements of Fish Passage document and then do a next steps.

Updates

Eric Hansen, PacifiCorp, provided an update on the Yale downstream fish passage facility. The design team is continuing their work on technical memos, adding detail and reasons behind the chosen alternatives (floating surface collector location, guide net system, fish attraction components, fish holding, fish transfer, truck loading, mooring, etc.). They have nine design-related technical memos so far. The current thought is to construct new facility using pre-fabricated modules put together onsite. The location for this is looking like Saddle Dam Park due to proximity and site elevation. A technical memo will show why we chose this location at Yale. The design team is planning to present information such as this at the 30% design meeting on December 14, 2022. The meeting invitations have been sent. Also provided will be a functional

design presentation with plan sheets, layout, and it will be very helpful for everyone who is involved, either directly or partially, to learn what's happening with the design. This project remains on an accelerated milestone schedule for completion in June 2026 and the design team will present this milestone schedule at the 30% design meeting.

Comments

Bryce Glaser, WDFW, noted that PacifiCorp seems to be full steam ahead with the chosen alternatives, yet the memos haven't been shared with this subgroup. We are still working through the alternative analysis even though the Yale floating surface collector (FSC) alternative hasn't been finalized. There still may be other options that the ACC wants looked into. The Alternative Analysis needs be such that folks are comfortable with what's happening and that due diligence has been done. He said it feels like we're getting out in front of finalizing the alternative analysis and asked if others felt the same way. Bill Sharp, Yakama Nation Fisheries, said it would be helpful to understand where PacifiCorp is. Todd Olson, PacifiCorp, said there is interest in getting new facilities designed and constructed as quick as possible. We realize the project timeline is very aggressive. If you would like to do a full investigation of alternatives that will take a lot of time. We are at a point where we need to clearly know 1) is there a different alternative for Yale downstream or upstream? and 2) do we need to stop the current design? Do we need to move the attention of the design team to do more alternatives analysis? There are two pathways and we are trying to do them in parallel (satisfactory alternatives analysis and initial design of new fish passage facilities). Bryce asked if others were comfortable that enough information has been provided or do we need to call a time out. He understands compressed timelines. We are behind because of issues we have gone through. He doesn't disagree and pointed back to the Settlement Agreement language of alternative analysis. He feels we should try to narrow down the things that don't make sense so we don't waste our time on them, but yet there may be sub steps to explore further. How do we thread the needle to keep moving at a fast pace while still doing due diligence? He doesn't want to hit the brake button but doesn't want due diligence left out.

Eric said the design team is working on alternatives and drawings that support the 30% design. This information will be provided at the December 14, 2022 meeting. It will enable a more efficient discussion. At this point, drilling into the other options would distract the design team, project, and momentum. We can always pivot later if the group decides more information or another direction is needed. Bryce said that was helpful to know. He just wanted to set the context in that we continue to look at alternative analysis. WDFW is in the process of reviewing things. He likes having the ability to come back to together and review everything on the list to make sure it's complete. That's the next step. Ultimately the design need consensus by the ACC and blessed by the Services. Then we can move forward. Eric said he appreciates the feedback. Any delays will impact the project getting complete by June 2026. Rudy Salakory, Cowlitz Indian Tribe, said it's with everyone's best interest that the project moves forward with haste. It shouldn't be seen as a delay on our part, with regards to everyone's comments provided. The Utilities have had a chance to look over the comments over the last few days. Others are still reviewing. We'll dive into comments and give feedback. Utilities will move forward unless everyone feels we are way off. If that's the case then we'll throw up the red flag and call time out. If no one is doing that, let's proceed to the 30% design with an understanding that it's a risk. There may be folks who provide input of "we like this but that piece we don't, and thus we should talk about modification of that piece." Bryce said maybe we can come back to this topic. The point is we need to have more discussion and haven't had adequate time to study the alternative analysis to see whether a red flag

is needed. We want to make sure while we push for June 2026, we don't want to get there with the wrong choice. Want to make sure we have the right choice up front. We need to figure out a pathway to get the information relayed. It was the intent of the Alternative Analysis to get everything reviewed. To conclude, Todd said the comments received were along the lines of needing better descriptions and more information. To be more surgical, he asked that if parties are continuing their review that they ask specific questions about an alternative they are interested in. Maybe the design team could then answer the specific questions. Bryce liked and agreed with that idea. *Action Item – Review and provide feedback (questions, if any), on specific alternatives.*

Nathan Higa, PacifiCorp, provided an update on the Yale upstream fish passage facility. In a lot of ways, design choices for the Yale upstream facility are a bit easier and more clearcut. We're at the narrow upstream end of the lake and working with a smaller shoreline. With that being said, we are still in a generic stage of the design. The baseline CFD model runs for existing prototype, and footprints (basic rough sizing) have been developed. An emphasis on general site layout and substructure makes sense but there is still room to look at other concept options at this point. Swift upstream is a similar stage but trailing by several weeks, being at the CFD model development stage.

Chris Karchesky, PacifiCorp, provided an update on the Yale Fish Behavior Study and indicated that the contractor was still assembling the final report technical memorandum that will be included in the 30% design presentation in December.

On the topic of a 2032 construction schedule for the Merwin downstream facility, Eric noted it was related to a planned FERC dam safety project. He walked through FERC's process of flood prediction and said Merwin can get complicated pretty fast. It's been determined that we need more spillway capacity at Merwin Dam, either another spillway structure or maybe replacing the existing gates with new larger gates, in order to meet the new required flood potential. Also need to consider the Pacific Northwest earthquake potential. Determining if you need more spillways starts with investigating soil mechanics and what can you construct on top of those soils. At Merwin, in order to widen or add another spillgate, you have to analyze soil, along with completing the investigation by drilling and getting core samples and doing analysis to determine the soil classification. We need to engage experts about what was discovered. Analyzing soil takes time. The design phase starts again, following by the discovery phase. A year later you are just getting to the 30% design. Two years after that you would get to 60% design that everyone is comfortable with. It then takes two more years to get to 100% design that would be approved by FERC. The FERC and permits may take two years to approval. It then takes two to four years to build the facility. It's more than just adding spillgates. A project of this size requires a large amount of pre-design study, rounds of engineering design, and multiple layers of review and approval in all engineering and science disciplines, not to mention a lot of biological review as well. All of that takes time, and the review and approval by external groups cannot really be rushed.

Todd said we will add narrative language in the document. Bryce appreciates the steps Eric walked through. If it's a 10-year project with a 2032 date, is it kicking it off this year? Todd said he would go back and make sure that's the case. Nathan added the project is part of a Lewis River flood study and how we're going to manage it. Dam Safety is under FERC Regulatory Program. The specific task for Merwin Dam came out of the flood river study. There are a lot of ideas, concepts, and backgrounds being discussed at this time. There are a lot of moving parts and it takes a lot of steps just like with licensing. Bryce clarified that the proposal on the table from PacifiCorp is to

combine the work with the Merwin downstream fish passage facility construction. He asked if the proposal could be outlined in the next draft. He also suggested having a separate meeting outside this subgroup with a PowerPoint presentation to give an overview that will help us understand the scope of the project and all the steps, as well as timelines, milestones, level of uncertainty. He'd like a clearer understanding of the big picture.

Todd said we could work on a PowerPoint to share. He'll talk with the Dam Safety Director on whether there are other dam safety things that are currently underway or in the no-too-distant-future for Lewis River. He'll then provide more information to this group.

Elements of Fish Passage 09192022 Review

5. Integration of Salmonid and Bull Trout Passage Facilities

Todd wasn't aware of any revised bull trout criteria and asked if it had come out yet. Jeff Garnett, USFWS, said no, it hasn't come out yet. Jeff recently asked one of their fish passage engineers about it but hasn't heard back. He offered to share a master PhD document with a lot of the criteria that might be reflected. Todd said ultimately both NMFS and USFWS would have say in the final designs and operations and would appreciate Jeff's sharing of the document. *Action Item: Jeff will share the master/PhD document with the group.*

7. Expansion of Upstream Fish Passage Facilities

Everyone agreed we want these facilities to handle what we expect to start with and have the capacity for increasing numbers of returning fish; not overbuild but be ready. Original fish numbers proposed by the Utilities was per 95% collection of NMFS 2019 EDT run. Chris provided clarity in that it is all part of what's going into the 30% design. We are approaching it using values from EDT but recognizing it might not be the best. It's the best piece we have though as it provides a starting point for design capacity for the facilities. We are working with the design engineers and are sizing for maximum use. Karchesky reminded the group that PacifiCorp is obligated to operate the facilities daily, so design team is really focused on what is the maximum number of fish anticipated to be collected in one day. Because the existing Merwin Adult Fish Facility and Swift Floating Surface Collector have been operated that way for nearly a decade, we have a lot of information to pull from in terms of daily collection numbers. When designing you lean on maximum collection rates as it provides an additional buffer. Selective vs. Swim Through scenarios and anticipated fish behavior related to both are also being considered. The other factor to consider is resident fish including kokanee. We have some information on what we can expect in Yale and Merwin Reservoirs, but are also reaching out to other facility owners to understand what they are seeing. Aside from fish numbers, other variables also being considered including water quality conditions and how they change over time. There's a lot more going into considering capacity than using EDT numbers. The 30% design will explain more. Todd added that we will be revising the draft proposal document text to make it clearer. We are using EDT but other considerations. Bryce appreciated Chris's walk through. His concern is with EDT for daily collection rates. They would like to see how it's being calculated. Maybe kick it over to the ATS group to review assumptions and models that were used to estimate this. He wants full transparency on the process. Todd said we'll work towards that. Bryce said either put it out to the ATS or get calculation on assumptions so we can agree or not agree. Chris, following up on EDT values, asked what kind of starting point do they have it mind? Bryce said the EDT model wasn't designed for

that. There is capacity for spawners but it doesn't mean that is what will return. You could have much higher returns than the capacity. Including marine survival scenarios would be helpful. Excel modelling to look at a range on potential returns or a "back of napkin" discussion on how you're factoring it in. Chris doesn't disagree and said time is of the essence. The capacity gives a good starting point and provides helpful information. Maybe the state has numbers we could use as a buffer. Bryce wanted to know what the assumptions or calculations are so we can look at it all.

8. Determination for Upstream Swim Through Fish Passage Operations

Todd will address comments received for this section of the draft proposal by including some additional text. There are two studies going on (Yale juvenile fish behavior and CFD modeling). Steve West, LCFRB, said their staff reviewed and provided the comments on the Alternative Analysis. He isn't an expert in fish passage. If the document is being given to use to approve, he would like to see more information. Todd said the idea behind the proposal document is to give information to the design team. He mentioned he appreciated all the comments. A lot of the design on the facilities will be driven by the NMFS criteria. The other studies inform and help in getting fish to enter a facility. Then criteria for fish passage starts to kick in.

Bryce clarified their comment regarding who leads the consideration and development of the determination for the "swim through" alternative. While the ACC will complete the process, the Utilities need to help and administer the process. Todd clarified this would be an ACC effort not one driven by the Utilities. Bryce envisioned the subgroup would do it.

Lastly, Todd wanted to address comments from the last meeting on the Merwin Downstream facility. He asked Nathan to put together a presentation showing the concept of the proposed facility. Nathan then walked the group through a Merwin Concept Design Sketch document (Attachment A).

<u>Comments</u>

Jeff thanked Nathan for the presentation and had two questions: 1) Juveniles were mentioned. He wanted to ensure this will also safely and effectively pass adults (steelhead and bull trout). Todd wanted to clarify and asked if he meant bull trout going downstream from reservoir to reservoir and downstream at Merwin? Jeff said for both. 2) Sub sampling was also mentioned. Where would a sampling facility be and how would it look? Todd said it would be a design criteria element. Bill added that for the ones on the Columbia River, there must be a pit tag array.

Bryce said they submitted pretty substantial comments previously on the July 14, 2022 draft document. They are concerned with sampling all fish at the Merwin downstream facility not just a sub sample and said we need to understand the fish marking strategy across all the areas. There might be other species that we don't want to pass downstream. He said there is a lot more with a bypass system they would need to understand. Todd mentioned he had just asked Nathan to provide a general idea of we were thinking about, and said they have started some internal discussions around Bryce's comments. This is the one piece we all need to spend more time on. He is going through the comments and updating where he can get things off the plate so to speak. The Merwin downstream concept needs more discussion. He wanted to get something out there to give an idea

of what the concept might be. Bryce added that from WDFW's perspective, they will work hard to get more specific comments on the Alternative Analysis document to keep conversation going.

Jeff asked about having a presentation on the different fish passage alternatives to discuss which ones were potential options vs. throwing out ones that weren't feasible. We could also discuss pros and cons, and objectives. Bryce agreed a presentation could be valuable.

Next Steps

Todd would like to get feedback on the no-go and top alternatives. He will then set up a phone call with the design team to discuss. Jeff said it would be good to have a forum for this group to be able to ask follow-up questions and ask the experts how or why they came up with the alternatives. It could be elaborated in a PowerPoint or talking through the table. He felt it would be beneficial for both him and the group. Bryce read the specific language from the Settlement Agreement. Todd will check with the design team and then propose a few times that work for everyone. He reiterated that he is just trying to make it work for everyone so we can have facilities we all feel good about.

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.	
Review and provide feedback/questions on specific alternatives to Todd Olson.	
Jeff Garnett will share a master/PhD document about bull trout criteria with the group.	

Action Items from September 21, 2022	**Status**
Review new version of Draft Proposal and provide comments and/or suggested language on how to word things) to Beth or Todd by October 6, 2022.	Completed
Review historical documents from original Swift Downstream construction.	

Next meeting: November 10, 2022

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Attachment A

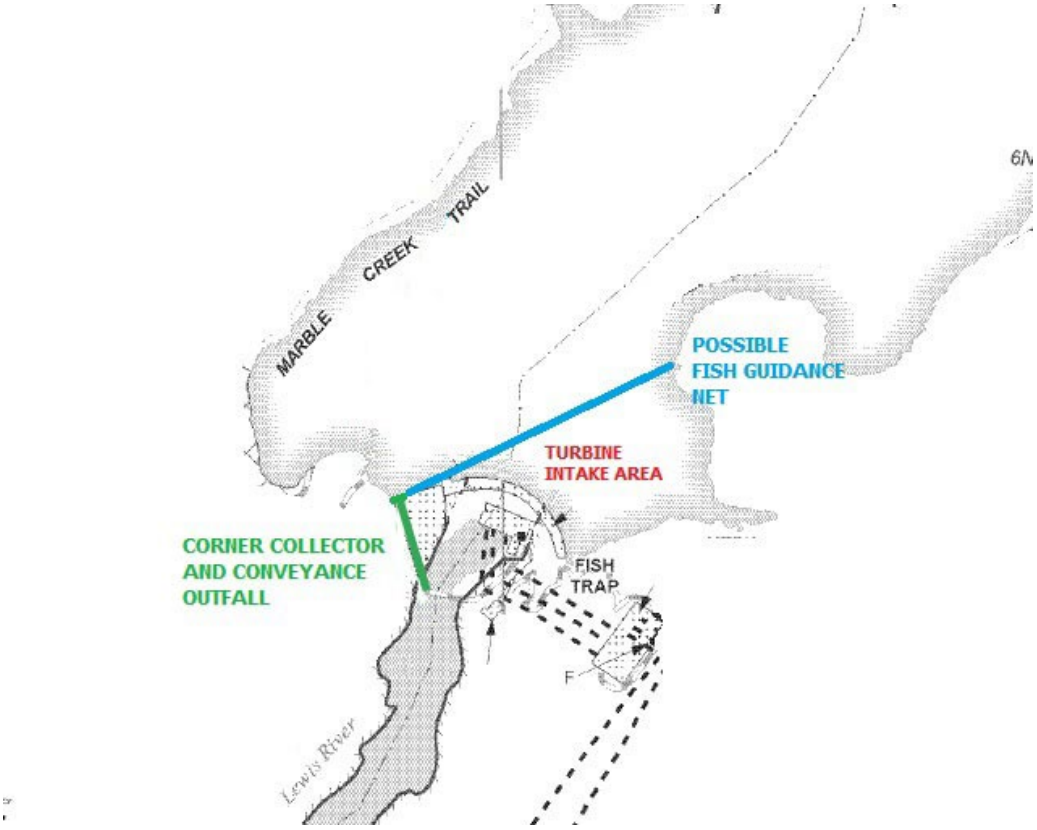
Merwin Concept Design Sketch

PACIFICORP

Hydro Resources/Engineering

Prepared: NTH
Checked by:
Date: 27SEP2022
Sheet 1 of 1

Subject: CONCEPT DESIGN SKETCH FOR LEWIS RIVER SURFACE COLLECTOR



Site Plan of Merwin site with Surface Collector

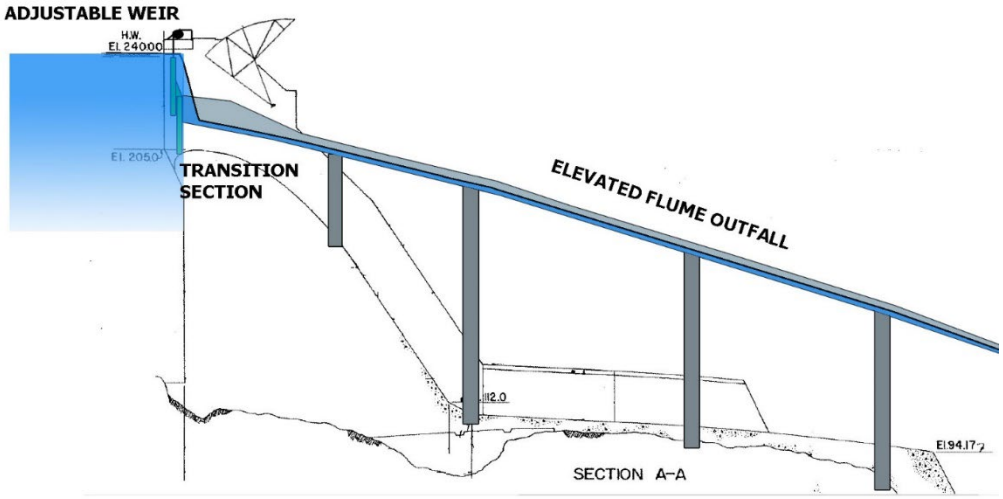
View of Merwin Dam

Photo of Merwin spillway, 10 ft wide gate on left

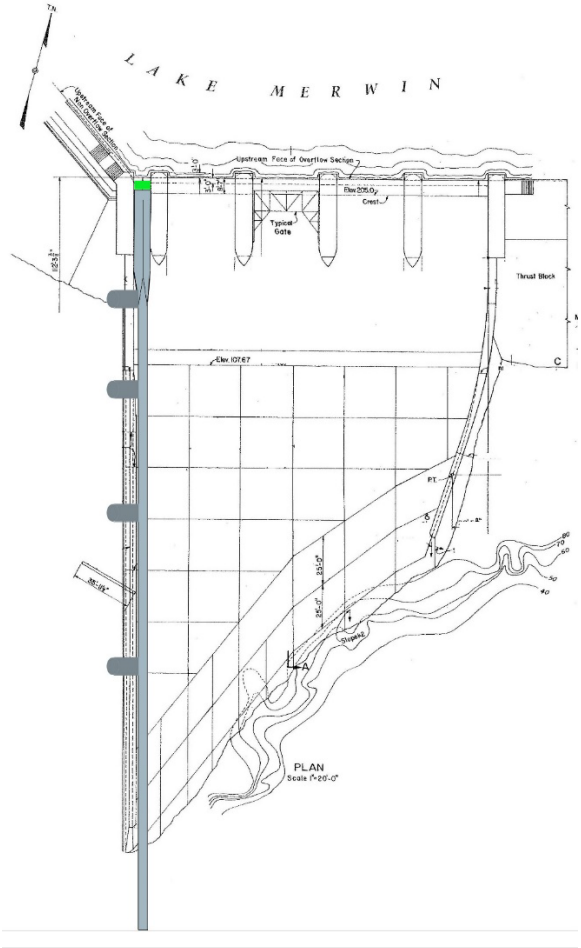
This concept plan will detail the basic components that would be required for a modification of the Merwin 10 ft wide spillway gate into a juvenile fish surface collector based on similar projects in the region. Due to the configuration of Merwin dam, certain fisheries criteria and physics have to be accommodated to successfully pass fish.

A downstream surface collector system will require the following:

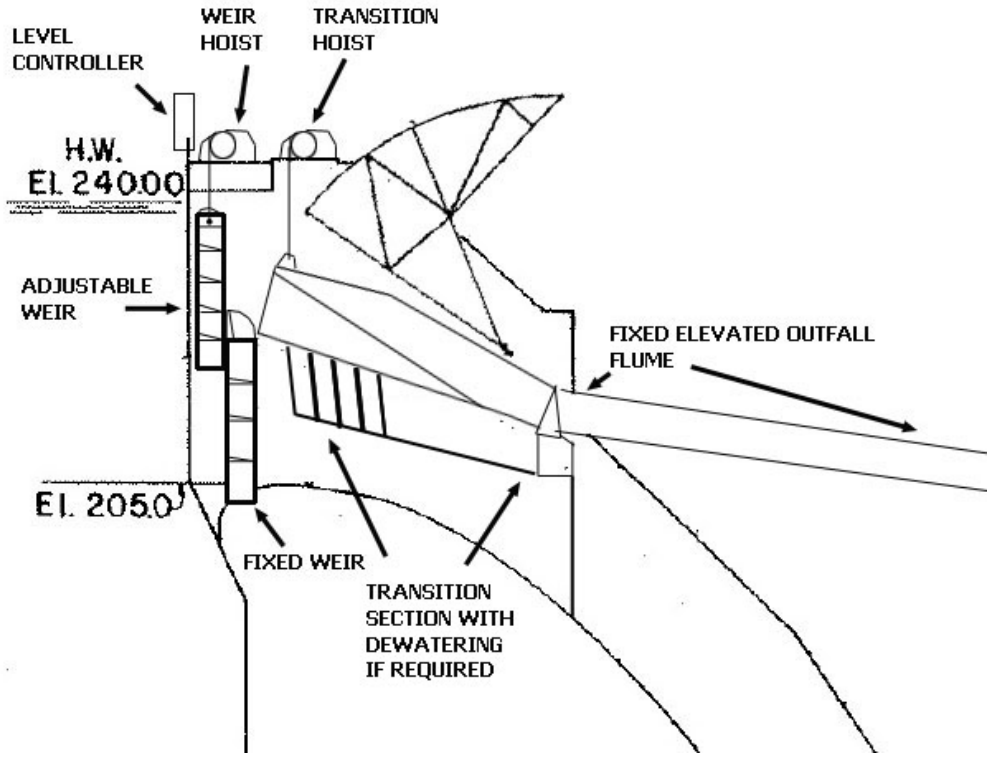
- Fish in the lake will need to be guided to the area of the spillway, either through water circulation patterns or fish guidance structures such as a net, while not impeding flow through the spillway or powerhouse
- Once in the proximity of the spillway, flow must be fast enough and of large enough volume to entrain fish into the intake of the system
- This intake must be able to regulate flow to follow the change in lake elevation. The cost and complexity of the intake will be proportionate to the range over which the system operates. Two possible configurations are detailed, a hoist operated bulkhead weir that can accommodate a smaller range of lake levels and a Removable Spillway Weir (RSW) which uses a ramp style weir that is floated or hoisted to a larger range of lake levels and can potentially be dropped completely out of the way for full spillway flow.
- A transition section will utilize hydraulic flow principles to change the high flow volume broad intake into a narrower conveyance flow flume. This may involve dewatering and reducing the flow volume and changing the flow characteristics utilizing engineered changes in the flow channel. Some designs may just maintain the full flow volume from intake to tailrace.
- Due to the height difference between the top surface of the lake and the river downstream (approximately 200 ft), the fish must be transported in a way that keeps the velocities low enough to not injure fish, and reduces the height of the outlet plunge into the river. This typically means a long flume with a shallow slope that outfalls feet above the river surface, though the steep spillway face could potentially be utilized. There is criteria regarding these limits which will dictate the design engineering.



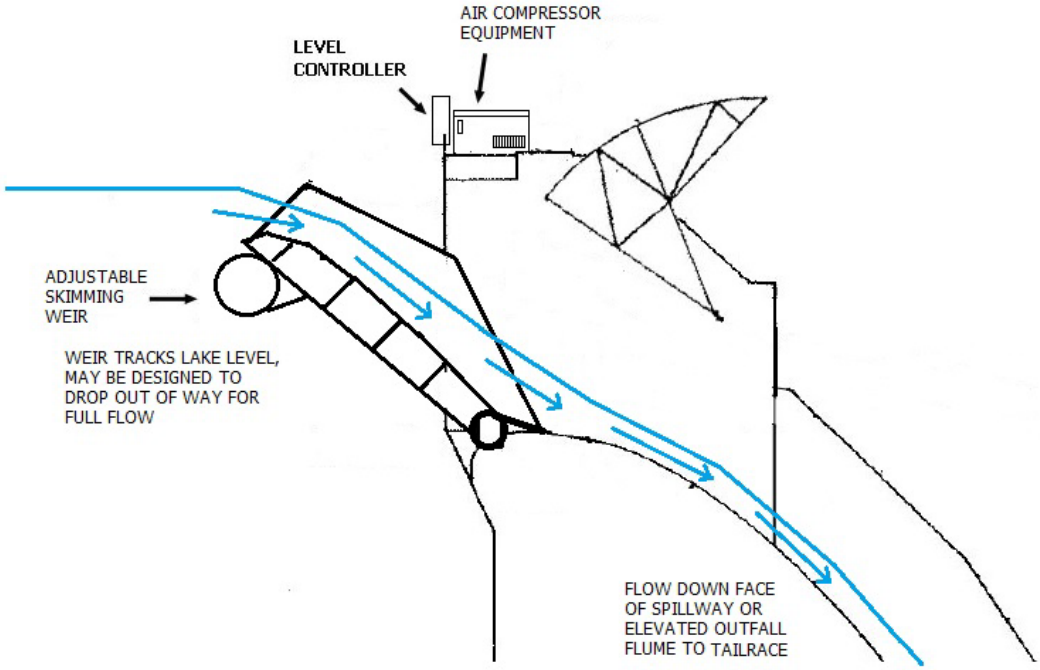
Profile of Concept Corner Collector with elevated flume outfall option



Plan view of concept Mewrin Suface Collector

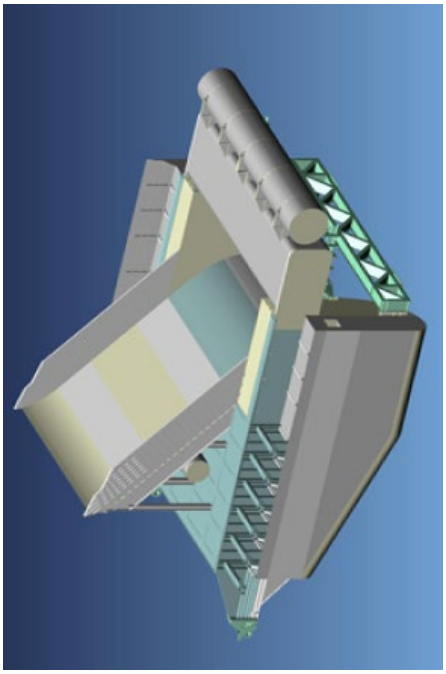


Detail of bulkhead weir type control Section of a Merwin Surface Collector

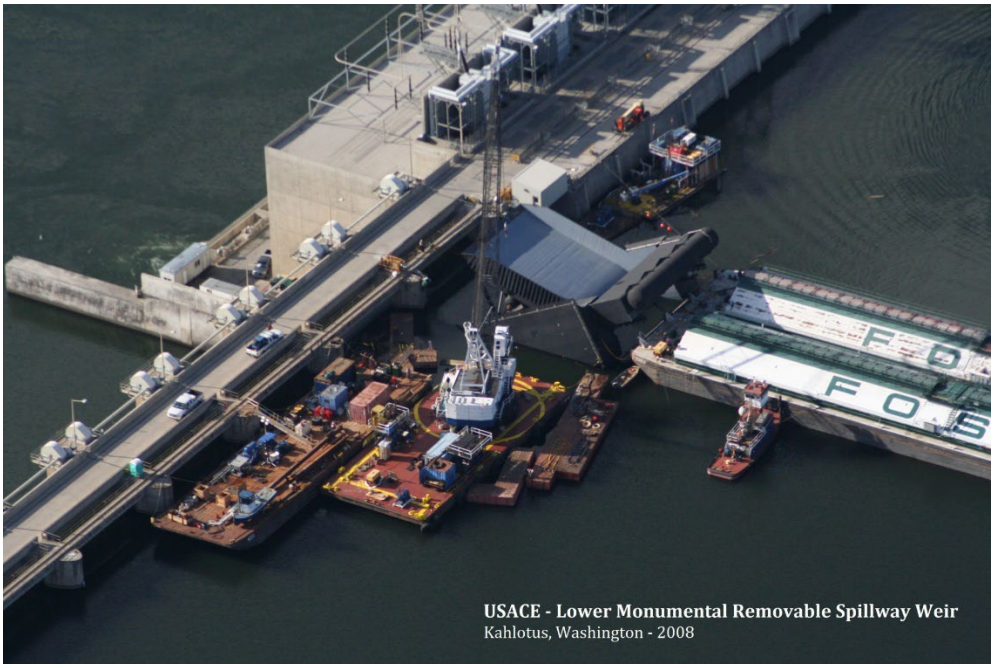


Detail of Ice Harbor style RSW type control Section of a Merwin Surface Collector

An bulkhead weir ice and trash sluiceway in the dam converted to a corner collector and the outfall flume extended to the end of the dam island



A 3-D rendering of a Removable Spillway Weir



A large RSW being floated into place in front of a spillbay

Retrofit spillway weirs in use, skimming surface flow, tainter gates raised out of the way

Skimming spillway gate with outfall chute built into dam