

FINAL - Meeting Summary Notes
Lewis River License Implementation
Engineering Subgroup
June 04, 2008
Fish Passage Meeting Notes

Subgroup Participants Present: (12)

Arnold Adams, PacifiCorp
Frank Shrier, PacifiCorp
Will Shallenberger, PacifiCorp
Bryan Nordlund, NOAA Fisheries
Jim Stow, USFWS
Eric Kinne, WDFW
Neil Turner, WDFW
Ken Bates, Kozmo
Dana Postlewait, R2 Resource Consultants
Monty Nigus, Black & Veatch (via conference/web call)
Brian Friesz, Black & Veatch (via conference/web call)
Dennis Anderson, Black & Veatch (via conference/web call)

ADMINISTRATIVE

Frank Shrier updated the Engineering Subgroup (ES) on the status of the FERC license, which is no different than the last meeting. FERC has estimated mid June as the earliest possible date of issuance. PacifiCorp is currently planning for July 1st.

General Meeting Handouts:

Distributed via email on May 13, 2008 by Kim McCune:

- Copies of the April 28, 2008 Engineering Subgroup draft meeting notes

Distributed via email on May 29, 2008 by Kim McCune:

- Meeting agenda for the June 4, 2008 subgroup meeting

Distributed at the June 4th meeting (paper copies):

- Meeting agenda for the June 4, 2008 subgroup meeting
- Copies of the April 28, 2008 Engineering Subgroup draft meeting notes

FUTURE MEETING DATES

Future meeting dates were planned as follows:

- July 16, 2008
- September 4, 2008
- October 15, 2008
- December 4, 2008

OTHER ADMINISTRATIVE ITEMS

- Jim Stow is retiring from USFWS, and this will be his last meeting. USFWS will provide a new representative to the Engineering Subgroup (ES).

MERWIN TRAP PROJECT

Handouts

Distributed via US mail on May 13, 2008 by Kim McCune:

- DVD's of the hydraulic model data summary table, and all video/pdf data
- Model Test Run Index Table, dated 4/27/08

Distributed via email on May 15, 2008 by Kim McCune:

- Model Observation and Decision Memorandum dated May 2, 2008

Distributed at the June 4th meeting (paper copies):

- Model Observation and Decision Memorandum dated May 2, 2008
- From PacifiCorp: Merwin Trap Schedule per NOAA proposal given to PacifiCorp, Study/permitting/procurement adjustments, Discussion Draft dated June 4, 2008
- From PacifiCorp: Merwin Trap ATE Discussion Draft dated June 4, 2008
- Copies of Bryan Nordlund's Discussion Draft of the Agencies Phased Approach Proposal distributed at the April 28, 2008 ES meeting.

Presentations

- Model data presentation related to the model video and velocity data at the pump station intake was viewed at the meeting and over the web. This data will be included with the model report.

Review of Previous Meetings' Merwin Action Items: See status summary table below.

No.	SUMMARY OF PENDING MERWIN ACTION ITEMS (remaining from previous Meetings)	STATUS
M81	R2 (Postlewait) – Coordinate review of sorting table revisions with Eric Kinne, and Neil Turner.	Pending, hold for 60% design phase.
M85	PacifiCorp (McCune) – Update the ES meeting announcement to move the August 28 th meeting to September 4 th , 2008. Coordinate meeting dates for 6 months of ES meetings following the September 4 th date at approximate 6-week intervals.	Done – 5/5/08
M86	Design Team (Postlewait, Nigus, NHC) – coordinate and conduct additional model runs noted above.	Done, today's agenda item.
M87	Design Team (Postlewait, Nigus) – update run index table to reorganize per order of comparison utilized at the meeting, and include additional run data on the table.	Done, today's agenda item.
M88	Design Team (Postlewait, Nigus, McCune) – Distribute model data DVD's to ES members, with updated run index and additional run data identified in these notes.	Done, sent via US mail on May 13.
M89	Design Team – Review agency response, and prepare an approach with more specifics per discussion above that will meet the intent, while addressing additional AWS supply and distribution concerns.	Done, today's agenda item.
M90	PacifiCorp (Shrier, Olson) – review SA language to help guide decisions on how far design should be taken for each phase.	Done, today's agenda item.
M91	Design Team – prepare a proposal on how far to take the design (i.e., final plans and specs, full functional conceptual design, etc.) for the various phases. The proposal must meet the Settlement Agreement requirements.	Done, today's agenda item.

Additional Comments on Last Meeting's Notes (April 28, 2008):

Bryan Nordlund had the following comments on the meeting notes:

- Per page 4, the agency phased proposal attachment referenced was not attached. The attachment will be provided with the final notes.
- Page 5, bullet item under Operational Changes. Change the sentence to read: “Jim Stow suggested that language be added to address how plant and fishway entrance operational changes *within each phase of the phased approach can be accommodated* based on ATE evaluations; depending on how “close” the results are to the ATE goals.”
- Page 6, under AWS flow distribution and siphon recovery. Change the sentence to read: “In addition to the flow amounts, Bryan noted his desire for flexibility in distributing flow *between* the corner entrance *and* a pump bay entrance.”

- Page 6, under Design Flexibility. Move the 2nd bullet up to the last bullet under the AWS flow distribution and siphon recovery heading.

The draft notes can be made final with comments noted above.

MERWIN TRAP AGENDA TOPICS

Tailrace Physical Hydraulic Model

DVD distributed with video and PDF data. The group discussed the DVD distributed to the team, which documented all of the model run conditions and data collected which has been previously discussed. The following points will help guide use of the DVD:

- When you open the DVD, it contains one Excel spreadsheet file in the root directory. This spreadsheet is intended to be the interface for all of the data. It provides a thorough summary of all the data for the run conditions, organized into groupings of runs intended to be compared. Hyperlinks to all available data are provided in the spreadsheet, which allows the users to simply click on the link to view the attached file.
- Dana Postlewait noted that the QuickTime application seems to be the best video viewing utility, as it allows the user to open multiple windows on the screen for comparison, and also allows the user to use the slider to quickly fast-forward or rewind the video for quicker viewing. The video clips will also open in other viewers, but the slider doesn't seem to work.
- A similar DVD will be provided with the model report to facilitate access to all of the data.

Dana, Dennis Anderson, and Monty Nigus reviewed the new model run data that was performed since the last meeting. Runs reviewed were as follows:

- Tests 35-36. Spot velocities requested at the last meeting were provided to supplement the dye tests of the eddy area at the corner entrance, with and without a clay fillet to simulate filling this area to eliminate the eddy. As expected, the fillet slightly increased velocities along the left bank. The group agreed that not changing the bathymetry in this area would be the best approach to facilitate fish passage, as the small eddy may provide a resting area for fish after they negotiate the ~9 fps flow around the rock point leading to the eddy. More discussion on this topic is provided in the Model Observation and Decision Memo (attached). The velocity plots viewed at the meeting will be provided with the model report.
- Dye testing with video clips and 3D velocity measurements were performed at the pump station intake rack. The goals of these tests were:
 - To examine flow patterns leading from Unit 3 to see if this aerated flow could recirculate (or short-circuit) immediately back into the closest pump bay intake tunnel, and

- To examine the effect of the large tailrace eddy on the intake rack, to determine if there are any concerns for uneven flow distribution due to the eddy.
- A full write-up of the discussion and decisions related to the pump station intake rack is provided with the Model Observation and Decision Memo (attached).

Pump Bay location decision. The group had a thorough discussion of the desire to select a single pump bay entrance to carry forward with the final design. This discussion is documented in the Model Observation and Decision Memo (attached). PB3 was unanimously selected as the preferred entrance location to carry forward, provided provisions are made within the design to move this entrance in the future should biological monitoring after the initial corner entrance construction and operation indicate PB2 would be a better location.

Model decommissioning. The group agreed that all data desired from the tailrace modeling effort has been obtained. This data has been very valuable to supporting the design effort and decisions made, and the model programmed was felt to be a success. Monty Nigus will notify NHC that the model can be decommissioned as planned now that the data collection phase is complete.

NHC is preparing a final model report for ES distribution. No draft report is desired by the subgroup members; therefore, the design team will perform a review of NHC's report, and a final document will be provided when it is ready – likely by the next ES meeting.

Jim Stow noted that in addition to the model observation memo, the team should document the important points of the many model discussions and decisions to accompany the design documents. This would avoid the need in the future for potentially different design team members to research past meeting notes on these discussions, should adjustments to the design be necessary in the future. The ES agreed that this would be helpful, and PacifiCorp will propose a reporting structure that can be utilized with the final design phase to document each of these issues.

Project Implementation, and PacifiCorp's response to the Agency Recommendations to Phased Approach

Frank Shrier and Arnold Adams handed out a document intended as a discussion draft, titled: "Merwin Trap Schedule per NOAA proposal given PacifiCorp study/permitting/procurement adjustments" (attached). The purpose of this document is to provide a draft structure for a "road map" that will clearly illustrate the design/implementation timeline for the various phases. Evaluation studies and resulting actions that could trigger each phase are identified.

The group had a very productive discussion on this document, and agreed with the approach and format presented by PacifiCorp. This document will be revised for ongoing discussion, with more detail provided for each phase. The following points will be addressed in future drafts:

- NMFS's concern is to identify the time lag necessary between each phase trigger, and its implementation. For example, if a decision is made to go to Phase 2, NMFS would prefer the design be carried far enough at the initial design such that this change could be implemented within one year/fish season, of the decision. This concern was understood, and will be addressed with the next draft illustrating how far each design phase will be taken with the initial design.
- Frank Shrier clarified the Settlement Agreement language that states the design must be completed by 18 months after issuance of the license. Due to the various procurement strategies that PacifiCorp may wish to use for the construction of these facilities, they would like to confirm the feasibility, hydraulics, general layout, and controlling criteria of all features for each potential phase as part of the initial design submittal. However, once these items are defined as part of the design, they may wish to use a design-build procurement method in the future, where a design/build team could complete the remaining detailed design within the necessary window. Based on the understanding of the time frame noted above, the next draft will identify design times necessary if the design is not proposed to be 100% complete at this time.
- The group discussed clarification to the Phase 1 to Phase 2 intent. Bryan Nordlund and Jim Stow expressed concern that the "either/or" language regarding increasing flow from 400 to 600 cfs at the corner entrance may not happen if the decision was made to construct a Pump Bay entrance prior to adding a 3rd pump. The agencies intent is to increase flow as the first step, which will be indicated on the revised draft. However, language will still be provided that if biological data (that won't be available until the future) indicates a possibility that a PB entrance would provide more benefit than flow, that this case could be considered prior to increasing flow.
- This topic will be an ongoing discussion with both the ES and the full ACC, and will be carried forward both formally at the next ES meeting, and in between via email communication of drafts.

Merwin Trap ATE Discussion

Frank Shrier handed out a document also intended as a discussion draft, titled: "Merwin Trap ATE", which will supplement the phased approach definition document. This topic is being addressed with both the full ACC and the ES, as the metrics and interpretation of the biological evaluation will ultimately provide the triggers for potential future facility phase implementation. Key points for consideration and ongoing discussion include:

- Agree on time of delay numbers, by species: 24 hrs, 32, 36, or 48 hours as indicated in the table.
- Agree on a target Capture Efficiency percentage: 98% or 95%. Low range of 92% seems to be a consensus.
- The 98% survival number is agreeable to both PacifiCorp and the agencies.
- Use of mean or median values as the metric. Bryan noted NMFS's preference for the median value. Frank noted the mean will converge with the median with larger sample numbers, but will consider this statistically with the next draft.

The main point of discussion relative to the ATE value of 98% or 95% relates to the applicability of the DART data used from the Columbia River system. Frank pointed out that the Columbia River studies are not set up to account for delay or rejection of the fish ladders, such as is the case with Merwin. Bryan noted this concern, but also expressed concern that the Merwin trap's performance is the cornerstone of the entire fish reintroduction program, therefore a high performance standard is warranted. The entire ES agreed that a high level of performance is warranted and likely achievable at this site, and will continue discussions between all parties and with the ACC to reach consensus on a reasonable and achievable goal.

Action Items

The following action items were identified for the next meeting.

No.	SUMMARY OF PENDING MERWIN ACTION ITEMS (remaining from previous Meetings)	STATUS
M81	R2 (Postlewait) – Coordinate review of sorting table revisions with Eric Kinne, and Neil Turner.	Pending, hold for 60% design phase.
No.	SUMMARY OF NEW MERWIN ACTION ITEMS (from June 4 th , 2008 Meeting)	STATUS
M92	PacifiCorp (McCune) – attach the agency phased approach memo to the April 28 th meeting notes.	Done 6/13/08
M93	Design Team – define reporting system to supplement the final design document production that will document key decisions and discussions from the meeting notes regarding the model and design points.	Pending
M94	PacifiCorp (Shrier/Adams) – update phase approach memo for ongoing discussion.	Pending
M95	NMFS/USFWS (Nordlund/Stow) – review Merwin Trap ATE proposal and coordinate with agency representatives to respond to PacifiCorp's proposal.	Pending
M96	Adams – provide flow diagram depicting the phases and adjustments	Pending

Merwin Attachments:

- From PacifiCorp: Merwin Trap Schedule per NOAA proposal given to PacifiCorp, Sutdy/permitting/procurement adjustments, Discussion Draft dated June 4, 2008
- From PacifiCorp: Merwin Trap ATE Discussion Draft dated June 4, 2008
- Updated Model Observations and Decisions Memo dated June 6, 2008

SWIFT DOWNSTREAM PASSAGE PROJECT

Handouts

- None

Presentations

- Overview of team progress since December, 2007, PowerPoint Presentation by Will Shallenberger.

Review of Previous Meetings' Swift Action Items: Not addressed at this meeting. Swift meetings will begin again at the next ES meeting.

Overview of Progress Since December, 2007

Will Shallenberger gave a brief overview of the progress on the Swift Downstream Collector since the last formal Swift meeting. Points noted include:

- PacifiCorp has retained the design team for the final design, which is composed of the same team members as the 30% design. The team is led by Black & Veatch, and includes R2 Resource Consultants, Art Anderson Associates, Kozmo (Ken) Bates, and Northwest Hydraulic Consultants.
- PacifiCorp and the Design Team have kept up to speed on the Upper Baker FSC that recently started operation for Puget Sound Energy (PSE). PSE has been very helpful in accommodating information requests, and multiple trips to Upper Baker have been made by various members of PacifiCorp and the design team, which have provided a wealth of information on lessons learned. This information will be very valuable as the Swift FSC design moves forward.
- Work has begun on the following systems:
 - Trestle and access to the FSC.
 - Hydraulic design of the FSC.
 - Sorting facility refinement.
 - Sampling facility needs definition and layout.
 - Net system design and CFD modeling.
- Additional updates will be provided at the next meeting.

Short Term Smolt Holding Criteria

Dana Postlewait updated the group on the sorting facility layout criteria. One item noted on the Baker FSC design is that the holding tanks are too deep to work the fish very well. In examining alternative to shallow up the tanks on the Swift FSC, R2 noted that the short term holding criteria published in the 30% report at 2 lbs/cubic foot may be overly conservative.

The 2 lbs/cubic foot value came from Senns' hatchery rearing criteria, which is more suitable for longer term holding in a hatchery environment. The holding tanks on the Swift FSC are being designed to hold the same number of fish that will be transported in a single 1,800 gallon truck trip. The truck transport density is set at 5.9 lbs of fish/cubic foot, to match WDFW criteria, assuming 8 fish/lb as the controlling density. This results in 1,420 lbs of fish, at 8 fish/lb, for a total of 11,350 fish per truck trip, or per holding tank.

In the Swift case, an automated fish counter will be used to direct the proper number of fish into each tank. When a tank is full based on a fish count, it will shift a gate to fill another tank. If the fish that enter the tank are smaller than the 8 fish/lb design criteria, the holding density will also be less. The design criteria on pounds of fish per cubic foot is intentionally conservative. Fish sizes entering the Cowlitz Falls collector are more in the 15 to 20 fish/lb size range, which is quite a bit smaller than the design value identified for the Swift collector.

The design team is proposing a peak day design density of 4 lbs of fish/cubic foot. This is based on transporting 7 truck trips per day at the extreme design peak – which may occur for only a few days each year. For the rest of the year, the density would be less, especially considering that the fish collected are likely to be smaller than the design value of 8 fish/lb. This value matches well with the published density values for the Columbia River fish barge systems, which load at 3.7 lbs of fish/cubic foot.

Bryan Nordlund and Eric Kinne indicated that they will run this criteria request through their agencies.

Action Items

The following action items were identified for the next meeting.

No.	SUMMARY OF PENDING SWIFT ACTION ITEMS (remaining from previous Meetings, December 19, 2007 meeting)	STATUS
S39	PacifiCorp (Shallenberger) Distribute the results of the CFD model run with north-only discharge and wind effects to the subgroup members via email or a link to the PacifiCorp web site.	Pending.
S40	NMFS/USFWS (Nordlund, Stow) Provide additional feedback on the first iteration on net alignments.	Pending.
No.	SUMMARY OF NEW SWIFT ACTION ITEMS (from June 4th, 2008 Meeting)	STATUS
S41	WDFW/NMFS (Kinne, Nordlund) Provide input by June 18 th on their approval of the proposed 4 lbs of fish/cubic foot short term holding density for the Swift FSC holding tanks.	Complete 6/20/08

Meeting was adjourned at 1:30 PM.