FINAL - Meeting Summary Notes
Lewis River License Implementation
Merwin Trap Engineering Subgroup
May 17, 2006
Via Conference Call / Web Meeting

Subgroup Participants Present: (7)
Sean Flak, PacifiCorp
Eric Kinne, WDFW
Pat Klavas, WDFW
Curt Leigh, WDFW
Bryan Nordlund, NOAA Fisheries (NMFS)
Monty Nigus, Black & Veatch
Dana Postlewait, R2 Resource Consultants

Handouts

Distributed via email on 5/9/06:

- Adult Passage Modeling, Draft April 7, 2006 (Word File) by Cramer Fish Sciences.

Distributed via email on 5/10/06:

- Draft – Meeting Summary Notes, April 12, 2006 Engineering Subgroup Meeting
- Agenda for 5/17/06 meeting.

Distributed via email on 5/15/06:

- Agenda for 5/17/06 meeting (Revised).

Distributed via email on 5/17/06:

- Facility Design Criteria document (vers. 6.6, Word file).
- Tech Memo Calculations, Attachment 14 (V12 w – 250g small tanks, PDF file).
- Visio – Merwin Trap Truck Loading Plan (V2, PDF file).

ADMINISTRATIVE

Welcome of attendees and review agenda.

Introductions: No new introductions this meeting.

Absent: Frank Shrier was not able to attend today's meeting due to a policy meeting with USFWS and others.

FERC License Schedule Update: Sean Flak informed the group that the FERC "Issuance of License" date may be delayed beyond the previously anticipated date of July, 2006 due to USFWS BIOP revisions. Frank Shrier is attending a meeting in lieu of this meeting where he may learn more regarding an updated schedule. A revised Issuance of License date may be unknown for some time.

Erik Kinne noted that a generic date of December, 2006 was discussed for planning purposes at last week's ACC meeting.

Curt Leigh reported that FERC recently granted an addendum to the existing license that is valid until April, 2007.

Sean Flak noted that for now, PacifiCorp would still be working from a July, 2006 date for LY0 for this project. PacifiCorp will provide new schedule information when available via email, and will continue to provide schedule updates at the Engineering Subgroup meetings.

Review of Last Meeting's Action Items: See status summary table below. Additional discussion is provided below the table.

Report on Previous Assignments (from April 12th meeting, and pending from March 7th meeting):	**STATUS:**
PacifiCorp/R2/B&V: Provide agenda item for future subgroup meeting to discuss development of an efficiency standard for the Merwin Trap improvements.	Pending. Frank Shrier distributed Cramer's modeling report via email. To be discussed at next meeting. See Item 1 below regarding involvement of full ACC with this item.
PacifiCorp/B&V (Shallenberger/Shrier/Nigus): Show construction access and future maintenance access on the permit drawings for upper release / bypass reach work. Bring this to future subgroup meeting for discussion (or distribute prior to meeting). Goal for WDFW is to preserve to the extent possible established riparian zones within the construction area.	Pending – future action item to be addressed with permit drawings.
Spawning channel design coordination: - PacifiCorp/B&V will coordinate the design of the spawning channel with Pat Klavas (WDFW). - Pat will coordinate with WDOE, and will provide PacifiCorp with guidance on spawning gravel specification (washed vs. well graded, and recommended gradation to meet goals). - Curt will provide a review of the gravel disposition, placement of fill, etc. for channel work, once the draft drawings (permit drawings) are prepared. Goal will be to prevent filling of wetlands, sensitive areas, etc., including access (construction and future maintenance), disposal areas, etc.	Pending – to be addressed once WDOE provides more details on desired flow/flow distribution and desired gravel / spawning channel specifications.

PacifiCorp (Shrier/Flak): Work out details of a minor amendment to the SA to address interim safety improvements to the fish trap. Frank will talk to Holly.	Pending – future item.
PacifiCorp (Flak/Adams): Revise text in draft letter regarding redundancy of electrical systems for fish trap safety improvement alarms.	Complete – agenda item this meeting.
PacifiCorp/R2 (Flak, Postlewait): Draft letter recommending number of tanks and rough configuration of the facility based on last several meetings and technical memo attachments (contingent on finalization of how to deal with surplus fish).	Pending – draft expected for the next meeting pending resolution during Shrier/Kinne meeting.
R2 (Postlewait): Provide final edits to Attachment 14 showing number of tanks and sizes.	Complete – agenda item this meeting.
R2 (Postlewait): Prepare draft calc showing size needed for recovery pond, for discussion at next meeting.	Pending – future item
R2/B&V (Postlewait/Nigus): Examine and report on cost of adding a 5th truck loading tank to the Merwin Trap.	Pending – remove from action list. This item to be addressed during facility layout.
R2/B&V (Postlewait/Nigus): Update criteria document items as described in notes.	Complete – agenda item this meeting. Comments requested.
WDFW (Kinne/Phillips): Provide recommendations to Sean for clear space between handrail and wall for the fish trap safety improvements.	Complete – agenda item this meeting. Set clear distance at 6-inches minimum.
PacifiCorp (Flak): Provide WDFW with catalog sheet for light fixture proposed for trap safety improvements.	Complete – agenda item this meeting.
Subgroup Members (everyone): Review and provide comments to the Merwin Fish Sorting Facility Scope Definition draft document.	Pending – input expected at next meeting. See Item 2 below regarding completion of Trap Standards.

Additional Comments on Last Meeting's Action List:

1. Bryan Nordlund commented that he and Michelle Day (NMFS) would like the Merwin Trap efficiency standards to be a topic for the entire ACC, as this issue is driven by biology in addition to engineering needs. Sean Flak reported that if Frank were here he would typically deal with this comment, but that it was Sean's understanding that Frank would agree with this suggestion, and that Frank could take the lead to initiate an agenda item with the entire ACC, and members of the Engineering Subgroup as required.

2. Bryan Nordlund commented that according to the Settlement Agreement (4.1.4c), until ATE standards are developed, NOAA Fisheries' *Anadromous Salmonid Passage Facility Guidelines and Criteria,* (Jan 31, 2004) (NOAA Criteria) are to be used as design criteria for the Merwin upstream passage facilities. As such, he will not commit to a final approval of the Criteria Document being developed by this subgroup until the ATE has been developed by the engineering subgroup with concurrence in the ACC. He further explained that one of his primary concerns with the Criteria Document in development is the language that limits attraction flow amounts below those used in NOAA Criteria (5-10% of river flow for fishway attraction to be provided between the 5% and 95% daily average exceedence flows), and below those suggested by Pat Powers of WDFW early in the Criteria Document development process. Bryan is of the belief that there is a direct link between attraction flow levels and trap efficiency. Without a ATE established for measurement of success of upstream passage, NOAA Criteria has to remain the default for design. The Settlement Agreement also calls for the ATE standard to consider without limitation entry rate, fall back, crowding at the entrance, delay and abandonment of the trap area. Since the radio telemetry studies are not complete, none of these parameters can yet be fully considered."

   Sean Flak commented that he understood Brian's suggestion, but would prefer to keep the project moving due to the overall schedule requirements, and would like to have everyone's remaining comments on the latest Criteria Document so they can be addressed and the Document finalized. Sean proposed that a separate meeting be scheduled as an action item with the biologists and engineers to address the ATE standards (Item 1), with goals and criteria specifically associated with this item published separately.

   Sean also suggested that he would like to "finalize" the Criteria Document with its current contents, and avoid future revisions that have become somewhat of an ongoing process. Once the group agrees that this document is "final", Sean proposed that future modifications to the published text be addressed via these meeting records.

   The group agreed to this approach, as the Criteria Document in its current state can be a stand-alone document, and other needs can be added through meeting notes and other publications. See other notes below.

Comments and Finalization of April 12th Meeting Notes: The following comments were proposed by Bryan Nordlund, and agreed to by the subgroup for the April 12th meeting notes.

Page 2 – Action item regarding the future agenda item to discuss the Merwin ATE standards. Expand text to include ACC consultation. (Note, this is addressed with Item 2 above).

Page 2 – last row in action item table. Revise text to reference ATE "*standards*", rather than "*goals*".

Page 3 – Additional Comment No. 1. Bryan would like this item reworded to confirm that the facility will be able to operate at the agreed to design flows (5% and 95% exceedance values). PacifiCorp will confirm that the 18,000 to 20,000 cfs flow that would correspond to the closure

of the access bridge exceeds the 5% exceedance flow. Design flows reported in the planning studies referenced the 10% exceedance flow of 11,100 cfs, which was the design criterion when planning for this project began. This paragraph will be amended with the statement: *"The 20,000 cfs threshold is well above the 5% exceedance flow."* 5% exceedance flow is approximately 12,850 cfs (occurring in December based on USGS gage data from 1989-2005).

Page 4 – Other Administrative Items, Item 1. Bryan suggested edits to this section to clarify NMFS's comments from the last meeting regarding their concerns with the proposed electro-anesthesia system. The three paragraphs under Item 1 will be revised as follows:

1. *Bryan Nordlund reported to the group a discussion of the proposed Electro-Anesthesia (EA) system that NMFS is currently addressing in-house. NMFS biologists have expressed a concern that the EA system is untested for the proposed use of sorting wild fish, and that there was only documentation currently available to indicate that eggs and adults were not physically damaged (Quilcene Hatchery study, observations at Bonneville Hatchery). There are no studies that demonstrate the ability of adult fish exposed to EA energy to migrate and successfully spawn. There are currently two or three other projects in the region that are dealing with the same needs of increased sorting capability for restoration or reconnection of habitat programs, so this is a regional concern that NMFS must address.*

   NMFS does not have a formal position on this concern yet, and understands that there are limited options to facilitate stress-free hand sorting of adult fish, where the fish are to be released for possible human consumption. The only other potentially viable anesthetic alternative is a clove oil based product that we discussed earlier in the design process. The clove oil does not yet have FDA approval.

   Bryan told Frank to expect a future discussion of this topic at an ACC meeting, and that NMFS may want to add a spawning success type study to verify that the use of the EA system will not affect the ability of adult fish to migrate and successfully spawn in the wild, and that NMFS desires involvement in this type of study design. Frank replied that studies are already planned as part of the SA to monitor the success of the reintroduction program, so this desire would not provide any additional requirements to the studies currently being planned, which are subject to NMFS review and input. The group also discussed the ease of which a clove oil type anesthetic bath could be accommodated into the facility design, should a retrofit be necessary in the future. The EA tank could be plumbed to accept a liquid anesthetic drip line, mixers could be added if necessary to dilute the chemical, and a flange and space for a possible waste anesthetic collection tank for waste product holding or potential treatment could be provided. The group felt comfortable that his issue is not expected to slow down the design process.

Page 5 – Discussion. Add the following bullet following the third bullet in this section:

- *Consider providing redundant pumps to allow facility operation with a pump failure scenario.*

Page 5 – Discussion. Edit third sub-bullet to read better as follows. "*…anticipate not needing to enumerate all fish.*"

Page 7 – first paragraph. Correct spelling for Bryan's name (and throughout the document). Change "*reservoir seeding*" to "*habitat preparation*". Add a sentence after the first sentence that reads: "*In other words, does the model account for reduced use of habitat during the initial reintroduction years.*"

These comments will be incorporated, and the notes distributed as final by Kimberly McCune.

CRITERIA DOCUMENT / TECH MEMO
Dana Postlewait reviewed the following items for the design criteria and fish number calculations.

Facility Design Criteria document (vers. 6.6, dated May 15, 2006): Changes to this document were limited to Table 1, the fish design number and disposition summary table, and to the Fish Handling Process Diagrams. Revisions were suggested by R2 after working through a similar design table for the Lewis River Hatchery implementation project.

- A new row was added to differentiate "Late Wild" from "Early Wild" Winter Steelhead. The Late Wilds will be transported to the upper river, and the Early Wilds will not as they are primarily a hatchery run.
- The River Return Pipe destination possibility for Late Wild Winter Steelhead was changed from Yes to No.
- The Lower River Recycle destination possibility for Early Wild Winter Steelhead was changed from No to Yes.
- The Lower River Recycle destination possibility for Hatchery Spring Chinook was changed from Yes to No.
- Brood take periods were eliminated for S-Coho in August and November (Brood take periods remain September and October).
- Associated changes were made for the Fish Handling Process Diagrams in Appendix A (Page A-4 and A-5).

Tank Loading Plan: Attachment 14 to the Tech Memo has been reworked to illustrate the use of four 3,000 tanks, and four 250 gallon tanks. Dana walked the group through these documents and pointed out where changes have been made since the last version. A Tank Loading Flow Chart was also developed to supplement this spreadsheet, based on the sketch Frank Shrier drew at the last meeting (see previous meeting notes). This document indicates that 4 large tanks, two small tanks, and a 400 gallon fish trailer are adequate to handle the peak daily loading (not including surplus fish).

Tank/Truck Loading Flow Chart, and Surplus Fish Handling Protocol: Dana walked the group through a graphical presentation of the Tank Loading Plan for September, to help address and provide a better understanding for the surplus fish issue. The group was generally pleased with this presentation, and requested a similar diagram to be produced for October (the other likely limiting month). This diagram also helps to address the protocol on how to surplus fish.

Eric Kinne expressed concern regarding a single use of Tank 1 to handle the hatchery brood. Eric's concern is that these fish should be able to be collected all day long, and not just in the morning. He is also concerned that four tanks may not be enough, and that five may be necessary to handle the surplus fish.

The goal of this document is to provide a discussion tool for Eric Kinne, Frank Shrier, and others to agree on a reasonable number of truck loading tanks. Because this is a complicated topic and there is quite a bit of information on these charts/tables to review, the group decided to create an action item for Frank Shrier and Eric Kinne to meet to finalize details on the tank loading and surplus fish issue. These items will be discussed, and the charts revised prior to the next meeting based on their discussions.

Merwin Sorting Facility Scoping Document: Dana asked the group if anyone had comments on the Merwin Sorting Facility Scope Definition document distributed at the last meeting. No one had any comments ready for discussion. PacifiCorp will send electronic copies of this document via email, and a review will be facilitated at the next meeting.

Confirmation of criteria document/tech memo approval process: The group agreed that following this last review, the Criteria Document can be finalized at the next meeting, and future revisions can be addressed with meeting notes and special addendum's if required. Bryan Nordlund asked to add a caveat to this statement adding that the design criteria will only be considered final once a performance standard for ATE has been established, and providing the Criteria Document can be revised by special addendums from future discussions such as those pertaining to a performance standard for ATE. With this caveat, he supports the current version of the Criteria Document for facility concept development, with the objective of achieving the performance standard for ATE." Also, I note that ATE is a performance standard, not a goal. The subgroup members were in full agreement on this caveat.

Approval to move ahead with conceptual design: The criteria issues are nearly all settled, however a few loose ends still exist such as the ATE standards, tank loading plan, and final review and approval of the provided documents. It was requested that all participants come to the next meeting ready to provide comments or to adopt the criteria documents. R2 and B&V will provide an updated Merwin Trap and Sorting Facility design schedule for the next meeting.

FISH TRAP SAFETY IMPROVEMENTS

Sean Flak reviewed the status of the fish trap safety improvements, which are currently near the 90% design level. WDFW (Eric Kinne) has provided a letter with comments on the 60% design, and has discussed his comments with Sean. Sean will be addressing these issues prior to release of the 90% design documents.

Issues to be addressed include:

- The clear spacing between the handrail and the wall will be set at a minimum of 6 inches, based on input from Bryan Nordlund and the subgroup participants.
- The automated actuator details on the bridge still need to be worked out. Eric Kinne expressed his preference to avoid the use of hand drive motors for safety and convenience reasons.

Sean will be providing a memorandum with the 90% plans to the ACC and the Engineering Subgroup.

LEWIS RIVER HATCHERY UPDATE

Sean Flak introduced the group to the work getting underway at the Lewis River Hatchery complex (Lewis River Hatchery, Merwin Hatchery, Speelyai Hatchery) related to the license implementation. R2 has been retained by PacifiCorp to perform the planning and engineering associated with the hatchery items. Sean is PacifiCorp's Project Manager for this effort, and Dan Turner is R2's lead engineer for the project.

Current efforts include finalization of Criteria Documents that are similar to those developed for the Merwin Trap. Handling and transport logistics to address the live transfer of surplus fish to Pond 15 at the Lewis River hatchery are a key element to the criteria.

Future efforts will include the redesign of Lewis River Hatchery (LRH) Pond 15, and Ponds 13, 14, & 16. As sorting and spawning will be conducted at LRH Pond 15, an electro-anesthetic system is also envisioned for this site.

Sean asked if any of the subgroup members wished to be involved in this project. PacifiCorp anticipated working directly with WDFW (Eric Kinne, Pat Klavas, potentially other WDFW engineering staff), and is open to support or input from the other agencies represented with the engineering subgroup. Bryan Nordlund stated that he will be able to support Eric Kinne and Pat Klavas as desired.

The subgroup agreed that the hatchery design effort does not need to be addressed by the entire engineering subgroup, unless there are topics related to the fish passage work. Eric Kinne stated that he would take responsibility for getting WDFW's engineers on board for oversight on the hatchery effort, and that he would prefer to send them review drawings at the 30%, 60%, and 90% stages. An updated schedule will be provided to Eric Kinne as part of the hatchery work. Design reviews are anticipated the 30%, 60%, and 90% design stages.

NEXT STEPS AND OTHER ITEMS

The next design priorities will be:

- Develop the fish trap safety improvements to the 90% design level.
- Further development and discussion of the fish population model, as it related to creating the ATE standards for the Merwin Trap.
- Finalize review of the criteria documentation, including review/comment on the Merwin Fish Sorting Facility Scope Definition discussion draft document.
- Develop a schedule for the Merwin trap 30%, 60%, and 90% design reviews.

The following table provides a summary of all pending action items.

Meeting Action Item Summary

SUMMARY OF PENDING ACTION ITEMS (remaining from April 12th meeting)	**STATUS**
PacifiCorp/B&V/WDFW: Upper Release and Spawning Channel Design Input and Details. See information in review of last meeting's action items.	Pending until design effort begins again following WDOE guidance.
PacifiCorp (Shrier/Flak): Work out details of a minor amendment to the SA to address interim safety improvements to the fish trap. Frank will talk to Holly.	Pending – future item.
PacifiCorp/R2 (Flak, Postlewait): Draft letter recommending number of tanks and rough configuration of the facility based on last several meetings and technical memo attachments (contingent on finalization of how to deal with surplus fish).	Pending – draft expected for the next meeting pending resolution during Shrier/Kinne meeting.
R2 (Postlewait): Prepare draft calc showing size needed for recovery pond, for discussion at next meeting.	Pending – future item
NEW ACTION ITEMS (From May 17th Meeting):	**STATUS:**
PacifiCorp (Shrier/Flak): Coordinate to address Bryan's comments regarding needing both biology and engineering support for development of the ATE Standards. Bryan wants input from Michelle Day and ACC biologists with this task, in addition to the engineers.	Pending – Frank Shrier to facilitate.
R2 (Postlewait): Make changes to April 12th Meeting Summary Notes to incorporate Bryan's comments. Get to Kim for distribution.	Complete. To be distributed by Kim McCune.
PacifiCorp (Shrier/Flak): Email license schedule update (if appropriate) following Frank's meeting today regarding BiOP.	Pending – Sean Flak to lead.
PacifiCorp/WDFW (Shrier/Kinne): Meet to review tank loading spreadsheets and new diagram for the trap. Kinne's concerns with the recommendation for 4 large tanks, 4 small (250 gal) tanks, and one fish trailer are: - Are there sufficient tanks available to allow taking brood throughout the day (as opposed to taking the 1st load for brood, then using the tanks for other needs)? - Is there sufficient capacity to allow taking recycle fish throughout the day? - Is there sufficient capacity to deal with surplus fish throughout the day, and not have too much down-time if an extra truck is used in lieu of a 5th tank. The surplus issue will be handled as part of the design process, but this note records Eric's concern.	Pending – Frank Shrier and Eric Kinne to coordinate.
PacifiCorp (Shrier). Once the above item is resolved, add an agenda item at a future ACC meeting to present tank configuration recommended by Engineering Subgroup.	Pending

R2 (Postlewait). Develop tank/truck loading diagram for October. Pending resolution of above item, update tank/truck loading diagrams to reflect Shrier/Kinne discussion.	October diagram complete. Final drafts pending contingent on Shrier/Kinne meeting.
All Subgroup Members: Review and provide comments to the Merwin Fish Sorting Facility Scope Definition document distributed at the last meeting.	Pending
PacifiCorp (Flak): Email out another copy of the Merwin Fish Sorting Facility Scope Definition document.	Complete
B&V/R2 (Nigus/Postlewait): Develop design schedule for sorting facility / trap work	Pending

NEXT MEETING

- The next meeting is re-scheduled for 10:00 am - 5:00 pm, June 26 at the Merwin Hydro Facility (in lieu of 9:30 on June 27th).

FUTURE MEETING DATES

As a reminder, future meeting dates were set for:

- Tuesday, August 8 - Merwin Hydro Facility
- Wednesday, September 20 - Merwin Hydro Facility
- Tuesday, October 31 - Merwin Hydro Facility
- Tuesday, December 12 - Merwin Hydro Facility

Meeting was adjourned at ~10:40 pm.