

Pend Oreille River TMDL Watershed Advisory Group
Meeting Notes
April 28, 2008
Pend Oreille Public Utility District Office Conference Room
Newport, WA

Participants: Pat Buckley, Curt Knapp, Scott Jungblom and Nancy Thompson, Pend Oreille PUD; Michele Wingert, Kalispel Tribe; Patty Perry, Kootenai Tribe; Karin Baldwin and Marcie Mangold, Washington Dept of Ecology; Don Martin, EPA; Robert Steed, Kristin Keith, and Tyson Clyne, Idaho DEQ; John Sugden and Ruth Watkins, Tri-State Water Quality Council; Kent Easthouse, Corps of Engineers; Lori Blau, Pend Oreille Newsprint; Ted Runberg, Priest River Chamber of Commerce; Dick Noble, Land Owner.

On the phone: Michael Schneider, Corps of Engineers; Paul Pickett, Washington Dept of Ecology; Christine Pratt, Seattle City Light; Jenna Borovansky, contractors for Seattle City Light; Kent Easthouse, Corps of Engineers

Introductions: Ruth Watkins opened the meeting and had everyone present and on the phone introduce themselves. Ruth described the agenda. Washington would continue and finish responding to comments in the matrix, and discuss the implementation strategies section of the TMDL. Washington stakeholders would respond the Washington's comments. Idaho would discuss Total Dissolved Gas (TDG) and moving the TDG TMDL to public comment. The Army Corps of Engineers would provide an overview of their technical issues, but save the in depth discussion for the next meeting. The group will finish the meeting by prioritizing some potential agenda items for the technical meeting on 5/12.

Washington Response to Comments:

Karin continued the response to comments from the last meeting. Using the presentation outline from the last meeting, Karin began with number 6: load allocation at the stateline. Ecology will determine the impairment at the stateline, and IDEQ will determine the allocation for the Stateline. The August draft contained an impairment there in May. After reworking the model to use model output from IDEQ rather than using observed data, the May impairment no longer existed. The Corps proposed that the May error was due to a modeling error that propagated downstream from the lake. Bob reiterated that the May impairment occurred because it was based on observed data instead of a model output. A rerun of the model caused the three degree difference on 5/5 to cancel out. Lori asked why observed conditions and model outputs didn't line up? Ecology said the observed conditions and model outputs did not line up in the Idaho model because bias existed in the model compared to observed results. The Corps asked about the error's source and the resulting model output. Lori asked if this meant stakeholders need to worry about the other model errors. Karin asked for clarification because during a past meeting people said the model was good.. The Corps summarized disagreements with the current model including all downstream effects of cold water from the lake. DEQ replied that slight variations exist between modeled and observed temperatures. Ecology

emphasized the adaptive process of TMDLs which involves rerunning the models every 5 years taking into account any additional information.

Issue number 7: Seven-mile Dam. Ecology will further analyze the effects of 7 Mile Dam Reservoir to separate its influence on Boundary Dam. This additional analysis might be addressed in the 401 certification. Christine added SCL's Boundary Reach Model used data collected from the tailrace of Boundary Dam. This is an international issue outside of jurisdiction of both Ecology and SCL. The natural model conditions included existing downstream conditions creating the confusion. Ecology has agreed to revisit this issue and discuss it further with SCL.

Issue number 8: Shade allocations. Ecology is taking a watershed approach with the TMDL. Therefore, Ecology is addressing temperature impairments on the tributaries from the Pend Oreille River upstream to the Colville National Forest border. Shade allocations are given to the tributaries for temperature impairments. Shade along the mainstem can benefit near-shore fish habitat and although it might not reduce temperature of the river that much, it will have some impact. Also establishing riparian vegetation has secondary benefits such as reducing erosion. Stakeholders must take all reasonable and feasible actions to achieve compliance; one of these is shade. WAG members stated the modeling showed that main stem temperatures were not influenced by increased vegetation. Christine added that implementation strategies must respond to levels of impairment. Marcie commented that shading is feasible in some places and not others. Paul said that modeling did show help from increased shading. Mike stated that storm fronts and cloudy days cause noncompliance and shading will not affect these. The shade issue was tabled for later discussion.

Lori asked for an explanation of the difference between offsets and credits. Regarding shading, Pat believes we should stick with the modeling results. He also mentioned that stakeholders could work with landowners to increase shade, but in the last 5 years, the general trend has been to remove trees for views. So increasing shade would be especially difficult on small lots. Karin agreed that planting riparian vegetation would not be easy. Marcie said a temperature credit system would not be feasible. The 401 certification is vague and as a requirement of the 401, a water quality attainment plan for the dams will be written. FERC may not accept any credit system in the water quality attainment plan or 401. Karin emphasized that TMDLs focus on the time of year when there is impairment. EPA legal staff will discuss temperature credits, but rubber meets the road at non-compliance.

WAG members asked where the impairments are, by how much, and when. WAG members asked the agencies to provide data and presentations ahead of the meetings when they will be discussed. Karin mentioned that she was surprised that stakeholders still question whether the Pend Oreille River is impaired after the last WAG meeting. Karin indicated that she will send the spreadsheets used for the analysis to stakeholders that request them before the May 12 technical workgroup meeting (by May 8). In an effort to provide the WAG with data used in the analysis, Kristin provided an overview of the Idaho's compliance points and their use of volume weighted averages. These are

covered in the 2nd Staff Report that was handed out in February's WAG meeting. Marcie mentioned that data can be found on Ecology's website (see <http://apps.ecy.wa.gov/eimreporting/Search.asp>). Karin said the next draft of the TMDL will include locations of impairments. Ecology will not be able to get out exceedance information before May 12th. Idaho can send out their spreadsheets, but reading the Staff Report will be more helpful than seeing the spreadsheets.

Washington—Implementation Strategies:

The implementation strategy document Karin sent out was Section 5.6 of the draft TMDL. The implementation strategy has to be part of the draft TMDL, but it is not intended to include specific action items. In Washington, stakeholders and agencies have one year following EPA approval of the TMDL to develop specific action items for implementation. This implementation strategy is a general menu of items that will be used to improve water quality. Some WAG members felt that the technical issues needed to be addressed before discussing implementation. WAG members mentioned they were confused about what input they are supposed to provide. Karin said that she would work with the Washington stakeholders to answer this question and make sure information included about them is accurate. Karin asked the group if it would be okay to hold a meeting of Washington stakeholders. The group did not voice any objections.

Open Discussion—Stakeholder Response:

- The Corps asked about effectiveness monitoring and whether they should monitor representative stations or at points in the river that are most impaired but are not representative. Ecology is working on a list of locations they recommend to be monitored. Ecology's Quality Assurance Project Plan (QAPP) for the effectiveness monitoring that will occur every five years will include monitoring locations. This will also be covered in the 401 certification for Boundary Dam. The model will be rerun with data from the effectiveness monitoring to determine if the river is in compliance, even in these unrepresentative locations.
- SCL mentioned they are uncomfortable with the specific numbers in the table on page seven of the draft.
- Patty emphasized that modeling disproved the effectiveness of shade and it's a strategy not an action. She also mentioned that agencies should not use modeling only when it's convenient.
- After lunch, Karin mentioned that EPA approved the Total Dissolved Gas TMDL on March 26. Copies were passed out to the group and are available.

Review of SCL comments:

SCL comments dated April 15th were passed out and Christine summarized their main points.

- The key issue for SCL is lag time and getting the correct impairment identified.
- Heat load allocations are based on an instantaneous maximum temperature from a surface cell along with instantaneous flow, which overestimates daily heat measures. SCL would like heat load to be calculated using a 24-hour heat load or daily average of flow and temperature.

- SCL doesn't want to be accountable for upstream sources and requested that in next draft a load allocation be identified for each reach. SCL would also like to know how upstream sources were removed in the analysis.
- A volume weighted average should be used to more accurately characterize temperature conditions in the system. This method was used to determine compliance at Rocky Reach Dam and should have set a precedence. Willamette used flow-weighted averages in their TMDL and EPA regulations did not prevent this. Using surface data doesn't represent water body as a whole. SCL wants rationale from Ecology for not using a volume weighted average.
- SCL contends that Ecology should look at the whole period of impairment: 8, 10, or 11 week period of time when doing a cumulative frequency distribution. Karin can send the spreadsheets for Ecology's cumulative frequency distribution analysis to people who request them.
- SCL doesn't think shade enhancement will help nearshore temperatures and shouldn't be considered for mitigation for implementation plan.
- The use of single point maximum as a margin of safety is a mischaracterization of a margin of safety. Margin of safety is intended to account for lack of knowledge of the river system.
- Both Idaho and Washington stakeholders need clarification on how the different analysis approaches will work together to provide consistency. There should be consistency on dates of noncompliance between the two states. If not, then agencies should provide justification as to why they are different.

Idaho-Total Dissolved Gas TMDL Discussion:

DEQ developed, and EPA approved a TDG TMDL in Cabinet Gorge Dam couple years back. At that time the Gas Supersaturation Control Group (GSCG) and had a fix (two tunnels) for TDG at Cabinet Gorge. It turns out that fix would cost much more than anticipated and would not reduce TDG to low enough levels. TDG levels would still be at 130-140%. Right now DEQ is reestablishing how it will work on TDG in Cabinet Gorge. Looking for ways to reduce TDG to 110%, which is the water quality standard. During high flow events, every ten years, we'll probably exceed standards no matter what we do. Now a TDG TMDL is due for the POR. Albeni Falls is not a big gas contributing facility, but it does pass on the gas contributed upstream. This TMDL goes from Railroad Bridge to the state line. This includes three assessment units: one for Lake Pend Oreille and two for the Pend Oreille River. Tyson is writing this TMDL and it mirrors the one on Cabinets Gorge: no net increase in TDG from Albeni Falls Dam. It's posted on the website and DEQ would like to go to public comment on this TMDL. DEQ and the Corps need to agree on when to go to public comment.

This TMDL will be met by of fixing upstream TDG problem and evaluation of operation scenarios at Albeni Fall Dam. The Corps may be able to help TDG by operation. The GSCG will be going through all kinds of scenarios at Cabinet Gorge: installing bubblers, rapids below dam, and preventing spill from reaching depths above 30 feet. Cabinet Gorge receives some TDG from upstream, but mainly produces it with their spill. Once we decide what can be done at Cabinet Gorge The Clark Fork TDG TMDL will be rewritten and DEQ will rewrite the TDG TMDL on the Pend Oreille River.

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Army Corps—Comments and Responses to Last Meeting:

- Corps wants the model to be accurate, well calibrated, verifiable, and defensible.
- The model needs rigorous sensitivity and error analysis. The Corps disagrees with the modeling group's decision that uncertainty and sensitivity analyses were not necessary to temperature modeling. Sensitivity analysis is important to all numerical models: wind sheltering coefficients and solar radiation absorbed by surface cell. Including these two in the model would improve the accuracy of the model. The Corps provided uncertainty and sensitivity analyses that cannot be compared to Idaho's numeric criteria. Sensitivity analysis will reduce the large positive bias in the model and reduce the Corps calibration issues.
- Lake elevation at the natural boundary is too low compared to historical data. The Corps thinks the Boundary conditions in the Idaho model are incorrect and are unaware of the blasting DEQ is basing their boundary conditions on.
- Large errors exist in the surface cells of the model. Surface and bottom cells are unreliable sources for load allocations. The Corps found that using surface cells can over predict temperatures by 1°C, whereas using volume weight approach over predict by 0.3°C. Greatest error exists at Long Bridge. Volume weighted averaging will provide a better picture of the river than just using the surface cells.
- Travel time and lag time need to be taken into serious consideration. The model needs the account for the fact that thermal loads will move down the river system at different rates. Frequency analysis is one option for dealing with this difference.
- Different hydraulic conditions exist at the boundary.
- Corps disagrees with modeling group in that comparing natural and existing conditions cancels out the model error. Differences between scenarios that change model error include: travel and lag time, difference in model structure, difference in boundary condition and model mesh at boundary, hydrologic/thermal forcing functions at boundary, and deep river system vs. shallow river system.
- Bottom cells are isolated and don't interact with rest of the water column.

Priorities for Technical Meeting—Potential Agenda Items:

Top 4 Issues

- 1) Margin of Safety and Conservative Assumptions (EPA)
- 2) Temperature Differences-vertical in the water column/volume flow weighted
- 3) Model Error, Uncertainty, Calibration
- 4) Lag Time; Frequency Analysis during critical time period; sorting out of source impairment

Remaining Issues of Lesser Priority for Agenda

- 1) Model Error—Corps of Engineers-cooler temperatures from Lake Pend Oreille do pass through to Washington approximately 0.5°C. How far down river?
- 2) How will allocations be determined in WA? (shade to be handled as part of allocations).
- 3) Allocation of loads at the state line.
- 4) Beneficial effects of the dam (used for implementation, decision-making, or impairment) credits-pollution trading

5) Exceedance discussion

Remaining Bullet Points:

- 1) Bottom/Surface Cells-compliance locations
- 2) Sensitivity Analysis
- 3) Boundary Conditions and Natural Lake Elevation
- 4) Get spreadsheet info out to group ahead of time
- 5) Exceedance info out by 5/12
- 6) Clarification from Ecology re implementation strategy