

Pend Oreille River TMDL Watershed Advisory Group
Meeting Notes
February 25, 2008
Pend Oreille Public Utility District Office Conference Room
Newport, WA

Participants: Scott Jungblom and Nancy Thompson, Pend Oreille PUD; Michele Wingert, Kalispel Tribe; Patty Perry, Kootenai Tribe; Karin Baldwin and Paul Pickett, Washington Dept of Ecology; Don Martin, EPA; Robert Steed, Kristin Keith, and Tyson Clyne, Idaho DEQ; John Sugden, Tri-State Water Quality Council; Christine Pratt, Seattle City Light; Tarang Khangaonkar and Jenna Borovansky, contractors for Seattle City Light; Kent Easthouse, Corps of Engineers. Tim Closson, Kootenai-Ponderay Sewer District; Cody Van Dyk, City of Sandpoint; Bruce Vogelsinger, Southside Sewer District; Lori Blau, Pend Oreille Newsprint; Jim Marthaller, Pend Oreille County; Brett Converse, JUB Engineers; Ryan Fobes, Inland NW Consultants; Ted Runberg, Priest River Chamber of Commerce.

On the phone: Michael Schneider, Corps of Engineers; Jennifer Hickenbottom, US Forest Service Colville; Kent Doughty, EES Consulting.

Introductions: Bob Steed opened the meeting and described some of the facilitation changes that have occurred. John Sugden confirmed that Ruth Watkins will continue facilitating these meetings after this 2/25 meeting, but that her role is purely facilitation. John will be setting up the meetings and taking minutes. Bob then described the items on the agenda: Idaho and Washington would explain the decisions they have made since the last meeting in evaluating standards with model results, describe the reporting format for combined TMDL report, provide and explain comment matrices that summarize WAG comments and agency responses, provide a TDG (Total Dissolved Gas) TMDL update Idaho and Washington, and schedule the next meeting.

WA Development of Allocations: Karin tried to address the confusion of the development of allocations in the draft TMDL. She reminded everyone that the TMDL must address the time of year when exceedances are occurring (a.k.a. critical period), identify the worst case conditions, and contain a margin of safety that accounts for future activities. The TMDL identifies how much heat the river can handle and still remain below water quality standards (called loading capacity). The loading capacity is then divided up between point sources (through wasteload allocations), non-point sources (though load allocations) and the margin of safety.

Paul provided a review the monitoring sites and model data. Three types of monitoring data were collected: continuous, spot profiles, and replicates of the continuous monitoring sites. Graphs of the continuous data are available on the Web. The maximum temps in 2004 generally occurred from August 14-20 with a maximum of 24-25°C. Vertical profile data show that the Pend Oreille River is well mixed. Not many temperature variations occur from top to bottom. Some variations do occur in milfoil beds, in slow moving areas, and right at the surface. The critical period was narrowed to June to September.

Questions-

- 1) Any hourly readings for monitoring? For continuous, yes, but for profiles, no.
- 2) Cross sectional maximum in the River? Profile measurements were taken from the center of the river as well as at the continuous monitoring location to document representativeness, and no differences were found.

Then Paul commented that temperature measurements should represent the aquatic habitat of the monitoring site. However, modeling for TMDLs may only focus on critical locations and times, depending on project objectives. The TMDL analysis identifies the worst case conditions and uses conservative assumptions to account for the margin of safety. So the language in the standards about temperature monitoring do not apply to developing TMDL loading capacity and allocations.

The WA section of the River was broken down into 5 reaches: Upstream, Kalispel, Middle, Box Canyon, and Boundary. Paul summarized the 8 modeling scenarios he used to identify the impact of a particular source on water temperature:

1. Existing
2. Existing without NPDES
3. Existing with Tributaries at temperatures resulting from Potential Natural Vegetation (PNV)
4. Natural with downstream impoundment
5. Existing with no downstream impoundment
6. Existing with mainstem PNV
7. Existing with upstream natural
8. Natural (upstream natural, no impoundment or NPDES, PNV shade in tribs and mainstem.

Questions on Scenario 8-

- 1) How does Scenario 8 account for upstream conditions? It accounts for unregulated upstream flow and all human sources removed.
- 2) Are the highest temperatures the surface temperatures? Not always. Generally surface temperatures were the highest, but sometime subsurface temperatures were higher.
- 3) How did Ecology calculated exceedances?
Calculated Loading Capacity (LC) from natural conditions. If the natural temperature is less than 20°C, then the LC is 20°C. If the natural condition is greater than 20°C, then LC is natural condition plus 0.3°C. If existing conditions exceed the LC, than that is considered an impairment.

Questions on Exceedance Criteria

- 1) Have you decided to focus on allocations based on 1 day or a longer 7 day period?
Ecology will address this later in the meeting.
- 2) Is margin of safety set in stone?
There are two types of margin of safety: explicit and implicit. Explicit means that a portion of the loading capacity is allocated to the margin of safety (for example 10 percent of loading capacity can be assigned to the margin of safety). Implicit means that

conservative assumptions were used during the modeling. Ecology used an implicit margin of safety in the draft TMDL.

Idaho Discussion of Compliance Points: Bob Steed described the compliance process. He stated that Idaho DEQ has analyzed data numerous ways from the model developed by Portland State University and in all instances it appears that impounding water will result in impairment. Bob reviewed the modeling process and how Idaho's 13 compliance points were determined for use in the model. The 13 compliance areas were determined by DEQ. The modeling process was reviewed by the technical modeling team, with members from EPA, IDEQ, Washington Department of Ecology, and the Kalispel Tribe. Compliance areas were selected to represent relatively deep areas in both the upper and lower portions of the Pend Oreille River. Evaluation areas at 10 km and at 35 km downstream from Railroad Bridge include surface, bottom and volume-weighted temperatures.

Understanding the TMDL Report Format: Karin passed out the format for the Temperature TMDL Report. Tetra Tech combined IDEQ's and Ecology's TMDL templates into the existing draft TMDL report. Sections specific to IDEQ's template are in gold and sections specific to Ecology are in maroon. Commonalities in the templates are represented in black.

Questions-Do we have a sense that if we satisfy Idaho standards, that we'll meet Washington standards? No, the standards are different.

Washington Response to Comments: Comments received on the Aug. 2007 draft TMDL were placed into a matrix. Helen Rueda, EPA, is the keeper of the matrix, but was on vacation and unable to combine IDEQ and Ecology's comments into one matrix. Karin passed out the matrix with Ecology's responses. Rather than going through each comment on the matrix, the comments were lumped together and placed into an outline which was distributed to the WAG before the meeting.

Karin reiterated the definition of loading capacity as the temperature that can be reached and still meet state standards.

Question-

1) How will benefits during non-critical periods be accounted for? TMDLs address impairments during the critical period. So, there is no avenue in TMDLs for such benefits to be considered. Ecology can only include activities in the implementation plan that reduce temperatures during the critical period. Water from Lake Pend Oreille was found to only cool the River for about 20 km downstream of the lake. This cooling effect doesn't reach the WA border, but it does find its way into deeper pools and does result in a greater volume of water.

Karin reiterated when natural is greater than 20°C, then loading capacity is the natural condition + 0.3°C. In this TMDL, if the actual temperature is higher than natural conditions, but both are lower than 20°C, there is no impairment. Any methods of reducing impairment are on the table for implementation.

Karin reminded the group that we have bull trout and dams, and we must come up with a plan to provide for both.

EPA has indicated that the Clean Water Act requires heat loads in TMDLs. EPA was involved in a lawsuit about how loads are expressed in TMDLs, and the court determined that loading should be expressed in days (TMDL stands for total maximum daily load). Therefore in this TMDL, the allocations will be expressed both as a heat load and as a temperature. Implementation activities will focus on temperatures.

As discussed at the Dec. 13, 2007 meeting, Ecology will not consider a volume weighted average. This decision was made at headquarters and will not change. The reasons for Ecology's decisions are listed in the outline. The US Army Corps of Engineers asked Karin to verify and explain why a volume weighted average was used on the Priest Rapids 401 Certification. The Army Corps of Engineers feels there is less uncertainty if a volume weighted average is used.

Paul presented his method for analyzing lag time. The analysis shows that there is not much of a difference between an analysis of paired values and a seven day frequency distribution analysis. WAG members thought that there was a difference. Tarang and the Army Corps of Engineers thought Ecology should perform the analysis over a longer period of time, such as two months or the entire critical period. Paul explained that the biological impacts of pooling data for periods greater than 7 days are uncertain, and the TMDL is not the place for evaluating biological impacts. Also, the standards specifically prohibit pooling data in a way that masks noncompliance. Paul had looked at pooling data over longer periods and found that periods of noncompliance were reduced. Karin asked Tarang to provide an explanation of how a longer frequency distribution period would be consistent with the one day standard for the Pend Oreille River.

Ecology ran out of time to review their responses to the remaining items in the outline and matrix.

Idaho Response to Comments: Bob passed out a DEQ staff report on the newly remodeled exceedances. Initially, two areas were out of compliance, now after rerunning the model and analyzing the output, 8 areas are out of compliance, out of 13 total compliance areas. The analysis is summarized in the February DEQ Staff report, which Bob handed out to the WAG members. Bob wants the stakeholders to comment on the staff report and the new version of the matrix. Deadline for submitting those comments to Kristin is 3/21. DEQ then began addressing the stakeholder comments to the draft temperature TMDL:

1) Level of Uncertainty and sensitivity analysis- Army Corps wants uncertainty analysis done. DEQ and modelers met and discussed this issue and decided they don't need to do this analysis. It is not very valuable to temperature modeling. Discussion between DEQ and the Army Corp regarding modeling error came up – Army Corps disagrees with the idea that the accuracy of the model does not have to be incorporated in comparing it to

the same model. Army Corp wants to revisit model error. DEQ stated a comparison of Scenario 1 which is existing conditions to Scenario 8 (natural conditions) will have the errors between both models. The technical modeling group agreed. The Corps believes they're not the same models. They're the natural and existing. According to the Corps, when you take out the dam, they're a little bit different.

2) Travel Time and Lag Time- Development of Load Duration Curves will be helpful in developing meaningful allocations for the Idaho model. Load Allocation Curves take into account more space, more time, and greater depth of water. Bob described how he used load duration curves to determine exceedances. The group was asked to review an EPA document to understand this approach: "An Approach for Using Load Duration Curves in the Development of TMDLs" (document can be found at http://epa.gov/owow/tmdl/duration_curve_guide_aug2007.pdf) DEQ responds every model has error. The 0.3C allocation and using 90% instead of maximum will account for errors. This is good enough.

3) Lake Pend Oreille Elevation-PSU removed the wedge of water held back by Albeni Falls Dam. Corps concern is that natural conditions make the lake level too low in this circumstance altering downstream data. DEQ and modelers decided that blasting and other channel modification justify removing this wedge. Different approach can be used in future modeling. DEQ and Corps will have to decide boundary conditions on the lake in the future.

Corp raised the issue that bottom cells are not representative of water quality conditions. DEQ agrees but will continue use surface cells.

Corps raised issue that DEQ has done significant research on temperature regulation and published documents on temperature compliance in Idaho. Corps insists that that DEQ didn't follow their publications in developing this temperature TMDL. DEQ has experience with temperature regulation in wade able streams only, not in Pend Oreille River.

Corps raised the issue that if there is less than a 10% exceedance, with no other thermal impairment, then it is possible to move to delisting rather than TMDL development. DEQ replies that the 10% exceedance isn't there to relax standards, but rather to account for errors in modeling and modeling.

Idaho TDG TMDL update: This TMDL will be modeled after the Lower Clark Fork TDG TMDL. Tyson provided some background on TDG and the effects of elevated TDG on fish, most importantly Gas Bubble Disease. The water quality standard is 110% for TDG. The goal for Albeni Falls Dam is to achieve no net increase in TDG above and below the dam. This shouldn't be very difficult because this dam has a low hydraulic head. Tyson reminded the group that there isn't interstate coordination for this TMDL. And there are not natural conditions provisions for TDG or metals.

Washington TDG TMDL Update: Ecology sent the TMDL to EPA on Jan. 22, 2008, and is waiting for EPA approval.

Temperature TMDL Schedule update: Karin presented the updated TMDL schedule as of 2/19/08. Due to vacations and additional workloads, the states and Tribe will send their edits for the next version of the TMDL to Tetra Tech by April 11. The next version of the Temperature TMDL will be released to the WAG on May 12. A WAG meeting will be scheduled in the first week in June for a vote to go to public comment. The agencies are anticipating a public comment period around mid-June through mid-July, with final submittal to EPA the first week in September.

Recognizing there are issues to be discussed further with the WAG, the agencies would like to meet again in April. The group decided the best time for the next meeting would be the week of April 7th or the 21st. John will be in touch to set a specific date and location for this meeting.

Issues to Discuss at the Next WAG Meeting:

- 1) How will allocation be done in WA? Worst case scenario vs. a more spatial/temporal approach.
- 2) Margin of Safety-Explicit/Implicit, for use in load allocations.
- 3) How will loads be allocated at the State Line?
- 4) Beneficial effects of dams used for implementation vs. used during decision-making on impairment ←TMDL addresses impairment only.
- 5) Larger Volume of Water in Lake Pend Oreille through Labor Day-does this provide a cool water source vs. are modeling results showing this effect is gone after 20 km.
- 6) Difference in temperature vertically in water column – can this be addressed during implementation?
- 7) Lagtime, frequency analysis during critical time period. Sorting out source of impairment.