

Oregon Fish Consumption Rate Project
2008 Public Workshop Series: Workshop 6

Fiscal Impacts and Implementation Strategies of a
Revised Fish Consumption Rate

Friday June 27, 2008

Portland Building

1120 SW Fifth Ave, 2nd Floor, Room C

Portland, OR

9:00 am – 4:30 pm

Goal of all Workshops: Engage the public, interested stakeholders and tribal governments in an exchange of information and ideas about: the fish consumption rate used in developing Oregon's human health criteria for water quality standards; the potential effects of a higher rate state-wide; implementation challenges; and alternative actions. These workshops will help DEQ, in partnership with EPA and CTUIR, to develop recommendations and supporting documentation to present the Oregon Environmental Quality Commission in October 2008 with a range of options that might lead to an increase in the fish consumption rate.

Workshop Purpose:

- To present and understand the work and initial recommendations of the Fiscal Impacts and Implementation Advisory Committee and, based on this information, review and discuss ideas and strategies that are needed to support revised human health criteria based upon a new fish consumption rate.

Goals for the Day:

- Provide an opportunity for the Fiscal Impacts and Implementation Advisory Committee (FIAC) to present their findings and recommendations.
- Facilitate Q&A session and discussion about this information.
- Discuss and get input on possible implementation strategies.

9:00 Welcome –Facilitator and Representatives from three governments

9:15 Setting the Stage – DEQ/EPA/CTUIR Representatives will describe the overall project and the scope of the FIIAC’s work: Where are the three Governments with the overall project? Where does FIIAC’s work fit into the project? What was the charge? What were the sideboards for FIIAC’s conversation?

9:45-10:00 Overview of the Fiscal Impacts and Implementation Advisory Committee’s Work—What did FIIAC do? What can be expected today? Kristen Lee, EcoNW and Sarah Kruse, EcoTrust

10:00-11:30 Fiscal Analyses of the Cost of Compliance: Three views

- Independent contractor’s analysis (SAIC, Inc)—Jennifer Wigal, DEQ
- Industry perspectives—Kathryn VanNatta, NWPPA
- Municipalities perspectives—Susie Smith, ACWA

(note: a 15 minute break will be taken as appropriate during this time frame)

11:30-12:00 FIIAC Members: Responses and Thoughts about Costs and Analyses
Clarifying Questions from Public

Noon Break for lunch—on your own

1:00 Potential Benefits—Committee members Kristen Lee and Sarah Kruse

- What are “benefits”? What potential benefits did the committee discuss that might flow from a revised FCR? Is there a recommendation about how to proceed with analyzing these benefits?

Overview of Committee’s initial ideas and recommended next steps

- Questions & Answers

1:30 Implementation Approaches—Committee Members

What implementation strategies did the group develop and discuss? Is there a recommended option or options they suggest?

- Implementation Strategies—Kathleen Feehan, CTUIR
- NPDES Implementation Framework & Flow Chart—DEQ
- Pathway to Compliance—Susie Smith, ACWA
- Questions, answers and comments from public

2:15 Break

2:30 Public Discussion

Small and/or large group discussions will focus on the suggested implementation approaches and the costs and benefits discussed by FIIAC

3:00 What’s Next for the Fish Consumption Rate Project?

DEQ, EPA, & CTUIR representatives will wrap up the project by sharing their thoughts on the fish consumption rate, likely implementation strategies and other information that they will likely share at the upcoming EQC meetings.

3:30 Opportunity for comments or personal testimony on the fish consumption rate, fiscal impacts or implementation ideas. Comment sheets will also be available for those who wish to write their comments.

4:20 Wrap Up and Next Steps in the Process

4:30 Adjourn

Oregon Fish Consumption Rate Project
Workshop Six: Fiscal Impacts and Implementation
Friday, June 27, 2008
Portland Building, Portland, OR

DRAFT Facilitator's Meeting Summary

NOTE: The following notes are a summary of the fifth workshop for the Oregon Fish Consumption Rate Project co-hosted by EPA, DEQ and CTUIR. Questions or clarifications about these summary notes may be raised to the facilitation team. Clarifications will be noted on the website. Questions will be directed to the appropriate staff.

Welcome and Invocation: Facilitator Donna Silverberg welcomed the participants and shared that the goal for today's meeting is to provide the Fiscal Impacts and Implementation Advisory Committee an opportunity to share information and ideas around impacts and implementation of a new fish consumption rate and get input from the public on that information.

Don Gentry, Klamath Tribe led the group in an invocation for the day.

Setting the Stage

Neil Mullane, DEQ's Acting Water Quality Administrator, thanked everyone for attending the meeting. He shared that this is a critical project for DEQ, as an increased fish consumption rate will have a significant impact on water quality standards in Oregon and the sources that generate the pollutants. He reminded everyone that the purpose of today's meeting, and this step of the overall Fish Consumption Rate project, is to examine a new fish consumption rate, the impacts from a new rate including costs and benefits, and develop implementation approaches to meet the new rate. Neil noted that the rigid process DEQ has used in the past may need to be expanded to get at other ways to reduce pollutants – and this would be discussed today. He noted that DEQ welcomed comments from everyone on the ideas as they are critically important to the agency moving forward with recommendations to EQC.

Jannine Jennings, EPA's Region 10 Water Quality Standards Manager, thanked everyone on the good work done through this project. She noted that EPA hopes to find options to implement a new rate that are legally defensible, will work for industry and municipalities, and that leads to actual toxics reductions in Oregon's waters. The ability to implement the rate is key to making this work. Jannine said EPA is listening with great interest to hear from the FIIAC and others about implementation ideas— some may be new and may not necessarily have been implemented in Oregon yet. EPA will continue to talk with DEQ about acceptable implementation ideas along the way. She thanked everyone for being here, and said she looked forward to hearing everyone's input. She specifically thanked the FIIAC for the tremendous amount of work and thought they have already put into this project.

Kathleen Feehan, policy analyst for CTUIR, welcomed and thanked all for attending and shared her thoughts on behalf of the tribes: The tribes see the fish consumption rate as a very critical issue to determining how our waters will be in the future. Decisions made through this effort will (or won't) support our future ability to freely consume fish. This process has involved an intergovernmental partnership to review water quality criteria that establish goals for clean water. To the tribe, and like many Oregonians, fish consumption is an essential part of our lives. It is our identity, heritage, economy, etc. Today we'll talk about how a new fish consumption rate might get implemented and what impact it will have on businesses and municipalities. From the beginning of this process we have heard clearly from people that they were not sure how much they could do in terms of meeting more stringent criteria, given the resources and technological capabilities in existence today. CTUIR relates to this concern as business people. With this in mind, the tribes invited a wide variety of business interests and others that need permits to discharge, to establish a relationship and so the tribes could understand what this means to them. Those issues are, largely, what we'll all be hearing today. The FIIAC, like all diverse groups, represent different interests and, while no consensus recommendations have been developed, have had great dialogue that led to developing innovative ideas for moving forward. As a member of the FIIAC and the intergovernmental partnership, Kathleen said, we need to hear what today's participants think about our ideas.

Dick Pederson, Director of DEQ, also welcomed the group and added that today's discussion will be important as DEQ looks forward. He offered thanks for the work of the FIIAC and to everyone for engaging in this process. Toxics reduction is a must for Oregon and this issue is at the center of the project. "The EQC is very engaged and our work together impresses upon them the seriousness and importance of this issue. Your advice will help educate them on their decision", he said.

Overview of the Fiscal Impacts and Implementation Advisory Committee:

Jennifer Wigal, DEQ, shared a power point presentation on background of the project, goals of the workshops and how the Fiscal Impacts and Implementation Advisory Committee fits into the project, and challenges to implementing revised human health

criteria (including measuring, treatment technologies, data limitations, identifying sources, and programmatic effects).

DEQ is interested in the programmatic effect of a revised criteria considering that the rate being contemplated (175 grams/day) has not been looked at before and would result in the most stringent human health criteria of any state in the U.S. While the actual environmental effect is uncertain, DEQ believes water quality standards can provide a target for actions that can result in cleaner water and cleaner fish. A challenge to implementing a revised rate is that actual achievement of these levels has not been accomplished elsewhere and even if achieved, would not *necessarily* result in an environmental effect.

How does FIIAC fit into all of this? Jennifer explained that that cost and benefits information will be important to developing any proposed regulation and continuing through the rule making process. DEQ will need to address implementation in their rulemaking efforts, and the FIIAC discussions will be critical to informing this. Jennifer thanked the FIIAC for their work thus far.

Sarah Kruse, FIIAC co-chair, provided an overview of the FIIAC's charge, which included review of the SAIC analysis (see further discussion of the analysis below). FIIAC provided an initial round of comments, with numerous concerns, on the first draft of the analysis. However, she noted, the timeframe for review of the next iteration of the analysis impacted FIIAC's ability to comment as a group, so no conclusions could be offered today. Sarah also noted that FIIAC does agree that a good deal of work was put into this analysis and that subsequent drafts have responded to FIIAC's comments. The FIIAC planned to do a further review of the analysis after today's meeting. Sarah went on to report that additional cost analyses were shared at FIIAC by NWPPA and ACWA. The analytical assumptions were not discussed with FIIAC, and again, no conclusions or comparisons were made on these analyses. The FIIAC (and all of today's participants) would hear more today on these analyses (see below).

Sarah shared that there were uncertainties and limitations to the group's work, which included: Varying perspectives on numerous assumptions, lack of funds to support a comprehensive benefits analysis, and a lack of cost and benefits analysis for various alternative implementation strategies the group developed. Given all the presentations and discussion at the FIIAC meetings, Sarah concluded that the FIIAC could say the following:

Implementation of a new fish consumption rate:

- Will take time for municipalities, industry and others to comply with;
- Will have associated increased costs – especially with traditional approaches;
- Will need innovative approaches to attain the standard;
- Will have associated benefits (but the level of those benefits have not been evaluated); and
- Will require a comprehensive approach.

Looking forward: As next steps, the FIIAC will be doing a final review of the SAIC report and provide conclusions and recommendations to inform the EQC. They will also provide a cost estimate consensus recommendation (if possible), develop a qualitative discussion of potential benefits and consider an alternative implementation strategy for possible recommendation to the EQC.

Fiscal Analyses of the Cost of Compliance: Three Views:

SAIC Perspective– Jennifer Wigal shared information about the Science Applications International Corporation (SAIC) “Cost of Compliance Report”. The lengthy report can be found linked to DEQ’s web page designated to this project under ‘FIIAC’. Jennifer also offered a sign-up sheet for those interested in receiving a hard copy. SAIC is an independent firm contracted through EPA to do this analysis. The analysis contains estimates of costs of point sources, a qualitative description of potential costs for non-point sources and storm water, estimates of government regulatory costs associated with variances and an increase in the number of impaired waters, discussion of uncertainties and limitations, and approaches and results of implementation activities and relevant actions in other states. Jennifer shared more details on the approaches used, assumptions that went into the analysis and limitations, all of which can be found in her power point “Cost of Compliance: SAIC Report” linked to DEQ’s web page designated to this project.

She also shared some of the findings: For point sources, reductions in effluent concentrations are needed for at least: DDT, BHC, arsenic, bis phthalates, dioxin and mercury to achieve baseline water quality criteria. Additional reductions are needed for arsenic, bis phthalate and mercury. At this time, mercury has no proven large scale treatment technologies that can treat to levels of the revised water quality criteria. Arsenic is largely naturally occurring. Bi phthalates would likely be addressed through cleaner sampling or a pollution prevention program. The analysis acknowledged that, while not all these approaches are currently used in Oregon, the approaches were deemed ‘feasible’ because other states have implemented them and they are allowed under current Oregon regulations. The analysis, which included very rough cost estimates, showed that costs for treating point sources plateau when a fish consumption rate reaches a point where measurement and technology capabilities are unknown or unavailable.

For non-point sources and stormwater costs, effects are most likely where point source controls are insufficient to meet revised criteria and where ambient concentrations exceed the criteria. Potential non-point sources included agricultural and forest lands; storm water; legacy mining; atmospheric deposition; and natural sources. Costs to achieve compliance in these areas were highly uncertain.

Finally, government regulatory cost estimates were also included.

Questions and Comments on the SAIC analysis

- Can you say more about revisions to the latest draft posted yesterday? DEQ response: The changes were mostly updates; they included comments from NWPPA to better characterize the pulp and paper mill bleaching process; clarifications on Oregon’s

internal management directives; and corrected pollutants that were missing from some of the summary tables (though used in the analysis) – overall, nothing substantive was changed to the latest draft.

- Re: the estimate for variance processing – was the \$65k figure an estimate for DEQ or for the source to put together a variance package? Answer: for DEQ processing.
- Re: the cost table – was this the total statewide or individual facility? Total statewide.

Industry Perspective, NWPPA – Kathryn VanNatta, Northwest Pulp and Paper Association, shared a cost of compliance study that was done on behalf of NWPPA. Kathryn shared that NWPPA is a trade association that represents pulp and paper mills in the Northwest. She shared background on the report (including assumptions and methodologies), estimated treatment costs, a TMDL case study, NWPPA’s perspective on risk reduction in fish and NWPPA concerns. More details can be found in the power point presentation “Cost of Compliance for Revised Toxics Water Standards” found linked to DEQ’s web page designated to this project.

Findings: Costs were based on a fish consumption rate range of 63-389 grams/day. (Kathryn noted that, at the time of analysis, NWPPA did not have the 175 grams that governments are coalescing around so did not initially analyze that number.) She emphasized that while 17.5 grams/day was the baseline, most point sources do not have permits incorporating that current criteria. The analysis studied various treatment options and the presentation shared advantages and disadvantages to using each. (For details on this, please see the power point slides). Four mill effluents were used to analyze capital costs for each treatment. For a mid-sized Oregon mill, iron coprecipitation was estimated at \$25 million, nanofiltration was estimated at \$67 million and reverse osmosis was estimated at \$79 million. Operating and maintenance costs estimated for iron coprecipitation was \$20 million, nanofiltration was \$6.7 million and reverse osmosis was \$7.4 million. Finally, annualized costs were estimated, over a 10-year period, for iron coprecipitation at \$24 million, for nanofiltration at \$16 million and for reverse osmosis at \$19 million. This is compared to current annualized costs which were estimated at an order of magnitude around \$3 million. Llewellyn Matthews, Executive Director of NWPPA, added that a pulp mill in Oregon recently sold for \$31 million.

Llewellyn Matthews provided a case study of the Spokane River Phosphorus TMDL to illustrate, by way of example, NWPPA’s concerns for numeric limits in permitting. She described the impact of this TMDL on the mill: no technology existed to meet the limit, but there was willingness from the mill to employ technology that would get the closest to compliance. In the meantime, a multi-stakeholder group developed a recommendation (through a Memorandum of Agreement) that, for the first ten years, all contributors would do what they could to address phosphorous concerns and, in the second ten years, they would look at creative implementation measures. After 20 years, the mill would need to come into compliance. Still, EPA held the mill to a numeric limitation. The facility was not able to comply given EPA’s interpretation – which is still under discussion and has not yet been legally resolved. It was noted that EPA did not sign the MOA, but had attended the meetings of the stakeholder process.

Llewellyn concluded that for creative implementation measures to be meaningful they must include all relevant government regulatory agencies in any agreement about their use. The TMDL example drives NWPPA's assumptions that, until such an agreement is reached, they must meet the numeric criteria. That assumption was a driver for the cost estimates in their analysis.

With regards to reducing risks from eating fish, NWPPA believes the solution should target chemicals that pose the most risk (man made and others non-point/legacy sources) and more research and understanding is needed on metals, including mercury and arsenic, before setting criteria.

Alternative approaches – Kathryn shared that NWPPA does not support the 175 g/day value, but rather supports exploring effective alternatives that will mitigate prohibitive treatment/regulatory and legal costs. Alternative options include:

- Raise the fish consumption rate for chemicals driving risk in fish tissue (this option was not supported by the full FIIAC);
- Phased implementation (participants would hear more on this later – see below);
- Use of narrative standards and *de minimus* provisions; and
- Pass-through credits for naturally occurring compounds.

Kathryn concluded that NWPPA believes that the proposed stringent water quality criteria would require reduced NPDES discharge limits. NWPPA's goal for compliance is 99.9%. There is no proven treatment to meet the human health water quality standard criteria under discussion (fish consumption rate of 175 grams/day) and costs to comply will be prohibitive for available treatment technologies. NWPPA questions whether meaningful risk reduction will result through setting a higher rate and the organization has a concern for fairness across business sectors. Finally, NWPPA is supportive of creative implementation and need to see proof that it will be fair, meaningful and a commitment from the regulatory agencies to provide legal assurances that support creative implementation options.

Questions on NWPPA analysis

- If you do not support a fish consumption rate of 175 grams/day, what do you support? NWPPA response: We have not fully vetted this internally. Instead we were prepared today to respond to the number generated by the three convening governments.
- Mercury and arsenic – do they drive your costs? NWPPA response: Trace metals are the highest driver of our costs. PCBs may become a higher concern in the future.
- Rick George, CTUIR, thanked NWPPA for the time and effort and noted that they have been instrumental in moving the Fish Consumption Rate project forward. With regards to different levels of toxicity from organic and inorganic arsenic – what do your mills contribute? NWPPA response: We don't know. There is general uncertainty about the fraction of organic and inorganic contributions in the environment – some work has been done in the Portland harbor but not much to date. We have raised this as an area that needs more research and understanding.
- Rick acknowledged the Spokane TMDL as a lesson learned. How would you do this differently? NWPPA response: In that case, a numeric limit and timeframe were in

place that could not be met. Oregon can use some implementation measures not used in the past, and include these new measures in statute to provide assurances that they can be used. Also, there needs to be a mechanism for keeping all levels of government involved, including in the discussions about creative implementation moving forward. All three governments need to be on board for all these things. EPA response: EPA acknowledged the difficulty faced by the pulp and paper industry; not able to comment on EPA's involvement with the Spokane TMDL, but do acknowledge the perception, at least, that they were seen as reversing a decision.

- Action: EPA agreed to follow up with CTUIR, NWPPA and others about the Spokane case, including EPA's involvement and lessons learned.

Municipal Perspectives on the Cost of Compliance, ACWA – Susie Smith, ACWA, worked with Willie Tiffany, League of Oregon Cities, on the municipal perspective of cost of compliance presented today. She provided background and context, the details of which were included in her power point slides (see the “Fiscal Impacts and Implementation Strategies of a Revised Fish Consumption Standard” document linked to DEQ's web page designated to this project). Susie shared costs of direct wastewater treatment, touched on other costs (including energy and greenhouse gas emissions costs), and discussed pollution prevention approaches used successfully in the past. She acknowledged the importance of the fish consumption rate number to the tribes, and, offered the municipalities' perspective that we need to move on to discussing implementation that will result in actual improvement in water quality over time.

Findings: Capital costs to treat metals ranged from \$6 million to \$15 million per million gallons per day to treat the effluent without blending. With blending, costs were estimated at \$2.5 million to \$3 million. These estimates, Susie added, comported with the SAIC report. She added that capital installation costs for a major wastewater agency such as Eugene/Springfield would range from \$187.5 million to \$262.5 million for blending and \$450 million to \$1.125 billion for 100% treatment. Susie concluded that municipalities' ability to finance that kind of treatment would reach a limit that included costs to citizens.

In summary, Susie suggested that the answer to cleaner water is to treat pollutants at the source, and to do this, a comprehensive approach is needed. Traditional end of pipe treatment is expensive and it is unknown whether numeric limits can be met or whether effectiveness can be measured. She also noted that major sources of pollution in Oregon's waters are not addressed or responsible for pollutant reduction through traditional approaches. Pollution prevention and toxics reduction approaches, on the other hand, can target effective programs to reduce pollutant sources, they avoid large capital and operating costs incurred for little measurable benefit, and they show more promise for achieving water quality improvement. What will be required? Time, money, non-traditional approaches and innovation.

Questions and comments on ACWA analysis

- Did you look at costs per user equation? ACWA response: With so much variability, it was difficult to get to those numbers. ACWA will attempt to deliver this information through its continuing work with the FIIAC.
- Re: pretreatment programs – costs to small businesses. Any records of costs of pollution prevention efforts? ACWA response: We provide an exhaustive annual report for programmatic costs for each pollution management program, but not refined to that level. Yes, small businesses will have costs associated with pre-treatment programs, and, it is a safe assumption that these costs will be far less than costs to operate advanced treatment systems. Silver processes and dental programs have the most information regarding this question.

FIIAC Members: Responses and Thoughts about Costs and Analyses

- Rich Garber, AOI: Pre-treatment costs impact on small businesses are not well understood at this point in terms of monitoring and sampling – AOI has questions about this and would like DEQ to study this as a part of this process. In addition, reflecting on the last workshop where I presented implementation ideas (and an implementation approach that will be discussed later) – whether these approaches are currently available, or will be in the future, depends much on the work of DEQ and EPA – e.g. the site specific variance approach referred to in the SAIC report. The public and EQC need to understand the realities around availability of options to implement these approaches. AOI (and other regulated communities) need assurances that the options are legally viable.
- Deanna Conners, DHS Public Health: Thanks to the governments for putting together the SAIC Cost of Compliance report and responding to our comments. This is a high quality report. There are big challenges to working toward the worthwhile goal of helping fish and people – and I look forward to the implementation discussions set for this afternoon.
- Kathleen Feehan, CTUIR: I agree the availability of tools is a challenge and it is worth reminding us all of that. The tribe believes we need to talk about tools that may not yet be available, and that this discussion is critical to getting us to a place where we can set goals and eventually get to the goals we set for clean water. Caution is good, and, changes are required. We can speak from our experience of restoring water to the Umatilla which required major changes to the Rules, and was accomplished. We are hearing from DEQ and EPA that new approaches can be taken. They, and we, are open to new ideas and crafting appropriate rules where needed.
- Kristin Lee, ECONorthwest: I am not an affected stakeholder but, as an economist, am interested in the economic analyses. The focus on costs of pollution prevention was an essential piece of the SAIC analysis, and there was no mention of cost of advanced technologies, which were addressed in both NWPPA and ACWA analyses. The big question that still needs to be addressed is how far towards reaching our goals can we get with traditional and alternative approaches?

Potential Benefits

Kristin Lee, ECONorthwest, shared that the FIIAC’s charge was to consider benefits in terms of economic effects of a proposed action on the public. “Economic impacts” include costs and benefits. Because no benefits analysis was commissioned, FIIAC

looked at information and examples from FIIAC members, the Oregon Environmental Council and DEQ that was useful and relevant to benefits. To be clear, no consensus conclusions or recommendations have come from FIIAC at this point on benefits.

Kristin provided a handout ‘primer of how we might think about benefits’ developed by the two economists (Kristin and Sarah Kruse) and other members of the FIIAC (not from the full FIIAC). She added that comments about potential avoided costs and potential benefits to raising a fish consumption rate were included in the response to the SAIC analysis. Some thoughts from the economists:

- Environmental protection entails both costs and benefits and there are multiple ways that a healthy environment provides economic value (no longer the notion that environmental protection comes only at economic cost).
- Costs can be easier to quantify than benefits, and benefits are just as important.
- Costs and benefits can be distributed differently across public, business, and society at large and have different impacts on different groups.
- When either costs or benefits are “external” to the decision, the economic signals are distorted.

Kristin provided examples of potential benefits including human health (e.g. reduced cancer risks), uses (e.g. avoided costs of treatment) and ecological (e.g. resiliency to ecosystem condition changes). She noted that benefits analyses usually are done via a collaborative process that includes economists, environmentalists, industry and others. She shared a conceptual model of some benefit pathways. Details of this concept and the list of benefits can be found linked to DEQ’s web page designated to this project. Kristin noted that because a full benefits analysis has not been done, many questions remain and, while nothing at this point can be quantifiable, qualitative statements can be shared.

Kristin summarized that an implementation strategy that achieves the same pollutant reduction at a lower cost will have higher net benefits and that some alternative approaches may produce additional benefits. The distribution of costs and benefits across parties may differ depending on which implementation strategy is employed. The FIIAC has not examined specific costs and benefits of alternative strategies, but some look as though they may produce higher net benefits than end-of-pipe treatment alone. She added that the amount and type of benefits depend upon the extent to which a higher fish consumption rate actually reduces pollutant levels (an uncertainty that was shared by DEQ earlier in the day). Strategies that reduce pollutants more quickly, achieve more pollutant reductions and/or have a greater certainty of achieving reductions will have higher benefits. Both benefits and costs need to be considered to best understand economic effects and for optimal economic outcomes to be achieved.

Questions and Comments on Benefits:

- EPA’s Columbia River toxics reduction strategy includes work with other federal partners to talk about benefits on salmon recovery in the Columbia Basin from doing a comprehensive toxics reduction strategy.
- Kat Brigham, CTUIR Board of Trustees: Unknown benefits need to be recognized. For CTUIR, getting water back to the river would bring the fish back. One of the

benefits was that we all – my Grandpa, I and my son – learned to fish on the river after a 70 year decline on the river. We can't cover everything and yet, this is a benefit. Family traditions etc. more than economic.

- Do decision makers have information they need to consider all the benefits, beyond economic? How can we be assured these non-economic benefits will carry some weight in the decision-making process? DEQ response: We always wish we had more information, and, without the luxury of time to gather data on costs and benefits, we as a regulatory agency still feel we have a lot of good information from the workshop process, both qualitative and quantitative, to make informed recommendations. We will share what benefits might occur with the EQC. From there, we'll develop an implementation approach that considers and integrates all of these elements.
- NWPPA has found difficulty in doing a cost benefits analysis. The driver is reducing risk to tribes from consuming fish. Secondary benefits are important but not drivers of the decision. EPA did do some of that risk analysis. We should focus now on quantifying what a change would do to improve risk numbers. Response: Yes, and it is important to acknowledge all the other potential benefits.
- Rick George: Is the value of the fishery today quantifiable? A dollar value attributed to protecting that fishery? Response: We could get those numbers, not sure we have them yet.

Implementation Approaches

Implementation Strategies: Kathleen Feehan, CTUIR, led the discussion by presenting potential implementation options developed by the FIIAC for an increased fish consumption rate. A matrix was provided as a handout that was described as an inventory of various compliance approaches currently in use, currently available, or not known to be used or available, to help evaluate possible strategies. Discussions amongst the FIIAC considered the various approaches in terms of several factors including legal certainty, assurances that approaches were consistent with requirements to implement the Clean Water Act (for this, she noted, participation of DEQ and EPA along the way has been critical), and where existing authorities were being challenged. Kathleen highlighted some of the approaches from the matrix:

- Compliance schedule: Most FIIAC members agreed this would be essential to getting to compliance on any rate.
- Intake credits: These are utilized in other parts of the U.S. and are considered a strategy suited for industry but not for wastewater treatment plants.
- Site specific criteria based on natural conditions: This approach has not been used in Oregon to date, perhaps could be considered for arsenic? It would be used only in places where you could not attain criteria due to naturally occurring conditions. Oregon does currently have authority to utilize this approach.
- Use attainability analysis: Use can not attain criteria due to natural conditions. Currently Oregon has authority to use, but this has not been used in Oregon. Where it has been used in other parts of the U.S. it may be burdensome in terms of technical requirements.

Questions and Comments

- See page three of the matrix for potential approaches that might be recommended by the FIIAC.
- Disagreements should be discussed in appropriate arenas, whether they are technical or policy. Make sure we are clear where issues lie, and if policy, let the policy folks grapple with them.

NPDES Implementation Framework and Flow Chart: A handout was provided. Jennifer Wigal presented DEQ's thinking on how these various tools might be used along the pathway toward reaching compliance with the CWA standards.

Questions and Comments on DEQ's Flow Chart:

- How would this be different than the TDG variance process in terms of federal regulatory oversight? DEQ response: The hypothetical approach shared today would be identified in the rule sent to EPA for approval and also perhaps would be used for site specific areas depending on the pollutant or the approach. Likely criteria would be set for how the variance would be granted and how it could be applied. An example of the Great Lakes region was given – a sector analysis is done and once a certain profile is met, requirements are in place to develop pollution minimization plans in addition to continuing actions already being taken to address the pollutant.
- Is there a trigger to re-evaluate variances? DEQ response At the time of permit re-issuance and/or standards review, DEQ would look to see if new information is available that would help evaluate the variance.
- In the SAIC report, an assumption is made that there will be a variance given with the pollution prevention program. This will affect cost. How does FIIAC react to that? DEQ response: The report assumed the permit holder would choose the path of least cost to compliance and this was deemed the most cost-effective path based on the analyzers' experience. ACWA response: Even the toxics reduction approach we promote is impacted by treatment technology cost threshold considerations. We as regulated dischargers need to look at this. NWPPA response: We do not embrace the assumptions in the report on cost nor the availability of the variance, nor what it would cost to put a variance into a permit. So we assume we would need to meet compliance through treatment technologies. Until we are shown the former is available to us at a reasonable cost, we have to assume it is not an option. ECONorthwest response: Questions remain about whether variances would help achieve limits and/or whether they would be available. We need to determine how to deal with non-quantifiable levels – this is a sticking point. AOI response: We have concerns about the feasibility of the pollution prevention variance approach – legal certainty is a major concern to us. DHS response: The analysis assumed that when a threshold is reached there is a switch to p2 and a variance. We still need to be aware of the assumption.

Pathways to Compliance – Susie Smith, ACWA, shared a handout of three potential pathways that might be taken to reach compliance.

The first was a technology-based advanced treatment to meet the standard. Compliance schedules would be needed, and perhaps pass-through credits and variances would be utilized as well.

The second was a toxics reduction program plus best conventional treatment (this is the ACWA recommended approach). Compliance schedules would be needed, coupled with toxics reduction program in the 1st permit cycle, then if met, continue with compliance schedule or, if not met, look at other tools e.g. variances, UAA, pass-through credit, and/or offsets/trading.

The third was use of a water quality benchmark in the permit. This would provide less liability than using a numeric limit in the permit. The same tools might be used for the 1st permit cycle, then the 2nd would use compliance schedule, variance, pass through credits, perhaps UAA and offsets/trading.

Other options that might be considered: *de minimus* and bifurcated approach (see matrix, page 3).

Questions and Comments on the Various Pathways to Compliance

- Where is EPA in all this? EPA response: We are listening and are open to ideas. The devil is in the details. Some approaches will be easier than others to put into a legally defensible structure. That is the next step for DEQ and EPA. We are committed to working closely with DEQ to examine implementation options from standards and permitting perspectives to come up with something EPA can approve.
- An example was provided: When CTUIR signed a treaty we expected everyone to live up to it – we thought everyone had bought in and understood the agreement. That didn't happen. Decisions need to be implemented through staff. It sounds like you (DEQ and EPA) are on a good path and it is critical for staff to be on the same path to implement decisions that are made.

Public Discussion

There was time for group discussion on what participants had heard so far today. Those comments are summarized below:

- Disappointed in the lack of a benefits analysis. What is the path forward on this? Will you do a benefits analysis once the path forward has been chosen? DEQ response: We are gathering as much information as possible to help inform our recommendation in October to the EQC about a new rate. If they approve it, we have to write a rule. We would look at the alternatives presented today and describe how they would work. This would be the place that costs come into play, as well as benefits that could come from the approach described. We would determine then whether more specific information should be gathered on the benefits of a specific approach that would lead us to making a recommendation to the EQC for implementation. There is more to come in the process. At this point, there are no extra resources to add a benefits study. To develop a standard under the Clean Water Act, benefits are not part of the equation.

- Llewellyn Matthews, Executive Director, NWPPA: We support the objective of cleaner fish. We support targeting man made pollutants, as we believe doing so will have a positive impact on cleaner fish. In terms of implementation, keep the regulatory regime simpler and more direct, rather than so complicated that we need a variance. Move away from being so process-heavy. Instead focus on how to address man made organics, leave natural earth metals until we know more about them. Employ a staged approach. Is this plea for simplicity possible? EPA response: The criteria we adopt must protect the use. If DEQ adopts a fish consumption rate of 175 grams/day, we need to protect at that level. We need to be consistent with the CWA and water quality standards regulation and, though we have not yet found the ability to take this proposed (bifurcated) approach, we could consider it if folks have ideas for how we might do this. The bifurcated approach has not been used in other states. Although schedules have varied, setting different rates for different pollutants has not been done. EPA would have a very difficult time explaining the different rates for different pollutants, relative to protection of fish consumption use. And, we are here to discuss creative options so let's keep the door open for discussion, perhaps in the context of naturally occurring vs. man made.
- Kat Brigham, CTUIR Board of Trustees: Change is difficult. Taking ownership of one's role in the issue is important to help us address the problem. We are in this together and need to find a solution together, for our children's future. We need to be creative in developing implementation approaches that will actually address the issue, e.g. using mussels to clean up the system. Partnership, collaboration and respect for each other are needed. A lot of thought and work has been put into this issue, and while we are not all the way there, we have taken the first step to getting things done. Policy folks need to acknowledge there is a problem, buy in to the process, and make decisions. Technical folks will help find the solution. We need to act now; if we act later it might be even costlier.
- Rick George, CTUIR: Can we say for certain the two proposed paths would not reach the same conclusion? If the cost to comply using advanced treatment technology equals the cost of the mill itself, the approach is not acceptable. So, for example, NWPPA's recommended approach would remove arsenic from the process. The other alternative approach looked at by FIIAC would include arsenic since arsenic could be addressed in some areas. From here, creative implementation approaches would be developed that would lead to the same conclusion that, either 'mill a' is shut down because it contributes a small percent of arsenic, or, address arsenic through other, non-end of pipe solutions. DEQ response: We are developing ideas for mechanisms that would serve as bridges to help us address water quality criteria: an approach that would actually reduce pollutants in a cost-effective manner. Questions remain about what to do about legacy contaminants to really meet the goal of clean fish, which will require us to move beyond point sources.
- Kathryn VanNatta: Many industry participants are missing from this conversation. We are representing just our (pulp and paper) ideas and creativity that we can bring to this. What is your outreach plan and how do you account for the lack of participation? DEQ response: Until other industries feel or identify with the potential impacts to them, they may sit and wait, perhaps until they see the rule being developed. We have tried to engage them but at this time, we are not at the tipping point for engaging

them. CTUIR response: Tribes are doing outreach and will continue to outreach to tribes and others. We'll work to help folks understand the importance of the change. DEQ: Director Dick Pederson added thanks to the NWPPA for being involved, and said it is very important to DEQ that they are participating. He acknowledged that many affected stakeholders are not involved yet, but said it is not for lack of accessibility. DEQ will continue its outreach efforts, and, he noted, it is challenging. EPA response: We are committed and have spent a lot funding this public process. We have provided the opportunity and it is up to folks to participate. We are also working closely with the state, tribe and other entities to continuing our outreach efforts. Jannine Jennings acknowledged Mary Lou Soscia's outreach efforts and suggested that will continue.

What's Next for the Fish Consumption Rate Project?

Dick Pederson, DEQ, thanked the FIIAC for their participation, and said he was awed at the level of commitment all have shown to something that is so important to DEQ. He reiterated that the framework for this process is to look at water quality criteria, of which the fish consumption rate is a key component. This rate needs to change to reflect proper protection of fish consumers. His concern: What does it mean? From a policy perspective we have to decide how this is going to be implemented. If we continue with traditional approaches that won't get us to where we need to be, we are not in a good place. It is incumbent upon us to develop creative approaches that reduce toxics to our waterways. He suggested we need to learn from what has been done elsewhere and push the envelope here in Oregon to get on with toxics reduction, while avoiding 'litigation Armageddon'. Stepping out into new approaches is exciting and risky, and it is our responsibility to show leadership for Oregon and the nation. Again he expressed appreciation for everyone's involvement, particularly CTUIR for their commitment along the way. He said DEQ will do their best to get others involved that should be engaged.

Kat Brigham, CTUIR, also thanked everyone for their efforts toward this project. From the tribe's perspective, determining what is available to us is the first step. We don't think we need to reinvent the wheel, but we should borrow from other states and try new approaches here in Oregon: use adaptive management to make adjustments as we go and build in flexibility. Solutions are important, as is buy-in; we don't expect everyone will be happy, but we are willing to help. In terms of economics, we can all take responsibility to help do analyses with funding help of governments and private industries. The fish consumption rate needs to increase. This is our way of life. We will not stop consuming fish so we need to be protected. If we don't act now, who will? We need to look long term and see that collaboration and partnership works. We will continue our outreach and we are pleased that Oregon is stepping up on this issue; we commend you as leaders.

Jannine Jennings, EPA, shared thoughts on next steps. She shared that the public workshops would end after today. The three governments will work toward a recommendation that will be presented to the EQC to raise the fish consumption rate. Before then, an August EQC meeting will include an informational briefing on this issue including work of the human health and FIIAC focus groups, and public workshop discussions. All the while we will be thinking about what a rule might look like. In

addition to the work with DEQ and CTUIR, EPA is committed to doing outreach and continuing discussions with others along the way.

Neil Mullane, DEQ, added that after the October EQC decision, DEQ will initiate rule writing with public meetings, hearings, and a comment period through 2009. DEQ will put together a schedule for coming back to the EQC with a final rule. Today's discussion was about finding a reasonable approach to implementation that gives us a legal pathway to addressing toxics and toward cleaner fish. Now we have ideas to move forward with that go beyond the traditional approach to do that. This is not the most 'comfortable', from a regulatory perspective, and we want EPA to support these new ideas and assure that they will be approved. As Dick noted, we want to avoid a litigation morass, and believe we have the right people here to do that.

Comments/Personal Testimony on the Fish Consumption Rate, Fiscal Impacts or Implementation Ideas

Joe Hobbs, Vice Chairman of Klamath Tribe: First, thank you for this opportunity to gain audience before you this afternoon. I greet you on behalf of all the Klamath Tribes. I'd like to start by giving you a little history lesson in terms of Klamath Tribes and our fisheries. When our treaty signers, in all of their wisdom, negotiated the Treaty of 1864 with the United States, one noticeable and predominant subject that stood out stated, "*the exclusive right of taking fish in the streams and lakes...is hereby secured to the Indians.*"

By this language, it was very obvious that the Treaty signers wanted it clearly understood that fishing was a mainstay in the livelihoods of the Klamath Tribes. We were a fishing people! And actually, are still a fishing people! At this time, it's harder to discern this fact, because we've been forcibly relegated to more of a hunting people! I've raised five children hunting and fishing. Historically, we had several species of fish that we depended upon, which included salmons, C'wam, Kuptu and Yen, which non-Indians nowadays refer to as "suckers", and the Rainbow or Red-band Trout. The Salmon, being anadromous fish, were cut off from our treaty rights areas by dams placed in the various reaches of the Klamath River without regard for fish passage...which incidentally, was promised to the Klamath Tribes by the dam builders, but was never followed through on! Mismanagement by cattle ranchers and other farming practices contributed to the C'wam and Kuptu being categorized as "endangered" and "threatened" on the ESA listing, which stopped that fishery for the Klamaths. We are now fighting to keep our last remaining fishery, the Rainbow, or Red-band Trout, at levels that will sustain the subsistence needs of our people.

The Klamath Tribes Tribal Council recently passed Resolution 2008-23 that states, "*Oregon's current 17.5 grams per day fish consumption rate is unquestionably inadequate.*" It is well documented that Native Americans of the Pacific Northwest, including the Klamath Tribes, are among those people groups who consume high quantities of fish obtained from the waters of Oregon. Oregon's rate must be increased to ensure protection of the Klamath people. Therefore, the Klamath Tribes opposed adoption of any fish consumption rate less than 175 grams per day for Oregon. In addition, Pacific Salmon must be included in the rate. The Klamath Tribes have trade

and barter laws that allow its members to trade/barter with lower Klamath River Tribes for fish which consist of close to 100% Pacific Salmon. We also obtain salmon from the Iron Gate Hatchery and distribute it to our people. Many of our people attend funerals, weddings and other ceremonies and consume salmon at these gatherings.

I understand the State of Oregon is reviewing and concerned with how much monetary impact an increase in the consumption rate will have upon the state. I would like to address a similar concern from the viewpoint of the Klamath Tribes. There is a big difference, in terms of fishing, from the Indian viewpoint and non-Indian viewpoint. The non-Indian sees fishing as “sport”, whereas the Indian looks upon fishing as “subsistence”! It’s a “way of life” for the Indian as he feeds himself and his family with the fish he catches, whereas for the most part, the others may look upon fishing as a form of relaxation or recreation. When looking at this from the Indian perspective, we have what we refer to as our “traditional economy”, as each fish we catch and eat has a “monetary” value to us.

The Klamath Tribes support the conclusion of the Human Health Focus Group that Oregon’s fish consumption rate should be based on fish consumers, not on calculations that include non-fish consumers. In closing, the Klamath Tribes are dependent upon clean water, fish, game, and other natural resources for subsistence, which are critical to maintaining the cultural, traditional and spiritual values and lifestyle of the Klamath Tribes, so in order to protect those values, the Klamath Tribes oppose adoption of any fish consumption rate less than 175 grams per day for Oregon.

Wrap up and Next Steps in the Process

Rick George, CTUIR thanked DEQ, EPA, ACWA, NWPPA and FIIAC for their energy, creativity and commitment to this work. He said we are here because of a need to set an appropriate protection level for tribal people, and Oregon’s children--now and into the future. That need is evident given the tribal presence here today and throughout the process. The challenge now is to complete the process as best we can through a collaborative effort and, where possible, reach consensus among the three governments. CTUIR remains committed to the group to work on outcomes that work for business and industry and achieve objectives of cleaner fish and cleaner rivers. Rick said he hoped everyone could commit to addressing these problems together so a clearer resolution and outcome can be reached. Also, he said, we have identified a common need for governments to make commitments. That will not be easy, but it is possible. CTUIR is ready to redouble its staff efforts to move us forward to the October EQC decision, via a recommendation that is as close to consensus as possible.

Mary Lou Soscia, EPA, thanked the facilitation team and also committed to talk with CTUIR and DEQ on Spokane TMDL lessons learned.

Wrap Up

Facilitator Donna Silverberg offered a few words to close this 18 month public process (she did note the FIIAC will continue its work). She said that working with the Human Health Focus Group and the FIIAC has been a wonderful experience and commended

members of both groups for all their expert contributions to this project. She acknowledged those who had traveled to all of the meetings, including Don Gentry of the Klamath Tribe. She encouraged participants to provide written comments on the comment sheets that were provided and said all comments will go into the final record. In closing, she shared her observation that there was a lot of growth and movement throughout the process and that bridges were being built – particularly around thinking outside a traditional regulatory approach. She said she looked forward to working with everyone in preparation for the EQC meetings.

Workshop 6 Attendees for all or part of the workshop (6/27/2008 – Portland)

FIIAC Members	
Deanna Conners	OR DHS OEPH
Sarah Kruse	Ecotrust
Susie Smith	ACWA
Kathryn Van Natta	NWPPA
Rich Garber	Boise Inc.
Kathleen Feehan	CTUIR
Kristin Lee	ECONorthwest
Human Health Focus Group Member	
Joan Rothlein	OHSU
Industry	
Eric Steffensen	Boise White Paper LLC
Llewellyn Matthews	NW Pulp and Paper
Rob Roholt	Blue Heron Paper
Jim Jakubiak	Schnitzer Investment Corp.
Stan Miller	SP Newsprint
Tribal Members or Representatives	
Don Gentry	Klamath Tribes
Aron Borok	EI/Colville Tribes
Kat Brigham	CTUIR
Joe Hobbs	Klamath Tribes
Brandy Humphreys	Confederated Tribes of the Grand Ronde
Rick George	CTUIR
Municipal or Regional Governments	
Dave Kliewer	ACWA/City of Portland BES
Kim Cox	City of Portland
April Snell	Oregon Water Resources Congress
State Governments	
Neil Mullane	DEQ
Jennifer Wigal	DEQ

Dick Pedersen	DEQ
Jane Bacchieri	DEQ
Mike Wiltsey	ODEQ
Stephanie Astorino	ODEQ
Melissa Gildersleeve	WA Dept. of Ecology
Cheryl Niemi	WA Dept. of Ecology
Federal Government	
Jannine Jennings	EPA
Mary Lou Soscia	EPA
Melinda McCoy	EPA
Kim Johnson	EPA Region 10
Facilitation Team	
Robin Gumpert	DS Consulting
Erin Halton	DS Consulting
Colby Mills	DS Consulting (student intern)
Donna Silverberg	DS Consulting