

Meeting #5 Summary: August 20, 2020

The meeting was held virtually
A list of acronyms used begins on p. 8 of this meeting summary

ATTENDEES

Advisory Committee members in attendance, and the organizations and interest groups they represent:

Jeff Clarke (WASWD), small-medium treatment plants; **Joseph Grogan** (Coupeville), small treatment plants; **Patrick Kongsli** (Pierce County/PNCWA), all treatment plant sizes; **Eleanor Ott** (Ecology), state agencies; **Mindy Roberts** (WEC), PSNGP AC environmental groups caucus lead; **Mark Sadler** (Everett), large treatment plants; **Rebecca Singer** (King Co), large treatment plants, PSNGP AC Chair, and PSNGP AC local utility caucus lead; **Valerie Smith** (Dept of Commerce), PSNGP AC state agencies caucus lead; **Wendy Steffensen** (LOTT), treatment plant with nutrient removal; **Dan Thompson** (Tacoma), large treatment plants; **Bruce Wishart** (Puget Soundkeeper), environmental groups; **Jenny Wu** (USEPA), PSNGP federal agencies caucus lead.

Advisory Committee members not in attendance:

Chip Anderson (Lummi Tribe Sewer District), tribal facilities; **Pete Tjemsland** (Sequim), small treatment plants.

Advisory Committee alternates in attendance, and the AC member each is designated to represent:

Katherine Brooks (Patrick Kongsli), **Judi Gladstone** (Jeff Clarke), **Teresa Peterson** (Dan Thompson), **John Rabenow** (Mark Sadler).

Advisory Committee alternates not in attendance:

Abby Barnes (Valerie Smith), **Terri Prather** (Wendy Steffensen).

Ecology's AC support staff in attendance:

Karen Dinicola (facilitator), **Kelly Ferron** (coordinator and liaison to PSNF)

The list of other individuals that registered for the webinar begins on p. 9 of this document.

Purpose of this committee

To advise Ecology in drafting general permit requirements for domestic wastewater treatment plants discharging directly to Puget Sound that will lead towards reducing nutrient loads.

Ecology's goals for the first PSNGP

The first permit should stop the water quality problem from getting worse and require plants to take meaningful steps towards making future reductions that meet water quality standards. At the same time, the PSNGP needs to somehow accommodate approved capacity commitments identified in comprehensive and general sewer plans to support smart growth. Additional goals include flexibility for communities to collectively address nutrients and consistent monitoring requirements for all permittees.

AC caucus leads share constituent input

Ecology's facilitator read from a letter to Governor Inslee from the Northwest Indian Fisheries Commission. Each AC Caucus Lead reported input from discussions on short- and long-term planning and adaptive management. The written summary of input provided by each caucus is included at the end of this meeting summary, beginning on p. 11.

Following the reports, AC members asked each other questions:

Please clarify what is meant by the term “water quality trading” and what is the approach? Ecology’s permit writer explained that the utilities (in consultation with the tribes) could set up a system where a plant that has excess nutrient reduction capacity can sell that capacity to a plant that needs it. Such a system requires a rigorous framework and a “currency” supported by modeling to ensure that location-specific impacts are accounted for.

- EPA’s representative underscored that equivalency is important.
- WASWD’s representative suggested that a phased process could trigger a cap increase and allow for adaptive management.
- EPA’s representative mentioned examples from elsewhere that included point and nonpoint source trading, but is unsure if it would work in Puget Sound. AC members requested that additional examples be added to the website, particularly the Montana example
 - The environmental caucus supports reducing nonpoint sources of nutrients, but doesn’t envision trading with nonpoint sources because they are prohibited by state law; there is no permit framework for them. Furthermore, the timing is wrong since most of the nonpoint load is in the rainy season and WWTPs are year round, with the DO problem happening in the summer months.
 - The utility caucus hasn’t discussed this topic. King County is exploring this idea with the Freshwater Trust; their approach is watershed based and holistic, looking at the cumulative small impacts.

Why is optimization considered inconsistent with long-term improvements, and why shouldn’t it be done in advance of long term WLAs? The environmental caucus sees this as an important stopgap measure because significant reductions will take a long time; they are willing to relax their position about WQBELs during the first term of the permit only if short term progress is achieved and WQBELs are achieved by the end of the second term. King County’s representative said utilities will explore optimization and agrees we should try it, but aren’t sure it will work as envisioned. Utilities need to be careful about downstream effects on their treatment systems. A Sound-wide plan is a good way to avoid wasted effort and ensure lasting progress.

AC members discuss monitoring concepts

Ecology’s permit writer clarified that monitoring required by the PSNGP will be in addition to plants’ individual permit monitoring requirements. Plants collect process monitoring data that are not submitted to Ecology. The AC generally agreed that more data are needed for both influent and effluent to inform and evaluate process changes and optimization, produce accurate loading estimates and inform the SSM. It is important for the water quality monitoring to inform the final objectives – WQBELs – and also measure optimization progress. Tacoma’s representative suggested a QAPP approach; Ecology’s permit writer agreed that the monitoring needs to match the goals, especially for optimization, but said the permit will likely include a built-in sampling plan rather than a stand-alone QAPP.

What parameters should be monitored?

The SSM uses DIN, but the permit writer proposes TIN as a more conservative measure. Nitrate plus nitrite plus ammonia comprise the inorganic species. Is total N needed? Consider that TKN – the organic

component – is not available at all labs. There will be a need for accreditation. SSM also needs some carbon species (BOD/COD). The LOTT representative emphasized the need to pair influent and effluent monitoring and to allow plant managers flexibility to determine additional and internal process monitoring needs. The Pierce County/ PNCWA representative suggested that ammonia be the focus of frequent influent monitoring, along with BOD; TKN could be monthly. Add nitrite and nitrate in the effluent. Alkalinity and pH are important process control monitoring parameters; pH might be easiest for small plants. The environmental caucus requested carbon effluent monitoring because of plants' impact on ocean acidification in Puget Sound; the AC should discuss which species of carbon are most relevant.

Should the sampling frequency be standardized across all plants?

Monitoring should capture the variability in a plant's loadings. All plants, regardless of size, need to reduce nutrients. Smaller plants' options are different; they still need to understand how they're doing.

- The utilities suggest sampling 3-4 times per week at large plants, once per week at medium plants, and once per month at smaller plants (the smallest plants have only quarterly data).
 - Are 1 MGD and 10 MGD the right size thresholds? Clarify/define how to measure: the maximum month design flow given in permit condition S4 would be most appropriate, not the peak flow.
- Also consider randomizing the timing of the sample collection.
- Reduced sampling frequency should be allowed once loading variability is adequately documented and the plant's request is approved by Ecology. Plants would still need to maintain the monitoring needed to support plant operations, refine processes, continue to calculate loads, and demonstrate compliance.
- Ensure standard methods (grab v. composite) for appropriate comparisons.

What are the cost considerations?

- QA/QC and accreditation costs associated with each parameter.
- Availability of laboratory services for smaller plants.
- The Coupeville representative said weekly influent and effluent monitoring would be about a tenfold increase over current monitoring requirements; he agrees data are needed.
- Would SRF be available for hardship cases?

Other issues/concerns?

- The environmental caucus is concerned that the way nitrogen load is proposed to be calculated in the table, plants will not capture the day to day variation in their TIN load because a 24-hr composite concentration is multiplied by average monthly flow. There is more variation in some plants than others. Each plant should get the best possible assessment of their actual loads by calculating a range using instantaneous flow measurements, not just monthly average flow, multiplied by the concentration from composites.
 - The WASWD representative asked how variable is LOTT's data? The LOTT representative will look, but thinks the suggested approach is plausible.
 - The Tacoma representative suggested correlating concentration and flow with calculated error bars.

- The Pierce County/PNCWA representative asked for clarification of the goal: seasonal or annual limit? Can plants decrease monitoring in winter and increase it in summer?
 - Ecology's permit writer said that even with a seasonal cap plants should track data throughout the year.
 - I/I is a dilution factor in the winter.
- The WASWD representative distinguished between knowing current loadings from predicting future loadings, particularly considering unusual years such as 2020 due to Covid.

AC members hear and discuss findings of Bay Area study

Dave Clark of HDR gave a [high-level summary](#) of the Nutrient Reduction Optimization webinar hosted by the PNCWA and City of Tacoma last week. He covered the optimization plan contents, data needs, and time frame for identifying and implementing near term nutrient reduction actions at a given plant.

AC members' discussion of the presentation and questions included:

- Side stream treatment: why such a significant cost? The (San Francisco) Bay Area study evaluated side stream for the entire plant capacity but it is a totally scalable alternative, and a good near term optimization option. It does require some capital investment. The optimization plan can include calculating the costs of sizing side treatment at less than full capacity.
- Do incremental changes make sense without knowing the end game? Optimization investments should not result in stranded assets. Best to consider what will fit in the longer term facility plan. Optimization approaches can be consistent and succeed in the end (example HDR project in Bozeman).
- Can plants accommodate growth with reductions achieved through optimization for nutrient reduction? It can be very economic for an under-loaded facility, but it may not be sustainable, and raises concerns about anti-backsliding. Bay Area plants have performance based loading targets listed in their fact sheet for each facility that include a provision for a 15% growth allowance but no specific criteria were applied. The Bay is at a tipping point and modeling (using real effluent performance data and better loading estimates) is needed to see if that growth can be accommodated. The targets are not yet in the plants' permits.
 - *[Note from Ecology's permit writer: remember, a significant difference between the Bay Area and Puget Sound is that San Francisco Bay is not impaired for DO.]*
- Any strategies to encourage early adopters? Incentivizing will lead to progress. The Bay Area study followed a Colorado example. Plants that make early progress will be the last to have their individual permits reissued.
- How much did the Bay Area study cost? It was maybe a \$1-2M scope of work to individually evaluate and develop specific monitoring and optimization plans for 37 facilities. It took about four years and got everyone on the same page for future permits.

AC members discuss planning concepts

At the August 11 discussion with planners, there was support for a "bookend" approach where plants would, in 2022-2023, provide high-level estimates for best and worst case scenarios of getting their plants to two (or perhaps three) effluent concentration targets. This would provide a framework for their planning and associated public process without knowing the specific target each plant will be expected to meet to achieve WQBELs.

The Dept. of Commerce representative suggested the permit provide a phased or sliding scale and require scenario planning for the 6- and 20-year project lists and financial plans. Plants nearing the 85% hydraulic or organic load influent capacity threshold may need capital improvements sooner. The changes will not be immediate, but need to start as soon as possible. The environmental representatives suggested that larger plants do or should already have this design work underway, and all plants need to include advanced treatment (and potential benefits of reclaimed water and other “outside the fence” approaches) in their 20-year plans; they agree that some plants closer to capacity need to move faster and underscored that nutrient reductions will be needed for any increase in flows. King County needs to coordinate their Comp Plan updates with all of the >30 cities served by their plants, which requires more time.

The EPA representative questioned why a permit requirement is needed to inform the Comp Plan updates if the planners are getting the information they need and the stage is set for detailed engineering reports and alternatives analysis. The WASWD representative said the planners will certainly use whatever numbers plants give them, but he has little confidence that plants can do a sufficiently adequate job of identifying capital project needs and developing associated budget estimates in the next 24 months. Most plants simply need more time for this sizeable effort. Other utilities seconded these concerns. The Pierce County/PNCWA representative suggested that we are getting ahead of ourselves; we need a regional study and cost/benefit analysis. Environmental representatives questioned whether precise estimates are required for GMA purposes; according to the August 11 discussion summary, planners seemed to accept the idea of presenting a range of costs and the 24 month period seems sufficient for plants to develop these initial cost projections.

What are expected impacts to affordable housing? It is not clear that this issue will have any direct impact on the availability of low income housing. In general, housing costs will not be directly affected by sewer rates but residential sewer bills are expected to increase (by as much as 40-50% according to a back-of-envelope exercise by the WASWD representative). This will affect low-income residents. Rate structures that provide relief to low income residents need more discussion.

AC members discuss cap calculation concepts

The committee has discussed the cap at every meeting. At our last meeting there was evolving consensus for using the cap as a trigger for actions, following the example of the ISGP. Ecology’s permit writer would prefer using the same calculation approach for all plants if possible, and also prefers using an annual average because there is not enough data for the small plants to support a seasonal cap calculation – but welcomes discussion about how to draw the line if the approach is not the same.

The LOTT representative said a seasonal average makes sense for BNR plants. King County would prefer an annual average. Pierce County would be above the limit in winter and is concerned about operating in a deficit; they prefer to have a target that gives them flexibility for optimization efforts. Everett’s plant has two outfalls, one with a seasonal ammonia toxicity limit.

LOTT is the only plant that currently has WQBELs, which are needed before trading takes place. EPA asked how SSM findings of areas out of compliance play into this. Ecology’s permit writer said the bounding scenarios report found that DO will improve with annual reductions. The environmental caucus wants the cap set at the 95% upper confidence level, not 99%, and for exceedance to trigger required actions rather than permit violations. Ecology’s permit writer said that unlike for toxic

pollutants, the overall average is more important than the maximum for nutrient concentrations; she had been looking at ranked averages, not straight percentiles, from the existing data. The Pierce County/PNCWA representative said Ecology could set the cap at the maximum load and still head in the right direction without causing unnecessary stress to plants.

Federal, state, and environmental caucuses support the nonparametric approach. Confusion persists among utilities about the nonparametric bootstrapping method and their how monitoring data will be compared to the calculated cap. Ecology staff will look at the Birch Bay Fact Sheet and the example presented at the June AC meeting to provide a better example and definition than was provided in today's meeting agenda.

AC members discuss optimization concepts

The cap and optimization topics are directly connected. How can the permit best encourage optimization without penalizing plants for trying new approaches? If the cap is a trigger rather than a hard and fast limit, what actions should be required, at what levels? The environmental caucus would like to follow the ISGP example with the cap driving adaptive management. They want to see triggers and options, and agree with looking at side-stream treatment. In order for this approach to work, Ecology must define in a detailed guidance document what optimization techniques shall be considered for the tiers of BMPs. Enforceable optimization plans should provide detail on how facilities will attempt to achieve the cap through these techniques. Plants need to go through the early steps before adding treatment. The environmental caucus does not want LOTT considered as a special case; but rather as a plant that took these actions sooner and has been successful in doing so..

Ecology's permit writer envisions the options including process control changes, flow equalization opportunities, and possible implementation of internal recycles. She likes the WASWD representative's idea of looking for low hanging fruit and side-stream treatment while awaiting WQBELs, and the framework that the example phosphorus action plan provides. Tacoma's representative suggested that BNR plants might need protection from penalties for exceeding BOD and TSS limits in working to reduce nutrients through optimization.

The WASWD representative prefers a menu of options, but wants to know what happens if optimization is not successful: is a side-stream treatment analysis then required, or should side-stream treatment evaluation be required as the first part of the optimization study? The Everett representative supports a regional study over the first 3-4 years of the permit versus 60-70 individual plants doing their own plans.

Tacoma's representative said the three categories of plants described for the Bay Area study provide a useful way of thinking here; Everett's representative said that most plants in Puget Sound fall in the category of having little opportunity to get a lot out of optimization efforts. Ecology's permit writer suggested that a checklist and template gives plants steps to follow and allows them to make decisions. The Pierce County/PNCWA representative suggested that the optimization plan needs both a framework and flexibility for amendments; it should be submitted to Ecology for review and approval. He also wants to avoid having to explain things that are happening outside the plan. Ecology's approach should be strategic in direction, not reactionary.

AC members discuss what nutrient reduction actions/plans should be required

Ecology's permit writer explained that the tiers of required actions could start with low cost controls and process changes; then evaluation of side stream treatment or small investments; and then

implementation of side stream treatment or other more significant changes or progress toward plant upgrades.

The WASWD representative underscored that plants should not all be treated the same; the increased cost per unit of improvement at smaller plants is much higher. Coupeville's representative said that small plants will feel the impacts of these requirements soonest and take the longest; they will need Ecology's support to consider changes and do engineering studies because they do not have in-house capacity. The environmental caucus wants Ecology to require large plants like King County's and Tacoma's to do more as a matter of equity; these few large plants are having the largest impact, and Puget Sound has no more assimilative capacity.

The environmental caucus would like to have more discussion about the actions to be required if the cap is exceeded, and how to balance encouragement of optimization and protecting plants from penalties of upsets that might happen as plants try new approaches. The guidance should spell all of this out. Tacoma's representative would like to have flexibility as to which actions to take at each level and be allowed to select among a menu within a category. Utilities want more time and monitoring data to inform their actions.

Public comments

- Judi Gladstone (WASWD): With respect to the planning discussion, the role of the utilities is to meet the needs not to say where growth goes. The right ebb and flow of information.
- Caitlin Dwyer (Lake Stevens District): For the optimization level of effort, consider capping the amount of money expected to be spent which will be more equitable and certain than a percentage of the equipment budget.
- Jim Voetberg (Mukilteo): Liked the Bay Area study. It is appropriate to commission a similar study in the first permit term to better understand the needs and opportunities and provide a regional framework. Puget Sound skipped this step. Costs for upgrades are substantial. We need more scientific study of impacts. Don't over-restrict plants. All plants want to protect Puget Sound but the regulations must be science based. About 80% of impact is from eight plants. About 5% is from plants <3MGD. A one size fits all cap solution is not appropriate.
- Dave Peeler (Deschutes Estuary Restoration Team): LOTT is doing a good job but still not meeting water quality standards and will have to further reduce nutrients (because of the TMDL in Budd Inlet). The focus has been on plant capacity in terms of flow. It's more complicated: nutrient load limits protect Puget Sound. Plan for meeting that capacity for growth in the long term. Don't assume capacity exists. The HDR study was a good effort and would be helpful here; the state should support it. SSM is one of the most advanced models in the world; don't attack it.
- Teresa Peterson (City of Tacoma): Great discussion. Intriguing to have a target not a limit. Need more time for optimization plan and studies, and to plan alternatives. The Bay Area study took four years and is a good model for us.

Key Takeaways from Today's Discussion

- More monitoring data are needed for both influent and effluent to inform and evaluate process changes and optimization, produce accurate loading estimates and inform the SSM.
 - Large plants should sample influent and effluent 3-4 times each week

- Medium plants should sample weekly
- Small plants should sample monthly
- Influent sampling should focus on ammonia and BOD
- Effluent sampling should focus on TIN and BOD, and maybe DOC
- A regional study similar to the Bay Area study would be helpful in Puget Sound to inform optimization approaches, side stream treatment, outside fence opportunities, and advanced treatment needs.
- Cap exceedance should trigger required actions rather than permit violations.
- Consider requiring earlier evaluation of side stream treatment.

Summary of Action Items for Ecology staff

- Improve the definition of the bootstrapping method, explain its use, and provide an example.
- Post additional information and examples, particularly those to be provided by EPA, on the website.
- Post approved laboratory methods Appendix A on the website.
- Schedule a call with planners before the September AC meeting to discuss the evolving recommendations document, and invite AC members to listen in.

Summary of Action Items for AC members

- Review this meeting summary and provide timely feedback for its finalization by email
- Review the next version of the “emerging recommendations” document
- Gather feedback from constituents to bring to the September AC meeting. Caucus leads:
 - Share this meeting summary along with the specific monitoring concepts and questions listed in today’s agenda
 - Prepare a written summary report out to include in the meeting summary
- Caucuses are asked to discuss the following questions about monitoring:
 - How to best/most accurately calculate and track loadings?
 - What size categories of plants should have what frequency of sampling required?
 - How should cost play into the monitoring requirements?
 - Do you agree with this set of parameters, and if not, what should be added or removed?
 - Influent: frequent ammonia and BOD, monthly TKN
 - Effluent: TIN, TKN, DOC, and BOD
- Caucuses should also discuss what actions should be required if the cap is exceeded.
- AC members should contact the chair and facilitator with questions, concerns, and/or suggestions about process.

Future meetings

Ecology’s AC process facilitator announced that a new meeting facilitator, Rian Sallee of Ecology’s Vancouver Field Office, will lead the AC in its next two meetings through finalizing of the evolving recommendations document. These meetings will be held on:

- Wednesday, September 30 from 9:30-3:00 with a 1-hour lunch break, to hear caucus feedback on monitoring and finalize draft recommendations for more caucus discussion; and
- Wednesday, October 21 from 9:30-3:00 with a 1-hour lunch break, to adopt final recommendations for delivery to Ecology and presentation at the November Forum meeting.

At the October meeting, we will also discuss whether/when/how to reconvene the AC during Ecology’s PSNGP issuance process.

List of acronyms and abbreviations used in this meeting summary

- AC – Advisory Committee
- AWC – Association of Washington Cities
- BNR – Biological Nutrient Reduction
- BOD – Biological oxygen demand
- COD – Chemical oxygen demand
- DOC – dissolved organic carbon
- DIN – dissolved inorganic nitrogen
- EPA – U.S. Environmental Protection Agency
- Forum, or PSNF – Puget Sound Nutrient Forum
- GMA – Growth Management Act
- ISGP – Industrial Stormwater General Permit
- LID – Local Improvement District
- LOTT – LOTT Clean Water Alliance (a wastewater utility in Olympia, serving the urbanized areas of Lacey, Olympia, and Tumwater in Thurston County)
- MGD – million gallons per day
- mg/L – milligrams per liter
- N – nitrogen
- PSNGP – Puget Sound Nutrient General Permit
- PSNGP AC – Puget Sound Nutrient General Permit Advisory Committee
- QA/QC – Quality Assurance and Quality Control
- QAPP – Quality Assurance Project Plan
- SAP – Sampling and Analysis Plan
- SRF – State Revolving Funds
- SSM – Salish Sea Model
- TIN – total inorganic nitrogen
- TMDL – Total Maximum Daily Load (required limit to meet WQS)
- TSS – Total suspended solids
- WASWD – Washington Association of Sewer and Water Districts
- WEC – Washington Environmental Council
- WLA – Waste Load Allocation (in a TMDL or TMDL alternative)
- WQBELs – Water Quality Based Effluent Limits
- USEPA – U.S. Environmental Protection Agency

Individuals that registered for the webinar, and the organizations they represent:

Name	Agency or Organization
Adam Jennings	Hach Company
Amanda McInnis	
Amanda Tobin	Pierce County
Andrew C. Perez	Kennedy Jenks
Annika Vaughn	Gordon Thomas Honeywell Governmental Affairs

Puget Sound Nutrient General Permit Advisory Committee (PSNGP AC)

Brian Funk	City of Sultan WWTP
Caitlin Dwyer	Lake Stevens Sewer District
Cassandra Moore	Pierce County Planning and Public Works - Sewer Division
Catherine Gowan	
Chris	Brown and Caldwell
Chris Thomas	The Freshwater Trust
Corrin Hamburg	City of Anacortes WWTP
Dave Peeler	Deschutes Estuary Restoration Team
David L. Clark	HDR
Donald A. Seeberger	D. Seeberger Consulting
Doug Navetski	King County
Eileen Canola	Snohomish County
Eric Burris	City of Bremerton WWTP
Eron Jacobson	King County DNR
Frances Bothfeld	WA Dept of Ecology
Gil Bridges	Mukilteo Water & Wastewater District
Greg Rae	Olympic Water and Sewer Inc.
Hanna Lintukorpi	City of Everett
Heather Earnheart	Alderwood Water & Wastewater District
Heather Stephens	Stantec
Jacque Klug	King County WTD
James Tupper	
Jane Vandenberg	Pierce County
Jeff Lafer	King County WTD
Jim Bolger	King County
Jim Voetberg	Mukilteo Water and Wastewater District
John Burk	City of Tacoma - Environmental Services
John Conway	King County Wastewater Treatment Division
John Ewell	City of Lynnwood WWTP
John Peters	Regen Development
John Rabenow	City of Everett WPCF
Joyce Nichols	City of Bellevue, WA
Judi Gladstone	Washington Association of Sewer & Water Districts
Kevin Buckley	Seattle Public Utilities
Kevin Leung	WA Dept of Ecology
Kirk Elliott	City of Tacoma
Klinton Caillier	City of Tacoma
Laura Fricke	WA Dept of Ecology NWRO
Laurie Pierce	Pierce County
Les Rubstello	City of Lynnwood
Mark Toy	Washington State Department of Health
Marty Grabill	West Sound Utility District
Matt Symington	City of Tacoma
Maureen Meehan	Pierce County SWM

Puget Sound Nutrient General Permit Advisory Committee (PSNGP AC)

Michael Shaw	Pierce County
Mike Martinez	NWIFC
Ned Lever	City of Bremerton
Nina Bell	NWEA
Olivia Robinson	King County WTD
Patrick Roe	HDR
Paul Marrinan	City of Puyallup
Peg Wendling	City of Bellingham
Rian Sallee	WA Dept of Ecology
River Wan	Pierce County
Roan Blacker	KCSD7
Robert Knapp	Jamestown S'Klallam Tribe
Scott Weirich	Parametrix
Shelley Davis	Planning & Public Works - Sewers
Stella Vakarcz	Kitsap County
Steve Hood	WA Dept of Ecology
Steve Lindstrom	Sno-King Water District Coalition
Teresa Peterson	City of Tacoma
Tom Coleman	RH2 Engineering
Tom McBride	McBride Public Affairs LLC
Tom Swartout	Parametrix
Tyler White	City of Port Angeles

PSNGP AC Caucus discussion summaries

Tribes:

This is an excerpt from the July 23 letter from Northwest Indian Fisheries Commission to Governor Jay Inslee, which also contains comments pertaining to the Puget Sound Nutrient Reduction Plan:

Puget Sound Nutrient General and Individual Permit Effluent Limits - Tribal, commercial, and recreational fisheries experience harm from Salish Sea DO impairments, as do other uses. Tribes and these other interests should not bear the cost of excess WWTP nutrient discharges. Rather, the costs of nutrient reduction should appropriately be allocated to permittees whose discharges contribute to violations of water quality standards. Ecology should implement significant nutrient effluent limits starting with the first general permit cycle, as well as through any interim or other individual permits. All Puget Sound nutrient discharge permits should require water quality based effluent limits and application of all known, available, and reasonable treatment technologies to protect and restore water quality and fishery uses. If permit effluent limits in the context of the Puget Sound Nutrient Reduction Plan are insufficient to promptly demonstrate compliance with water quality standards, then Ecology should consider other alternatives including an overarching Clean Water Act Total Maximum Daily Load for Puget Sound nutrients and DO.

With borrowing costs currently at historic lows, and interest in creating jobs and infrastructure investments that support recovery objectives, new opportunities exist for upgrades using known technologies to remove both nutrients and other chemicals of emerging concern (CECs) from discharges,

a priority need identified by the Southern Resident Killer Whale Task Force final recommendations. With an expected increase in federal infrastructure spending, the U.S. Environmental Protection Agency's Clean Water State Revolving Fund could be tapped to generate water quality improvements and jobs across the region while addressing nutrient, DO, CEC, and acidification impairments.

Federal agencies:

The federal caucus discussed the integration of achieving nutrient targets from WWTPs with other Puget Sound priorities, optimization, and growth. Specific takeaways are:

- **Incorporating Other Puget Sound Priorities.** It is important to consider other Puget Sound priorities in the permit to make sure there are not unintended consequences to meeting one goal that would harmfully impact the Sound in another way. For instance, where there are discussions of expanding the footprint of WWTP to allow for nutrient removal, if habitat or other ecologically important land uses are harmed through this process that would be at odds with the overall priorities of Puget Sound.
 - Having planners attend the meeting are a good way to bridge that gap, and EPA is thinking of other ways to draw connections between potentially competing areas in implementing nutrient reductions in permits and other Puget Sound priorities.
 - One consideration is that when optimization plans are being developed, other factors such as protecting sensitive habitats are considered in the context of overall Puget Sound goals.
- **Optimization and Differences in WWTP facilities.** WWTPs are different in their treatment processes, resources, and monitoring, among other factors. Permit conditions to optimize nutrient reductions in a GP are challenging, since there needs to be a balance in defining actions that facilities can implement but provide flexibility for each facility to do the best and most efficient optimization in this interim period before WQBELs are established. WWTPs should not get locked into costly optimization that will then need to be reversed when WQBELs are established.
- **Nutrient Reduction Evaluation and Low Cost Optimization.** The federal caucus agrees with a nutrient reduction evaluation in the first permit, at a minimum. This engineering report for nutrient reduction could focus on low cost optimization, since there will be further reductions identified in the second nutrient GP. Thereafter, there should be annual reports that describe how the report has been implemented including any quantifiable phosphorus reductions.
 - If data are available, the nutrient reduction evaluation report should be submitted in a year. If data are not available, the facility should collect one year of data and then submit a report in the second year.
 - EPA completed a draft report on case studies across the country, which used different low optimization technologies for WWTP that could be helpful. Some of the low cost optimization methods range from a few thousand to a hundred thousand dollars. This would be a reasonable start to optimization until WQBELs are established in the next permit. Pretreatment was also brought up as an area to explore for nutrient reduction.
 - EPA will share a 2016 memo done for Montana permittees that looked at costs to optimize and retrofit various WWTPs.
- **Growth and Nutrient Loading Cap.** Re: growth, an option may be to consider design flows when calculating capping phosphorus loads. Most facilities do not discharge up to design flow, so this could be useful in considering additional growth. However, the intent of the permit is also to cap

current loads, so if a design flow is significantly more than the current maximum monthly flow, this would result in a much greater load. Therefore, an option could be using a design flow or a flow that is capped at a certain percentage above the current maximum monthly flow (e.g., 150%).

State agencies:

The most recent PSNGP State Caucus meeting included representatives from Dept of Corrections and State Parks in addition to those from Commerce, DNR, Health, Agriculture, PSP, and Ecology that have participated in prior caucus meetings.

Question from PSNGP AC: What planning concepts/principles do you agree with? Why?

PSNGP State Caucus Stance:

- Local planners need advance notice to adjust comprehensive plans for future plant upgrades. This will be difficult without knowing the long term goal.
 - Existing local comprehensive plans need to be updated in 2024. Utilities should do some best case/worst case scenario planning and calculations
 - Ecology should provide more certainty about the steps for an intermediate goal, to get to the long term goal (which might be a more aspirational target or regional vision) and estimate a goal with a buffer for planning.
 - Clarify: the cap is specific to the first permit term, water-quality-based effluent limitations (WQBELs) are in the third permit; what rate of progress is expected?
 - Avoid a situation where jurisdictions have to keep changing their plans to reach a newly identified goal.
 - GMA level of service assignment for treatment plants (if a grade drops, then cities need to take action and they can assign the action to the developer as has been done with other jurisdiction based services in the past)
- Consider a phased or sliding scale approach, and provide time and flexibility to address needs and avoid moratoriums
 - Monitoring triggers certain actions – to start planning earlier or get more done on engineering specifics
 - Tiered approaches based on plant size (like ISGP) and/or % capacity available (85% trigger = cap reached, same adaptive management (AM) action). Figure out what would make the most sense.
 - Need to define what that adaptive management process would look like: optimization plan, monitoring of process adjustments, and evaluation of changes to try in future
 - Nutrient reduction evaluation with cost estimates for future upgrades

- Consider planning for significant reductions on a concentration basis
- This problem will take time to address. We're not likely to see a lot of short term improvements. But it is important to make progress to address the problems we're seeing in Puget Sound.

Question from PSNGP AC: What planning concepts/principles do you disagree with? Why?

PSNGP State Caucus Stance:

- Allowing growth allocation to increase loads over the first PSNGP – don't want to end up giving LOTT extra requirements per their TMDL.
 - How can this permit help avoid that happening? How can we make progress with the overall permit and not have this issue keep it from happening?
- Desire to see immediate results. (Planners have a 20 year horizon.) Caucus is concerned about misalignment of timing and expectations that changes can be made quickly in response to problems identified

Question from PSNGP AC: What planning requirements could apply to all dischargers (except those that already have nutrient reduction technologies)?

PSNGP State Caucus Stance:

- Failure to cap in first permit term results in accelerated schedule to identify needed upgrade to plants or otherwise expand capacity to address nutrients
- Introduce idea of a sliding scale of growth. Especially if growth is happening quickly, allow them to have wiggle room but trigger earlier study and changes
- Planning needs to be required by the permit, but Ecology needs to tell them their end goal
- Need to make short and long term engineering planning and comprehensive planning complementary
 - Clarify what triggers jump starting detailed facility upgrade planning process with engineering design
- Start with what is implementable: Have the planners assume they're already at 85% capacity and the report is happening, and not go through the process to get there. As an exercise to identify the possibilities and challenges.
 - Use the optimization work to feed the next stage of requirements
 - Consider starting with a check list, it will give them a road map that they can use to make progress and adjust if needed. Work with local planners to look across technologies and at site-specific constraints and implement ASAP to fulfill GMA duty to serve.

- Opportunities for source control/reduction should be included in the adaptive management approach as well; operators should use all of the tools in their toolbox

Environmental groups:

1. What types of adaptive management should be required to support optimization and keep plants from exceeding the cap?

- Industrial stormwater permit approach – benchmark approach, not a penalty, but required to do things, and progression over time. Need to define a hierarchy of techniques for optimization. Year 1 do this, then increase over time.
- Meaningful progress toward addressing growth in next few years through optimization and sidestream treatment
- Generally agree with the state caucus report – include specific triggers for actions.

2. What types of short-term planning should be required to support nutrient reduction in both the short and long terms? (examples were given in the July 16 meeting agenda)

ALL PLANTS

- How to get to 10 mg/L and also to 3 mg/L as planning-level exercise, preferably as 10% / conceptual plant design in first round of permitting
- Would like to see a centralized approach as was done for SF Bay as economy of scale *if* local governments agree to band together
- How to expand I/I to reduce hydraulic pressure on treatment plants to gain time
- Conduct optimization and evaluate sidestream treatment in the first round of permitting
- If sidestream treatment implemented, we are more supportive of staging these plants after others going to full infrastructure until later.

PLANTS ABOVE OR NEAR FLOW CAP, triggering planning activities

- Won't get flow expansion in a permit without actions that reduce nitrogen loads overall
- Any plant above or near 85% of rated flow now and during first permit cycle needs to do more detailed analyses, including optimization.
- For plants above or near the 85% of rated flow during first permit cycle, need to (1) implement sidestream treatment and (2) develop designs that reflect 10 mg/L and 3 mg/L options.

3. What types of long-term planning should be initiated to support further nutrient reduction in the long term? (examples were given in the July 16 meeting agenda)

- Must be reflected in 2024 Comprehensive Plan, Capital Facilities (20-year) Plan, and Capital Improvements (6-year) Plan under GMA.
- We concur with the state caucus that these efforts must include scenario planning and a suite of actions.
- Comp plans will get population projections in 2022 showing a range of high/medium/low from population projections

- Similarly, Comp Plans need to reflect high/medium/low targets also for technology goals – never more lax than 10 mg/L, could be as stringent as 3 mg/L, most stringent is 3 mg/L and no flow increase (with growth addressed through satellite plants, building-scale solutions, and “outside the fence” innovations)
- We need to see the foundation for transition to 90% reduction – innovative, outside-the-fence solutions like satellite treatment, building-scale solutions, and traditional nutrient removal technology – financing, planning
- Trading frameworks initiated, with strong consultation with Tribes early in the process

4. What concepts/principles do you agree with? Why?

- Puget Sound, and the communities and life that depend on it, deserve protection. Status quo is not working. We have a generational opportunity and obligation to clean up our own messes and not punt this down the road. Ecosystems have limits and we need smarter approaches to growth.
- We know that the cumulative effect of wastewater, predominantly from Central Puget Sound population centers, violates water quality standards. Wastewater discharges flow landward, so Seattle’s wastewater flows to Tacoma, Tacoma’s to South Puget Sound, and Olympia/South Puget Sound is downstream of these large population centers. Multiple lines of scientific evidence demonstrate that the ecosystem is stressed. Now is the time to address the needs of future generations who value clean water and healthy habitat, and also future residents that will need wastewater treatment. Important public service that protects ecosystem services. Ignoring the problem will not make it go away.
- We agree with and strongly support the positions of the Northwest Indian Fisheries Commission and its member Tribes in the recent letter to Governor Inslee. Tribes with treaty rights and people who rely on salmon and other natural resources are the communities most impacted by the degraded health of Puget Sound and its rivers. Protecting the status quo for white people does not reflect our shared values as a society. We see this all around us, both as a nation and as individuals grappling with systemic racism. Who are we protecting Puget Sound for?
- Those plants moving forward faster toward reductions in total nitrogen load should be rewarded. Several have already built in the progression toward advanced treatment technology as they approach plant upgrades. We appreciate their foresight because it will save money.
- Equity among plants – smaller plants/communities need assistance, and we would like to see financial support reflect that.
- Utility rates should reflect equity as well, and we would like to discuss how to ensure financial accounting within utilities recognizes that low-income households pay a greater proportion of their income toward utilities. That should not stop investments in infrastructure – that means we need to rethink and retool all of our funding.
- Generally support the concepts from the federal caucus on how to consider caps for facilities that have capacity to grow.

5. What concepts/principles do you disagree with? Why?

- We disagree that these planning frameworks, which we recognize are needed to protect the health of fish, people, and the Sound, would lead to a moratorium on growth. We know with certainty that utilities cannot simply rely on expanding flows through secondary treatment plants; you need to include decreases in total nitrogen with future plant upgrades now.

6. What planning requirements could apply to all dischargers (except those that already have nutrient reduction technologies)?

- Scaled requirements by community, flow rate
- Need to address: How are you going to expand flow while also implementing nutrient removal?

7. Did caucuses have additional discussion around preferred options for the cap calculation or optimization?

- Non-parametric, 95th percentile as a trigger, especially if we go to an annual load limit and have other “gives” on things like benchmarks and triggers already.

Utilities/plant operators:

The Utility caucus has agreed to the answers to the following questions. The key takeaways from our group are the following:

1. We need a specific definition for adaptive management in the context of optimization. It is unclear what it means or what the expectations are.
2. We can only reasonably do long term planning. Plants need to set a specific long-term course to see it realized. Think of it this way, a large cargo ship cannot turn quickly or easily. We are being asked to steer large ships in small bodies of water. We cannot move quickly or with ease.
3. We need to know the expected results of implementation. What are the environmental impacts? Are the numbers real? What does the science say about reducing nutrient limits at treatment facilities and what we will realize in water quality improvements?
4. This is a regional watershed issue. Non-point source needs to be addressed.
5. There are other solutions to this issue than WWTP modifications. i.e. water quality trading, recycled water
6. Costs are higher than what is indicated in the Tetra Tech report from 2011 that ECY is using a basis for economic feasibility.

What types of adaptive management should be required to support optimization and keep plants from exceeding the cap?

Group Discussion

There is an assumption that we will be able to stay below a cap. Small adjustments to plant operations are not likely to generate any or meaningful reductions. It will take time, a lot of engineering and money.

We assume this is a way to assure we aren't violating. We do adaptive management at the plants daily.

LOTT

- Sampling is needed at all levels to support adaptive management
- Adding probes, if feasible, for aeration control at different stages of the process would also be helpful- DO, ammonia, other?
- Using extra tankage where it is available to increase SRT
- Using extra tankage where it is available to hold centrate, and dose at a constant level
- Request Ecology to assess alternative treatment scenarios for septage haulers.
- Funding from state and federal sources to defray costs of sampling, analysis, minor retrofits, planning documents.

Mukilteo

- Some entity should collect reports on optimization efforts (we tried this, here is the result) and regularly providing them to treatment facilities so we can learn from one another.
- Staff should continue their present efforts to monitor facility results, and make adjustments that appear necessary.
- Caps should be targets with no penalties or enforcement actions if exceeded during the adaptive management period.
- Adaptive management requirements should be different across plant sizes. Plants with design capacities of 25 MGD and larger are of greater complexity and have greater resources to evaluate various alternatives. On the other side, Plants with design capacities of less than 3 MGD likely have little flexibility for significant changes (their nutrient loading is also significantly lower). Then there are Plants that currently have nutrient concentration levels of 10mg/l and less. Ecology should not be wasting their time on these Plants.
- The entire wastewater treatment process is interrelated. You may be able to reduce nutrients but cause BOD, TSS or pH to increase. Ecology should not expect Plants to explore and implement nutrient reduction measures without impacting other regulated discharge limits. Ecology should waive intermittent exceedances of regulated discharge limits during the adaptive management period.

Everett

- Targets not caps, science and data based decisions, allow data to be taken for all plants, not parametric or bootstrapped, frequent communications with Ecology and permit manager, optimization based on regional studies of the PS WWTPs. Complete the science before treatment limits.
- If the regional study indicates a plant has limitations or cannot provide nutrient treatment, allow funds and time for engineering design study with adequate data to make decision. Treatment decisions cannot occur without treatment design needs.

King County

- Allow time to collect adequate data across the sound. Ensure science-based results. Allow facilities across the sound to work in coordination to ensure environmental outcomes are realized. Allow for testing and retesting.

Pierce County

- Ecology should recognize that adaptive management is a standard operating procedure used by every sewer utility every day. Approaches to adaptive management will vary by plant based on existing capital and the nuances of operation. Plants that are not designed for Biological Nutrient reduction may have limited to no viable adaptive management alternatives.
- Ultimately, Pierce County believes that establishing a cap for this permit iteration is premature and doesn't fall within technology or water quality regulatory criteria. However, if a target cap is developed, then an exceedance of that target should be used as the planning trigger.

What types of short-term planning should be required to support nutrient reduction in both the short and long terms? (examples were given in the July 16 meeting agenda)

Group Discussion

- Where is the regional plan? This process is reactive rather than proactive.
- Short term should be a Sound wide optimization plan.

Any short term plans will affect long term plans, they need to be considered together. Hold us static through several permit terms until we know how we can accomplish real results.

We have to collect the data so we can tell if we've had a positive impact. Baseline data. Need to ensure data will not be used against us.

We need a common goal, similar to BACWA, between ecology and the utilities. Framework and trust.

LOTT

- Engineering and Operations Assessments that include analysis of
 - Operational adjustments
 - Minor retrofits like baffles for oxic/anoxic zones, sidestream treatment etc.
- Tankage and Footprint assessment to see where extra space might be re-purposed or built upon

Mukilteo

- Accumulation of adequate data on nutrient levels, by season.
- Assessment of irregular weather patterns, unusual inflows, or operational issues that might have affected the data. COVID-19 has created very unusual flows and constitution of flows, and data from this year is suspect.
- Testing, testing, testing. We need three years of data to have an adequate base for understanding of influent and effluent
- Assessment of "optimization" methods and their practicality and effectiveness in reducing nutrient levels.
- Assessment of impact of optimization efforts on energy usage and budget.
- Assessment of ability of facility to meet customer demands while attempting to reduce nutrients.
- It's difficult and nonproductive to do short-term planning when you don't understand the scope of the problem or know what limits (end result) you are trying to attain. Wastewater treatment plants by their very nature are long-term facilities. That's why Ecology stipulates that when a Plant gets to within 85% of their influent limits they need to begin planning for enlarging their facility. Short-term planning without identifiable long-term goals and requirements is a waste of resources.

Everett

- Update your sewer GP and a WWTP Facilities Plan (if not done within the last 5 years).
- Participation in the 2024 County Comp Plan updates. Nutrient treatment study work plan for plants, but need science-based treatment limits first.

King County

- Ensure the science is accurate
- Determine if optimization is an option first. Is there anything the plant can do to reduce nutrients without disruption to other parts of the plant process?
- Short-term planning should guide long term solutions. King County cannot phase in nutrient reduction efforts without knowing the long-term target. If the science cannot tell us if or what the reductions will provide to the overall quality of the sound, than we need to continue monitoring and science before implementing costly reduction efforts.

Pierce County

- Data collection to drive decision making, ensure the accuracy of the science, and increase the validity of the Salish Sea Model.

- Regional study of utilities to develop a strategic plan, like the strategy used by BACWA in the San Francisco Bay area.
- Creation of an incentives program
- Establishment of a clear objective, success metrics, and benefits.
- Note: Ecology's proposal to update GSPs and Comp plans is more of a long-range planning effort.

What types of long-term planning should be initiated to support further nutrient reduction in the long term? (examples were given in the July 16 meeting agenda)

Group Discussion

We need waste load allocations for WQT. There is a disconnect between what is thought we can do and what we actually can do.

This whole process is long-term planning.

With proper long term planning we can put all the pieces together.

LOTT

- Engineering assessments of different alternatives – in the second permit round
 - Nutrient reduction at existing treatment facilities
 - Diverting flow from discharge to Puget Sound
 - Produce, reuse, recharge reclaimed water
- Engineering report to follow on choice of “preferred alternative”

Mukilteo

- You can't begin long term planning without data, data, data (testing, testing, testing) and knowing what long-term limits you are planning for. Cart before the horse
- Assessment of property in hand or available for purchase to expand treatment facilities.
- Assessment of technologies that may be appropriate to increase facility ability to reduce nutrient levels.
- Thorough assessment of the science behind Ecology's drive to reduce nutrient levels in the effluent.
- Assessment of the impact of wastewater plant efforts in light of the effects of Climate Change on natural (non-human) nutrient levels.
- Alternative analysis to consider expanding an existing plant versus constructing a new one.
- Analysis of the practicality and benefits of land application or water reclamation.
- Engineering report for design of facility upgrades.
- Analysis of the cost effectiveness of requiring small treatment plants to make major investments to obtain relatively small environmental benefits.
- Analysis of the environmental impacts of nutrient reduction projects.
- Analysis of potential reuse including the distribution and transmission systems costs, the availability of reuse water applications/use, its relationship to the cost of water delivery by drinking water systems, and the impact on water customers.

Everett

- WQ trading, Watershed planning, Regional financing or funding, keeping combined sewers, regional solution for septage

King County

- Long term watershed approach. This is not a wastewater treatment plant specific issue; this is a total discharge issue as well as a naturally occurring issue we have yet to fully understand due to inadequate science.

- Mandate water reuse, similar to biosolids.
- Full engineering and financial analysis for the feasibility of implementing nutrient reductions at facilities not currently designed to do so.
- Coordination with Planning and regional partners to ensure capacities can continue to be met.

Pierce County

- Pierce County supports relying on existing planning efforts and their associated timelines to address long-range planning requirements. Pierce County has recently commenced an update to its Unified Sewer Plan (USP), which includes its General Sewerage Plan.
- Utilities should be permitted to use relevant existing utility documents (facility reports, engineering reports, etc.) as well as the timelines established by those documents.
- Pierce County also supports phased studies – high level analysis followed by feasibility study followed by engineering report.
- Challenges to effective long-term planning include
 - Addressing competing demands/regulations/priorities including those from external drivers and elected officials
 - Availability of resources such as skilled operators and technicians.
 - Accomplishing elements that trigger established adoption processes and associated timelines such as regulatory changes and rate increases.

What concepts/principles do you agree with? Why?

LOTT

- Additional sampling to establish baselines
- Assessing each facility as to their impact and their capability
- Ensuring that both GMA and CWA are complied with
- Setting up a system to enable water quality trading
- The first permit should have limits/caps/ goals that are achievable, while data collection and planning are occurring

Mukilteo

- Protection of Puget Sound water quality.
- More frequent and detailed monitoring. Monitoring of influent.
- True involvement by stakeholders in solving the problems.
- No issue with limiting nutrient loading into Puget Sound. But first, the problem should be scientifically verified (update the Salish Sea Model), and second, Plants should be given sufficient time to plan, design and make (pay) for the changes.
- Upgrades are Plant specific and some Plants may be easy while some Plants may be difficult.
- Agree with optimization because Plants should always be looking to optimize. With a specific goal of optimizing nutrient discharge. Optimizing nutrients may impact other regulated discharge limits (BOD, TSS, pH). While trying optimization strategies, Ecology will need to allow intermittent exceedance of other regulated discharge limits.
- For other than the larger Plants, optimization can be done by the operator with the understanding the operator may conclude there are no viable options without major capital improvements. Ecology should not expect an operator can simply turn a knob to reduce nutrient loading.

- I agree with exploring optimization of larger plants but because of their size and complexity it will take professional engineers to evaluate opportunities.

Everett

- Protecting Puget Sound
- Optimization, allow existing permitted capacity. And agree with the general statements by Ecology to Tacoma Council (paraphrasing) – ‘not intended to make permittees out of compliance’; ‘time must be reasonable to permittees to make changes’; ‘most treatment plants in PS are not designed for nutrient treatment and multiple permit cycles are needed’; ‘Ecology will stand by previous commitments and approved plans’.

King County

- We agree with our colleagues regarding:
 - Protecting PS
 - Increase monitoring frequency
 - Ground this in science that is backed by the universities and other experts in the field.
 - Broaden input from regional partners.

Pierce County

- Employing adaptive management as an overall concept and as it aligns with existing/industry standard day-to-day operations.
- Establishing a system that incentivizes early adopters, which may include water quality trading.
- Allowing utilities to test plant capabilities/optimization strategies without that data being used to establish unreasonable expectations and timelines.
- Providing adequate time for planning and upgrades.
- Working collaboratively to find the best solutions for a healthy environment.

What concepts/principles do you disagree with? Why?

Group Discussion

Has Ecology followed the processes for the CWA? Need waste load allocations. No performance-based limits.

A TMDL would be based on science. Where is the anthropogenic depression in DO?

Technology and science would be impossible to apply to the entire sound. Let's use a TMDL to find out.

LOTT

- Increases in nitrate loading to Puget Sound (even in the first permit) should not be allowed where they have the potential to harm already compromised waters.

Mukilteo

- “Equity among the 67 plants.” Shouldn't we spend the money for improvements where it will have the greatest impact?
- “The science is resolved.” This is very questionable. If it is resolved, why won't Ecology lay out the basis for examination?
- “Our focus is entirely on water quality in Puget Sound.” We are also concerned about air quality. Affordable housing. Ratepayer finances.
- “This project needs to be done ASAP.” About three years ago, Ecology was reducing the monitoring frequency for the Picnic Point treatment plant—hardly a sign of urgency on the nutrients front. Now change must be done overnight. Was it really a Salish Sea model run that changed Ecology's mind about urgency? Given the cost, the importance

of Puget Sound, and the impact on public finances and the overall environment, we need to get this right—not quick.

- Ecology has a good handle on the amount of nutrients Puget Sound can accept and the percentage attributed to WWTF's. The Salish Sea Model needs to be updated before it is used to make long-term and expensive decisions that will have a dramatic impact on GMA and the economy.
- Caps should be hard Caps with penalties and violations. Caps should be targets to attain with sufficient time to meet the targets without the fear of having violations or being fined. Ecology needs to remember they reviewed and approved every plant. They should not be allowed to move the goal posts then begin issuing violations and fines.
- There was a brief discussion on Plants begin gathering nutrient data before Ecology comes up with some standards. I think this is a Plant by Plant decision and while it may make sense for some, This is not a good approach for MWWD.

Everett

- That caps need to limit plants to discharge nutrients at current levels. This is counter to our Ecology permitted hydraulic capacity and approved design and construction plans – (some as only 5 years ago). Growth planners use this type of information, and the draft PSRC Vision 2050 plan identified 87,000 more folks for greater Everett by 2050.
- Disagree with Caps, rather have targets, any limit must consider existing permitted capacity and be seasonal, and no bootstrapping.

King County

- The science – modeling accuracy
- Timing – this is not the right process at the right time.
- Stakeholder involvement – not enough and not enough outreach
- Costs – ECY seems to be unaware of the astronomical costs this will impose
- Implementation – we were not built to remove nitrogen, interim caps could limit growth, burden ratepayers, be unfeasible, show no environmental improvement

Pierce County

In addition to the concerns listed by the other utilities, Pierce County is concerned about comprehensive annual planning and reporting requirements and wants to ensure that analysis/comments on plant operations are limited to industry professionals able to provide expert analysis.

What planning requirements could apply to all dischargers (except those that already have nutrient reduction technologies)?

Group Discussion

A quality assurance project plan to ensure data.

LOTT

- The idea that one group or entity could look at all of the treatment plants to assess data needs, consistency in data collection, possible solutions, and trading scenarios is a good idea. As appropriate, the short and long-term plans could fit under this one umbrella.

Mukilteo

- More frequent monitoring, by more consistent protocols.
- Regular reporting.

- Consideration of optimization alternatives.

Time, Time, Time. Every Plant was designed and constructed (with Ecology's review and approval) with the long-term in mind. Significant changes to discharge regulations during the life of a plant results in a loss of capacity and stranded investments. Bonds and loans were likely guaranteed with the commitment the investments made will ensure plants have the ability to meet regulatory needs and the needs of its customers of XXX years. To simply change the life of a plant due to new regulations breaks the guarantee to the investment holder and to our customers.

Everett

- A sound-wise sampling plan for all plants – data would be used for load caps, better model input, optimization efforts, and in any plant updates. Sampling should be plant specific and be process based.

Have one study done for all plants for optimization and status – similar to BACWA –

King County

- Monitoring
- Planning
- Feasibility analysis
- Development of a watershed approach
- Regional partnerships

Pierce County

- Identification of plant capabilities and ability to meet the nutrient reduction goal.