9/28/20 REVISED DRAFT

Evolving Recommendations: Considerations for PSNGP Development

Document purpose: The AC has been engaged in a months-long process to develop a set of recommendations to Ecology that will frame conceptual approaches to the first PSNGP. Everything in this document is subject to further discussion by the caucuses/interest groups and the committee. This document will be thoroughly discussed at the AC meeting on September 30 and will not be finalized until the AC meeting on October 21, 2020.

Background information including committee purpose and list of members: in cover letter

This committee makes these recommendations for the purpose of achieving actual, not perceived, water quality improvements. This committee has explored where the flexibilities are for the first permit term. Our final recommendations collectively provide a justifiable and defensible solution for the wide variety of plants that will be covered under the PSNGP. The following combination of approaches comprise the AC's recommendations for how to best achieve Ecology's goal to prevent nutrient-related water quality problems in Puget Sound from continuing to worsen during the first permit term, while also allowing contracted plant capacity to be utilized to support smart growth and comply with Growth Management Act requirements.

Contents:

I. Overall considerations for developing the first PSNGP

1. The requirements of the first PSNGP must result in meaningful progress toward water quality improvements
    a. The permit should level the playing field to ensure that all plants are making a reasonable effort in both the short and long terms
    b. Early steps taken during the first PSNGP should lead to successful implementation in the second and third five-year permit terms
    c. Plants that currently implement nutrient reduction technology should not be required to make additional improvements during the first PSNGP

Utilities – The Pierce County Sewer Division (PCSD) advocates that wastewater treatment plants (WWTPs) that can adopt BNR nutrient effluent limits are held at that limit until other WWTPs of comparable size (small, medium, or large) are also able to meet that standard.

Tacoma: the first PSNGP should begin the process of meaningful protection of Puget Sund. The focus should be on defining the problem and identifying data gaps to address the problems. Specifically treatment plants should assess their ability to reduce nutrient reductions with existing facilities. Ecology should identify data needs for calculating WQBELs. Ecology should produce a QAPP for collecting the data needed to calculate WQBELs and to assess the current state of the sound and to measure the effectiveness of various strategies for increasing DO in Puget Sound

Before going any further, Ecology should set out a complete picture of the science underlying their push for nutrient regulations. Making investments of public resources on this scale without setting for the underlying science and discussing it in detail is a mistake.

As I have stated before, the Advisory Committee process was very rushed for such an important topic. Ecology appeared to assume that fast input on the General Permit would lead to very fast implementation of measures to "hold the line" on nutrient load. Over the past six months, there has been no convincing evidence that this was a realistic prospect. Taking the time to do it right would have produced a better result for the public and the Sound, and built more trust between the stakeholders.

In item 1a, why should "all plants" make investments? Creating a "level playing field" does not help the orca. A majority of the plants taken all together create less than 1% of the total nutrient load. Requiring expensive upgrades by the smallest plants is not necessarily going to be cost-effective. [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District}

LOTT: We would reword item C as follows; Plants that currently operate under seasonal or annual nutrient permit limits of 10 mg/L or less should not be required to make additional improvements during the first PSNGP or be subject to additional caps under the first PSNGP.

KC: • Elected officials want more engagement in this process.

• Ecology should present a rough draft of the permit to the Advisory Committee to determine areas of agreement or areas requiring discussion. The draft permit proposal presented by the utility caucus could be a starting point.

• There continues to be some interweaving mention of phosphorus in discussions. Clarify that the PSNGP permit only pertains to nitrogen.

Federal agencies – The federal caucus believes it is important to move forward with these permits. Excess nutrients in the Puget Sound has been studied over decades to cause dissolved oxygen problems, and NOAA has identified harmful aquatic blooms as a significant problem in the Sound that can also harm aquatic life. The Clean Water Act requires TMDLs or equivalent plans, to address impaired waters. The approach that Ecology lays out is pragmatic and legal for moving forward with permits with water quality limits that will trigger short-term actions to contain loading. At the same time, this sets up planning, frameworks, funding, and monitoring information that will inform implementation of the second NGP which will be quantitative water quality based effluent limits.

Tribes – 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. NWIFC Letter to Gov. Inslee July 23, 2020.

Environmental groups – This is a high priority for the Environmental community. Edits:

1 - The requirements of the first PSNGP must result in meaningful progress toward reducing nutrient loads

a. The permit should level the playing field to ensure that all plants are making a reasonable effort in both the short and long terms, with expectations scaled by plant size

b. Early steps taken during the first PSNGP should lead to full successful implementation in the second permit term

The {14} plants that currently achieve effluent concentrations of TIN <10 mg/L should not be required to make additional capital infrastructure investments during the first PSNGP {Note: 14 based on the compilation by Mukilteo that was shared with groups; not independently verified. LOTT, Alderwood, Shelton, Mukilteo Big Gulch, Oak Harbor, Gig Harbor, Port Townsend, Sequim, Bainbridge Island, Friday Harbor, Vashon, Kingston, Hartstene, DOC Clallam Bay, Taylor Bay}

State agencies –

2. The requirements of the first PSNGP must be practical and achievable, and may be scalable by plant size, type, or other category

    a. Plants want to stay in compliance, and be able to accommodate new connections associated with existing capacity agreements and/or future population growth during the PSNGP data collection and planning process

    b. Avoid immediate need to impose additional wastewater rates; requirements should not force plants to incur new loans during the first PSNGP unless they are already at or near capacity and/or are currently in the process of planning and designing expansion or other upgrades

Utilities – The PCSD generally agrees with 2.a.and 2.b.. For the introductory sentence, thresholds for the terms practical and achievable need to be established before determination/effective feedback can be provided.

Tacoma: The requirements of the first PSNGP must be consistant with future permits.

Federal agencies – The federal caucus supports the first PSGNP being practical and achievable and that growth should be considered. However, ensuring that current loads are not increased is also essential. The federal caucus does not believe that plants should pay for short-term actions or upgrades that

would either need to be reversed or wasted if the second PSGNP requires different types of actions. However, we believe that the fist PSGNP needs to include actions that ensure that plants are doing everything they can be doing in the short-term to not increase current loads and even reduce them to the greatest extent possible through low-cost optimization.

Tribes –

Environmental groups – Agree in concept though edits needed:

2 - The requirements of the first PSNGP must be practical and achievable, and may be scalable by plant size, type, or other category

a. Plants must use optimization and minor capital improvements to the greatest extent feasible to prevent exceeding the interim load cap. Plants should accommodate new connections associated with existing capacity agreements and/or future population growth during the first permit term of the PSNGP data collection and planning process concomitant with decreases in concentrations.

b. While recognizing that there will be costs associated with permit compliance, the goal should be to avoid the immediate need to impose additional wastewater rates; requirements should not force plants to incur new loans during the first PSNGP unless they are already at or near capacity and/or are currently in the process of planning and designing expansion or other upgrades

Add (c) Ecology cannot legally issue WWTP flow increases without concomitant reductions in concentrations {which is similar to other recs below}

State agencies –

3. Plants need time to achieve nutrient reductions, and few immediate improvements are expected, but we will make progress to address the DO problems in Puget Sound

Utilities – PCSD agrees that time will be needed for the WWTPs to achieve nutrient reductions. The PCSD recommends this sentence be revised to more clearly define what 'progress' would mean, or stricken due to the broadness of its language and resultant uncertainty as to its exact meaning. In addition, PCSD notes that nutrient reduction from all human-based sources will be needed.

Tacoma: We need data to determine capabilities, appropriate technologies and to identify effective strategies. The first permit should focus on collecting this data.

Federal agencies –

Tribes – 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. NWIFC Letter to Gov. Inslee July 23, 2020.

Environmental groups – Edits needed:

3 - Within the first permit term, plants will make progress to reduce nitrogen loading to Puget Sound, with future large-scale improvements to follow, consistent with Ecology's response to the NWEA petition.

State agencies –

4. Ecology needs to be sufficiently staffed to implement the PSNGP and individual permits, oversee and interpret increased monitoring, and review optimization reports and facility design and planning documents

Utilities – The PCSD agrees that Ecology needs to be sufficiently staffed to address their workload. Ecology should scale this effort to conform with their administrative capacity. Do not implement administrative requirements to the plants that are not utilized in a timely manner.

Tacoma: Ecology needs to be sufficiently staffed to issue permits on time, catch up on all administratively extended permits and to calculate WQBELs in a timely manner

In item 4, we agree that state agencies must have adequate staff to work with any new regulations. Otherwise plant operators are likely to encounter long delays in getting action on requests. [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

Federal agencies – The federal caucus agrees that continued staffing, compliance support, and shared information among point sources, committee members etc. Is very important, particularly as it sets the stage for development and implementation of the second PSNGP.

Tribes –

Environmental groups – Agree; add "… staffed through NPDES fees."

State agencies –

II. How to calculate and implement a cap during the first PSNGP

5. Establish a target load, not a percent removal target, for each plant to support the goal of preventing further increases in nutrients and improving water quality
    a. Total inorganic nitrogen (TIN) is the best metric for capping the load
    b. Continue the same loading metric into the second PSNGP to support trading

Utilities – The PCSD may support an approach that establishes a target load in the fact sheet, like the approach utilized by BACWA. In addition, PCSD supports the use of incentives to encourage nutrient reduction.

Tacoma: Utilities have virtually no ability to lower TIN in the effluent in the short run. Our only tools are "optimization" (with an estimated 5-7% reduction at best) or denial of service (in the form of sewer

availability letters) resulting in building moratoria. Caps or even targets are not useful if there is nothing that can be done to reach them. Our energy and resources would be better spent working to establish meaningful WQBELs.

This section is titled "How to calculate and implement a Cap." Ecology should not create "caps," at least not in the first permit cycle. We do not have adequate and consistent data, and the prospect of facilities having to shut down connections because they exceed a "cap" has not been adequately addressed. At a minimum, facilities should collect at least three years of data on at least a monthly and in many cases weekly basis before Ecology assesses facility performance. [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

In item 5 there is talk of "target loads" but then refers to "capping the load." Is it a target? A cap? What are the implications of a "cap"? Ecology should not focus on how to calculate a "cap" before thoroughly discussing how such a thing would be implemented. [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

How soon will Ecology establish a "target load?" Will they have adequate and reliable data during the next few years to make those decisions accurately? [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

KC: • Cap should be annual load, unless existing facilities already have a seasonal load limit. The calculation method should be simple, straightforward, and easy for stakeholders to understand, and provide flexibility to meet growth. The bootstrapping approach does not meet these objectives and should not be used.

• Cap calculation discussions have gotten deep into details in the committee meetings and the group should focus on developing agreeable? Implementation and compliance.

• In particular, the committee should determine the return on investment for instituting the cap early on. Can a cap be developed for all facilities within 5 years? Would we be better off prioritizing optimization and nutrient planning as first steps?

Federal agencies – We agree with the concept laid out above to have a level in the permit that triggers actions and that this level should be a facility's current loading.

Tribes –

Environmental groups – Edits needed: Add "establish an interim target load" and change "metric" to "parameter" in both a and b.

State agencies –

6. Both seasonal and annual loads should be established if sufficient data are available

    a. Annual load reductions will be needed, but seasonal load reductions are most achievable with Biological Nutrient Reduction (BNR)

Utilities – PCSD does not believe that sufficient data is available to establish seasonal or annual loads or that a loading limit should be established under the first Puget Sound Nutrient General Permit cycle.

Tacoma: If we are talking about caps during the first permit cycle building BNR is not realistic. Selection of the appropriate technology takes time and would be dependent on the WQBELs. Selecting a technology before the WQBELs are established runs the risk of stranding investment in technology that won't meet the requirements of the limits.

Federal agencies – The federal caucus believes that annual load reductions should be included. The federal caucus believes seasonal load reductions in addition to additional load reductions are optional, unless modeling indicates that seasonal reductions are also needed to limit shorter-term impacts to water quality.

Tribes – WWTPs deliver 81% of dissolved inorganic nitrogen loads to Puget Sound during the summer months when river flows are low. In numerous Salish Sea locations, seasonal oxygen levels are below those needed for fish and other marine life. NWIFC Letter to Gov. Inslee July 23, 2020.

Environmental groups – Edits needed:

6 - Both seasonal and annual loads should be established for interim loads based on best available data for current loading, not design capacity.

State agencies –

7. Use narrative limits or targets rather than a hard cap, using something similar to the adaptive management approach employed in the Industrial Stormwater General Permit (ISGP) where tiered actions are triggered by monitoring data and would achieve long term reductions sooner instead of being a permit violation– see #24
    a. Use ranked averages, not straight percentiles, from the existing data
    b. The non-parametric, 95th percentile triggers actions for an annual load limit
    c. The non-parametric, 99th percentile triggers actions for a seasonal load limit
    d. Define what actions are acceptable for each trigger; the actions must be appropriate and achievable for the individual plant, and be defensible and enforceable
        i. 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

Utilities – See response to Item #6.

Tacoma: Don't wait for triggers. Identify short term actions and implement them as soon as possible. Targets or caps are not useful if the treatment plants can either easily meet them and can do very little to reduce their nitrogen inputs to the sound. Treatment plants should implement low cost controls immediately but design and contruction of side stream treatment is likely to take longer then the first permit cycle. An optimization study that addresses short term, medium term and long term actions (at a very high level) should be a permit requirement. This could be done on a Sound wide basis identifying the most efficient opportunities sound wide.

It is unproductive to discuss 95th vs. 99th percentiles (item 7) and seasonal vs. annual targets without walking through examples and seeing how they function and what the differences are. This discussion reminds one of talking about what color the drapes should be when we have not decided if we want to buy the house. [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

Federal agencies – The federal caucus believes this concept is a reasonable approach. As further described below, we have questions on defining how many violations under what period of time will trigger actions under the first phase and subsequent phases. For instance, are annual loading targets a rolling 12-month average or is it fixed? Also, fleshing out tiers of actions is important to the rigor of meeting narrative limits. I agree with the utilities' comments above that providing examples of exactly what the numbers look like and how violations would be determined under these metrics would be useful to walk through for facilities. The federal caucus would also like to know (or be reminded) why different percentiles are used for annual vs. seasonal loading. Re: 7(d)(I), we also discussed that smaller facilities investigating whether untreated septics were in influent, and doing pre-treatment like actions to only allow treated septics in influent could help reduce nutrient concentrations.

Tribes – Ecology has documented that nutrient loads from Puget Sound's Main Basin are transported to the South Sound and Whidbey Basin, demonstrating that discharges in one basin can affect water quality in others. The largest estimated improvements will occur with nitrogen removal at all WWTPs, with basin-wide improvements contributing to local improvements in DO impairments. Thus, it is essential that Ecology implement Sound-wide nutrient effluent limits that comply with water quality standards and prevent degradation of these waters that support treaty fisheries. Exceedances of this sound-wide limit should be accompanied by corresponding effluent limit reductions in WWTP permits. NWIFC Letter to Gov. Inslee July 23, 2020.

Environmental groups – Edits needed:

7 - Set progressive requirements and interim targets to determine permit compliance and violations rather than a hard cap. Use something similar to the adaptive management approach employed in the Industrial Stormwater General Permit (ISGP) where tiered actions are triggered by monitoring data. {Note that this is a significant concession by the environmental caucus to achieve long term reductions sooner.}

(b) We agree that the non-parametric, 95th percentile triggers actions for an annual load limit based on Ecology's May 2020 meeting example data set.

(c) We disagree. The non-parametric, 95th percentile triggers actions for a seasonal load limit to be consistent with the annual load limits based on Ecology's May 2020 meeting example data set; otherwise would lead to confusion.

State agencies –– concern about time to implement and evaluate and accomplish real change. Want to avoid constant exceedance and no real change. Trading conversation can provide some incentives for plants to make more progress sooner: funding package preference for more proactive action; more time to design, construct, and implement your upgrade; provide more access to technical assistance and opportunities to correct problems before violation/legal action. Also recognize cooperation/participation in the regional study.

8. Allow a short term increase in loads to gain more meaningful long term solutions– see #25

Utilities – PCSD notes that based on the existing data available, most WWTPs have only a very broad estimation as to what their existing annual TIN loads may be. As such, it would be difficult to determine whether short term loads were occurring.

LOTT: this short term increase should be offset by nutrient reductions elsewhere.

Federal agencies – Agree with LOTT comments above. Offsets could be through low cost optimization, or potentially for small facilities, paying into a fund that would offset nutrient reductions either upstream of their plant (as in pre-treatment) or elsewhere.

Tribes – Treaty resources and harvests have already been affected by excess nutrient loading, so any general permit should be implemented rapidly with effluent limits on the largest dischargers addressed in the first general permit cycle, and with ambitious limits in each interim or other individual permit in order to achieve prompt compliance with water quality based, and basin-wide Puget Sound nutrient effluent limits. NWIFC Letter to Gov. Inslee July 23, 2020.

Environmental groups – Repetitive and contradicts later recs. Edits needed:

8 - The first permit term should allow for incremental growth in flows during first permit term if necessary to ensure more effective long term solutions. Ecology cannot issue permits allowing additional flow increases without concomitant decreases in nitrogen concentration, which is why implementing optimization is needed to avoid significant increases in loads.

State agencies –

9. No additional first permit term targets should be established for plants that are already operating nutrient removal technologies

Utilities – As stated above, the PCSD advocates that plants that have nutrient reduction capabilities and can adopt nutrient effluent limits are held at that adopted limit until other plants of a similar size are also able to meet a similar standard.

Tacoma: no targets should established for any of the plants. Optimization studies should be required in the first permit

LOTT: We would reword #9 as follows; No additional first permit term targets should be established for plants that are already operating under seasonal or annual nutrient permit limits of 10 mg/L or less.

Federal agencies – We agree that there should not be additional optimization requirements for these facilities.

Tribes – Treaty resources and harvests have already been affected by excess nutrient loading, so any general permit should be implemented rapidly with effluent limits on the largest dischargers addressed in the first general permit cycle, and with ambitious limits in each interim or other individual permit in order to achieve prompt compliance with water quality based, and basin-wide Puget Sound nutrient effluent limits. NWIFC Letter to Gov. Inslee July 23, 2020

Environmental groups – Edits needed:

9 - For the {14} plants that demonstrably meet effluent concentrations <10 mg/L, additional capital investments should not be required in the first permit term.

State agencies –

10. Provide more time for plants whose plans Ecology approved in the past five years

Utilities – PCSD agrees that this process will need to consider a WWTPs current planning efforts and timelines.

Federal agencies – The federal caucus does not agree. These plants should update plans based on the new PSGNP.

Tribes –

Environmental groups – We disagree. Plants with (a) recently approved plans, (b) that do not yet reflect the need to reduce loads, and (c) that have not been implemented should be required to update their plans along with all other plants; not doing so and proceeding to construction could lock in increasing loads and lead to more costly expenses down the road if one set of infrastructure changes are allowed that do not yet reflect the need to reduce loads. Ecology should identify which plants this pertains to.

State agencies –

11. To keep water quality from continuing to degrade, do not allow any increase in nutrient loads during the first permit term and use the cap as a hard interim limit at current loading rates until achievement of water quality based effluent limits (WQBELs) is required; do not allow flow expansions without commensurate actions that reduce nitrogen loads

Utilities – The PCSD disagrees, and has concerns that this approach might result in growth moratoriums for portions of the region.

Tacoma: This will require building moratoria and should be discussed in alarger forum.

The recommendation about not allowing “any increase in nutrient loads in the first permit term” (item 11) ignores several key issues: we do not have adequate monitoring to determine what the current loads are, and numerous plants are unlikely to be able to “hold the line” on nutrients without denying any additional customer connections. It also ignores the potential for climatic and social changes to affect nutrient loads. Similarly, what is meant by “do not allow flow expansions without commensurate actions that reduce nitrogen loads”? Taken literally, that means no additional connections in many cases, in the fastest growing region of the country. [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

Federal agencies – The federal caucus agrees as laid out earlier and believe this is a practical interim step until quantitative water quality based effluent limits are established in the next permit. Moreover, this allows for conversations on what works and what doesn’t to begin now, such as regional evaluations of different treatment facilities and conversations on offsets and trading.

Tribes – 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. NWIFC Letter to Gov. Inslee July 23, 2020.

Environmental groups – We support this recommendation, as brought forth by the Northwest Indian Fisheries Commission without changes that would weaken its intent.

State agencies –

12. Set the limit for each plant's Ecology-approved full rated flow capacity or otherwise clarify how plants will accommodate expected growth, and whether there can be any future expansions or reversion of cap limits

    a. To avoid allowing a large load increase for plants not using existing capacity, cap this calculation at a percentage above the current maximum monthly flow (e.g., 150%)

    b. Use caution in applying 2020 data; COVID-19 has created unusual flow patterns

Utilities – PCSD agrees that nutrient management limits/caps/targets should not preclude regional growth, or limit use of full plant capacity. It is unclear whether the approach outlined about will be viable without a real-world example. PCSD also agrees that 2020 data may be an outlier

Tacoma: We suggest focusing on getting to the WQBELs to have meaningful impact on water quality. Interim caps, targets, or limits will not help us get there.

Federal agencies – The federal caucus should clarify from a previous advisory committee that we believe in order to make sure that caps are maintained, the flows should be set at maximum monthly limits, not design flows. We had previously stated that if a facility were close to its design capacity, the design flow is often used. But if a facility were not close to its design capacity, allowing a certain percentage above a current maximum monthly flow might be appropriate. In most recent conversations with the federal caucus, members now believe a maximum monthly flow is a better way to cap current loading.

Tribes –

Environmental groups – Edits needed.

12 - We do not think the current load should be set based on the full rated flow capacity unless the plant already achieves effluent concentrations <10 mg/L. Interim target load caps should be based on recent actual flow rates multiplied by best available concentration data.

(a) While we agree that incremental flow increases may occur in the first permit term due to new connections, allowing 150% is too high; we do not know of any community growing at that pace in 5 years.

State agencies –

13. Require plants approaching or beyond 85% of their rated design capacity to make more progress toward long term reductions during the first permit term by completing more detailed engineering designs

Utilities – While the PCSD agrees that plants requiring upgrade/expansion in the near term should include investments towards nutrient reduction, it is unclear how these utilities will know to what standard to design until such time as the STI process is completed and WQBELs are assigned.

Tacoma: I t would be more efficient to assess the opportunities sound wide and focus or resources and where and with what technologies we can be most effective. This will require a collaborative approach from the utilities.

I don't understand the suggestion (item 13) to have plants nearing or surpassing 85% of capacity "complete more detailed engineering plans." If a plant is at 85%, it needs to develop plans for upgrading or expansion. What is the point of the comment? [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

Federal agencies – The federal caucus agrees with this approach.

Tribes –

Environmental groups – We agree with this recommendation. Add "… their currently approved rated design capacity…"

State agencies –

14. Require the largest plants with the largest loads to make more progress during the first permit term toward long term reductions by completing more detailed engineering designs

Utilities – The PCSD has the following concerns about this item:

- Definition of "more progress",
- Definition of what a "more detailed engineering design" entails,
- It is uncertain as to what the market availability is for the consultants who do this work, and
- funding opportunities for these projects will take time to aquire, and even longer to implement these improvements.

Tacoma: see above comment

Similarly, requiring the largest plants to "complete more detailed engineering plans" (item 14) is unclear. Plans to do what? Expand capacity, or reduce nutrients? Upgrades for large plants can take longer to design than for small plants. It depends on circumstances. [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

Federal agencies – We agree with this in concept, though water quality based effluent limits have not yet been determined. An evaluation could be done with different concentration thresholds. More clarity on what a detailed engineering design should be discussed.

Tribes – Treaty resources and harvests have already been affected by excess nutrient loading, so any general permit should be implemented rapidly with effluent limits on the largest dischargers addressed in the first general permit cycle, and with ambitious limits in each interim or other individual permit in order to achieve prompt compliance with water quality based, and basin-wide Puget Sound nutrient effluent limits. NWIFC Letter to Gov. Inslee July 23, 2020.

Environmental groups – We agree with this concept and recommend defining the details of how this would work.

State agencies –

15. A cap should be established for each individual plant, but bubble permits can be considered for municipalities that operate more than one treatment plant.

Utilities – The PCSD agrees with the development of a trading program.

Tacoma: we do not agree that caps are appropriate

There is reference to "bubble permits" (item 15) for jurisdictions operating multiple plants. Is there potential for bubble permits covering multiple agencies, or is that up to a trading scenario? [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

Federal agencies – We agree with this in concept. Bubble permits need to account for localized impacts.

Tribes – Ecology has documented that nutrient loads from Puget Sound's Main Basin are transported to the South Sound and Whidbey Basin, demonstrating that discharges in one basin can affect water quality in others. The largest estimated improvements will occur with nitrogen removal at all WWTPs, with basin-wide improvements contributing to local improvements in DO impairments. Thus, it is essential that Ecology implement Sound-wide nutrient effluent limits that comply with water quality standards and prevent degradation of these waters that support treaty fisheries. Exceedances of this sound-wide limit should be accompanied by corresponding effluent limit reductions in WWTP permits. NWIFC Letter to Gov. Inslee July 23, 2020.

Environmental groups – Also covered in #22 below. Because WQBELs are not part of the first permit term, we do not believe that bubble permit options are needed at this time and to our knowledge would only benefit the two largest municipal sources – Seattle/King County and Tacoma – in a way that could negatively impact other wastewater treatment plants interested in pollutant trading (since a bubble permit essentially constitutes an inside-municipality trade). At this time, not enough information is available to support establishing bubble permits, which may not benefit the vast majority of wastewater treatment plants in the region. In order to consider bubble permits in the future, Ecology should establish the overall trading framework in the first permit term.

Edit needed:

15 - A cap must be established for each individual plant. To support future discussions around bubble permits, which may provide an interim fix, a larger point-source trading framework must be established to consider the needs beyond the two municipalities that operate more than one treatment plant. Trading frameworks cannot lead to degradation or sacrifice areas in Puget Sound.

State agencies –

16. Set a performance goal rather than a cap for a plant that is already implementing nutrient removal technology; effluent concentrations that exceed 10 mg/L will trigger additional actions

Utilities – As stated above, PCSD does not believe that sufficient data is available to establish seasonal or annual loads or that a loading limit should be established under the first Puget Sound Nutrient General Permit cycle. Also, the PCSD does not support the second phrase of the sentence "effluent concentrations that exceed 10 mg/L will trigger additional actions" as it is still unclear as to the ultimate concentration goals, anticipated timelines to meet these goals, and what "additional actions" entails.

Tacoma: Performance goals for plants that have nutrient removal capability seems reasonable. What is the consequence for not meeting the performance goal?

LOTT: We would reword as follows; For plants that are not already subject to existing permit limits for nutrients but that have nutrient removal technology in place and have effluent concentrations that exceed 10 mg/L, set a performance goal rather than a cap.

Federal agencies – We agree with this.

Tribes –

Environmental groups – This appears to repeat #7, which includes more detail. We recommend using consistent terminology and to use the approach of naming demonstrable effluent concentration data to differentiate plants that need to do more or less on optimization and planning during the first permit term.

State agencies –

17. Both seasonal and annual caps should be established for plants with sufficient data; either one year of monthly or three years of quarterly data are the bare minimum needed for the calculation

Utilities – The PCSD agrees with using the first permit cycle to gather data and notes that much more robust data is needed to conduct plant analysis, one year of monthly data or three years of quarterly data is insufficient to establish seasonal or annual cap values.

Tacoma: Tacoma does not believe that thereis adequate to establish meaningful caps for most of the plants on Puget Sound. Resources should be directed to identifying what data is needed and creating a plan to collect that data.

LOTT: More Data is needed to set a meaningful cap. At a minimum, three years of monthly data or 2 years of biweekly data

"One year of monthly" or "Three years of quarterly data" (item 17) means twelve data points. That is not nearly enough data to properly characterize a plant's operation. [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

Federal agencies – As previously stated, we believe that annual caps are needed and seasonal limits, if modeling supports that this is needed. The amount of minimum data to establish interim trigger levels is fine.

Tribes – WWTPs deliver 81% of dissolved inorganic nitrogen loads to Puget Sound during the summer months when river flows are low. In numerous Salish Sea locations, seasonal oxygen levels are below those needed for fish and other marine life. With this understanding, Ecology is justified and indeed obligated to implement measures to reduce nutrient discharges. NWIFC Letter to Gov. Inslee July 23, 2020.

Environmental groups – Edits needed:

17 - Both seasonal and annual caps should be established for plants based on best available data; either one year of monthly or three years of quarterly data are the suggested minimum needed for the calculation

State agencies –

18. Use the best available data including relevant that data plants have collected that was not permit-required, and therefore is not in PARIS

Utilities – PCSD disagrees. This would include non-permit compliance data, and therefor would mean non-accredited testing or probe monitoring data that can be significantly off due to calibration issues.

Federal agencies – We agree.

Tribes –

Environmental groups – Agree

State agencies –

19. Plants with the least amount of data should not have a cap set; data gathered during the first two years of this permit term should be applied according to the same method to set the cap for the remainder of the permit term

Utilities – The PCSD agrees that plants with limited data should not have a cap set. The first permit cycle should be used to gather the necessary data, without attempting a permit revision mid-permit term.

Tacoma: see above coomment

Federal agencies – The federal caucus is open to this. However, a cap must be set in during the permit term once the minimum data are collected.

Tribes –

Environmental groups – All plants must have interim numerical load caps established at the beginning of the first permit term, based on best available data. Of the 31 plants that have actual flows <025 mgd

and rated capacities <1 mgd together contribute about 300 lbs/day of nitrogen, which represents 0.4% of the total load, only 5 lack any nitrogen data. All larger plants have at least some data available. For comparison, the three Seattle/King County plants and two Tacoma plants together discharge over 50,000 lbs/day of nitrogen, which represents 66% of the total load. {Numbers are based on Mukilteo compilation, which was not independently verified}

State agencies –

20. This approach should be used to calculate the cap for all plants:
    a. A representative load is most accurately determined using the flow for the day of the sample collection
    b. Use same (non-parametric) approach for all plants
        i. Allow a waiver for a different approach if a compelling reason is provided by an individual plant
        ii. Use historical data to the greatest extent possible; gather adequate baseline data for every plant
        iii. Use a 12-month average but taking the peak of available data
        iv. Investigate two phases of seasonality: critical June-August versus May-October
        v. Calculate the average using a robust enough method should be that the seasonal variation would not show up as a trend in loads
        vi. Consider the photo period versus temperature for seasonal loading
        vii. When using the bootstrapping approach, ensure plant operators understand how their monitoring data will be compared to the calculated cap, and can readily explain it to a non-technical audience

Utilities – PCSD supports monitoring and data collection for the first permit cycle. As outlined above, Ecology's proposed cap calculation is a short-term solution (first permit cycle) that is intended to ensure nutrient discharge to the Puget Sound does not increase while WQBELs are being established. Utilities will need to implement optimization efforts to ensure they can comply with these standards and not impose moritoriums within their service areas. To accomplish this, any cap limits that Ecology imposes would need to be either 99th percentile or max load.

Tacoma: caps are not appropriate. Identify and implement optimization and design data collcetion for calculation of WQBELs

Federal agencies – The federal caucus agrees with the ideas described in general. However, it would be important to determine a specific method for calculating the interim load as described previously. In general, using the 95th percentile non-parametric for nitrogen and the maximum monthly load appears to be a reasonable way to establish the interim annual load.

Tribes –

Environmental groups – Repetitive with #37, copied here under bullet (a) where it fits well as a new (i). Clarifications and edits are needed:

20 - This approach should be used to calculate the interim nutrient load cap for all plants…

(a) A representative load is most accurately determined using the flow for the day of the composite sample collection

(i) Get the best possible assessment of each plant's actual loads by calculating a range using instantaneous flow measurements, not just monthly average flow, multiplied by the concentration from composites

{This recommendation was presented to clarify that a single daily nitrogen concentration multiplied by the average monthly flow could artificially inflate the loads if the concentration was measured on a lower-flow day and the plant experiences spikes in inflow or infiltration the same month. We recommend that Ecology consider using a flow metrics that cover the range of flows a plant experiences.}

(iii) Clarify that this refers to load

(v) What does this mean? Our quick trend analyses demonstrate that some plants do have trends in summer seasonal loads.

(vi) Fine point that should be resolved. We hear municipalities talking about the importance of temperature on plant operations and nutrient removal technologies. Both photo period and temperature are critical to impacts from nitrogen on dissolved oxygen in the receiving waters of Puget Sound.

(vii) Does not seem needed since operators and engineers don't generally get to talk with the public. We would like to hear how small plant operators frame this recommendation.

State agencies –

21. PSNGP cap calculation does not need to specifically address CSO events; use monthly averages

Utilities – PCSD is not a combined sewer.

Tacoma: see above comment

What does it mean to not consider CSO events (item 21) in setting caps? Do we pretend that is just business as usual? [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

Federal agencies – Agree. The federal caucus believes annual loading calculations will take into account CSO events.

Tribes –

Environmental groups – Edits needed. While we do not expect nutrient loads from CSOs to drive or dominate the overall annual loading of nitrogen, their contributions should be included in the interim loading cap calculation. Otherwise, there is an incentive to spill wastewater this way without counting against N load.

21 - PSNGP interim nutrient loading cap calculation should include contributions from CSO events; because these tend to occur in wet winter months when sunlight and water temperature are low, using monthly averages may be sufficient.

State agencies –

III. How to assess compliance with the cap during the first PSNGP

22. Consider bubble permits for limited geographic areas

Utilities – The PCSD generally agrees with the concept of developing a trading program. However, the terms of these approaches needed to be more refined. For example, it is uncertain what is meant by "limited geographic areas" so PCSD support of that term's usage cannot be confirmed. The PCSD does note that broader use of bubble permits and trading programs may support faster overall reductions of TIN loading.

Tacoma: see above comments

Again, this presumes that we will have "caps", which the utilities completely disagree with.

Second, Ecology has not discussed the implications of a facility exceeding "a cap". They are now talking about it being a trigger for accelerated planning, which implies that "cap" is not the right term. Third, facilities must be able to experiment with Optimization measures without fears that unforeseen rises in TIN will cause a violation and bring regulatory problems. [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

KC: • Cap is an interim regulatory step. PSNGP should clarify the interim status and that the final nitrogen limit will be negotiated after the allocation process.

- For utilities with multiple treatment plants, the cap should be implemented as a bubble permit.
- We agree a narrative permit with tiered actions could be a good approach for the interim stage. More time should be devoted to discuss the compliance pathway.
- We need assurance that a compliance schedule will accommodate operational trial and error. Action points are not clearly defined.
- Actions beyond cap compliance should be incentivized but not required at this early stage.

Federal agencies – Agreed that bubble permits if applied should only cover a limited geographic area and must account for localized impacts.

Tribes –

Environmental groups – Also covered in #15 above. Because WQBELs are not part of the first permit term, we do not believe that bubble permit options are needed at this time and to our knowledge would only benefit the two largest municipal sources – Seattle/King County and Tacoma – in a way that could negatively impact other wastewater treatment plants interested in pollutant trading (since a bubble permit essentially constitutes an inside-municipality trade). At this time, not enough information is available to support establishing bubble permits, which may not benefit the vast majority of wastewater treatment plants in the region. In order to consider bubble permits in the future, Ecology needs to

establish the overall trading framework in the first permit term as an interim step toward water quality improvements in a way that does not allow for degradation or sacrifice areas.

Edit needed:

22 – Beginning with the second permit term, bubble permits could be considered for limited geographic areas but only if they equally benefit all municipalities and if they could be implemented in a way that does not allow for degradation or sacrifice areas.

State agencies – Generally like the idea of remaining flexible, or allow for tradeoffs, would the agreements be between ECY and facilities or allow for interlocal agreements between facilities. Discussion: some limitations in this approach – compliance issues with multi-agency bubble versus a single utility with several facilities. Handle similarly to annexation?

23. Require application of all known, available, and reasonable treatment technologies to protect and restore water quality and fishery uses

    a. 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

Utilities – The PCSD notes that application of AKART during NPDES permit review is already required by state law.

Tacoma: what treatement technologies meet AKART? Is this to be implemented in lieu of WQBELs? Will their be a compliance schedule?

Item 23 asks for application of AKART but does not acknowledge the difficulty, cost, or societal impacts of doing so. [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

LOTT: if a new upgrade technology can be used to address multiple issues, that would be a benefit but it should not be a requirement for unregulated compounds. Addressing CECs in this document should not be its focus.

Federal agencies – We agree.

Tribes – 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. NWIFC Letter to Gov. Inslee July 23, 2020.

Environmental groups – We support this recommendation, as brought forth by the Northwest Indian Fisheries Commission, without changes that would weaken its intent. We support getting to clean water and lower pollution loads as quickly as possible. Washington State Law requires Ecology to assess and apply AKART before authorizing a discharge."

State agencies –

24. Follow the ISGP approach of tiered actions that are required for plants that exceed targets set in the permit; plants that implement the actions in the required timeframe are not in violation

    a. Clearly define this hierarchy of actions and how they are triggered– see phosphorus plan

    b. Couple this with tracking each plant's meaningful progress through optimization and evaluation/implementation of side-stream treatment

Utilities – The PCSD generally supports a tiered action approach but will want to provide input as specific plans are developed. The PCSD also supports the concept that plants that implement actions in a timely manner are not considered to be in violation.

Item 24.b. seems to imply that both optimization and the evaluation/implementation of side-stream treatment will be required for WWTPs in the first General Permit iteration. The PCSD is concerned because the evaluation/implementation of side-stream treatment appears to be a newly considered requirement that has not been addressed in the same manner that optimization has been discussed in previous meetings.

Tacoma: All reasonable (optimizations) actions should be taken as soon as possible. There is no need to wait for triggers.

LOTT: Increased loadings should be offset by nutrient reductions elsewhere.

Federal agencies – See above for our comments. We agree with this general approach.

Tribes –

Environmental groups – This concept is covered in #7 and #46 as well; we suggest maintaining consistent terminology throughout the document and combining similar recommendations where appropriate. In general, we support the concept that plants should begin with the simplest activities

that make meaningful progress toward reducing nutrient loads. Any plants that miss progress should have more increasingly intensive requirements.

State agencies – Discussion: Caution at possibility of gaming the sytem, i.e. concerns of when adaptive management doesn't have an end. Make this real and enforceable. See #7. How to create more incentives to look forward to modifying treatment? Maybe more access to technical support from ECY?

25. Where plants are experiencing rapid growth (as documented by new connections), allow them to increase loadings but require earlier studies, design work, and detailed engineering reports

Utilities – This item will be entirely dependent upon how the target TIN load is defined. Care should be taken that an allowance for increased loadings does not run afoul of federal anti-backsliding requirements.

Tacoma: This is a sound wide issue. The focus should be on collecting data regionally to deal with population growth throughout Puget Sound. A collaborative approach to do studies that looks at the sound holistically would be more efficient and effective.

Federal agencies – The PSNGP should be capping current loading while growth may be accounted for in different optimization or for smaller facilities who are unable to optimize, paying into a fund.

Tribes –

Environmental groups –Edits needed, because this seems to give preferential treatment to larger communities that are experiencing growth right now, possibly to the detriment of other municipalities. A more equitable approach would be to accommodate for incremental growth in flows during the first permit term consistently across all plants. As discussed in other responses, incremental increases in flow expected due to population growth during first permit term must coincide with implementing actions that reduce nitrogen concentrations through optimization and minor capital improvements, including side-stream improvements.

25 – The permit should allow incremental increases in flows associated with growth in the first permit term, which must be coupled with concomitant decreases in concentrations

State agencies – **Needs clarification/revision**

a) Are all "new connections" assumed to increase loadings, or is there a threshold?

-i.e. Design flows are not current loads. So anything more is considered additional loading? Federal caucus had suggested using 150% of max flow rather than design flow

-only if new connections means that they they won't be able to meet the expectation to reduce loads until they implement outside fence actions and upgrade plants; reclaimed water; I/I fixes will improve plant performance and overall water quality conditions.

b) define "rapid growth". Will Ecology be the authority to declare that a certain number of new connections requires action to avoid increase loadings? When will the facility be required to take actions, i.e. no new connections policy or speed-up studies, design work, detailed engineering, etc.?

c) Is there a way to categorize or limit this flexibility allowance based on specifically mapped ecologically sensitive areas?

d) What are the other acceptable "tradeoffs" as a reasonable action that facilities could use, while they speed up studies, instead of "no new connections"?

-Can we remove this recommendation #25, because the tradeoffs are implied/addressed elsewhere, like #7?

26. Focus on a plant's overall pattern, not a single day, for assessing compliance

    a. Be clear about the length of time that an exceedance is considered a violation, i.e., what is the maximum penalty that can be assessed

Utilities – The PCSD agrees that the length of time that an exceedance occurs should be considered when assessing a violation and when determining the maximum penalty for such an occurance. This criteria for this type of event should be clearly defined.

Federal agencies – As stated above, defining a violation is important. We agree that generally, a single day should not be trigger a violation and that a longer timeframe should be used. However, defining what that is is important.

Tribes –

Environmental groups – Agree with the concept of a longer timeline for comparing actual loads against interim nutrient load cap and the need to be clear for the public what constitutes a violation.

State agencies –

27. Excursions that occur during experiments or pilot trial activities related to the optimization plan should be exempt from cap compliance calculations

Utilities – PCSD agrees that data gathered during pilot testing should not be used in cap calculations, as the values achieved during the pilot test may not be sustainable in the long term.

Probably not "excursions." Exceptions? Exceedances?

Federal agencies – The federal caucus is supportive of innovation. However, this is important to further discuss since maintaining levels below current loading is a central premise to the integrity of the first PSNGP.

Tribes –

Environmental groups – Add "… limited-duration optimization experiments or pilot trial activities…."

State agencies –

28. During pilot trials, a plant may reduce nutrients but correspondingly cause intermittent problems with other regulated parameters such as BOD, TSS or pH; provide plants with assurance that these instances will not result in penalties for individual permit violations

Utilities – PCSD agrees that plants should have allowances made to facilitate pilot testing.

Tacoma: Tacoma does not agree that caps are appropriate however we do agree that having a mechanism that protects utilities from permit violations while they are trying innovative strategies for nutrient removal would be good.

Federal agencies – The federal caucus believes this needs to be further discussed. We will need to see what regulatory provisions could allow for this, but are not immediately aware of any other than enforcement discretion.

Tribes – 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. NWIFC Letter to Governor Inslee, July 23, 2020.

Environmental groups – Add "… cause temporary intermittent problems…"

State agencies –

29. Use enforcement strategies that will keep plants accountable for implementing required and appropriate adaptive management approaches that are triggered by monitoring results

Utilities – PCSD encourages the use of incentives as opposed to enforcement actions to promote nutrient management and believes incentivization will be more effective long term. It is unclear what is meant by enforcement strategies.

Federal agencies – Agree.

Tribes –

Environmental groups – Agree, and add "Optimization Plans should be enforceable in the same manner as SWPPPs in the ISGP."

State agencies –

IV. How to conduct monitoring to provide consistent data needed for permit decisions

30. Better and consistent data collection is needed across plants during the first PSNGP for both influent and effluent to inform and evaluate process changes and optimization, produce accurate loading estimates and inform the SSM

    a. It is important for the water quality monitoring to inform the final objectives – WQBELs – and also measure optimization progress

b. Additional data collection is needed prior to calculating caps for some plants to meet in the first PSNGP

c. Provide a thorough Sampling and Analysis Plan (SAP) to ensure standard methods and comparable data

   i. Develop the SAP in consultation with experienced plant operators and laboratory personnel; include parameters; locations; instrumentation; frequency/sampling intervals; and protocols/methods of sampling

   ii. Have each plant identify and address internal and external factors that might influence variation and skew data

Utilities – PCSD supports a more robust data collection with associated QA/QC process within the region and that nutrient management process, i.e. WQBELs/modeling efforts/etc. should be informed by this data.

Tacoma: Tacoma believes the first PSNGP should focus on identifying objectives and on creating a data collection and monitoring plan that can inform the SSM, the creation of WQBELs, and assess the effectiveness of the various optimization strategies that may be implemented.

KC: • Supportive of need for additional monitoring and the discussions around monitoring.

• Supportive of more frequent sampling for large and medium plants than for small plants

Federal agencies – The federal caucus agrees.

Tribes –

Environmental groups – Agree

State agencies – Discussion: permit is set up with special conditions that constitute a sampling plan; no additional QAPP is necessary. Standard methods will be integral to the permit./ Discussion: this is contained in the permit language, no additional document development needed/ Discussion: agree, also see #34

31. The first PSNGP will have new monitoring requirements overlaid on individual permit requirements to address the wide variety of and variability in the available data, and the paucity of data in PARIS for many plants

Utilities – PCSD agrees that nutrient monitoring should be a part of the general permit.

Tacoma: Tacoma agrees with the above statement

Federal agencies – We agree.

Tribes –

Environmental groups – Agree

State agencies –

32. The monitoring will trigger required actions when targets are exceeded

Utilities – PCSD generally agrees with the concept of monitoring results triggering actions but will need further understanding of the targets prior to verifying support.

Federal agencies – We agree.

Tribes –

Environmental groups – Agree

State agencies – see cap recommendations

33. Large plants (>10MGD) will sample 3-4 times each week; medium plants (3-10 MGD) will sample weekly; small plants (<3 MGD) will sample monthly

    a. Allow reduced sampling frequency 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)

    b. Allow a moderate decrease of sampling in winter after baseline data are collected and Inflow/Infiltration (I/I) influence is well understood

Utilities – The PCSD generally agrees with this approach, including varying sampling requirements based on plant size and allowing for a modified sampling frequency after loading variability is adequately documented.

Tacoma: Tacoma believes that sampling frequency should be determined in a detailed sampling plan and QAPP that is designed to collect the data needed to calculate WQBELs informthe SSM and assess the efficacy of any optimization strategies employed.

LOTT: More frequent sampling than that shown would be advantageous to plants to understand their process and loading.

Federal agencies – We agree with the large plants. However, the federal caucus also stated that up to twice a week may be better for medium plants, and 2-4 times/month may be necessary for small facilities to ensure better characterization. We agree with 33a and 33b.

Tribes –

Environmental groups – Agree, including that the sampling frequency can be adjusted, such as in (b) if needed.

In our other comments, we define small plants as the 31 plants that have design capacities <1 mgd and actual flows <0.25 mgd. For the 10 plants with design capacities between 1 and 3 mg/L, 6 already achieve effluent concentrations below 10 mg/L and two more are close; therefore, we would support the sampling frequency of monthly for the 10 plants with rated capacities between 1 and 3 mgd.

State agencies – Discussion: EPA uses major and minor designations where 1 MGD is the cutoff. There aren't many plants in PS under 1 MGD; the facilities under 3 MGD are about 5% of the total load. Agree with idea of giving small plants a break. The majority of the problem (75-80%) is from the large treatment plants. Perhaps 15-20% from the medium. Need to track annual reductions. Lots of these

samples are 24-hour composites. Utilities seem to agree that the frequent sampling is needed to run the plant processes. Good data is important, considerations of the extra burden due to heavy monitoring. Consideration of lab costs/logistics if needing to be sent out. Larger plants should sample more.

34. Randomize the timing of the sample collection

Utilities – PCSD - Plants should be allowed to determine if randomized sampling is appropriate to their unique circumstances.

Federal agencies – THe federal caucus is fine with this recommendation.

Tribes –

Environmental groups – Agree

State agencies –

35. These influent data are needed: frequent ammonia and BOD, monthly TKN

Utilities – PCSD recommends influent ammonia testing 3X a week and a monthly TKN; BOD testing is addressed in the individual permit

Tacoma: Tacoma agrees with this statement

Federal agencies –

Tribes –

Environmental groups – Agree, although we encourage alternative lab analyses to avoid TKN toxic waste and worker safety issues.

State agencies –

36. These effluent data are needed: TIN, TKN, DOC, and BOD

Utilities – PCSD recommends TIN effluent testing 3X a week; BOD testing is addressed in the individual permit.

Tacoma: Tacoma agrees with this statement

Federal agencies – Agree in general, although CBOD could be monitored instead of BOD, since TIN will account for nitrogenous oxygen demand, which is also covered in BOD. Is DOC for modeling ocean acidification effects?

Tribes –

Environmental groups – Agree, although we encourage alternative lab analyses to avoid TKN toxic waste and worker safety issues.

State agencies – Discussion: is dissolved inorganic carbon on the table? TOC is the parameter SSM needs; correlates with BOD that will also be useful for process upgrades. Make sure this carbon parameter is what SSM modelers want. TOC effluent is more important;

37. Get the best possible assessment of each plant's actual loads by calculating a range using instantaneous flow measurements, not just monthly average flow, multiplied by the concentration from composites

Utilities – PCSD believes this is an unrealistic request. The frequency of the testing and calculation method is sufficient and does not require instantaneous flow measurement.

Tacoma: Tacoma agrees with this statement

Federal agencies – We agree.

Tribes –

Environmental groups – This repeats the concepts in #20, where this concept should be nested under (a). This recommendation was presented to clarify that a single daily nitrogen concentration multiplied by the average monthly flow could artificially inflate the loads if the concentration was measured on a lower-flow day and the plant experiences spikes in inflow or infiltration the same month. We recommend that Ecology consider using a flow metrics that cover the range of flows a plant experiences.

State agencies – came from environmental caucus, we generally agree due to variability throughout the day.

38. Standardize or normalize daily flow monitoring calculations

Utilities – PCSD would require additional information as to what is meant by standardize or normalize, i.e. what process is proposed, before a determination of support can be made

Federal agencies – We agree.

Tribes –

Environmental groups – We believe this is already standard practice and required. Do you mean load? What does normalize mean?

State agencies –

39. Correlate concentration and flow with calculated error bars

Utilities – This approach is not used for monitoring other parameters and therefor should not be used for nutrients either.

Federal agencies – We agree.

Tribes –

Environmental groups – Needs more context – unclear what is meant. If this is the calculation methodology, work in with #20?

State agencies –

40. Assist smaller plants with funding for accreditation and additional testing

Utilities – Pierce County generally agrees – funding mechanisms should be developed to assist all plants with funding for accreditation and additional testing. Small plants and plants that are exceeding federal affordability guidelines should be prioritized to receive assistance.

Tacoma: Tacoma agrees with this statement

Federal agencies – We agree.

Tribes –

Environmental groups – Edits needed: "Prioritize assistance for smaller…"

State agencies –

V. How to require optimization and adaptive management in the first PSNGP

41. In the context of the PSNGP, the purpose of optimization and adaptive management is to evaluate existing treatment processes for opportunities to reduce nutrients to the greatest possible extent and as soon as possible through operational adjustments and design efficiencies

    a. Do not require a costly optimization approach that might then need to be reversed when WQBELs are established; plants should not invest in short term solutions that will not be useful long term

    b. Investments in optimization should not exceed $10,000/MGD of plant capacity

    c. Have plants explore using existing equipment to change processes to drive nitrification/denitrification and to reduce overall nutrients as much as possible at a minimal cost (i.e., <25,000 for small plants and <$100,000 for large plants) while still maintaining other permit requirements

    d. The largest plants with the largest loads should be required to invest more

    e. Provide incentives for plants to reduce nutrients sooner than required

Utilities – PCSD generally agrees – Note: use of terms (e.g. as much as possible, invest more, sooner) are open to interpretation and should be avoided in this document. The first PSNGP should focus on optimization of the existing plant and providing incentives for early adoptors. The framework for early adoptors will need to be well defined to ensure good performance is not punished. Ecology should commit to holding these plant's effluent limits through the second permit cycle when other WWTPs of comparable size (small, medium, or large) are also able to meet that standard or until WQBELs can be established.

Tacoma: Tacoma offers the following definition for optimization: Optimizatioin consists of performance improvements that rely primarily on operational changes and not on construction or purchase of additional equipment. We belive investments should be made where they have the greatest impact on the health of the sound not necessarily at the largest treatment plants. We believe that some mechanism has to be created to assist smaller plants with fewer resources either through grants or by creation of a Nitrogen credit market (Nutrient trading).

KC: • Develop a straightforward definition of optimization that recognizes the core pillars of economic and technical feasibility.

• Some of the actions are mischaracterized as being optimization. Side-stream treatment is not optimization due to the high cost.

• Optimization will look different at each facility. However, we are supportive of developing an optimization evaluation framework to guide utilities and provide consistency.

• Discussions are still needed about realistic schedules for the evaluation and implementation of optimization plans and adaptive management, and ensuring that the path for utilities to remain in compliance is clear.

• Optimization trials require operational flexibility

Federal agencies – We agree in concept. Another idea is to use a sliding scale to definie low-cost where it is a $X per 0.1 MGD design flow.

Tribes – 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.

Treaty resources and harvests have already been affected by excess nutrient loading, so any general permit should be implemented rapidly with effluent limits on the largest dischargers addressed in the first general permit cycle, and with ambitious limits in each interim or other individual permit in order to achieve prompt compliance with water quality based, and basin-wide Puget Sound nutrient effluent limits. NWIFC Letter to Governor Inslee, July 23, 2020.

Environmental groups – We agree with the first paragraph as written, but have edits for the bullets:

(a) When reviewing and selecting optimization techniques, the preference should be for solutions that will be useful long term.

(b) and (c) Where do these costs come from? While we appreciate trying to set a financial expectation for optimization, minor capital improvements including sidestream treatment, and planning, the numbers seem low compared with other infrastructure investments. The large plants are so much larger than the littlest ones that the one-order-of-magnitude bump up seems too little to be meaningful. For example, together the Seattle/King County wastewater treatment plants are rated for 215, 144, and 40.9 mgd; by comparison, 31 plants are rated <1 mgd. We believe it would be bad precedent to set numbers like this in NPDES permits. It would not be appropriate for Ecology to specify that “Industrial

Company X should spend up to $10,000 to test optimization" for example, under the same NPDES program.

(e) Provide support for plants …

State agencies –

42. Provide a menu of options; define actions that plants can implement but provide flexibility for each facility to do the best and most efficient optimization in this interim period before WQBELs are established

    f. Provide guidance for plants to develop the optimization plan

    g. Define in a detailed guidance document what optimization techniques shall be considered for the tiers of BMPs

        i. Have individual plants evaluate and rank in order of feasibility for their sites

        ii. Plants would not need to try all of the approaches, but they would need to explain why a given technique is not viable at the plant

        iii. Allow plants to select from the menu within each category

        iv. Have plants develop or use existing SOPs for all optimization approaches

        v. Enforceable optimization plans provide detail on how plants will attempt to achieve the cap through the selected techniques

        vi. Be specific enough that each plant can knows how to submit a compliant plan

        vii. Review each plant's plan in a timely fashion

        viii. Provide the framework but allow flexibility for amendments

    h. Encourage pilot trials and do not penalize plants for failed experiments

    i. Encourage networking and information sharing among plants

    j. Investigate minor retrofits as part of the optimization plan

    k. Ensure adequate monitoring is implemented to evaluate the plan

    l. Include appropriate Ecology review/approval or advance notification prior to trying out new approaches to avoid penalties for upsets during trials or adjustments

    m. Pay close attention to which approaches are short term and which are long term

    n. Complete an economic assessment as part of the optimization plan considering the challenges at the individual plant

    o. Explain/justify why certain techniques are deemed infeasible for a plant and introduce other innovative approaches that might be tried

p. Consider other factors such as protecting sensitive habitats in the context of overall Puget Sound goals

q. Avoid unintended consequences to plants that are in different phases of planning, design, construction, operations

r. Provide performance incentives to encourage optimization, but do not penalize plants who have already gone above and beyond to reduce their nutrient loadings

s. Provide financial support for the smallest plants

t. Initial evaluations could provide the basis for future engineering reports

Utilities – Pierce County generally agrees – Some items listed in #42 are not realistic expectations (e.g. "O"). Plants should be given a reduction target (e.g. 35% reduction) and develop alternatives for meeting this goal. Plants are highly integrated, so the preferred alternative will need to consider the pros/cons of implementation. This should include considerations for all elements of plant operation which includes water quality, air quality and biosolids management.

Tacoma: This could best be achieved in a collaborative approach rather than have each individual plants write an optimization plans. A Puget Sound wide evaluation of optimization opportunities could be more efficient and would facilitate networking and information sharing. An analysis of data gathered in this manner should lead us to identifying low hanging fruit and allow prioritization of projects to get the greatest benefit in the shortest period of time.

Federal agencies – We agree in general, although the federal caucus needs to discuss these concepts more and will provide more comments in the next evolving recommendations version. Note that the concept of not applying penalties associated with pilot plans, etc is addressed in a previous comment.

Tribes –

Environmental groups – Edits needed. (j) Investigate AND IMPLEMENT. (m) Define #years. (s) "…support THAT PRIORITIZES THE …" (t) needs to be stronger.

43 - Provide a menu of options; define actions that plants can implement while recognizing that each facility may differ in terms of what constitutes best and most efficient optimization in this interim period before WQBELs are established in the second Permit.

f. {no change} Provide guidance for plants to develop the optimization plan

g. Define in a detailed guidance document what optimization techniques shall be considered for the tiers of BMPs

i. Rank BMPs in order of effectiveness and feasibility

ii. Under their Optimization Plan, plants would not need to try all of the approaches, but if they select a less effective technique, they would need to demonstrate why the more effective technique is not viable at the plant

iii. Allow plants some ability to select from the menu within each tier

iv. Have plants develop or use existing SOPs for all optimization approaches

v. Enforceable optimization plans provide detail on how plants will attempt to achieve the cap in the first permit cycle through the selected techniques

vi. Be specific enough that each plant can understand know how to submit a compliant plan

vii. Review and approve each plant's plan in a timely fashion

viii. Amendments must be approved by the Department

h. {no change} Encourage pilot trials and do not penalize plants for failed experiments

i. {no change} Encourage networking and information sharing among plants

j. Minor retrofits (need to define) may be required as part of the optimization plan

k. {no change} Ensure adequate monitoring is implemented to evaluate the plan

l. {no change} Include appropriate Ecology review/approval or advance notification prior to trying out new approaches to avoid penalties for upsets during trials or adjustments

m. {no change} Pay close attention to which approaches are short term and which are long term

n. We disagree as worded. While we understand that municipalities will need to be thrifty in this work, the current wording suggests a detailed economic impact report, which is not the point here. "The optimization plan should include economic considerations at the individual plant"

o. One improvement needed over the structure provided in the ISGP is a better standard for infeasibility. Explain/justify why certain techniques are deemed infeasible for a plant and introduce other innovative approaches that might be tried

p. We support protecting sensitive terrestrial and freshwater habitat as well and view this bullet as a false choice between terrestrial/freshwater and marine health. We do not support this bullet in the context of the PSNGP. Instead, this should read: "Plants that discharge to an existing impaired waterbody, and/or a waterbody where ESA-listed species can and do transit, spawn, and rear young must complete more actions than plants that do not discharge to these waters. Plants with rated flow capacities above 10 mgd should do far more than plants with rated flow capacities below 1 mgd.

q. Avoid unintended consequences to plants that are in different phases of planning, design, construction, operations {while we do not disagree with this point, there have been unintended consequences of not addressing nutrient pollution to Puget Sound. We add bullet (u) below.}

r. Provide performance incentives to encourage optimization and other improvements, and focus on plants with current effluent at >10 mg/L TIN rather than plants with effluent TIN concentrations <10 mg/L who have already reduced their nutrient loadings

s. Prioritize financial support for the smallest plants

t. {no change} Initial evaluations could provide the basis for future engineering reports

u. {new} Avoid unintended consequences of delaying nutrient reductions, particularly from discharges at flows greater than 10 mgd rated flow capacity.

State agencies –

43. Plants should document the changes they try out and identify what works best for nutrient reduction at their facility

    a. Each year after completing the plan, plants would report what was tried, share what was learned, and list what is planned

    b. Plants that do not know what their current nutrient loadings are will have a hard time evaluating the impact of operational changes; this experimentation, assessment and reporting should be delayed for a year at such plants

    c. Reporting can be only once in the 5-year permit cycle at plants implementing nutrient reduction technologies or with effluent concentrations below 10 mg/L; and at the smallest plants (<3MGD) in locations that are not expected to have near-field effects

    d. Ecology should make it easy for all of the operators to submit a compliant report

Utilities – Pierce County agrees –

Tacoma: A monitoring plan that establishes a baseline and identifies the necessary data to be collected to determine if an optimization strategy is having an effect is absolutely necessary for adaptive management strategies to work.

In item 43, it would be helpful to hear where Ecology believes plants may be having near-field effects. The term gets used, but there is no indication of whether it applies to a handful of facilities discharging to inlets, or if it applies to plants discharging to the main part of the Sound as well. [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

Federal agencies –

Tribes –

Environmental groups – Edits needed:

43 - Plants should document the changes they try out and identify what works best for nutrient reduction at their facility in a report available to the public.

(a) Each year after completing the plan, plants would report what was tried, share what was learned, and list what is planned

(b) {We disagree with the bullet as written. According to the compilation by Mukilteo, only 6 plants lack data, and these are all <0.25 mgd actual flow rates and plants rated <1 mgd flow capacity. Edit needed:} Plants with limited nitrogen concentration information may need to conduct pilot trials in a way that also fills that information gap; this experimentation, assessment and reporting should be designed appropriately.

(c) For plants already achieving demonstrated effluent concentrations below 10 mg/L of TIN, annual reports should be much more streamlined than for plants with effluent concentrations above 10 mg/L. In addition, for plants with rated flow <1 mgd, reporting requirements should be streamlined for those without near-field effects.

(d) Ecology should make it straightforward for all of the operators to submit a compliance report but, at the same time, reports should provide enough detail that reviewers understand what specific optimization techniques have been utilized and the degree of success that has been achieved.

State agencies –

44. Conduct a Sound-wide study in the first 2-3 years of the permit to assist plants in identifying optimization opportunities and expected short- and long-term pollutant reductions

    u. Have a single entity evaluate all of the plants, learn what has worked best for plants elsewhere, and identify appropriate strategies if optimization for nutrients is not feasible at a plant

    v. Collect reports on optimization efforts ("we tried this, here is the result") and share findings with plants

    w. Compare plants' capabilities with SSM nutrient reduction goal

    x. Inform side stream treatment, plant footprint re-purposing, outside fence opportunities, and advanced treatment needs

    y. Identify which plants may need more time to design and build upgrades; which are most at risk for not meeting demand for capacity; which have inadequate land area for expansion; which plants need a complete rebuild

Utilities – Pierce County agrees.

Tacoma: Agreed

Federal agencies – The federal caucus strongly supports this idea.

Tribes –

Environmental groups – Repeated in #48 below. While we agree that a Sound-wide study would improve efficiency, we remain concerned about who would pay for this, who would oversee it, and the timeline required for a public bidding process consistent with legal requirements in place in state and local government. This should be included as an "option for plants to conduct" and is not instead of optimization. Implementing optimization must be done in parallel with this work. The bidding process and selection would take at least a year, theoretically the study would be 18-24 months to complete; waiting 2-3 years before even trying optimization is not consistent with the need, and we cannot delay.

Edits:

44 – Support a Sound-wide study in the first 2-3 years of the permit to assist plants in identifying optimization opportunities and expected short- and long-term pollutant reductions. Ecology should

oversee this work with funding to be determined. Note that interim estimates are needed to provide timely information for the 2024 Comprehensive Plan updates.

(bullet) Identify objective metrics to transparently tier plants to identify those above or close to the 85% threshold for triggering new planning requirements, those with the greatest limits to their footprint, and those plants likely to need a complete rebuild to meet effluent concentrations <10 mg/L and <3 mg/L.

State agencies –

45. Include, in the first year of the permit, evaluation of side-stream treatment opportunities to add nutrient reduction capacity and, if considered technically and economically feasible, require their implementation if cap targets are exceeded

Utilities – PCSD notes that this approach is counter to previous discussions of the first permit iteration which supported increased sampling/monitoring, further Salish Sea modeling, planning, and limited capital investment.

Federal agencies – Agree

Tribes –

Environmental groups – Agree

State agencies –

46. Use a tiered approach (like ISGP) based on plant size and/or percent capacity available

    z. Largest plants and those near 85% capacity should be presumed to have reached their cap, and be required to make more progress toward future upgrades sooner

    aa. Plants at or near capacity and with less flexibility might focus on doing more planning to get upgrades online sooner rather than optimizing their current operations

Utilities – PCSD generally supports the use of tiered approach to address nutrient management, especially for elements such as sampling and monitoring. However, planning need and the approach to nutrient management is likely to be plant specific based on each set of unique circumstances.

Federal agencies – See earlier comments. Agree.

Tribes –

Environmental groups –

State agencies –

47. Allow plants to use their own ingenuity to meet nutrient reduction goals

Utilities – Pierce County agrees with this item.

Federal agencies – The federal caucus agrees that permits do not require specific implementation decisions to meet targets, only that facilities meet those targets.

Tribes –

Environmental groups – Generally agree; edits needed:

Optimization plans should be based on Ecology guidance and proven techniques while still allowing plants to use their own ingenuity to meet nutrient reduction goals to a certain extent.

State agencies –

VI. How to approach short- and long-term planning requirements for facilities

48. Allow plants to contribute to and participate in a Sound-wide evaluation and planning study to complete and coordinate the first planning steps

Utilities – The PCSD agrees with this item, but also notes that participation should be voluntary.

KC: • Planning schedule and requirements for long-term nutrient reduction plans needs to be realistic – needs to be additional discussions about how accelerated planning schedules fit into the compliance triggers. While funding is a major barrier, procurement policies and consultant availability will hinder this being a strategy that can be activated and completed quickly.

• Need direction on planning targets – confirm targets of moderate and aggressive nutrient treatment levels (i.e. "book ends")

Federal agencies – Agree

Tribes –

Environmental groups – See comments on #44 above. Edits needed. Add "…, in parallel with required optimization steps that allow for incremental growth in flow during first permit term."

State agencies –

49. Plants that are already operating nutrient reduction technologies are not required to do additional planning in the first PSNGP

Utilities – PCSD agrees with this item.

Tacoma: Tacoma suggest a collaborative planning strategy that involves all plants would be most effective

LOTT would reword # 49 as follows; Plants that are already operating under nutrient reduction permit limits (10 mg/L or less) are not required to do additional planning in the first PSNGP.

Federal agencies – See previous comment related to plants discharging the threshold of 10 mg/L or less and associated actions that would not be required.

Tribes –

Environmental groups – Agree in concept; edit needed – set objective effluent concentration of <10 mg/L.

49 - Plants that already demonstrably achieve effluent nutrient concentrations <10 mg/L are not required to do additional planning in the first PSNGP, unless those plants are above or approaching 85% of their design capacity.

State agencies –

50. Keep plants accountable for both making improvements during the first permit term and taking steps toward making necessary improvements in future permit terms and plan in phases: high level analysis followed by feasibility study followed by engineering report

    bb. Allow plants to move forward from whatever planning stage they are in

Utilities – PCSD agrees that plants will need to be allowed to move forward from whatever planning stage they are in. Further information is needed as to how Ecology intends to address accountability prior to PCSD making a recommendation. PCSD generally agrees with phased planning that includes a high-level analysis, followed by a feasibility study, followed by an engineering report.

Tacoma: Until the WQBELs are established there is only a limited amount of planning that can be done. That being said ding as much planning in advance as we can would be a good thing.

Federal agencies – Agree with 50. Unsure what 50bb refers to.

Tribes – Ecology has documented that nutrient loads from Puget Sound's Main Basin are transported to the South Sound and Whidbey Basin, demonstrating that discharges in one basin can affect water quality in others. The largest estimated improvements will occur with nitrogen removal at all WWTPs, with basin-wide improvements contributing to local improvements in DO impairments. Thus, it is essential that Ecology implement Sound-wide nutrient effluent limits that comply with water quality standards and prevent degradation of these waters that support treaty fisheries. Exceedances of this sound-wide limit should be accompanied by corresponding effluent limit reductions in WWTP permits.

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. NWIFC Letter to Gov. Inslee, July 23, 2020

Environmental groups – Agree in concept, and this must be accomplished in the first permit term. In bullet – use "Encourage" instead of "Allow"

State agencies –

51. Provide time and flexibility to address planning needs and avoid growth moratoriums; consider a matrix of growth rates and available current plant capacities

Utilities – The PCSD generally agrees with this approach but would want to be included with the other utilities and stakeholders in the development/review/approval process.

Tacoma: Growth moratoriums can be avoided by establishing scientifically supportable limits (WQBELs) and allowing reasonable compliance schdules

Federal agencies – The federal caucus is unsure what this is referring to in the permit. The federal caucus's previous agreement and comments on how the permit should be constructed along with timing and actions that are triggered are the core parts of the permits. This comment is connected to some degree with other comments related to growth. We propose that issues of growth be addressed in the way that is addressed in previous comments.

Tribes –

Environmental groups – The Environmental Caucus has acknowledged, in a significant concession, that compliance in the first permit term will be based on progress toward various activities rather than effluent nitrogen concentrations or changes in concentrations. Implementing optimization and other measures is intended to incrementally decrease concentrations so that any incremental increases in flow associated with growth do not lead to increased loads. The transition to advanced treatment needs to be in the 2024 Comprehensive Plan updates; we support flexibility that still meets this deadline, but not flexibility that leads to municipalities not adequately transitioning to reduced nitrogen.

State agencies –

52. Require an initial nutrient reduction evaluation focused on low cost optimization with cost estimates for future upgrades

    cc. Include nitrogen, phosphorus, and carbon in the nutrient reduction evaluation

    dd. If data are available, plants submit the report at the end of the first year of the PSNGP; if data are not available, the plant should collect one year of data and then submit a report at the end of the second year

    ee. Thereafter, plants submit annual reports that describe how the nutrient reduction evaluation report has been implemented and evaluated

Utilities – PCSD notes that the requirement of an initial nutrient reduction evaluation focused on low cost optimization with cost estimates for future upgrades is generally consistent with the Advisory Committee discussions. PCSD agrees that some WWTPs may need to collect data before being able to develop a nutrient reduction evaluation. PCSD notes that annual reports may not be necessary depending on the timeframe of the low-cost optimization elements and/or the future upgrades identified in the plan. Language providing reporting flexibility based on plant specific conditions should be incorporated.

PCSD also notes that phosphorus and carbon have not been specific points of focus in the discussions to date and therefore should not be folded into the process without the benefit of discussion.

Tacoma: This should be part of the sound wide optimization study.

Federal agencies – We agree, and believe this is an important first step in nutrient reductions. These types of plans are also commonly used in permits when seeking to characterize and/or reduce pollutants in effluent.

Tribes –

Environmental groups – Edits needed:

52 - Require an initial nutrient reduction evaluation focused on optimization and low-cost capital improvements with cost estimates for future upgrades

(dd) Plants must submit the report at the end of the first year of the PSNGP; for the 6 plants with no available data {as compiled by Mukilteo}, the plant should collect one year of data and then submit a report at the end of the second year

State agencies –

53. Require a long-term nutrient reduction evaluation in the first PSNGP that considers, at minimum, technologies that will reduce the plant's effluent TIN concentrations (1) to around 8-10 mg/L, and (2) to around 3-4 mg/L, and submit this study by the end of 2023
    a. This will be a high level evaluation or feasibility study (10% conceptual planning design) that estimates future costs, documents specific initial and long-term site constraints, and identifies potential implementation challenges
    b. For plants at or above 85% design capacity, require a formal engineering report per WAC 173-240-060and implementation of feasible side-stream treatment during the first permit

Utilities – Pierce County disagrees. This should wait until WQBELs can be established.

In item 53, is there real benefit to Small Plants conducting these studies? All these plants together constitute about 1% of total loading, so there seems little to be gained. Also, the work done by larger facilities will probably go a long way towards understanding what the Small Plants could try, at what cost. [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

Federal agencies – Agree

Tribes –

Environmental groups – Agree, with a few edits:

Change 2023 to "… 2022 to inform the 2024 round of Comprehensive Plan udpates."

For (a) add "… at least 10% conceptual planning design."

For (b) add phrase "…, because Ecology cannot write a permit authorizing flow increases without concomitant concentration decreases."

State agencies –

54. GMA Comprehensive Plan updates are due in 2024 and plans for plant upgrades need to be in this update but do not need to be required by the permit; just require affirmation in the last year of the permit that future plant upgrades are represented in the 2024 update, (20-year) Capital Facilities Plan, and (6-year) Capital Improvements Plan

    c. Jurisdictions will start work on plans in 2021; for this exercise, planners should assume their plants are at capacity and plan to provide sewage treatment for current and expected population without impacting water quality

    d. Requirements in the first PSNGP should work with the comprehensive planning timeline to update GMA checklist to include the requirement for nutrient reduction

    e. Assure plants and planners that their ultimate targets in the 15- to 20-year timeline ahead will be met by either the 8-10 mg/L or 3-4 mg/L approach (or something in between)

        i. Address collaboration in the short term, perhaps first, to see what can be accomplished with the equipment plants have now

        ii. Make a regional plan for equitable rate structures to address funding shortages and ensure environmental justice in plant upgrades

        iii. Consider a special State legislative session ask for grants to help plants with equipment, consulting help, and planning for the first PSNGP

        iv. Ask for federal funding for this critical infrastructure

    f. Any city/county that cannot accommodate expected growth without keeping their nutrient loads in check must make a six-year plan to provide the required services; GMA actions are triggered when a plant reaches 85% of its rated capacity

Utilities – Pierce County disagrees with many of the points outlined above.

Item 54 is confusing. The GMA CIPs cannot include future plant expansions without including costs, which presupposes required treatment levels…which are unknown. Then it says we should consider that the plants are "at capacity." Why? That means that the projections are not necessarily accurate. This whole comment seems not to understand GMA. [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

Federal agencies – The federal caucus needs to review this further and will provide comments in the next version.

Tribes – Treaty rights should be addressed in addition to environmental justice. 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. NWIFC Letter to Gov. Inslee, July 23, 2020.

Environmental groups – Edits needed to several bullets:

(c) Jurisdictions will start work on plans in 2021; for this exercise, planners should assume their plants are above that allowed to discharge to Puget Sound and plan to provide sewage treatment for current and expected population without increasing nitrogen loads

(e) Confirm with plants and planners that their planning targets should be based on two scenarios: needing to meet an effluent concentration of 8-10 mg/L or 3-4 mg/L approach within the 20-year planning horizon of GMA and Capital Facilities Plans.

(iii) Coordinate with Tribes, all levels of government, environmental organizations, and others who rely on clean water in Puget Sound to pursue federal and state funding opportunities, as was done when Spokane transitioned to nutrient-removal technology, to help plants with equipment, consulting help, and planning for the first PSNGP

(f) add "… because the Clean Water Act limits are triggered now."

State agencies –

55. Provide a compliance schedule to plan and build the infrastructure needed to accommodate future growth and meet eventual WQBELs

Utilities – Based on the PCSD's understanding of the current process structure, we anticipate that this may be addressed as part of Ecology Puget Sound Nutrient Management Plan.

Tacoma: This can only be done after WQBELs are established

Federal agencies – The first PSNGP as laid out lays out actions that are required if trigger levels are exceeded. A compliance schedule can only be given if a facility is unable to meet their action levels. In this case, where the trigger levels are the current loading, there should not be a compliance schedule granted. However, in the second PSGNP, there may be some facilities with monitoring data showing they cannot immediately meet WQBELs. In this case, some facilities could meet the regulatory threshold where a compliance schedule could be given.

Tribes – Future population growth in the Salish Sea region will undoubtedly increase human nutrient loads from wastewater, stormwater, agricultural runoff, and other activities, contributing further to DO impairments if no actions are taken to reduce nutrient sources. 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. NWIFC Letter to Gov. Inslee, July 23, 2020.

Environmental groups – Environmental groups – Add "… by end of second permit term."

State agencies –

VII. How to approach "outside the fence" practices to reduce nutrient inputs in the first PSNGP

56. Allow and encourage plants to achieve nutrient reductions by other means than biological and other nutrient removal technologies, such as building satellite plants; looking for other discharge locations (*i.e.*, recycled or reclaimed water); expanding regular maintenance and line replacements and other I/I reduction efforts; investigating opportunities for source control; using approaches similar to how industrial pretreatment programs work; requiring separate plumbing and/or other building scale solutions; and/or implementing other innovative techniques

Utilities – The PCSD agrees that given the unique nature of each sewer system, Utilities should be allowed to consider broad suite of actions to address nutrient reduction.

The siting, designing and building of a satellite plant would take years as would building the facilities to produce reclaimed water. This is likely not possible during the first permit cycle. I&I reduction will have negligible effects on nutrient loading since I&I does not contain a high concentration of Nitrogen.

KC: • AC should discuss and decide if these projects should be encouraged and prioritized. These projects could achieve multiple benefits and support other Puget Sound restoration priorities.

• Without direction or endorsement in the GP, it's unlikely these projects will be explored or implemented in a widespread manner.

• Develop a nutrient reduction specific framework to help utilities and communities consider these projects that provide guidance on nutrient reduction benefit, implementation uncertainty, and cost-benefit economic framework. Integrate into the planning or optimization guidance to formalize their consideration. There are a lot of tools available from water research organizations.

Federal agencies – The federal caucus is open to having some kind of fund that small facilities pay into during the first PSNGP if optimization costs are too costly. Also, laying out the groundwork for future trading in the second PSNGP is something the federal caucus is open to sharing information on with the rest of the Advisory Committee as well as learning about other ongoing efforts by other committee members.

Tribes –

Environmental groups – We agree in general and suggest a clarification, since Ecology would not be able to approve a new discharge to Puget Sound until plants comply with nutrient removal requirements. Edit: "looking for alternatives to new marine discharge locations …"

State agencies – some of these (I/I) will improve overall plant performance

57. Allow and encourage each jurisdiction to come up with a comprehensive set of solutions that works for their plant and community and give plants credit for achieving these reductions

Utilities – As noted in the response to Item # 56, the PCSD agrees that given the unique nature of each sewer system, Utilities should be allowed to consider broad suite of actions to address nutrient reduction.

Federal agencies –

Tribes – Any implementation of water quality trading should not result in shifting unaddressed impairments to treaty resources. NWIFC Letter to Gov. Inslee, July 23, 2020.

Environmental groups – Agree

State agencies –

58. Consider a regional approach to coordinating septage intakes to determine how and where septage would be best disposed of to reduce nitrogen discharges to Puget Sound while still providing septage hauling services

Utilities – While the PCSD does not accept septage, we agree that the region should have a coordinated approach to serve this community need.

Tacoma: Part of this needs to be an evaluation of how much septage is contributing to nitrogen loading.

Item 58 continues to discuss septage, but Ecology has yet to explain what they think the problem is, or how requiring companies to "take it somewhere else" is either possible or productive. [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

Federal agencies – We agree.

Tribes –

Environmental groups – Agree, and encourage learning from each others' experiences.

State agencies –

VIII. Outstanding questions or concerns to address in parallel with PSNGP issuance

59. Increase outreach to the development community and the public

Utilities – The PCSD generally agrees that an increase of balanced outreach to the development community and the public would likely assist with future nutrient reduction efforts.

Tacoma: agreed

There has been little discussion or consideration by Ecology of the financial impact of the nutrient regulations, or the impact on low-income individuals. [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

KC: • GP should facilitate innovative solutions like water quality trading.

• GP shouldn't get ahead of the science. There should be consideration on how the GP can support the feedback loop between science and regulatory action.

• This is going to take a lot of funding – for utilities, for Ecology, for science and for environmental community. Elected officials need to be engaged in this process. There has to be additional state or federal funding to accelerate the timescale.

Federal agencies – Agree. We believe outreach to all interested members of the public are important and valuable.

Tribes –

Environmental groups – While we strongly support outreach to the public, we caution that this recommendation misses obligations that the state has to connect with the people most impacted by pollution. Otherwise, this appears to offer special treatment of an industry and may not be consistent with protecting values. Edits:

59 – Conduct government-to-government consultation with Tribes and increase outreach to communities near the outfall locations, including but not limited to those identified as at greater risk from the Washington Environmental Health Disparities Map, the fishing community, recreational users, the public, and developers.

State agencies –

60. Create a clearinghouse of information for various plant sizes

Utilities – The PCSD agrees that Ecology should create and maintain a clearinghouse of information related to nutrient reduction

Federal agencies – Agree

Tribes –

Environmental groups – Agree

State agencies –

61. Provide a reward structure for the greatest reductions in nitrogen, the soonest

Utilities – The PCSD supports incentivizing nitrogen reduction where possible to promote it application.

Federal agencies – We are unsure what this is referring to, but are supportive of encouraging the greatest reductions in nitrogen as early as possible.

Tribes –

Environmental groups – Agree

State agencies –

62. Encourage plants to evaluate new investments for their nutrient impact, similar to how purchases are currently evaluated for energy efficiency, carbon footprint, and greenhouse gas emissions

Utilities – PCSD has no concerns.

Federal agencies –

Tribes –

Environmental groups – Agree

State agencies –

63. Expand the pool of skilled plant operators

Utilities – The PCSD agrees a deficit of skill plant operators is likely to be a significant barrier to adoption of nutrient reduction practices.

Federal agencies – Agree

Tribes –

Environmental groups – Agree

State agencies –

64. Develop a state funding strategy to lessen the burden on individual utilities and their ratepayers

    a. Address anticipated funding shortages and ensure environmental justice in plant upgrades

    b. 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

Utilities – The PCSD agrees that state and federal funding mechanisms should be developed to facilitate nutrient reduction.

Tacoma: That would be nice

Item 64 postulates an "expected increase in federal infrastructure spending." We should not be developing regulations based on the assumption that a) Congress will actually boost infrastructure spending, or b) that we will have a place near the front of the line to receive such funds. [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District

Federal agencies – Agree, and we support this effort as well as offer any ways that we can help facilitate SRF funding or other programs to support this effort.

Tribes – Tribal treaty rights should be considered in addition to environmental justice. 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. NWIFC Letter to Gov. Inslee, July 23, 2020.

Environmental groups – Agree. The funding strategy was also key to upgrading the Spokane wastewater treatment plant for nutrient removal technology. Increases in Federal funding for the CWSRF program will also require concomitant increases in state matching funds.

State agencies –

65. Apply emerging science during the first PSNGP term and establish WQBELs for plants

Utilities – PCSD - Based on existing timelines established by Ecology, the Puget Sound Nutrient Management Plan will not be available before the issuance of the draft General permit. As such it does not appear that a WQBEL can be established in the first permit iteration.

Item 65 asks us to "apply emerging science" but does not hint at what that science might be. Or how soon it might be usable. [Jeff Clarke: WASWD & Mukilteo Water and Wastewater District]

Federal agencies – Agree

Tribes –

Environmental groups – Delete "emerging" and add "as quickly as possible. WQBELs will be included in Permit no later than second permit." It is of the highest priority to the environmental groups that WQBELs be required no later than the second permit.

State agencies –

66. Get more science to address near versus far field contributions and seasonality

Utilities – The PCSD agrees that additional study, modeling, data gathering, and discussion is needed to fully understand nutrients in the system.

Tacoma: Definitely needed

Federal agencies – Agree that the model should continue to assess these impacts.

Tribes –

Environmental groups – We disagree as written because this is not about "getting more science." Edit:

Apply Salish Sea model to understand relative benefits of alternative nutrient load reduction scenarios, including impacts to the nearfield and farfield waters of Puget Sound and the seasonality of loading.

State agencies –

67. Develop a bigger picture for trading, in consultation with Tribes early in the process
    a. Use the Sound-wide study to identify plants' capacities, nutrient levels, and expected abilities to meet their caps
    b. Determine equivalency factors to be used in future trading
        i. The "currency" needs to be place-specific, because near-field and far-field pounds per day are not the same
        ii. Percent removal cannot be used for trading; it must be a mass loading
    c. Consider (1) setting a regional limit, (2) creating incentives for source reductions, (3) allowing arrangements for public and private trades, and (4) allowing some utilities to pay into a fund

Utilities – The PCSD agrees with the concept of developing a nutrients trading program and anticipates being an active stakeholder in that process.

Tacoma: A nutrient trading program is a good idea. Recommend working with experienced partners like The Freshwater Trust

Federal agencies – We agree. See comments above on trading.

Tribes – Ecology has documented that nutrient loads from Puget Sound's Main Basin are transported to the South Sound and Whidbey Basin, demonstrating that discharges in one basin can affect water quality in others. The largest estimated improvements will occur with nitrogen removal at all WWTPs, with basin-wide improvements contributing to local improvements in DO impairments. Thus, it is essential that Ecology implement Sound-wide nutrient effluent limits that comply with water quality standards and prevent degradation of these waters that support treaty fisheries. Exceedances of this sound-wide limit should be accompanied by corresponding effluent limit reductions in WWTP permits. Any implementation of water quality trading should not result in shifting unaddressed impairments to treaty resources. NWIFC Letter to Gov. Inslee, July 23, 2020.

Environmental groups – We agree with bullets (a), (b), and (c). Edit:

67 - Develop a framework for point source trading, in consultation with Tribes early in the process, and by the end of first permit term. Any trading program will be implemented pursuant to Final Guidance by Ecology on Water Quality Trading.

State agencies –– need a currency and a bank, and a monitoring system to measure progress and ensures enduring implementation. Think more about including other sources in the system. Will take a long time to develop this system. Consider more focus on fixing the root cause of problem.

68. Implement a Sound-wide comprehensive nutrient reduction plan to address other sources

Utilities – The PCSD agrees that a plan that addresses all nutrient sources will be the most effective approach.

Tacoma: agreed

Federal agencies – Agree

Tribes – The state should recognize and apply its advancements in riparian buffer protection to agricultural and urbanizing areas, as complimentary and an important part of addressing watershed nutrient, temperature, and other pollutant loading. Any implementation of water quality trading should not result in shifting unaddressed impairments to treaty resources. NWIFC Letter to Gov. Inslee, July 23, 2020.

Environmental groups – While we agree with this recommendation, the plan must also include statutory authories to carry out the work, along with clearly defined roles, responsibilities, measures of success, and further actions needed in the event nonpoint source reduction is not succeeding.

State agencies –

69. Consider allowing the smallest (<1 MGD) plants to make demonstrable permanent reductions in other sources of nutrients as an alternate approach to trading

Utilities – The PCSD would need further data on what is meant by "demonstrable permanent reductions in other sources of nutrients" to determine whether there is support for this item. The PCSD does note that a successful reduction in human based nutrients will eventually require all jurisdictions to identify and reduce sources of nutrients.

Federal agencies –

Tribes – The state should recognize and apply its advancements in riparian buffer protection to agricultural and urbanizing areas, as complimentary and an important part of addressing watershed nutrient, temperature, and other pollutant loading. Any implementation of water quality trading should not result in shifting unaddressed impairments to treaty resources. NWIFC Letter to Gov. Inslee, July 23, 2020.

Environmental groups – We do not agree that trades should include point for nonpoint

State agencies –

70. Match new PSNGP with individual permit requirements, particularly for monitoring

Utilities – The PCSD notes that given wastewater treatment plant operational and loading variability, plants should be provided a required number of sampling events, but then allowed to determine the frequency and variability based on the unique plant conditions. This should only apply to the first permit, once they go to a GP they should strip from the IP.

Federal agencies – Agree

Tribes –

Environmental groups – We are unclear how this would be done.

State agencies –

71. Improve Ecology's schedule and priorities for updating permits that are overdue for reissuance

Utilities – The PCSD agrees with the timely reissuance and updating of permits and believes that Ecology should have adequate staffing/funding to address its workload. The Pierce County Sewer Division also notes that in some instances there are valid reasons to have a permit in Administrative Extension.

Tacoma: See previous comment recommending Ecology provide adequate resources to get all permits up to date.

Federal agencies – Agree

Tribes –

Environmental groups – Edits needed: "…, without allowing fast-track permissions to expand flows or loads.

State agencies –

72. Put monitoring and planning requirements in permits overdue for reissuance now, and focus on optimization efforts and side-stream treatment evaluation

Utilities – The PCSD has concerns that incorporating nutrient monitoring and planning requirements in individual permits that may then need to be revised after the general permit is approved may cause an unnecessarily increased workload for Ecology staff.

Tacoma: See previous comment recommending Ecology provide adequate resources to get all permits up to date.

Federal agencies – Agree

Tribes –

Environmental groups – Edits needed: "… and implement in the first term."

State agencies –