

DERT

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March 15, 2021



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PO Box 47600 Olympia, WA 98504-7600  
Submitted via: <http://wq.ecology.commentinput.com/?id=aiK7u>

RE: Comments on Preliminary Draft Puget Sound Nutrient General Permit

Dear Ms. Ott:

Thank you for the opportunity to comment on the preliminary draft of the Puget Sound Nutrient General Permit. On behalf of the Deschutes Estuary Restoration Team (DERT) members and supporters we offer the following comments:

Although DERT was not a member of Ecology's Advisory Committee (AC), we regularly commented at the meetings, updated other organizations, discussed the materials of the Advisory Committee, and provided feedback throughout the process. **Our highest priority is transitioning every wastewater treatment plant discharging to Puget Sound and the Salish Sea to nutrient-removal technology as quickly as possible.**

Many wastewater treatment plants are out of date, with outdated permits. While individual permits must be updated, a Nutrient General Permit has the potential to reduce pollution from all, or most, of these wastewater treatment plants at the same time without requiring individual permit updates. DERT supports a Nutrient General Permit to ensure that Puget Sound meets Clean Water Act requirements, including protecting water quality, human health, and aquatic life. However, the Preliminary Draft of the Puget Sound Nutrient General Permit is not yet strong enough to protect water quality and the important habitat Puget Sound provides for salmon and other aquatic life. To meet Ecology's responsibility, the next iteration released for public comment must tighten up the requirements of the permit to achieve reasonable 5-year progress and accelerate the transition to nutrient-removal technology.

Ecology has known for decades that wastewater treatment plants are causing or contributing to water quality violations throughout Puget Sound. Puget Sound is impaired for dissolved oxygen

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as a result of excessive nutrient pollution. Nutrient pollution is causing too much plant and algae growth, reducing the amount of dissolved oxygen in the water. Many parts of Puget Sound have oxygen levels that fall below what is needed for aquatic marine life to thrive and do not meet water quality standards. Some algal blooms are harmful to humans because they produce elevated toxins and bacterial growth. Nutrient pollution can make people sick if they come into contact with polluted water, consume tainted fish or shellfish, or drink contaminated water.

Since the mid-2000s, Ecology's modeling work has indicated that current nutrient discharges from treated wastewater, together with other human sources of nutrients, violate the state water quality standard for dissolved oxygen in Puget Sound, causing more than a 0.2 mg/L depletion of dissolved oxygen below already low levels. Robust computer model development, peer reviews, and iterative refinements have reduced uncertainty while maintaining the core finding that nutrients from human sources do not meet water quality goals for Puget Sound. We are pleased that Ecology has made the Reasonable Potential determination. The transition to nutrient-removal technology is inevitable. In fact, multiple utilities, from Olympia to Sequim to Spokane, have already implemented this technology and remain financially solvent.

Throughout the AC process, the environmental community identified reasonable approaches to achieving clean water. We regret that the Water Quality Based Effluent Limits (WQBELs) require additional time to complete, and we offered interim approaches for pragmatic steps that utilities should undertake toward the transition. These included short-term planning efforts and optimization efforts to reduce effluent concentrations without extensive expenditures, and we offered the structure that different tiers of actions are triggered when different nutrient load values are exceeded. In the final adoption of the Advisory Committee's recommendations, the Environmental Caucus, State Caucus, Federal Caucus, and our interpretation of the Northwest Indian Fisheries Commission letter as well as the position of some utilities consistently supported these transition steps; a subset of the utilities did not.

WQBELs must be made available by 2022 or 2023. WQBELs must be added to the Permit as soon as developed and no later than when the second Permit is issued. The first Permit should include a compliance timeline for plants to achieve water quality standards by a deadline no later than the 10th year/end of the second Permit cycle.

While this Preliminary Draft Puget Sound Nutrient General Permit captures the breadth of the Advisory Committee discussion points, the load calculations are weaker than proposed and discussed at the Advisory Committee meetings, and several modifications are needed to fully protect water quality, Puget Sound, and the people and wildlife that depend on clean water.

**Do not weaken any provisions in the preliminary draft permit when released as the full draft for public comment. We recommend additional improvements to strengthen and clarify key provisions as noted in our comments.**

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We recognize that all permit development represents a negotiation to some extent. The Environmental Caucus negotiated in good faith, and the recommendations of the Advisory Committee already include significant flexibility in how this work should be done. In particular, we agreed in concept to triggering actions rather than permit violations if certain load numbers are exceeded – even though that could be categorized as violations of the Clean Water Act. In future drafts of the Puget Sound Nutrient General Permit, none of the provisions should be weakened.

**We agree with the bootstrapping approach to calculating current nutrient loads from wastewater treatment plants.**

Throughout the PSNGP Advisory Committee deliberations, when asked for recommendations for what Ecology should use to estimate current loads, we were consistent in our feedback that the non-parametric bootstrapping calculation method was the most appropriate approach of those presented. Non-parametric statistics can appear mysterious at first glance, and we encourage Ecology to continue to document how these statistical approaches have been used in stormwater management and other environmental measurements when continuous data are simply not pragmatic and not available. We concur with ECY's assessment that using a straight percentile or EPA's TSD performance-based approach do not characterize existing loads as well as the bootstrapping method.

***Page 9 – Do reviewers have feedback on whether the 95% UCL or 99% UCL is more appropriate for ALo? Ecology has considered both and would like additional input.***

During the Advisory Committee proceedings, no organization made a public argument in favor of the 99th upper confidence percentile of the bootstrapping calculation, yet that value shows up in the Preliminary Draft permit. We were consistent in our feedback that the 95th percentile was a better level than the 99th percentile. In the world of statistics, a 5% error rate is the typical approach used, and a 1% error only tolerated with the repercussions or impacts of being wrong are extreme. Functionally, using the 99th percentile produces a higher load number than the 95th percentile.

**We do not agree with the use of a 99th percentile for ALo for the simple reason that if a facility goes over that value, the implications are simply planning and optimization. Exceeding those numerical values, at least as this preliminary draft describes, would not constitute a permit violation.**

In fact, the tiered actions are reasonable steps that should be taken by all utilities during the first permit term, as we describe below. A 1% error rate is too permissive and wholly unneeded because if a facility does exceed the trigger values described in the Preliminary Draft permit as action levels, those exceedance trigger only planning activities and low-cost optimization – both necessary and pragmatic steps toward the goal of nutrient-removal technology.

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**We raise this now because we believe using the 99th percentile will effectively increase the nutrient loads to Puget Sound.** A facility could simply tolerate the 5% error rate and continue to grow into the ALo loads with no triggered actions at all. That is anathema to the intent of this first permit term and inconsistent with the vast majority of feedback Ecology received from the AC and other commenters throughout the process. Therefore, the Preliminary Draft permit is more lax than described during the Advisory Committee without any explanation.

Please publish the datasets used for the preliminary draft calculation, as well as any modifications to those datasets and the rationale for them that will form the basis of values presented in the upcoming draft permit. DERT is concerned that, when comparing nutrient loading numbers that were shared with the Advisory Committee against the nutrient numbers used for the ALo in Table 4, it appears that the numbers for King County plants were calculated using a different method. The King County numbers appear higher (more permissive) when compared against the numbers from the AC. All plants should be treated fairly and use the same methodology to calculate the ALo.

**While we concur that plants that already achieve effluent nitrogen concentrations <10mg/L have stepped up and should not be required to do as much as the plants with higher concentrations, these plants should still monitor more frequently than currently described in the Preliminary Draft permit.**

We commend the plants that have invested resources in transitioning to nutrient removal technology, beginning with the Lacey Olympia Tumwater and Thurston County (LOTT) plant many decades ago. LOTT and several others recognized the need and appropriately planned for the future.

**Require an AKART analysis per RCW 90.54.020(3)(b):**

“Regardless of the quality of the waters of the state, all wastes and other materials and substances proposed for entry into said waters shall be provided with all known, available, and reasonable methods of treatment prior to entry.” Ecology must perform or require an AKART analysis with the issuance of every NPDES Permit under the Clean Water Act. The proposed Nutrient Reduction Evaluation Requirement under Section VI. B. of the Draft Permit might be redrafted to fulfill AKART requirements but falls short as written. Ecology should modify this Section to explicitly require that the Nutrient Reduction Evaluation Requirement include an AKART analysis. An AKART analysis is not dependent upon ranges such as 8-10mg/L or 3-4mg/L reductions, nor on WQBELs or water quality standards. Furthermore, the AKART requirement applies to all plants, including small plants operating under 10mg/L TIN.

**The AL1 Approach is Flawed; Ecology should consider combining and reducing the number of Action Levels.**

DERT believes the AL1 approaches for both <10mg/L and >10mg/L plants are too permissive. Also, Ecology should consider combining and reducing the number of Action Levels. A 5%

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allowance should not be needed for any plants as all plants should be performing optimization that reduces their concentrations a few percentage points. Any increases in flows must be accompanied by reductions in loads to ensure the total nutrient outputs do not increase. Moreover, while we are not seeking to penalize the dozen or so plants already achieving 10mg/L less, allowing them 2-3x more wriggle room as an AL1 is unacceptable. This gives some Permittees an unrealistic expectation that they can triple their TIN output and remain in compliance with the Permit. Growth is adequately provided for in the way the Draft Permit is crafted to set the ALo level as a “Nutrient Action Level” instead of as a limit.

**The largest plants need to do more, including facilities serving Seattle, King County, Tacoma.**

All plants need to begin the transition to nutrient-removal technology during the 5-year permit term, and we agree with the concepts that smaller plants should receive additional support. However, we would like to reiterate that five plants serving the largest population centers discharge over 67% of nutrients in treated wastewater in the entire Puget Sound – King County’s West Point, South King, and Brightwater plants, and Tacoma’s Central and North End plants. The tiered actions need to include specific actions now rather than wait for a specific load estimate to be exceeded.

To advance this goal, first, the optimization requirements need to include specific actions now for all plants, with more stringent optimization requirements for the largest dischargers, rather than wait for a load estimate to be exceeded. Second, as currently constructed we do not believe the Tiers are strong enough to achieve nutrient reductions. They are too permissive and could allow for paper shuffling for the first Permit cycle. Third, sidestream treatment should not be a Tier 3 action, and the Nutrient Reduction Evaluation should be modified to be a clear AKART requirement, that is a separate Permit requirement for all plants instead of a Tier 3 action.

Tacoma has repeatedly stated that their nutrient concentration data are not representative. If this is true, then they are both violating their current permit conditions, and the estimates of loads have a higher level of uncertainty. However, the point is that sewage from the nearly 3 million people in Seattle, Tacoma, King County, and Pierce County constitute the vast majority of the nutrient load and they need to transition to nutrient removal to effectively reduce nutrients from all human sources.

**Regional Study Concerns**

A regional study, whether performed or not, should not interfere with Permit implementation or serve as an excuse for lack of performance. Furthermore, the regional study should not be referenced or included in the Permit unless it is necessary to achieve Clean Water Act requirements, such as the regional monitoring requirement in the Municipal Stormwater General Permit.

**Upstream wastewater treatment plants should be included in the permit with a requirement to monitor effluent concentrations.**

Wastewater treatment plants that discharge to rivers and streams upstream of marine waters are included in Ecology's analyses as human sources in rivers. While they very likely have some impact, the instream travel times and natural processes reduce that impact once it hits marine waters. Their total contribution to marine dissolved oxygen problems is likely much less than those plants discharging directly to marine waters. While we agree that they should not be required to conduct optimization and planning during the first 5-year permit term, we recommend that they be required to monitor nutrients – both nitrogen and phosphorus – in their effluents at a frequency capable of estimating their end-of-pipe loads.

Utilities have repeatedly claimed that they need more data. If that is the case, then the upstream treatment plants should be required to monitor effluents throughout this first 5-year permit term. Therefore, they should be included in this permit coverage with the understanding that their initial actions should be limited to monitoring to characterize effluent loads.

**Private facilities should be included in the draft permit and should be required to monitor during the first 5-year permit term.**

The apparent exemption of private facilities from the PSNGP as a result of RCW 173-220 was not identified nor discussed during the Advisory Committee process. As stated in the Preliminary Draft, RCW 173-240-104 requires domestic wastewater treatment plants to be owned by public entities. While private facilities must incorporate before they are allowed to expand or make substantial modifications, each of them still has an NPDES permit for their existing discharges. As such, they should be covered under this general permit as well. Several of these facilities such as Carlyon Beach (NPDES WA0037915) serve completely built-out areas and likely would not trigger flow-based upgrades as provided for under RCW 173-240-104. In fact, Carlyon has some of the highest TIN concentrations of any plant discharging to the Salish Sea, mainly because it is dominated by septage. However, discharges may have localized impacts that should be considered in the future and as watershed sources are identified and controlled.

If Ecology has identified some limit in state law that precludes nutrient reduction from private facilities, then we want to work with Ecology to change state law to ensure that the Clean Water Act is fully enforced for privately owned treatment plants. The requirement to transition to a publicly owned entity before any upgrades would be considered is insufficient, for the reason that these can serve already-built out areas that may not trigger a flow increase in the near future.

We suggest striking the mention that private facilities contribute 1% of the load. While a statement of fact, the point is that all facilities need to transition to nutrient-removal technology, including both private and publicly owned treatment plants.

**Excluding industrial discharges from the Nutrient General Permit is reasonable based upon currently available information.**

No current permitted industrial discharges include significant concentrations or loads of nitrogen based upon their DMRs and related permit information, and we concur with exempting them from this general permit. However, we would like to ensure no new or expanded high-nitrogen facilities are permitted to discharge to Puget Sound in the future.

**Federal and Tribal facilities are excluded from the PSNGP.**

We concur that the PS Nutrient General Permit developed by Ecology has no authority for federal or tribal facilities. However, as regional studies are undertaken, we encourage the federal and state regulators to coordinate activities, including economic assistance programs. **In addition, Ecology should use both the State-EPA annual planning process and its CWA Section 401 authority to ensure that these facilities are required to monitor for nutrients and implement nutrient reduction treatment technology in the future, similar to those facilities covered by the PSNGP.**

**Facilities with current nitrogen limits should not be changed.**

We concur that the general permit should not weaken existing ammonia limits, often developed to address nearfield ammonia toxicity issues rather than nearfield or farfield dissolved oxygen impacts. However, Ecology must ensure that those treatment processes are not simply tuned to discharge as nitrate, which is still a contributor to TIN.

**Use of total inorganic nitrogen is appropriate.**

We concur with Ecology's use of total inorganic nitrogen (TIN) rather than dissolved inorganic nitrogen in the permit. Particulate inorganic nitrogen, which is the difference between total and dissolved inorganic nitrogen, is in the noise of the laboratory measurements. TIN analyses does not require a filtration step, which would add error

**Nitrogen as indicator of DO per 40 CFR 122.44(d)(iv)(C)**

We concur with Ecology's assessment that nitrogen is an indicator of dissolved oxygen per 40 CFR 122.44(d)(iv)(C). Ecology's highly peer reviewed model, described by EPA's Ben Cope on March 9, 2021 as "at the level of irreducible error", has confirmed that current nitrogen discharges from wastewater treatment plants discharging to Puget Sound clearly contribute to violations of the dissolved oxygen water quality standard and must be reduced now.

**Tier 2 actions triggered by exceedance of ALO**



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This is why the 95th percentile is more appropriate -- by reducing variability in concentrations, facilities could game the system. We want the trigger to be tighter, because these are low-cost, practical steps and not onerous to undertake.

### **Tier 3 actions triggered by AL1**

Again, the 5% allowance is simply not needed. These are planning-level activities. Allowing 5% is still allowing additional load, which Ecology cannot do because of the reasonable potential determination. Facilities can use optimization to create the growth space they need. For facilities that have recently upgraded to provide flow capacity, AL1 can be 5 times ALo, which is simply unacceptable as it would increase nutrients loads to Puget Sound.

Add a provision to drop the nutrient concentrations by 5% if a community exceeds ALo and before they get past AL1.

### **Section III. A.**

The finding that 70% of summer nitrogen load comes from WWTPs has been a durable finding since the earliest days of the South Puget Sound Dissolved Oxygen Model. There is now no question that WWTPs need nutrient limits and controls. This is the basis of the “reasonable potential” determination which has also been a durable finding as model uncertainties have been addressed and reduced sequentially.

We agree that WQBELs will be needed as soon as possible, but not having them now is not an excuse to eliminate the required action levels. This is not an indicator of a model error or uncertainty. Good public policy as well as the CWA require action now.

### **Conclusion**

In summary, Ecology must require sewage treatment plants to transition to nutrient removal technology under the Clean Water Act as quickly as possible. We have known about the nutrient pollution problem for decades - we cannot keep kicking the can down the road, particularly when treatment technologies could become more expensive as time passes, and the dual pressures of climate change and population growth compound the problem. Furthermore, the post-pandemic economy presents unique opportunities to fund clean water infrastructure projects, and environmental groups, EPA, Ecology, and utilities have a shared common interest to advocate for funding to advance nutrient pollution controls that will soon be required. Now is the time to seize the opportunity by issuing the strongest Nutrient General Permit possible.

Sincerely,

Dave Peeler  
Deschutes Estuary Restoration Team