AWC ASSOCIATION OF WASHINGTON CITIES

1076 Franklin St. SE | Olympia, WA 98501-1346
360.753.4137 | 1.800.562.8981
wacities.org

August 27, 2025

Mr. Jon Kenning
State of Washington Department of Ecology
Water Quality Program
P.O. Box 47600
Olympia, WA 98504-7600

RE: Draft Puget Sound Nutrient Reduction Plan

The Association of Washington Cities (AWC) provides the following comments to Ecology's June 2025 Draft Puget Sound Nutrient Reduction Plan. AWC remains committed to working with the agency to identify the causes and effective solutions to address excess nutrients and the impact on dissolved oxygen (DO) in the Puget Sound. The issue is complex and one that should be addressed through stakeholder collaboration, where the brightest scientific, engineering, and public policy minds can gather—at the same table—and share and evaluate problems and strategies to move forward.

Although we have many questions and comments detailed below, our most significant concern is one of process – particularly because of the historic levels of public investment this proposal will necessitate. Collaboration is foundational to successful water quality restoration and protection. AWC is requesting that Ecology convene a third party facilitated stakeholder process—now, rather than waiting until after adopting the plan—to collaborate with all stakeholders to reach an approach that will address the DO concerns, but not result in a housing moratorium, continuous litigation, or triple digit wastewater utility bill increases for the lowest-income ratepayers in the Sound.

We ask that the agency significantly enhance the financial assistance evaluation section of the plan. We are seeing credible cost estimates from utilities that could result in total capital costs exceeding double digit billions of dollars. The lion's share of those costs will be borne by utility rate payers, and will need to be collected years in advance of wastewater treatment plant upgrades. The financial assistance section seems to indicate that state and federal support will be forthcoming, but does not acknowledge nor grapple with the challenge that those state and federal programs are already oversubscribed. In the case of the Clean Water Revolving Fund support from the federal government, and the state Public Works Assistance Account, low interest loans will still ultimately be paid by local ratepayers.

It is our understanding that the *total* historic investment over many decades into Washington state from the Clean Water Revolving Fund and Public Works Assistance Account do not meet the level of need this proposal requires to meet its goal. We ask the agency provide a more detailed assessment of how an investment of this scale will be funded based on information already provided to the agency in 2023 and, more recently, estimates from larger treatment plants.

Whether the state's proposed wastewater treatment infrastructure costs are borne by the federal, state, or local government coffers, they are paid for by the people. As the government closest to the people, cities and their leaders have a duty to ensure that every public dollar spent will achieve what it purports to. We do not have the information, nor the confidence, to convey that message now; but we do believe we can, if we work together, find a path forward.

Carl Schroeder
Deputy Director of Government Relations
Association of Washington Cities

Detailed comments on the Draft Nutrient Reduction Plan:

Role of NPDES permits

According to an EPA document about nutrient pollution and NPDES permitting, "Excess nutrient loading to water bodies beyond levels needed to maintain the health of an *indigenous aquatic ecosystem* is commonly referred to as nutrient pollution."

Q: Has Ecology established the levels needed to maintain the health of *the Salish Sea indigenous aquatic ecosystem*?

AWC's understanding is that the marine dissolved oxygen criteria that Ecology is relying on is from 1967; more recently, to support those criteria, the agency has pointed to studies based on organisms that do not live in the Puget Sound. However, the latest University of Washington's Puget Sound Institute (PSI) scientific workshop, *Temperature-Dependent Oxygen Thresholds for Marine Life* (August 15), indicated that a "strong scientific foundation, supported by growing experimental evidence, [exists] to determine how much oxygen is required by species in Puget Sound," and initial analysis for Chinook Salmon, Dungeness Crab, and English Sole "confirms dissolved oxygen impacts…are limited to certain Puget Sound areas and periods of the year." We're asking the agency to reconsider the scale of its approach and central focus on WWTP's

when the significant impacts are isolated to certain shallow embayments on certain days of the year.

Agency approach

Q: On pg. 11 Ecology states:

> The Puget Sound Nutrient Reduction Plan *details Ecology's strategy* to restore DO levels to achieve water quality standard levels across Puget Sound by 2050. This plan *establishes total nitrogen targets* for both the marine point sources discharging to Puget Sound and the watersheds draining into the Sound to achieve this goal (Table 5 and Table 6). The marine point source *targets will be used to inform effluent limits in future reissuances of domestic wastewater treatment plant and industrial facility permits* discharging into Puget sound, while the watershed targets will be the starting point for prioritizing, developing, and implementing water clean-up plans in watersheds draining to the Sound

That language implies this is a final plan. Yet in the introduction to Appendix H, Ecology states:

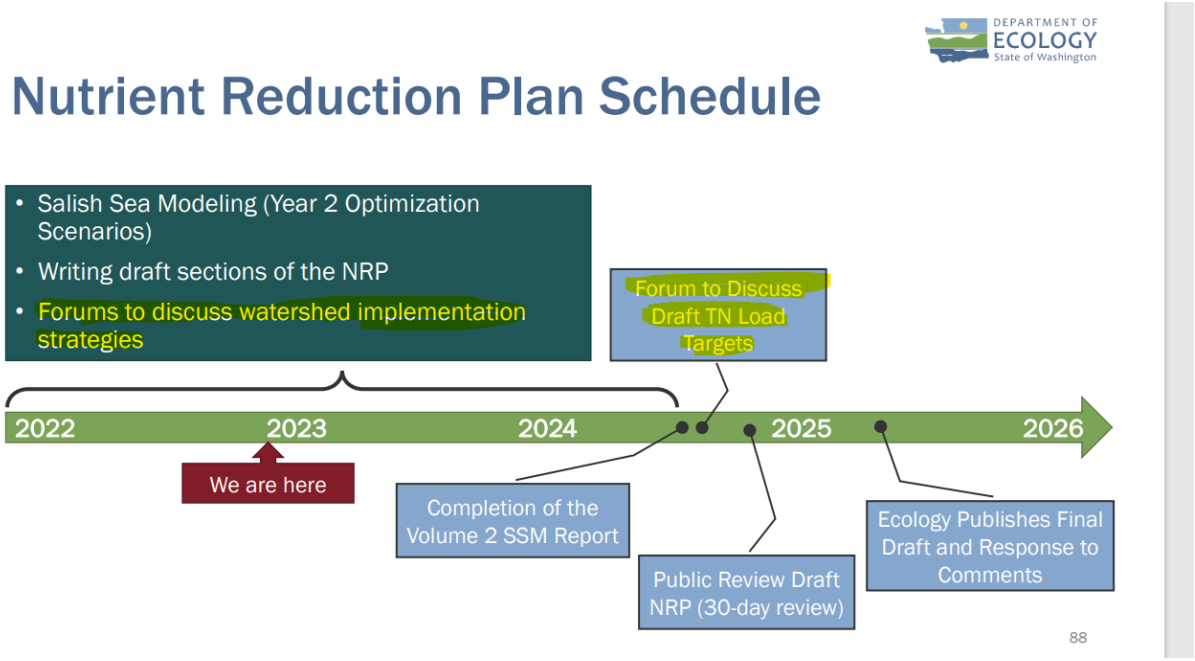
> This document presents Ecology's *preliminary strategies, potential approaches, and considerations* for calculating and implementing Water Quality Based Effluent Limits (WQBELs) for National Pollutant Discharge Elimination System (NPDES) permits that must include requirements to reduce nitrogen loading to Puget Sound. Our intent is to provide *an initial framework for further discussion and collaboration* with interested parties. We welcome comments on this document and will consider public feedback in our next steps. This appendix outlines potential strategies, approaches and considerations for implementing nitrogen water quality-based effluent limits (WQBELS) as part of Ecology's broader Puget Sound nutrient reduction effort, as reflected in the draft Puget Sound Nutrient Reduction Plan.

There is a direct relationship between the targets and the effluent limitations. If the targets are set without consideration of alternative strategies, approaches, or collaboration then the foundation of the work that WQBELS is based on could be flawed and the WQBELS ineffective – at a significant public and environmental cost. We request that the agency take a step back and approach the draft plan with the language included in Appendix H.

Q: On pg. 18, the plan states:

> The Nutrient Forum has met regularly since 2018 to discuss, learn, and provide input on how to reduce human sources of nutrients entering Puget Sound and to provide feedback on Ecology's approach to addressing nutrients in the Sound.

The Forum has not met regularly as Ecology was drafting the ARP. In the December 2022 Forum meeting Ecology shared the following timeline:



Instead, no meetings were held to discuss the draft ARP nor the new approach to TN load targets until March 2025 when attendees were notified the draft would be released in June.

An ARP outline was provided in 2020 and received extensive feedback from the Forum, including:

> "We support that the intent of Section 2 will be an exhaustive 'existing conditions' analysis to document the known sources of nutrients to Puget Sound and the mechanisms leading to DO impairment conditions."
>
> "In Chapter 2 the focus appears to be exclusively on human sources of nutrients. A robust discussion of natural sources is also needed, especially since Hood Canal is mentioned as part of the project area. This would also be a good place to discuss another human impact- climate change. There is no mention of it elsewhere in the document, and since it is being mentioned in other forums as a priority for Ecology, it needs to be well discussed in the context of Puget Sound water quality. If large amounts of money and effort are to be expended to reduce nutrients, there needs to be reasonable potential that the results will not be overwhelmed by changing climate. Inundation maps already call into question the expenditure of tens of millions of dollars for habitat restoration"

"The outline should include descriptions of the other stakeholder engagement and planning for nutrients that will have occurred by the time the Nutrient Management Plan is completed. The Ecology-led Marine Water Quality Implementation Strategy process is identified in Appendix F of the outline. However, the Nutrient Management Plan should address how that multi-stakeholder process to identify overarching scientific and strategic approaches to nutrients in Puget Sound relates to regulatory and non-regulatory approaches that are adopted."

"Chapter 4 needs to include information on stakeholder and public engagement for the PSNMP, both during development and once completed. No separate advisory committee was mentioned to assist in the development of the plan, which causes concern. Local jurisdictions, tribes, conservation districts and other stakeholders have extensive knowledge of their resources and what is needed in their area. Waiting until the plan is complete misses the opportunity to leverage that expertise." Ecology's response was that "The Nutrient Forum serves as a stakeholder advisory group that we have worked with and solicited feedback from numerous times since its inception in 2018. We will continue to use the Forum as a place for stakeholders, tribes, and the public to assist in development and review of this plan."

According to an EPA presentation on Introduction to the Clean Water Act Section 303(d) Program and Vision (2023), collaboration is foundational to successful water quality restoration and protection. AWC is requesting that Ecology convene a third party facilitated stakeholder process—now rather than waiting until after adopting the plan—to collaborate with all stakeholders to reach an approach that will address the DO concerns, but not result in a housing moratorium, continuous litigation, or triple digit wastewater utility bill increases for the lowest-income ratepayers in the Sound.

Q: When did Ecology decide to model the limit scenarios – specifically the year round limits of 8/5/3 TIN and 8 mg/L cBOD? Why didn't Ecology use the same criteria as used in the Nutrient General Permit Nutrient Reduction Evaluation requirement?

Q: On pg. 18, Ecology states that the first expansion of addressing nutrients beyond Budd Inlet relied on then current data (2014). Why is Ecology still using 2014 data when WWTP's send in *monthly* reports?

Q: As it relates to dissolved oxygen and regulating nutrients, has Ecology considered a Use attainability analysis required under 40 CFR § 131.2?

A *Use attainability analysis* is a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors as described in § 131.10(g). Of the six factors to analyze in whether attaining the use is feasible,

the following are relevant for addressing WWTP's role in discharging nutrients in dissolved oxygen depletion: (1) Naturally occurring pollutant concentrations prevent the attainment of the use; (2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use; (5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; and (6) Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.

Q: Related, has the agency evaluated the 303(d) list, of which this plan is in response to, under § 131.12(a)(2)(ii), which allows for a lowering of a high water quality after an analysis of alternatives, that such a lowering is necessary to accommodate important economic or social development in the area in which the waters are located?

The analysis of alternatives shall evaluate a range of practicable alternatives that would prevent or lessen the degradation associated with the proposed activity. *Practicable*, in the context of § 131.12(a)(2)(ii), means technologically possible, able to be put into practice, and economically viable. The proposed focus on WWTP is not economically viable nor does it account for housing growth since 2014.

Q: Since natural conditions are an integral part of surface water quality standards, why is Ecology moving forward with this plan prior a response from the EPA on Ecology's proposed natural conditions provisions?

Q: Is it correct that Ecology uses the EPA disapproved .2mg/L for DO for the basis of this plan and the modeling it relies on? This was included in a footnote on pg. 30 with the following rationale:

> The new natural condition provisions limit Ecology's ability to assign the human use allowance only to "local and regional sources of human-caused pollution." The plan does not provide any of the human use allowance to non-local and regional sources such as climate change and Canada.

In Ecology's response to comments on the 303(d) list (Assessment), the agency stated in response to 3.Q:

Response to 3.Q

Policy 1-11, Chapter 1 was updated for the 2022 Assessment in March 2023 with a note stating, "Ecology will not utilize the following Natural Conditions methodology for waterbodies relevant to the disapproved provisions until a new natural condition provision has been adopted into our Surface Water Quality Standards and approved by EPA" (Policy 1-11, Chapter 1 page 48). The sentence referenced by the commenter is directly from the suspended Natural Conditions methodology.

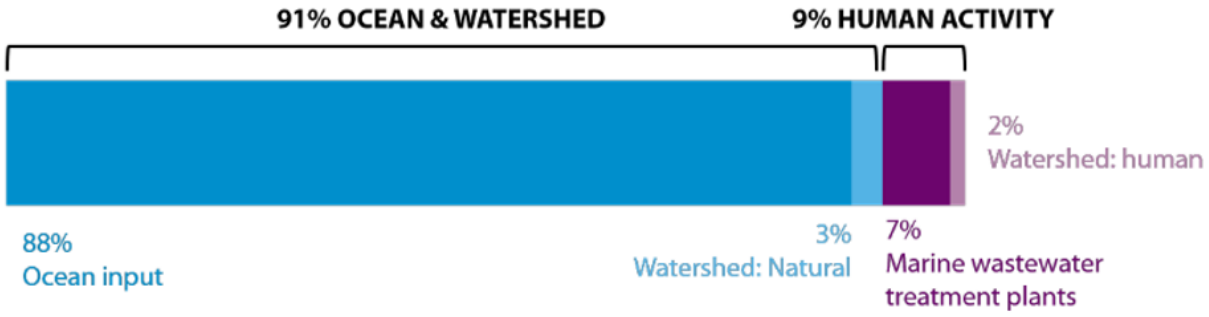
While the new natural conditions provisions were adopted on December 15, 2024, they have not been approved by EPA. As stated in Policy 1-11, Chapter 1 only EPA approved natural conditions provisions can be used for CWA purposes such as the Assessment. Should EPA approve of Washington's natural conditions provision, the Assessment team will update the Natural Conditions methodology in Policy 1-11, Chapter 1 to reflect the updated rule.

Please explain how this plan is a valid approach given the new proposed natural conditions provisions have not been approved by the EPA ("only EPA approved natural conditions provisions can be used for CWA purposes such as the Assessment.")

Q: In response to comment on the Assessment, comment 3.X, Ecology stated, "Due to disapproval of Ecology's natural conditions provisions in 2021, Ecology is not applying the Salish Sea Model for use in the 2022 Assessment." Ecology sent the 2022 Assessment to the EPA in April 2025. Please explain why Ecology is using the Salish Sea Model for this plan, which is the proposed action plan to address impaired waters, but it was not appropriate to use it for the Assessment.

Effectiveness of approach

Q: On pg. 17 it states: "For over a decade we have known that humans deliver a significant amount of nitrogen to the Sound, which contributes to low DO levels." In fact, the human sources of nitrogen amount to 9% - the other 91% are natural:



In addition, how much of the 7% nitrogen from WWTPs contribute to the low DO issues is still a matter of scientific debate. If Ecology achieves everything the Advance Restoration Plan sets out to achieve, how much does the percentage from human activity get reduced? How much

from WWTP? (ie. Is it 7% to 5%?). What difference does this make to the ecosystem and at what specific scale and location?

Q: How will Ecology measure progress and impact of its regulatory regime?

According to PSI's technical memo, *Review of 2025 Salish Sea Model Updates and Application to Nutrient Management*, August 22, 2025:

> Although overall model performance improved modestly, errors in embayments remain several times higher than the 0.2 mg/L human use allowance. Additionally, the subtraction of two scenarios does not cancel uncertainty—especially since the reference condition cannot be validated. As a result, when compliance is determined by comparing existing and reference scenarios, the true level of uncertainty in the outcome is larger than the model statistics alone suggest and must be explicitly considered in regulatory applications. It seems unlikely that any model could reduce uncertainty to the point that it is lower than the current human use allowance of 0.2 mg/L.

Q: In Ecology's report Salish Sea Model: Sediment Diagenesis Module (2017) it states that Canadian WWTP deliver nearly 50% of the nutrient loading from wastewater treatment plants (pg. 9) and that river DIN loads are slightly greater than WWTP DIN loads on an average annual basis, while WWTP loads are slightly greater in the summer when stream flows are much lower. Please explain how this plan is a valid approach given the impact of non-local and regional sources on dissolved oxygen (Fraiser River and warming waters due to climate change, as two examples).

Q: AWC is aware of recent research presented at PSI's Science of Puget Sound Water Quality Workshop Series that indicates that at sites where dissolved oxygen is decreasing (i.e., Carr Inlet, Point Jefferson, and Near Seattle), warming and associated DO saturation reduction explains 50-100% of the observed loss of dissolved oxygen. Has Ecology established—and distinguished—the role of water temperature, and its increasing trend, from point source nutrient inputs?

Q: Please distinguish between the watershed targets and the use of end-result requirements that are impermissible under the CWA. On pg. 39, Ecology acknowledges that that although external sources of nutrient pollution contribute to the problem and are part of the Salish Sea Modeled impacts Ecology used to develop this plan, "we have not allocated a portion of the 0.2 mg/L DO human use allowance to these sources, and they were not assigned nutrient targets." This results in an end-result regulation. How much have external sources contributed to the modeled impacts?

Q: What is the role of the contributions of permitted CAFOs, sand and gravel general operations, and upland finfish raising operations? Have these been included in the model? On pg. 50, it states that BMPs are required of these permits and "some require monitoring in certain circumstances." Please explain why Ecology's approach to these permitted point sources are significantly different than WWTP.

Q: On pg. 7 of the report Salish Sea Model: Sediment Diagenesis Module (2017), Ecology states:

> The revised and recalibrated Salish Sea Model, which now includes sediment diagenesis, will be used in future studies to reevaluate the relative influence on DO of climate effects, local human nutrient sources, and the Pacific Ocean.

Please provide the studies (name, year, and publication number) completed prior to drafting the Nutrient Reduction Plan in which the model was used to reevalute the influence on DO from climate effects, local human nutrient sources, and the Pacific Ocean.

Q: What has Ecology determined as the margin of safety, which considers any lack of knowledge concerning the relationship between effluent limitations and water quality, as required by CWA §303(d)(1)(C), 40 C.F.R. §130.7(c)(1))?

Cost of approach

Q: On pg. 53, Ecology sites to a 2011 financial study to support the contention that nutrient removal at WWTP will come at a significant cost:

> For perspective, a 2011 economic evaluation of nutrient removal at WWTPs in Washington found that capital improvement, operating, and maintenance costs of implementing nutrient removal technology to treat WWTP effluent to 8 mg TIN/L during the dry season in WRIA 1 (greater Bellingham region) alone would cost $166.3 million, in 2010 dollars (Tetra Tech, 2011).

Setting aside that $166.3 million in 2010 is approximately $245 million today, and that engineering firms have expressed validity concerns with the 2011 report, Ecology has more recent financial data that it can use, especially as it shows the impacts to low-income households.

The Legislature funded $9 million to support permitees under the now invalid General Permit, to include technical assistance on financial feasibility. AWC administered an Ecology grant that provided complex, plant-specific engineering technical assistance to permitees to evaluate optimization strategies and to complete financial impact analysis. These were submitted to the agency in 2023. Why hasn't the agency used the current financial impact data that was submitted under that project? For the larger plants that were not eligible for the AWC-led

project, their NRE’s are still in process as the general permit required submittals by December 2025.