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Northwest Regional Office, Washington State Department of Ecology

Re: Puget Sound Nutrients General Permit

Puget Sound is a regional and national treasure, and its waters support iconic species like salmon and orcas. Communities around the Sound depend on its resources for recreation, commerce, and cultural identity. However, Puget Sound shows signs of stress and no longer provides the resources it once did. Moreover, millions of new residents are expected to call this region home over the coming decades, and now is the time to plan for their arrival without further straining resources and degrading water quality.

The Department of Ecology (“Ecology”) has determined that current wastewater discharges to Puget Sound, together with nonpoint nutrient sources in rivers, violate the state water quality standards for dissolved oxygen in Puget Sound set under the federal Clean Water Act. Therefore, Ecology is obligated to institute measures that will reduce nutrient discharges. In addition, future population growth will clearly increase demand for wastewater services, and increases in flows will increase loads of nutrients to Puget Sound without changes to treatment technology.

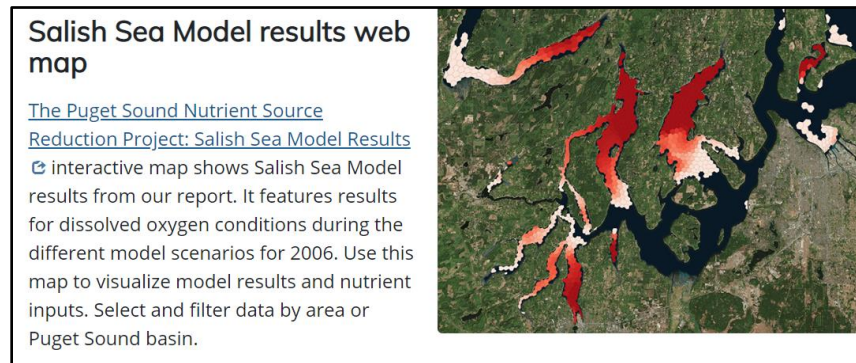
Ecology is considering pursuing a general permit approach for nutrients in Puget Sound (Washington State Department of Ecology [publication no. 19-10-033](#)). Ecology has been hosting the [Puget Sound Nutrient Forum](#) the last two years to present information about the impacts of nutrients on Puget Sound, in terms of dissolved oxygen, ocean acidification, and food web impacts that could disrupt species. The information builds on the sophisticated computer modeling Ecology has developed with Pacific Northwest National Laboratory for [over 10 years](#). Ecology has conducted thorough and exhaustive peer reviews of the modeling framework and application.

We concur with the general permit approach for nutrient discharges to Puget Sound. However, we believe the implementation schedule needs to be accelerated and not extended for 3 permit cycles. In the last 15 years, the Puget Sound population has grown significantly, and waiting another 15 years is not reasonable. We urge Ecology to address these more rapidly.

General permit approaches have been used successfully. Chesapeake Bay, Long Island Sound, and San Francisco Bay are all working toward nutrient reductions using a variety of approaches,

as we learned at the [March 2019 Nutrient Forum](#). These investments are [paying off in those waters](#), including reduced nutrients, improving eelgrass, and preparing for the future.

We do not believe that a permit-by-permit approach with individual dischargers is appropriate given the high level of connectivity of the waters of Puget Sound and the long distances that pollution travels in tidally influenced areas. The areas that show the greatest water quality impacts (see graphic below) are generally not entirely due to nearby nutrient sources. Instead, the impacts to the inlets of South Puget Sound result from or are greatly exacerbated by the nutrient discharges of the large population centers of Central Puget Sound, including the King County and Tacoma wastewater treatment plants. Deep waters of the Main Basin of Central Puget flow southward due to classical estuarine circulation, where they mix with other wastewater, freshwater, and marine waters and contribute to additional algal growth and dissolved oxygen depletion. To be fair to all dischargers, Ecology needs to consider the composite effects of all wastewater discharges simultaneously. Synchronizing individual permit cycles would not appear to be workable from a staffing perspective at Ecology.



Source: <https://ecology.wa.gov/Water-Shorelines/Puget-Sound/Helping-Puget-Sound/Reducing-Puget-Sound-nutrients/Nutrient-pollution-studies>

The advantages of the general permit approach are many. First, it allows the dischargers flexibility in determining how to meet the permit limits, with opportunities to consider trading. Second, the approach complements the individual permit cycles that have been the practice for decades. Finally, pursuing a general permit approach means our region gets started on solutions now rather than waiting for another process to conclude.

In addition to the general permit approach for nutrients, we would like to work with our federal delegation and state legislators to figure out how to supplement local government investments. The last time a major treatment technology was advanced in the region in the 1980s, we heard the same arguments against upgrading from primary treatment technology that basically just settled out solids before discharging to the Sound – it's too costly, the benefits aren't enough to justify the costs, no one cares enough to spend the money. We know that none of those are true, but what got the region moving was a federal infusion of infrastructure funding to help pay for the upgrades. We need to start those conversations now, and we look forward to

working with you. Congress will likely consider infrastructure overhauls in the coming years, and our entire region should come together to ensure that water infrastructure, including wastewater, drinking water, and stormwater, will be a focus of federal funding.

To be clear, the limited information available on the costs to upgrade wastewater treatment plants for nutrient removal have been artificially inflated due to using very high expected flow rates in the design. The cost of upgrades increases with the flow rate used in the design calculations because, for example, larger tanks would be needed for higher flows to achieve desired contact time, and that increases costs. In engineering approaches, margins of safety are used to ensure that a facility never violates a permit limit. However, the cost estimates used for facilities like the Tacoma Central plant used very high flow rates more representative of the highest of winter flow conditions, which would likely not require nutrient control because cool temperatures and limited sunlight would control algal productivity; in other words, winter nutrients are less harmful than summer nutrients. Instead, we need pragmatic approaches to design systems more tuned to seasonal spring or summer discharges that coincide with higher temperatures and more sunlight when human nutrients deplete dissolved oxygen. This needs to be coupled with innovative permit approaches to provide certainty to the dischargers.

Communities designing facilities like Chambers Creek in Pierce County recognized years ago that the national trend moves toward nutrient removal technology. They smartly designed the plant to accommodate advanced treatment technology when it was determined needed to meet the Clean Water Act. Upgrading the plant would never be cheaper or easier, and they are preparing their community for future needs. In addition, the Lacey Olympia Tumwater and Thurston County (LOTT) plant in Olympia has been operating advanced treatment technology for decades. Moreover, they are planning for the future by pursuing smart approaches to reclaimed water while also balancing concerns from the public over inadvertently moving pollution somewhere else.

Wastewater treatment plants are shifting to advanced treatment technologies all over the country, spurred by the Clean Water Act as well as recognized needs to plan for the future. Other municipalities have succeeded, and the Puget Sound region will, too. Treatment technology available today could more than offset increased nutrients expected from population growth; biological nutrient removal could reduce nutrient concentrations to about a third of secondary treatment effluent concentrations. That means doubling the population by 2070 would result in decreased nutrients compared to current inputs if advanced treatment technology is built now.

People in our region value clean water, and that support polls across demographic groups. Never before have we seen so many people paying attention to the health of Puget Sound, sparked by the plight of the Southern Resident orcas. Now is the time to address current and future wastewater needs – upgrades will never be cheaper. Pursuing a general permit for nutrients in Puget Sound is the right next step. Further, reducing nutrients will also clean up our own local land-based nutrient sources that worsen ocean acidification. We must do our part to

be credible as we pursue global and local actions that reduce carbon dioxide emissions. Finally, reducing nutrients will help protect the Puget Sound food web that supports salmon, orcas, and the communities that depend on them.

Please contact Mindy Roberts ([mindy@wecprotects.org](mailto:mindy@wecprotects.org)) if you have any questions.

Thank you,

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