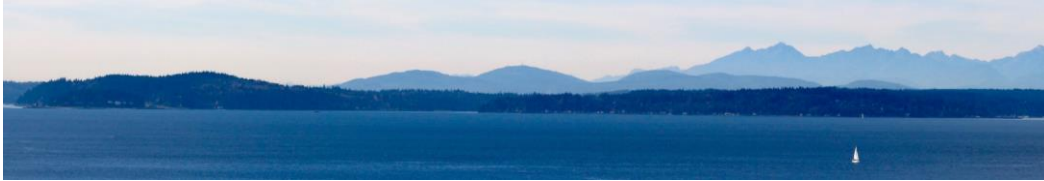


# Feedback received on Puget Sound Nutrient Reduction Plan Outline Water Quality Program August 2020



## Puget Sound Nutrient Reduction Plan:

The Puget Sound Nutrient Reduction Plan is a comprehensive plan for reducing human nutrient sources to Puget Sound. This Plan is part of the [Puget Sound Nutrient Source Reduction Project](#). The goal of this plan is to meet the marine water quality standards for dissolved oxygen (DO) in Puget Sound. We are currently developing the outline for this plan, while we move towards writing the draft plan.

## Incorporating Forum feedback into the outline:

At the May 7 Forum meeting, we shared a draft outline and walked through high-level elements to be included in the Nutrient Reduction Plan. We solicited feedback from Forum participants on the outline. Thank you to all who submitted feedback. This document shows the areas of the outline where we received comment and serves as a working document. Comments that refer to specific sections of the outline are included in this document in **red text**. Changes to the outline based on the comments are included in this document in **blue text**.

We also received more general comment letters. We have included all the feedback letters at the end of this document from the following people and organizations:

- Capitol Lake Improvement and Protection Association
- Puget Soundkeeper
- Caitlin Dwyer
- Gary Lindsay
- Washington Association of Sewer and Water Districts
- King County
- Northwest Indian Fisheries Commission

As the document is developed, we may update this outline document with new section titles, new information, or re-ordered sections. We plan to release the draft plan in 2022 and it will be open for public comment.

## Contact Info:

If you have questions, please contact the Puget Sound Nutrient Source Reduction Project manager, Dustin Bilhimer, at [dustin.bilhimer@ecy.wa.gov](mailto:dustin.bilhimer@ecy.wa.gov).

May 2020

## Executive Summary

### 1. Introduction

- 1.1. History and context of Puget Sound dissolved oxygen (DO) Studies
- 1.2. Why is nutrient management important?
  - 1.2.1. What is wrong with excess nutrients?
  - 1.2.2. Connecting excess nutrients to DO and impacts of low DO on aquatic species
  - 1.2.3. Emerging science to understand relationship between excess nutrients and other eutrophication indicators
  - 1.2.4. Other physical and geochemical factors that affect marine water response to anthropogenic nutrients
  - 1.2.5. Sensitive marine areas of biological, tribal, social, and economic importance

### 2. Scope of the Problem-Where we are seeing impairments and geographic area for the Plan

- 2.1. Define project area: Washington's marine waters of the Puget Sound and Hood Canal, the Greater Puget Sound, and the Straits of Georgia and Juan de Fuca
  - 2.1.1. Areas of Biological, Tribal, and Cultural Significance
  - 2.1.2. [Connections with Tribal salmon recovery strategies](#)
- 2.2. [Sources of Nutrients, Biogeochemical & Physical Factors Influencing Dissolved Oxygen in Marine Waters](#)
  - 2.2.1. [Natural Nutrient Sources and the Ocean Boundary Condition](#)
  - 2.2.2. [Regional Anthropogenic Nutrient Sources](#)
  - 2.2.3. [Transboundary considerations for British Columbia nutrient sources](#)
  - 2.2.4. [Other Eutrophication Indicators](#)
- 2.3. Monitoring data that informs our understanding of the problem
  - 2.3.1. Areas in Puget Sound that do not meet DO water quality criteria
  - 2.3.2. Puget Sound water quality trends including: Marine Water Condition Index, Eyes Over Puget Sound results, Ecology's long-term marine water and benthic monitoring, [and other ambient marine monitoring program results](#)
  - 2.3.3. Freshwater monitoring and nutrient trends
- 2.4. What modeling data tells us about the problem
  - 2.4.1. Summarize Ecology's Salish Sea Model Reports and other relevant reports
- 2.5. [Climate Change Impacts on Marine Water Quality](#)

#### **Chapter 2 Comments:**

##### **Northwest Indian Fisheries Commission:**

We are glad to see that the current outline for Ecology's Nutrient Reduction Plan proposes consideration of marine areas of tribal importance. Ecology should recognize that all of Puget Sound is important to tribes. Moreover, Ecology should consult formally with all affected tribes and consider DO and nutrient concerns addressed in tribal salmon recovery strategies. Consideration should be given to both WWTPs and watershed nutrient loads affecting tribal resources.

##### **King County:**

"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."

### **WA Association of Sewer and Water District:**

“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”

### **3. Water Quality Standards and Clean Water Act (CWA)**

- 3.1. Authority under the Federal Clean Water Act and Washington State Water Pollution Control Act
- 3.2. Water Quality Standards, marine DO criteria (Part A and B), and designated uses
- 3.3. [Water Quality Assessment listings for DO addressed by this plan and future assessments](#)
- 3.4. Ecology’s National Pollution Discharge Elimination System (NPDES) regulatory authority over point sources
- 3.5. Ecology’s rules, policies, and programs to address nonpoint source pollution
- 3.6. Connection to the Budd Inlet DO TMDL

#### **Chapter 3 Comments:**

##### **King County:**

“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.”

### **4. Nutrient Forum stakeholder engagement and collaboration**

- 4.1. Summarize Puget Sound Nutrient Source Reduction Project (PSNSRP) engagement, participants, and key outcomes
  - 4.1.1. Nutrient Forum and web resources
  - 4.1.2. [Stakeholder Engagement](#)
  - 4.1.3. [Public Input and Review of the Nutrient Management Plan](#)
- 4.2. [Connection to the Marine Water Quality Implementation Strategy](#)
- 4.3. [Continued engagement and collaboration beyond 2022](#)

#### **Chapter 4 Comments:**

##### **King County:**

“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.”

**WA Association of Sewer and Water District:**

“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.”

**Commented [BD(1):** 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.

**5. Tribal Consultation**

**Northwest Indian Fisheries Commission:**

Tribal treaty rights should be included as a separate chapter before Ecology’s consideration of environmental justice.

**Commented [BD(2):** We have created space for a new chapter specifically on tribal consultation, and it will include tribal treaty rights and how this plan will address those rights.

**6. Salish Sea Model**

- 6.1. How the model and analysis was used to develop the loading capacity and load reduction targets
  - 6.1.1. Model assumptions used to develop marine and watershed source allocations
  - 6.1.2. Modeling system performance and limitations
- 6.2. Methods used to determine when dissolved oxygen water quality criteria objectives are met
- 6.3. Baseline assumptions (Reference Condition) used for determining nutrient load capacity and allocations
- 6.4. Comparison with other coastal nutrient management approaches for modeling

**Chapter 5 Comments:**

**King County:**

“The discussion of the SSM should describe how the modeling will be used as a “tool” for managing and adapting nutrient reduction strategies as the plan is implemented over time. There also should be a discussion of how Ecology will modify and adapt the SSM over time in response to improvements in data, scientific understanding, or modeling improvements.”

**WA Association of Sewer and Water Districts:**

“Chapter 5 should include discussion of the challenges and shortcomings of the Salish Sea model, as well as discussion of the complexity of Puget Sound. [is there more to say here, generally, about the problems of the model?]”

**Commented [BD(3):** These topics will be covered more fully in the Salish Sea Model Volume 2: Optimization Scenarios report and summarized in this chapter to reduce duplication of effort and reach a more general audience.

**7. Nutrient Load Reduction Targets for Marine & Watershed Human Sources**

- 7.1. Total nutrient load reduction needed to meet water quality criteria
  - 7.1.1. Spatial and temporal considerations for source reductions
  - 7.1.2. Nutrient Load Capacity
  - 7.1.3. Basis for load allocation decisions
- 7.2. Marine point source wasteload allocations
  - 7.2.1. Seasonality & critical conditions
  - 7.2.2. Reserve capacity for additional point sources and population growth
- 7.3. Watershed sources load allocations
  - 7.3.1. Seasonality & critical conditions
  - 7.3.2. Priority Watersheds for reduction
- 7.4. Margin of safety and allocation for growth

**Chapter 6 Comments:**

**King County:**

“Section 6 should identify all the categories of point and nonpoint sources that are known to contribute nutrients to Puget Sound. A full list of sources needs to be acknowledged in the Nutrient Management Plan to account for the total amount of nutrient sources and nutrient reduction allocations for them. This full accounting of sources also will allow the plan to consider potential innovation and cost-effective regulatory and non-regulatory source control approaches in the future. In §6.4, it appropriately identifies that seasonality will be considered as a factor in the nutrient reduction allocations. The effects of the location of nutrient sources within Puget Sound, and their relative magnitude of effect on DO conditions, should also be identified as specific factors to be considered.”

**Commented [BD(4):** This will be covered more fully in Chapters 8 & 9 so as to make Chapter 7 the primary spot for the load allocation information (for easy reference) rather than spreading it out amongst multiple chapters and sub-sections.

**WA Sewer and Water District:**

“Section 6 should identify all the categories of point and nonpoint sources that are known to contribute nutrients to Puget Sound. A full list of sources needs to be acknowledged in the Nutrient Management Plan to account for the total amount of nutrient sources and nutrient reduction allocations for them. This full accounting of sources also will allow the plan to consider potential innovation and cost-effective regulatory and non-regulatory source control approaches in the future.”

**Commented [BD(5):** This information will be covered more fully in Chapter 9.

**8. Marine Source NPDES Nutrient Control Strategy- the structure and content of this section is dependent on the outcome of the Nutrients General Permit (NGP) development process**

- 8.1. The importance of marine source nutrient reductions and definition of marine sources
- 8.2. Wastewater Puget Sound Nutrients General Permit
  - 8.2.1. Stakeholder Advisory Committee engagement summary
  - 8.2.2. NGP and the pathway from Individual Permit to the NGP
  - 8.2.3. How Water Quality Based Effluent Limits will be derived from the nutrient load reduction targets and incorporated into the NGP
- 8.3. Costs and Technology
- 8.4. Tools to support implementation
  - 8.4.1. Water quality trading discussion
  - 8.4.2. Reclaimed water as a possible implementation strategy for individual wastewater treatment facilities
  - 8.4.3. Compliance schedules
  - 8.4.4. Incentives

**Chapter 7 Comments:**

**Northwest Indian Fisheries Commission:**

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. Water reclamation, and groundwater recharge strategies should be considered where appropriate.

Any implementation of water quality trading should not result in shifting unaddressed impairments to treaty resources.

**King County:**

“The section title states that the “structure and content of this section is dependent on the outcome of the Nutrients General Permit development process”. We agree that the General Permit development process will

generate important principles and processes for regulating nutrient reductions. However, we understand and support the concept that the Nutrient Management Plan should provide the broader framework and elements of regulatory and non-regulatory nutrient reduction strategies. The Nutrient Management Plan also should address overall technical feasibility, socio-economic considerations, and prioritization of nutrient reduction actions and outcomes for Puget Sound. A comprehensive framework will best facilitate a complementary and legally defensible General Permit renewal process over time that is adaptive to scientific and management improvements.

**Commented [BD(6):** Added these topics into the outline and we will strive to be as comprehensive as possible in the NMP to guide subsequent development of the second issuance of the NGP.

Related to the comment above on §6.4 and the consideration of seasonality and location of discharges in the setting of nutrient reduction allocations, the approach to addressing the location-specific and time-specific value of a unit of load reduction will need to be included here.

The Nutrient Management Plan should include strategies and actions that incentivize implementation of reductions by dischargers, such as funding opportunities or time schedule accommodations. For example, favorable treatment of voluntary planning and engineering studies, or interim treatment improvements, could be useful in achieving early cumulative nutrient reductions and provide valuable information for program planning purposes if it were to support permitting concessions and compliance with a more feasible and affordable schedule for full-scale reduction requirements.

**Commented [BD(7):** Agreed. I've added in sections for some of these topics, but the bulk of the funding opportunities and incentives discussion will be in Chapter 12: Implementation Costs and Funding Needs.

The concept of "Trading" (§7.3) is only identified under the marine sources section. We support the concept of trading (or offsets) as a broader implementation tool that should address point and nonpoint nutrient sources, or other potential strategies (e.g., natural stream, wetlands, and floodplain nutrient attenuation processes). A comprehensive approach and plan for point and nonpoint, and regulatory and non-regulatory, implementation strategies would be more suitable in a separate section of the Nutrient Management Plan such as Section 9, which could be renamed as "Implementation Strategies, Tracking, and Accountability". Both §7.3 (Trading) and §7.4 (Recycled Water) also would fit better in a separate implementation discussion."

**Commented [BD(8):** Ecology is open to a wider discussion about trading between point and nonpoint sources, however there are limitations initially that may drive the conversation to start with marine point sources. Namely, we need to have a watershed nutrient loading model that will allow us to understand how marine WWTP allocations compare to watershed implementation activities in terms of their relative water quality benefit and likeliness to succeed. When the NMP is published we hope to be on a path to develop that tool and information, but it won't be ready by 2022. This section will reflect the most current conversations and direction known at the time of publishing, and it is reasonable to assume that a water quality trading program would be adaptively managed over time.

**WA Association of Sewer and Water District:**

"Since Chapter 7 is being discussed at the General Permit advisory group, the only thing to add at this time is that in addition to possible water quality trading, there should be a discussion of bubble permits, which can give regulatory and liability relief while still maintaining water quality standards."

**9. Watershed Source Nutrient Control Strategy**

**9.1. Importance of watershed source reductions**

- 9.1.1. Understanding role of nitrogen, phosphorus, carbon, and suspended sediments in watersheds
- 9.1.2. Human nutrient sources and natural sources in watersheds
- 9.1.3. The role of groundwater and local nitrate vulnerability
- 9.1.4. Land use distribution summary and trends over the last several decades
- 9.1.5. Existing water cleanup plans (TMDLs or other WQ improvement plans) that include nutrient reduction
- 9.1.6. [Connection to the Puget Sound Recovery Process and Action Agenda](#)
- 9.1.7. [Related programs that call for control of anthropogenic nutrient reductions including salmon, orca, shellfish, eelgrass, and kelp recovery programs](#)

**9.2. Long-term strategy for watersheds**

- 9.2.1. Describe need for allocating nutrient loads among sources within Puget Sound watersheds
- 9.2.2. Watershed modeling used to understand human sources in watersheds and evaluate potential nutrient reduction actions to meet watershed load allocations
- 9.2.3. [Timeline for development](#)

**9.3. Near-term strategy for human sources of nutrients in Puget Sound watersheds**

- 9.3.1. Priority watersheds- ranked by watershed load allocation values
- 9.3.2. Point sources of nutrients in watersheds
  - 9.3.2.1. Municipal Wastewater and Stormwater
  - 9.3.2.2. Other point sources
- 9.3.3. Nonpoint sources in watersheds
  - 9.3.3.1. State Clean Water Act Nonpoint Program
  - 9.3.3.2. [Clean Water Guidance for Agriculture](#)
  - 9.3.3.3. Forestry
  - 9.3.3.4. Urban/rural homeowners
- 9.3.4. Restoration of natural nitrogen attenuation functions
- 9.3.5. Implementing Organizations/Partners
- 9.4. Recovered nutrients are a resource
  - 9.4.1. What happens with the nutrients we don't discharge to Puget Sound?
  - 9.4.2. What is the value and benefits of nutrient recovery and reuse?
  - 9.4.3. Ecology's rules for solids handling and disposition that protect water quality and public health
    - 9.4.3.1. Municipal biosolids permit program
  - 9.4.4. Agricultural manure

**Chapter 8 Comments**

**Northwest Indian Fisheries Commission:**

Also, 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.

**King County:**

"Similar to comments #6 and #7 above (Section 5), there should be discussion in §8.2 (Long-term Strategy for Watersheds) to describe how watershed modeling, and its use in establishing nutrient load reduction allocations or as a tool for developing reduction strategies, will be adapted as data and scientific understanding evolves and the plan is implemented over time. As noted in comment #12 (Section 7) above, the use of nutrient trading should be addressed either in this section as an implementation strategy, or in a separate discussion of implementation tools."

**WA Association of Sewer and Water Districts:**

"Chapter 8 discussion on watershed sources of nutrients needs to acknowledge some realities on the ground. Ecology noted the investigation of different watershed models for evaluating processes and discharges occurring in the watersheds. Since this modelling will take time to answer specific questions, we understand that Ecology will start or continue action on known problems in the near term. It is important to caution, however, that the "low hanging fruit" has largely been picked by local jurisdictions under NPDES Stormwater permits, and work by the conservation districts. Agricultural enforcement has mainly been limited to voluntary compliance, so Ecology needs to describe any new initiatives they will provide for better enforcement. A discussion is needed of how forestry will coordinate with Habitat Conservation Plans and court decisions declaring NPDES permitting is not needed. Also needed is a description of monitoring currently being done to determine the effectiveness of non-point source controls currently in place. Again, Ecology needs to work with local partners during the development of this plan to get a firm idea of what is already being done to protect water quality in the watersheds. Brief mention was made of the State Non-point Program, but what is needed is a more robust description of how this will coordinate with the PSNMP and NPDES stormwater permits. Also needed is a report on the effectiveness of surface water management programs and regulations, and how these programs will be examined and modified to reduce nutrient pollution in the watersheds and Puget Sound."

**Puget Soundkeeper:**

**Commented [BD(9)]:** Discussion of how the model will be used for adaptive management of the NMP will be described in a new Chapter 12 that will be dedicated to all elements of an adaptive management strategy.

**Commented [BD(10)]:** Yes, we agree that agriculture is a source category that needs to be better controlled. Nutrient control BMPs will be included in the Clean Water Guidance for Agriculture, and we will continue working with the agricultural community to find ways to reduce runoff from agricultural land uses where that is a problem.

“Agriculture is the leading cause of water degradation worldwide. Many farms apply fertilizers and manure containing high amounts of nitrates and nitrogen to crops that are washed into local waters, causing nutrient pollution. In the United States, agricultural pollution is the top source of known contamination in rivers and streams.<sup>1</sup> The livestock sector is one of the top three contributors to the most serious environmental problems on the planet, including water-quality degradation, at every scale from local to global (FAO, 2006).<sup>2</sup> In addition to surface runoff that pollutes streams and other waterbodies, leaky manure lagoons and the over-application of nitrates, nutrients, and chemicals from manure can pollute groundwater. Nitrate from livestock agriculture is the most common chemical contaminant in the world’s groundwater aquifers. *Id.*

As you are undoubtedly aware, agricultural pollution is a major problem in Washington State. There are approximately 36,000 farms in Washington and in 2018, according to the Washington State Department of Agriculture, approximately 250 of those were dairy farms. Per the Department of Ecology’s Clean Water Act permitting database (PARIS), despite the large number of farms in Washington, as of 2019 there were only twenty-seven (27) agricultural operations holding active federal, state, or combined federal + state CAFO NPDES permits. This means that only 27 of 36,000 or so farms in Washington were subject to a Clean Water Act permit last year. The remainder of these agricultural operations are largely unregulated, though producers can choose to participate in voluntary assistance programs to implement best management practices to protect water quality. Despite these voluntary programs, according to Ecology, Washington has more than 2,000 polluted waters listed in areas where agriculture is the primary land use activity.

*The Puget Sound Partnership acknowledged, “Ecology has the responsibility to control and prevent the pollution of streams, lakes, rivers, ponds, inland waters, salt waters, watercourses, and other surface and underground waters of the state of Washington.” To fulfill that duty, the Puget Sound Partnership found a need for increased enforcement, and set a goal for Ecology to “ensure compliance with regulatory programs designed to reduce, control, or eliminate pollution from working farms.” [As of 2016] Ecology had received over \$1.5 million in funding from the National Estuary Program through Puget Sound Partnership since 2012, specifically for the purpose of increasing inspection and enforcement of current water quality standards. Yet Ecology has decreased its enforcement actions under its water quality program since 2012.” [Internal citations omitted].<sup>3</sup>”*

**Commented [BD(11)]:** Section 10.2 was added to provide for a more explicit description for Ecology’s enforcement authority and accountability.

## 10. Tracking Implementation Progress and Accountability

- 10.1. Tracking implementation activities and measuring progress
  - 10.1.1. Ecology’s Administration of Grants and Loans (EAGL) database for the Integrated Water Quality Financial Assistance Program
  - 10.1.2. Puget Sound Action Agenda and Miradi for NEP grant funded projects
  - 10.1.3. Habitat Work Schedule for Salmon Recovery grant funded projects
  - 10.1.4. Orca Recovery Actions
  - 10.1.5. Ecology’s Permitting and Reporting Information System (PARIS) for NPDES permits
  - 10.1.6. Ecology’s Nonpoint Activity Collector Database
- 10.2. Enforcement and accountability
  - 10.2.1. Point source actions and compliance in NPDES permits;
  - 10.2.2. Nonpoint source (NPS) reductions
- 10.3. Reporting progress
  - 10.3.1. NMP Milestones and reporting achievements
  - 10.3.2. Biennial State of the Sound Report

### Chapter 9 Comments

#### **WA Association of Sewer and Water Districts:**



“Chapter 9 will need a lot of work to adequately address progress and accountability. Just the topic of databases to hold the information from thousands of sources is daunting. How will progress be measured? Is it just implementation, or is it a detailed effectiveness study for years after implementation?”

**Puget Soundkeeper:**

“Troublingly, the 4 page PSNMP outline does not contain either the word “regulation” or “enforcement.”

We know that 69% of the anthropogenic caused nutrients impacting Puget Sound come from our wastewater treatment plants, and that watershed sources – including agricultural pollution – account for the other 31%.<sup>4</sup> Agricultural pollution therefore must be addressed in the PSNMP. Soundkeeper strongly encourages Ecology to continue to refine, improve, and develop new regulatory and voluntary programs to address agricultural non-point source pollution, and to include both regulatory and voluntary solutions as components of the PSNMP. Soundkeeper supports and looks forward to continued collaborative participation on the Voluntary Clean Water Guidance for Agricultural process to develop voluntary Best Management Practices to protect water quality, and we look forward to gaining a better understanding of how this document will be incorporated into the PSNMP.”

**11. Monitoring Marine WQ Improvement**

- 11.1. Current Programs tracking changes in marine dissolved oxygen and other eutrophication indicators
  - 11.1.1. Ecology, UW, King County, Puget Sound Ecosystem Monitoring Program (PSEMP), Department of Natural Resources (DNR), Stormwater Action Monitoring (SAM), et al)
- 11.2. Fresh water quality monitoring
- 11.3. Ecology’s Environmental Information Management (EIM) System
- 11.4. [Marine Waters Condition Report](#)
- 11.5. [PSEMP and the Puget Sound Vital Signs](#)
- 11.6. Data gaps, and recommendations for additional monitoring

**12. Adaptive Management**

- 12.1. [Framework for adaptive management of this plan](#)
  - 12.1.1. [Using Effectiveness Monitoring and Implementation Tracking to adapt our approach to meet DO criteria and the Nutrient Reduction Plan goals](#)
- 12.2. [Incorporating new science and data that improves our understanding of anthropogenic nutrient impacts on Puget Sound water quality](#)
- 12.3. [Continuous improvement of the Salish Sea Model, research and monitoring to advance our understanding of the marine water quality stress reduction](#)
- 12.4. [Adaptive decision process](#)
- 12.5. [Adaptively managing watershed implementation](#)

**Chapter 10 Comments**

**King County:**

“As written, the intent and scope of the “Adaptive Management” element identified under §10.4 is unstated. In general, we would be concerned if only marine receiving water monitoring were considered in an Adaptive Management process for the Nutrient Management Plan. Importantly, because the contribution of anthropogenic nutrient loads to Puget Sound is relatively small compared to the total amount of nutrient loading, the proposed nutrient reduction programs are unlikely to result in any substantive or observable changes in monitoring data of DO conditions in the short term. Therefore, receiving water monitoring should be recognized as primarily being

**Commented [BD(12):** This is an important question and one that we intend to discuss with the Forum over the next year and a half. There are multiple state and regional databases with information that is helpful on the technical side and the more challenging question is how to coordinate data sharing and reporting.

able to inform adaptive approaches over longer term timeframes, but is unlikely to be helpful in managing and adapting the Nutrient Management Plan and outcomes for short term needs.

Furthermore, we believe an Adaptive Management program for modeling tools, regulatory and non-regulatory strategies, and implementation programs should consider a variety of monitoring elements including targeted studies to address the recognized data gaps and uncertainties, studies to improve scientific understanding of DO conditions, and effectiveness monitoring of implementation actions.

Additionally, DNRP has appreciated Ecology’s efforts to convene stakeholders via the Nutrient Forum, the Marine Water Quality Implementation Strategy, and currently the Advisory Committee process to develop the Nutrients General Permit. Once completed via the Forum stakeholder process, the Nutrient Management Plan also would benefit from the assembly of steering and technical advisory stakeholder groups to provide ongoing review and oversight of the implementation and adaptive management actions.”

**WA Association of Sewer and Water Districts:**

“In Chapter 10, how will Ecology obtain and compile data from all the jurisdictions, tribes, environmental groups, conservation districts, etc. doing freshwater monitoring?”

**Commented [BD(13):** Right now we are identifying the different repositories of implementation data (Chapter 10) and environmental data (Chapter 11), and recognize there may be others we haven’t yet mentioned that we would like to include.  
Ecology is required by law to only use data meeting statutorily defined quality objectives for regulatory decision-making purposes. It may be that some collaborative efforts are established after the NMP is published.

**13. Implementation Schedule and Milestones**

- 13.1. Nutrient General Permit timeline and milestones
- 13.2. Milestones for watershed reductions

**Chapter 12 Comments**

**Northwest Indian Fisheries Commission:**

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.

**14. Implementation Costs and Funding Needs**

- 14.1. Estimated costs for point and nonpoint implementation activities
- 14.2. State and Federal grant and loan programs for point source improvements
  - 14.2.1. [Clean Water State Revolving Fund](#)
  - 14.2.2. [Public Works Assistance Account](#)
  - 14.2.3. [USDA Rural Development Fund](#)
  - 14.2.4. [Stormwater Financial Assistance Program](#)
  - 14.2.5. [Centennial Clean Water Program](#)
  - 14.2.6. [Water Infrastructure Finance and Innovation Act \(WIFIA\)](#)
- 14.3. Financial assistance opportunities for nonpoint source improvements
  - 14.3.1. [Section 319 Nonpoint Source Grant Program](#)
  - 14.3.2. [National Estuary Program](#)
  - 14.3.3. [Salmon Recovery Funding](#)
  - 14.3.4. [NRCS, Federal Farm Bill, and Washington State Conservation Commission state funding](#)
  - 14.3.5. [Floodplains by Design](#)

14.3.6. [Craft 3 Low-Interest Loan Program for OSS repairs](#)

14.4. [Developing local capacity for implementation](#)

#### **Chapter 12 Comments:**

##### **Northwest Indian Fisheries Commission:**

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.

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.

##### **WA Associated Sewer and Water Districts:**

"Chapter 12 should provide a discussion of rate impacts of required upgrades to treatment plants. Many WWTPs have already developed these estimates. This section should also provide a realistic assessment of grant and loan sources, especially considering the current economic situation. The plan also lacks an explanation of how this plan fits in/coordinates with the Puget Sound Partnership. What does the coordination between Ecology and PSP look like? In addition, there are transboundary issues with Canada, particularly discharges from Victoria and the Fraser River system, that need to be discussed."

#### **15. Environmental Justice Requirements and Considerations**

##### **16. Outreach to encourage implementation**

- 16.1. [Creating collaborative state and local partnerships to support voluntary implementation activities](#)
- 16.2. Human behavior changes and community based social marketing
- 16.3. Communication resources for watershed nonpoint outreach
- 16.4. Communication resources for point sources

##### **17. References**

##### **18. Appendices**

Appendix A: Public participation (more detailed information than what is included in Chapter 4.

Appendix B: Public comments and response to comments

Appendix C: Glossary and Acronyms

Appendix D: Salish Sea Model, [development history](#), publications and resources

Appendix E: List of relevant TMDLs or other plans referred to in body of document

Appendix F: Marine Water Quality Implementation Strategy- summary and links to materials

- Conceptual Models and Results Chains
- Priority recommendations for the Action Agenda
- Identifying Benefits and Costs of Marine Water Quality Improvements
- Human Dimensions of Marine Water Quality Improvements

Appendix G: EPA's 9 key elements (NKE), found in [EPA's Handbook for Develop Watershed Plans](#)

- Source identification
- Load reduction estimates
- List implementation activities
- Identify implementation partners
- Communication strategy
- Implementation schedule
- Interim measurable milestones
- Criteria to measure success
- Effectiveness monitoring design

**General Comments from Feedback that will be considered as we develop outline and Plan:**

**Northwest Indian Fisheries Commission:**

Ecology recognizes that a comprehensive suite of measures, including watershed load reductions, is needed to fully comply with water quality standards in Puget Sound. To reflect this nutrient reduction imperative, Ecology’s proposed nutrient management plan should be renamed to emphasize the intent to reduce nutrient loads.

**Puget SoundKeeper Alliance:**

In addition to a general nutrients permit, Ecology should develop water quality criteria for nitrogen and phosphorus in Puget Sound. 40 C.F.R. § 131.11 mandates that States adopt water quality criteria that protect each designated use of a water body, based on sound scientific rationale and containing sufficient parameters or constituents to protect the designated use. While Ecology’s failure to develop water quality criteria for nutrients does not preclude issuance of a general permit designed to reduce nutrient pollution by addressing dissolved oxygen, ultimately, Ecology must still develop these standards.

Ecology must also develop TMDLs for all impaired waterbodies in Washington. A general nutrients permit does not obviate this requirement, nor will a general permit address nutrient discharges from other sources that are causing or contributing to impairment.

In numerous presentations and discussions throughout the Puget Sound Nutrient Source Reduction Project process, Ecology has acknowledged and demonstrated that additional sources are causing or contributing to nutrient pollution throughout Puget Sound apart from the 70 plants that discharge directly to Puget Sound. These include non-point sources discharging to watersheds. TMDLs are not only legally required to clean up impaired waters, but a TMDL is an appropriate tool to fairly allocate necessary load reductions amongst both permitted and unpermitted dischargers. A TMDL or TMDLs to achieve clean water in Puget Sound would supplement a general nutrients permit and need not be a substitute.”

**WA Association of Sewer and Water Districts:**

“As a final comment, questions about the age and validity of the state marine DO standards have been brought up repeatedly. EPA and some of the Atlantic states have developed modern criteria that have flexibility for conditions that Washington standards do not. Since trading from other states will be evaluated for use in Washington, **better science based DO standards should also be examined.**”

**Commented [BD(14)]:** In August of 2018, we posted guidance about the history and rationale of the current marine DO numeric criteria. The final 1968 DOI recommendations were written on the basis of maintaining native populations of fish and other aquatic life. More recent studies have not pointed to a need to change the current numeric criteria, and the application of the anthropogenic allowance accounts for spatial and temporal differences around the Sound. We are open to new studies that can further our understanding of anthropogenic nutrients impacts on aquatic species and meet our statutory obligations for data quality.

You can find this information here:  
[https://www.ezview.wa.gov/Portals/\\_1962/Documents/PSNSRP/Marine%20DO%20Paper%20Guidance%20Updated%20July%202018.pdf](https://www.ezview.wa.gov/Portals/_1962/Documents/PSNSRP/Marine%20DO%20Paper%20Guidance%20Updated%20July%202018.pdf)

# Bob Wubbena

Your outline is generally correct. What it may be missing is some significant work completed by the Capital Lake Improvement and Protection Association, (CLIPA). CLIPA is a group of 20 professionals from all parts of the community that has studied, assembled, publicly discussed and then assembled a proposed "nutrient control and Lake management plan" that is already in place but is poorly managed by the State. CLIPA has outlined a specific plan, using the fact that the natural "fresh water wetland/lake" environment is already removing substantial nutrients from the rural and urban Deschutes River watershed before discharging into lower Budd Inlet. Simple monitoring by the State or someone, from the E Street Bridge's Ecology monitoring point above the Deschutes Water Falls and then from the discharge from Capital Lake will tell its own success story. The Lake is normally saturated with oxygen from the fall, before discharging into Budd Inlet. CLIPA has provided a specific proposal to DES and the Community on how with very few dollars, this nutrient removal process can be improved in a short time. Currently it is all being ignored and the monitoring program we have recommended is not being done to prove the facts in the field.

Our team of experienced and expert water resource, water quality and systems management professionals would be happy to meet with your team to share specifics. Go to [www.SaveCapitalLake.com](http://www.SaveCapitalLake.com) for many references and details. Call me at 360 280 9100 if you want more specific details or information or to schedule a meeting. If a meeting is not available, what type of information do you need from CLIPA to provide the data that would warrant your agency's closer attention to our details. I look forward to having response from you on this opportunity..



**PUGET  
SOUNDKEEPER®**

Dustin Bilhimer

Washington State Department of Ecology

Phone: 360-706-3423

Email: [dustin.bilhimer@ecy.wa.gov](mailto:dustin.bilhimer@ecy.wa.gov)

Sent via Electronic Submission Form only at: <http://wq.ecology.commentinput.com/?id=dhTus>

June 11, 2020

RE: Comments on 4 page draft outline of Puget Sound Nutrient Management Plan (PSNMP)

Dear Dustin:

Puget Soundkeeper (Soundkeeper) is a non-profit environmental organization whose mission is to protect and preserve the waters of Puget Sound. Soundkeeper's vision is a healthy Puget Sound ecosystem teeming with diverse marine life and providing safe opportunities for swimming, fishing, recreation and sustainable economic activity. We strive to improve water quality through our monitoring and enforcement, education and engagement, and policy and advocacy work. We appreciate this opportunity to comment on the PSNMP outline, and look forward to continuing to work with you on the Nutrients General Permit Advisory Group and on the Puget Sound Nutrient Forum to stop nutrient pollution to Puget Sound.

Primarily, we write to reiterate our strong support for an NPDES (Clean Water Act) Nutrients General Permit to ensure that Puget Sound meets water quality standards. We also would like to see clear, actionable steps to address watershed sources in the PSNMP, including actionable steps to control agricultural non-point source pollution. Finally, we strongly support the development of water quality standards for nitrogen.

### **1. Support for Strong Nutrients General Permit.**

The Washington Department of Ecology (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 nutrients. 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 marine life to thrive, causing fish kills, and do



not meet our 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.

Research has shown that wastewater treatment plants are the most significant contributor to the nutrient pollution problem. Many wastewater treatment plants have antiquated treatment equipment, and outdated permits. Population growth and climate change are compounding pressures that make this dire situation even more urgent. According to the Washington State Office of Financial Management the region's total population is now 4.2 million, and according to the Puget Sound Regional Council, it will grow to nearly 6 million people by 2050. Additional people means additional sewage flows heading to our wastewater treatment plants. Changing climate patterns, including rising temperatures, increased snowmelt and droughts, are also already impacting water quantity and quality, exacerbating existing pollution problems.

We strongly support Ecology's ongoing efforts to develop a Nutrients General Permit. We also support regulating nutrients from all wastewater treatment plants whose flows ultimately impact the Sound, including the 30 or so up-river wastewater treatment plants. These plants are causing or contributing to water quality violations and should also be regulated by the Nutrients General Permit. Even a very conservative fate and transport study designed to look at discharges from these upstream facilities would show that they have an impact on water quality in Puget Sound. A significant amount of pollution is coming from rural, upriver, and other watershed sources. As such, the PSNMP should articulate a solution to address nutrients from all wastewater treatment plants in the Puget Sound watershed.

## **2. Support for Clear, Actionable Steps to Address Watershed Pollution Sources, Including Agricultural Pollution.**

Agriculture is the leading cause of water degradation worldwide. Many farms apply fertilizers and manure containing high amounts of nitrates and nitrogen to crops that are washed into local waters, causing nutrient pollution. In the United States, agricultural pollution is the top source of known contamination in rivers and streams.<sup>1</sup> The livestock sector is one of the top three contributors to the most serious environmental problems on the planet, including water-quality degradation, at every scale from local to global (FAO, 2006).<sup>2</sup> In addition to surface runoff that pollutes streams and other waterbodies, leaky manure lagoons and the over-application of nitrates, nutrients, and chemicals from manure can pollute groundwater. Nitrate from livestock agriculture is the most common chemical contaminant in the world's groundwater aquifers. *Id.*

As you are undoubtedly aware, agricultural pollution is a major problem in Washington State. There are approximately 36,000 farms in Washington and in 2018, according to the Washington State Department of Agriculture, approximately 250 of those were dairy farms. Per the

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<sup>1</sup> [https://ofmpub.epa.gov/waters10/attains\\_nation\\_cv.control#total\\_assessed\\_waters](https://ofmpub.epa.gov/waters10/attains_nation_cv.control#total_assessed_waters)

<sup>2</sup> <http://www.fao.org/3/a-i7754e.pdf>



Department of Ecology's Clean Water Act permitting database (PARIS), despite the large number of farms in Washington, as of 2019 there were only twenty-seven (27) agricultural operations holding active federal, state, or combined federal + state CAFO NPDES permits. This means that only 27 of 36,000 or so farms in Washington were subject to a Clean Water Act permit last year. The remainder of these agricultural operations are largely unregulated, though producers can choose to participate in voluntary assistance programs to implement best management practices to protect water quality. Despite these voluntary programs, according to Ecology, Washington has more than 2,000 polluted waters listed in areas where agriculture is the primary land use activity.

*The Puget Sound Partnership acknowledged, "Ecology has the responsibility to control and prevent the pollution of streams, lakes, rivers, ponds, inland waters, salt waters, watercourses, and other surface and underground waters of the state of Washington." To fulfill that duty, the Puget Sound Partnership found a need for increased enforcement, and set a goal for Ecology to "ensure compliance with regulatory programs designed to reduce, control, or eliminate pollution from working farms." [As of 2016] Ecology had received over \$1.5 million in funding from the National Estuary Program through Puget Sound Partnership since 2012, specifically for the purpose of increasing inspection and enforcement of current water quality standards. Yet Ecology has decreased its enforcement actions under its water quality program since 2012." [Internal citations omitted].<sup>3</sup>*

Troublingly, the 4 page PSNMP outline does not contain either the word "regulation" or "enforcement."

We know that 69% of the anthropogenic caused nutrients impacting Puget Sound come from our wastewater treatment plants, and that watershed sources – including agricultural pollution – account for the other 31%.<sup>4</sup> Agricultural pollution therefore must be addressed in the PSNMP. Soundkeeper strongly encourages Ecology to continue to refine, improve, and develop new regulatory and voluntary programs to address agricultural non-point source pollution, and to include both regulatory and voluntary solutions as components of the PSNMP. Soundkeeper supports and looks forward to continued collaborative participation on the Voluntary Clean Water Guidance for Agricultural process to develop voluntary Best Management Practices to protect water quality, and we look forward to gaining a better understanding of how this document will be incorporated into the PSNMP.

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<sup>3</sup> <http://www.westernlaw.org/sites/default/files/Agricultural%20Pollution%20in%20Puget%20Sound%20-%20April%202016%20-%20Web.pdf>

<sup>4</sup> [https://www.ezview.wa.gov/Portals/\\_1962/Documents/PSNSRP/PSNF\\_Dec19\\_Webinar.pdf](https://www.ezview.wa.gov/Portals/_1962/Documents/PSNSRP/PSNF_Dec19_Webinar.pdf).





### **3. Support for Nitrogen Standard, and TMDLs**

A Nutrients General Permit is an appropriate tool to regulate wastewater treatment plants and reduce nutrient pollution in Puget Sound. However, issuance of a Nutrients General Permit should not replace other, additional actions necessary to meet water quality standards.

In addition to a general nutrients permit, Ecology should develop water quality criteria for nitrogen and phosphorus in Puget Sound. 40 C.F.R. § 131.11 mandates that States adopt water quality criteria that protect each designated use of a water body, based on sound scientific rationale and containing sufficient parameters or constituents to protect the designated use. While Ecology's failure to develop water quality criteria for nutrients does not preclude issuance of a general permit designed to reduce nutrient pollution by addressing dissolved oxygen, ultimately, Ecology must still develop these standards.

Ecology must also develop TMDLs for all impaired waterbodies in Washington. A general nutrients permit does not obviate this requirement, nor will a general permit address nutrient discharges from other sources that are causing or contributing to impairment.

In numerous presentations and discussions throughout the Puget Sound Nutrient Source Reduction Project process, Ecology has acknowledged and demonstrated that additional sources are causing or contributing to nutrient pollution throughout Puget Sound apart from the 70 plants that discharge directly to Puget Sound. These include non-point sources discharging to watersheds. TMDLs are not only legally required to clean up impaired waters, but a TMDL is an appropriate tool to fairly allocate necessary load reductions amongst both permitted and unpermitted dischargers. A TMDL or TMDLs to achieve clean water in Puget Sound would supplement a general nutrients permit and need not be a substitute.

We must act now to increase capacity, reduce pollution, and improve the handling of waste at municipal wastewater treatment plants in our region before Puget Sound becomes a dead zone. We therefore support the development of a PSNMP that includes a strong Nutrients General Permit and actionable regulatory and non-regulatory programs to address agricultural non-point source pollution as major components. We also encourage Ecology to develop a Nitrogen standard and to promptly develop TMDLs for Nitrogen impaired waterbodies.

We appreciate this opportunity to provide feedback on Ecology's 4 page PSNMP outline, and look forward to discussing the PSNMP in more detail with you as it is further refined.

Sincerely,

Chris Rilling  
Executive Director and Puget Soundkeeper  
Puget Soundkeeper Alliance

# Caitlin Dwyer

It's distressing to see that Ecology is ready to require expenditure of billions of dollars in utility ratepayer money before any quantification of non point sources of nutrients is done. Queensland has developed an app to help tackle this problem - why can't we?

<https://stormwater.wef.org/2020/04/sweet-insight-app-helps-farmers-save-great-barrier-reef/>

# Gary Lindsey

First of all my awareness of the project stems from my involvement as a real estate developer in Kitsap County and I am wanting to understand the public beneficial aspects of the proposed regulation as well as the impacts on the contributors to the discharge of wastewater facilities. With that said I believe we have compromised the quality of our waters throughout the state for over a 150 years and it is important to reverse that.

I believe timing to prepare adequately both financially and implementation of infrastructure modifications is important.

## Questions:

1. The Puget Sound Nutrient Reduction Timeline shows a 2022 Draft Nutrient Management Plan and a 2020 General Permit Decision and what is the difference between the DNMP and the GP.
2. What is the expected date the regulations become effective/adopted and what is the date the jurisdictions will be required to be in compliance with the new regulations.
3. Has the science that is being used to drive the new regulations already been completed and accepted as substantially complete.
4. I have read the April 3, 2020 letter from V. McGowan to the City of Tacoma responding to the city raising issues in their building and land use permits in which they caveat future ability to provide sewer service. What's an approximate time frame in which a jurisdiction will have enough information to actually inform constituents of their potential inability under current discharge permits to accept additional discharge.

Thank you for your consideration of my question,

Gary



**Washington Association  
of Sewer & Water Districts**

EDUCATE ■ ADVOCATE ■ COLLABORATE

June 9, 2020

Dustin Bilhimer  
Water Quality Section  
Department of Ecology  
Lacey, WA

RE: Comments on outline of proposed Puget Sound Nutrient Management Plan

Dear Mr. Bilhimer,

Thank you for the opportunity to comment on the draft outline of the Puget Sound Nutrient Management Plan (PSNMP). The Washington Association of Sewer and Water Districts represents sewer districts throughout the state and is involved in forums and committees assisting in the development of the Nutrient General Permit. As the PSNMP is currently just an outline, our comments will focus on items we would like to see in the plan, or questions clarifying the intent.

At the May 7 Nutrient Forum meeting introducing the plan, Ecology staff presented introductory materials that have already been covered in previous Forum meetings and focused on the need to meet dissolved oxygen (DO) criteria in Puget Sound. We would also like to see information regarding the history of wastewater/stormwater effluent regulations to provide context for how much has been already accomplished regarding pollutants of all types entering the Sound. A discussion of processes and timelines utilized to develop and impose new regulations would also help clarify procedures as they are now happening. Including a history of nutrient considerations, i.e., studies, monitoring, plans, etc., would show a rich history of effort and participation by stakeholders in developing regulations and actions. An example of such an effort would be the development of monitoring programs by the Stormwater Work Group in support of NPDES permit requirements.

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.

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.

Chapter 5 should include discussion of the challenges and shortcomings of the Salish Sea model, as well as discussion of the complexity of Puget Sound. [is there more to say here, generally, about the problems of the model?]

Chapter 6 needs to have a robust discussion on how margin of safety and allocation for growth will be calculated, particularly how it will coordinate with Growth Management mandates. Public agencies have invested billions of dollars of ratepayer money to build wastewater treatment plants to serve current residents and businesses while protecting Puget Sound and accommodating growth. The Plan needs to clearly recognize those efforts and how different objectives present potential tension.

Since Chapter 7 is being discussed at the General Permit advisory group, the only thing to add at this time is that in addition to possible water quality trading, there should be a discussion of bubble permits, which can give regulatory and liability relief while still maintaining water quality standards.

Chapter 8 discussion on watershed sources of nutrients needs to acknowledge some realities on the ground. Ecology noted the investigation of different watershed models for evaluating processes and discharges occurring in the watersheds. Since this modelling will take time to answer specific questions, we understand that Ecology will start or continue action on known problems in the near term. It is important to caution, however, that the “low hanging fruit” has largely been picked by local jurisdictions under NPDES Stormwater permits, and work by the conservation districts. Agricultural enforcement has mainly been limited to voluntary compliance, so Ecology needs to describe any new initiatives they will provide for better enforcement. A discussion is needed of how forestry will coordinate with Habitat Conservation Plans and court decisions declaring NPDES permitting is not needed. Also needed is a description of monitoring currently being done to determine the effectiveness of non-point source controls currently in place. Again, Ecology needs to work with local partners during the development of this plan to get a firm idea of what is already being done to protect water quality in the watersheds.

Brief mention was made of the State Non-point Program, but what is needed is a more robust description of how this will coordinate with the PSNMP and NPDES stormwater permits.

Also needed is a report on the effectiveness of surface water management programs and regulations, and how these programs will be examined and modified to reduce nutrient pollution in the watersheds and Puget Sound.

Chapter 9 will need a lot of work to adequately address progress and accountability. Just the topic of databases to hold the information from thousands of sources is daunting. How will progress be measured? Is it just implementation, or is it a detailed effectiveness study for years after implementation?

In Chapter 10, how will Ecology obtain and compile data from all the jurisdictions, tribes, environmental groups, conservation districts, etc. doing freshwater monitoring?

Chapter 12 should provide a discussion of rate impacts of required upgrades to treatment plants. Many WWTPs have already developed these estimates. This section should also provide a realistic assessment of grant and loan sources, especially considering the current economic situation.

The plan also lacks an explanation of how this plan fits in/coordinates with the Puget Sound Partnership. What does the coordination between Ecology and PSP look like? In addition, there are transboundary issues with Canada, particularly discharges from Victoria and the Fraser River system, that need to be discussed.

As a final comment, questions about the age and validity of the state marine DO standards have been brought up repeatedly. EPA and some of the Atlantic states have developed modern criteria that have flexibility for conditions that Washington standards do not. Since trading from other states will be evaluated for use in Washington, better science based DO standards should also be examined.

Thank you for taking comments on the draft outline.

Judi Gladstone

Sincerely,

A handwritten signature in blue ink that reads "Judi Gladstone". The signature is written in a cursive, flowing style.

Judi Gladstone  
Executive Director



## King County

Department of Natural Resources and Parks

### Wastewater Treatment Division

King Street Center, KSC-NR-0500  
201 South Jackson Street  
Seattle, WA 98104-3855

# MEMO

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June 17, 2020

TO: Dustin Bilhimer

FM: Rebecca Singer, Manager, Resource Recovery Section

RE: Nutrient Management Plan Outline – Review Comments

On behalf of the King County Wastewater Treatment Division (WTD), thank you for the opportunity to comment on the Washington State Department of Ecology's (Ecology) "Puget Sound Nutrient Management Plan Outline" (May 2020).

WTD operates five wastewater treatment plants, four of which discharge directly to Puget Sound: West Point, South Plant, Brightwater, and Vashon Island facilities. Collectively, these facilities serve a residential population of approximately 1.7 million people. Along with wastewater treatment, other environmental resource programs such as stormwater management, habitat restoration and conservation, agricultural assistance, and water quality monitoring are part of King County's efforts to have clean water and healthy habitat.

WTD recognizes Ecology's responsibility to develop a comprehensive planning and regulatory framework to address compliance with water quality standards and address the dissolved oxygen (DO) impairment concerns in sensitive areas of the Sound. We appreciate Ecology's solicitation of early input on the content requirements for such a framework via the Nutrient Management Plan Outline.

Based on the County's experience and expertise with Puget Sound water quality issues and the work of our wastewater treatment and water and land resources divisions, we understand that there remain significant scientific uncertainties and gaps in available information that need to be addressed to assure ratepayers across Puget Sound that new regulatory actions will substantively improve Puget Sound's water quality. Accordingly, we provide the following detailed comments and recommendations on the approach and content of the Nutrient Management Plan Outline to address these interests.

### **Section 2 (Scope of the Problem-Where we are seeing impairments and geographic area for the Plan)**

1. 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.

2. For both the sections that characterize conditions based on monitoring data (§2.2) and the Salish Sea Model (SSM) analyses (§2.3), the outline should include a description of uncertainties that exist with accurately characterizing the location, timing, and magnitude of DO impairments. A thorough characterization of the level of certainty of sources and causal mechanisms is important for any proposed regulatory and non-regulatory approaches as it relates to the margin of safety that is included in the regulatory framework. Explicitly identifying the uncertainties and data gaps in this regulatory document also will support Ecology being able to prescribe adaptive implementation approaches and NPDES permit conditions over time as new information is developed.

### **Section 3 (Water Quality Standards)**

3. The outline should include a description of the state water quality standards that pertain to naturally impaired background conditions to reflect the situation that exists in Puget Sound, where DO is primarily reduced from the oceanic influence and influx of low-DO and nutrient-rich water. The state standards recognize that existing natural background impairment conditions should define the “reference condition” when establishing target values for improvement.
4. The outline should include a description of the state’s responsibilities under Section 303d for locations in Puget Sound that are listed as impaired by low DO conditions, and the associated approach under the Nutrient Management Plan to monitor and delist locations as nutrient reduction actions are implemented and progress is achieved.

### **Section 4 (Nutrient Forum stakeholder process)**

5. 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.

### **Section 5 (Salish Sea Model)**

6. The discussion of the SSM should describe how the modeling will be used as a “tool” for managing and adapting nutrient reduction strategies as the plan is implemented over time.
7. There also should be a discussion of how Ecology will modify and adapt the SSM over time in response to improvements in data, scientific understanding, or modeling improvements.

### **Section 6 (Nutrient Load Reduction Targets)**

8. Section 6 should identify all the categories of point and nonpoint sources that are known to contribute nutrients to Puget Sound. A full list of sources needs to be acknowledged in the Nutrient Management Plan to account for the total amount of nutrient sources and nutrient reduction allocations for them. This full accounting of sources also will allow the plan to consider potential innovation and cost-effective regulatory and non-regulatory source control approaches in the future.



9. In §6.4, it appropriately identifies that seasonality will be considered as a factor in the nutrient reduction allocations. The effects of the location of nutrient sources within Puget Sound, and their relative magnitude of effect on DO conditions, should also be identified as specific factors to be considered.

### **Section 7 (Marine Source NPDES Nutrient Control Strategy)**

10. The section title states that the “structure and content of this section is dependent on the outcome of the Nutrients General Permit development process”. We agree that the General Permit development process will generate important principles and processes for regulating nutrient reductions. However, we understand and support the concept that the Nutrient Management Plan should provide the broader framework and elements of regulatory and non-regulatory nutrient reduction strategies. The Nutrient Management Plan also should address overall technical feasibility, socio-economic considerations, and prioritization of nutrient reduction actions and outcomes for Puget Sound. A comprehensive framework will best facilitate a complementary and legally defensible General Permit renewal process over time that is adaptive to scientific and management improvements.
11. Related to the comment above on §6.4 and the consideration of seasonality and location of discharges in the setting of nutrient reduction allocations, the approach to addressing the location-specific and time-specific value of a unit of load reduction will need to be included here.
12. The Nutrient Management Plan should include strategies and actions that incentivize implementation of reductions by dischargers, such as funding opportunities or time schedule accommodations. For example, favorable treatment of voluntary planning and engineering studies, or interim treatment improvements, could be useful in achieving early cumulative nutrient reductions and provide valuable information for program planning purposes if it were to support permitting concessions and compliance with a more feasible and affordable schedule for full-scale reduction requirements.
13. The concept of “Trading” (§7.3) is only identified under the marine sources section. We support the concept of trading (or offsets) as a broader implementation tool that should address point and nonpoint nutrient sources, or other potential strategies (e.g., natural stream, wetlands, and floodplain nutrient attenuation processes). A comprehensive approach and plan for point and nonpoint, and regulatory and non-regulatory, implementation strategies would be more suitable in a separate section of the Nutrient Management Plan such as Section 9, which could be renamed as “Implementation Strategies, Tracking, and Accountability”. Both §7.3 (Trading) and §7.4 (Recycled Water) also would fit better in a separate implementation discussion.

### **Section 8 (Watershed Source Nutrient Control Strategy)**

14. Similar to comments #6 and #7 above (Section 5), there should be discussion in §8.2 (Long-term Strategy for Watersheds) to describe how watershed modeling, and its use in establishing nutrient load reduction allocations or as a tool for developing reduction strategies, will be adapted as data and scientific understanding evolves and the plan is implemented over time.

15. As noted in comment #12 (Section 7) above, the use of nutrient trading should be addressed either in this section as an implementation strategy, or in a separate discussion of implementation tools.

#### **Section 10 (Monitoring Marine WQ Improvement and Adaptive Management)**

16. As written, the intent and scope of the “Adaptive Management” element identified under §10.4 is unstated. In general, we would be concerned if only marine receiving water monitoring were considered in an Adaptive Management process for the Nutrient Management Plan. Importantly, because the contribution of anthropogenic nutrient loads to Puget Sound is relatively small compared to the total amount of nutrient loading, the proposed nutrient reduction programs are unlikely to result in any substantive or observable changes in monitoring data of DO conditions in the short term. Therefore, receiving water monitoring should be recognized as primarily being able to inform adaptive approaches over longer term timeframes, but is unlikely to be helpful in managing and adapting the Nutrient Management Plan and outcomes for short term needs.

Furthermore, we believe an Adaptive Management program for modeling tools, regulatory and non-regulatory strategies, and implementation programs should consider a variety of monitoring elements including targeted studies to address the recognized data gaps and uncertainties, studies to improve scientific understanding of DO conditions, and effectiveness monitoring of implementation actions.

Additionally, DNRP has appreciated Ecology’s efforts to convene stakeholders via the Nutrient Forum, the Marine Water Quality Implementation Strategy, and currently the Advisory Committee process to develop the Nutrients General Permit. Once completed via the Forum stakeholder process, the Nutrient Management Plan also would benefit from the assembly of steering and technical advisory stakeholder groups to provide ongoing review and oversight of the implementation and adaptive management actions.

Finally, as the Nutrient Management Plan continues to be refined, WTD looks forward to providing additional input on the approach and content of the plan for nutrient reduction requirements.

cc: Mark Isaacson, Division Director, Wastewater Treatment Division (WTD)



# Northwest Indian Fisheries Commission

6730 Martin Way E., Olympia, Washington 98516-5540  
Phone (360) 438-1180 [www.nwifc.org](http://www.nwifc.org)

FAX # 753-8659

July 23, 2020

The Honorable Jay Inslee  
Governor of Washington  
PO Box 40002  
Olympia, WA 98504-0002

Re: Puget Sound Nutrient Reduction Plan and Permit Effluent Limits

Dear Governor Inslee:

The Northwest Indian Fisheries Commission (NWIFC) writes to support the work Washington state is leading to accelerate reductions of nutrient discharges in the Salish Sea. As you know, these nutrient loads contribute to ocean acidification, disrupting not just the water chemistry itself but also the behavior and survival of salmon, shellfish and the entire ecological balance of the Salish Sea.

The Washington Department of Ecology (Ecology) has determined based on extensive documentation that current wastewater treatment plant (WWTP) nutrient discharges, together with nonpoint source derived contributions, result in violations of state water quality standards for dissolved oxygen (DO) in Puget Sound. 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.

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.

**Elements of the Puget Sound Nutrient Reduction Plan** - Ecology recognizes that a comprehensive suite of measures, including watershed load reductions, is needed to fully comply with water quality standards in Puget Sound. To reflect this nutrient reduction imperative, Ecology's proposed nutrient management plan should be renamed to emphasize

the intent to reduce nutrient loads. We are glad to see that the current outline for Ecology's Nutrient Reduction Plan proposes consideration of marine areas of tribal importance. Ecology should recognize that all of Puget Sound is important to tribes. Moreover, Ecology should consult formally with all affected tribes and consider DO and nutrient concerns addressed in tribal salmon recovery strategies. Consideration should be given to both WWTPs and watershed nutrient loads affecting tribal resources. 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. Water reclamation, and groundwater recharge strategies should be considered where appropriate. Also, 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. Tribal treaty rights should be included as a separate chapter before Ecology's consideration of environmental justice.

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

With borrowing costs currently at historic lows, and interest in creating jobs and infrastructure investments that support recovery objectives, new opportunities exist for upgrades using known technologies to remove both nutrients and other chemicals of emerging concern (CECs) from discharges, a priority need identified by the Southern Resident Killer Whale Task Force final recommendations. With an expected increase in federal infrastructure spending, the U.S. Environmental Protection Agency's Clean Water State Revolving Fund could be tapped to generate water quality improvements and jobs across the region while addressing nutrient, DO, CEC, and acidification impairments.

In closing, nutrient loading has broad importance to our Salish Sea, from affecting the building blocks of the food web critical to salmon and shellfish to threatening the prey base for southern resident killer whales. We appreciate Washington's progressive attention to this important

component of Puget Sound recovery, one that we see as integral to preparing and building resiliency to both increased population growth and climate change. Treaty resources and harvest opportunities 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. While Ecology must engage each sovereign tribe regarding their reserved treaty resources on an individualized basis, we are available to meet with Ecology to explore these challenges and opportunities to improve water quality comprehensively. Please contact Justin Parker, Executive Director, on my staff ([jparker@nwifc.org](mailto:jparker@nwifc.org)) with any questions regarding this letter.

Sincerely,

A handwritten signature in black ink that reads "Lorraine Loomis". The signature is written in a cursive, flowing style.

Lorraine Loomis  
Chairperson

cc: Jennifer Hennessey, Senior Policy Advisor, Washington State Governor's Office  
Laura Watson, Director, Washington State Department of Ecology  
Heather Bartlett, Deputy Director, Washington State Department of Ecology  
Vincent McGowan, Water Quality Manager, Washington State Department of Ecology  
Dustin Bilheimer, Puget Sound Nutrient Source Reduction Project Manager, Washington State Department of Ecology  
Kelly Ferron, Nutrient Forum Coordinator, Washington State Department of Ecology  
Karen Dinicola, Puget Sound Nutrient General Permit Advisory Committee, Washington State Department of Ecology