Josiah Hartom

Attached are the Alderwood Water & Wastewater District's comments and reccomedations regarding the Puget Sound Nutrient Reduction Plan.

ALDERWOOD
WATER & WASTEWATER
DISTRICT

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August 27, 2025

Washington State Department of Ecology
Water Quality Program
Attn: Jeremy Reiman
P.O. Box 47600
Olympia, WA 98504-7600

RE: Alderwood Water & Wastewater District Comments on the Draft Puget Sound Nutrient Reduction Plan (PSNRP)

The Alderwood Water & Wastewater District (AWWD) appreciates the opportunity to provide feedback on the Draft Puget Sound Nutrient Reduction Plan (PSNRP). Alderwood operates the Picnic Point Wastewater Treatment Facility (PPWWTF) which is a 6.0 MGD MBR treatment facility. Alderwood also contracts with King County and the City of Everett for treatment of wastewater from drainage basins within our service area. Alderwood values environmental stewardship and is committed to our shared responsibility to protect and improve water quality in Puget Sound. The District designed, permitted, built, and operates a state-of-the-art wastewater treatment facility that produces clean effluent that significantly exceeds current permit discharge requirements and staff continue to participate in the nutrient reduction effort to improve water quality in Puget Sound. While we support the overarching goal of improving water quality in Puget Sound, we have significant concerns regarding the technical foundation, regulatory consistency, and practical feasibility of the plan as currently drafted.

One of the most pressing issues is the reliance on outdated data from 2014 in the Salish Sea Model (SSM), which serves as the basis for many of the plan's conclusions and proposed limits. Since that time, numerous wastewater treatment plants (WWTPs) have undergone upgrades, and Ecology has collected more recent data through the 2022 General Permit and continuous nitrogen monitoring efforts. The failure to incorporate this new data undermines the credibility of the model and the plan's proposed targets. Additionally, the model's use of vertical layer aggregation appears inconsistent and lacks a clear regulatory or scientific basis. In some scenarios, aggregation is used to demonstrate compliance, while in others it is not, raising concerns about selective application of modeling techniques. The model's error margins—ranging from 1.04 to 3.05 mg/L DO in embayment's—are significantly higher than the 0.2 mg/L

threshold used to determine compliance, calling into question the reliability of the model for setting enforceable limits.

The plan also introduces confusion and inconsistency in its use of nitrogen metrics. While the original modeling and technical evaluations focused on Total Inorganic Nitrogen (TIN), the draft plan frequently references Total Nitrogen (TN), which includes additional nitrogen species not previously considered. This shift imposes more stringent and potentially unachievable requirements on WWTPs, particularly when combined with flow caps based on 2014 levels. These caps, when paired with low concentration targets (e.g., 3/5/8 mg/L), effectively penalize utilities for regional growth and could be interpreted as promoting growth moratoriums—despite Ecology's stated intent to avoid such outcomes.

Small dischargers and early adopters of advanced treatment technologies are also disadvantaged under the current draft. The plan removes previously established incentives and imposes uniform, low seasonal limits that may not be appropriate for facilities with minimal impact. AWWD recommends restoring incentives for early adopters and allowing more flexible compliance options, such as annual limits, for small loaders. There is little to be gained by requiring small dischargers to meet seasonal nitrogen limits below 3 mg/L, especially considering the high costs associated with achieving such stringent levels. The actual pounds of nitrogen removed from Puget Sound by these facilities under such limits would be minimal, yet the financial burden on ratepayers would be significant. A more cost-effective and environmentally balanced approach would be to maintain flexibility for small dischargers, recognizing their limited impact and the inefficiency of applying uniform standards across all facility sizes.

While the plan promotes adaptive management in watershed nutrient reductions, it does not extend the same flexibility to WWTPs. All facilities are expected to meet uniform targets by 2050, regardless of size, location, or existing treatment capacity. This one-size-fits-all approach is inconsistent with the principles of adaptive management and fails to account for the logistical and financial challenges of upgrading dozens of facilities simultaneously. Ecology should consider a phased or prioritized implementation strategy that allows for incremental progress, data collection, and model refinement over time.

The plan also lacks clarity on how compliance schedules will be developed and how AKART analyses and nutrient reduction evaluations will inform interim limits. AWWD supports the formation of a Technical Advisory Committee to address these issues and ensure that target loads are grounded in sound science and practical feasibility before being used to establish Water Quality-Based Effluent Limits (WQBELs). To achieve lasting improvements in Puget Sound's water quality, it is essential that Ecology foster meaningful, collaborative partnerships across the region. This includes not only utilities, but also non-governmental organizations and regulatory agencies working together in a transparent and coordinated manner. A shared commitment to science-based decision-making and equitable implementation will be critical to protecting the Sound's ecological health for future generations. Once WQBELs are established

from updated model inputs, the District is in support of annual or seasonal load limits based on future predicted flows for the plants.

The scale of upgrades required across the region is unprecedented and will cost tens of billions of dollars. Historical precedent shows that such mandates were accompanied by substantial federal investment, such as the funding provided under the Clean Water Act in the 1970s. Ecology must advocate similar levels of funding and provide clear pathways for utilities to access financial assistance. Without this support, the 2050 compliance timeline is infeasible and would cause an undue burden on the region's ratepayers. In a region already grappling with affordability issues, such increases could place an unsustainable financial burden on households, especially those with fixed or low incomes.

AWWD supports the concept of nutrient credit trading but cautions against overly restrictive eligibility criteria or impractical trade ratios. A third-party entity should be involved in the development of the trading framework to ensure transparency and stakeholder engagement. Additionally, the plan must include assurances that WWTPs will not be held responsible for watershed reduction shortfalls. If WWTPs meet their targets, Ecology should commit to exhausting all watershed-based options before imposing further requirements on point sources.

While AWWD shares Ecology's commitment to improving water quality in Puget Sound, we believe the current draft of the PSNRP requires significant revision. The plan must be grounded in current data, aligned with existing regulatory frameworks, and implemented in a phased, adaptive, and financially supported manner. We look forward to continued collaboration and technical dialogue to ensure that the final plan is both environmentally effective and practically achievable. Our full list of comments begins on the following page.

Sincerely,

Josiah Hartom

WWTF Manager Picnic Point Wastewater Treatment Facility

Draft Puget Sound Nutrients Reduction Plan			
Comments from Alderwood Water & Wastewater District			
Page Label	**Plan Section**	**Paragraph or Subsection**	**Comment/Question**
18	Efforts to address dissolved oxygen problems	2	Can ecology provide some examples of specific input received from the forum advisory committee that has shaped the decisions within this plan?
18	Efforts to address dissolved oxygen problems	Last paragraph	States the primary goal was to find an equitable and reasonable nutrient reduction distribution between WWTPs and watershed sources. Why aren't adaptive strategy approaches more similar? All WWTPs are expected to meet specific concentrations all by 2050. However, watersheds are taking more of a traditional adaptive management approach with prioritization schedules and time to review effects of change. Rather than apply drastic changes all at once, ecology should look at prioritization within the WWTPs in order to keep compliant with adaptive management intents of showing incremental progress towards water quality.
19	Salish Sea Model	Paragraph 1	Can ecology provide some examples of specific input received from the forum advisory committee that has shaped the decisions within this plan?
19	Salish Sea Model	General	Since the creation of the Salish sea model, the data that was used has become outdated. Ecology should update the data sets for their scenarios. Several treatment plants have been upgraded

			after 2014 and there were limited data points to reference.
19	Salish Sea Model	Last Sentence	Are there any regulations, laws, or recommendations that dictate the number of vertical layers used in the Model?
21	Table 1	All	In this section ecology notes the requirements of Total Inorganic Nitrogen (TIN) Limits established by the PSNGP, but this plan then changes those limits to total nitrogen. This is a significant difference for wastewater treatment plants as it adds additional nitrogen that was not originally planned for removal. This also was not the assumptions made in the cited Tetra Tech report.
21	Table 1	All	Why not update this and the information to reflect the updated due dates and language of the reissued permit?
21	Table 1	table footnote e	The exemption for a small loader for AKART is under 10mg/L for an existing small loader. Why change that in the later sections of this document, making it significantly more stringent?
23	Advance Restoration Plan approach	General Comment	Though an ARP provides flexibility in some ways to manage nutrient pollution, this plan speaks to potentially moving targets and limits that do not account for any growth in a region set to see a lot of it. There are no protections here for WWTPs. Meaning if each plant can meet the 3/3/3 or 3/5/8 standard set in this plan, along with growth caps, if watersheds are unable to meet their reductions, what stops ecology from coming back to treatment plants and asking for more? If Ecology is going to call for tens of billions of dollars to be spent on the problem, there needs to be some assurances to the ratepayers who will

			have to pay those costs in their significantly increased utility bills.
23	Advance Restoration Plan approach	General Comment	Similar to the previous comment, establishing an ARP if the overall intent is a TMDL could hinder the efficiency of how the limited funds within the region are used to resolve this issue.
26	Designated Uses of waterbodies	Water Quality Standards	Based on the model developed by ecology, less than 1% of the Sound, by volume exceeds the water quality limits for aquatic life uses. In nearly all cases, that would consider satisfying the requirement of "Water quality of this use class shall markedly and uniformly exceed the requirements for all uses including but not limited to...". However, Ecology's interpretation of the model exaggerates the issue using an arbitrary set of vertical layers. As seen in its aggregation of layers for the selected scenario. If ecology can aggregate the bottom 3 layers to achieve their desired compliance, why can't they go a step further and aggregate more layers, which would likely show less days of non-compliance within the sound? Again, what requires the depth of a layer and why can't these be aggregated based on aquatic uses rather than arbitrary depths that can be manipulated to serve ecology's specific goals?

31	Selected Model Scenario	Second Paragraph	Noted flows for this scenario were capped at 2014 numbers for the scenario. When you are speaking in total pounds of nitrogen, concentration of TN, concentration of TIN, you need to stay consistent and recognize the real-world effects of changing your language. Unless ecology is recommending moratoriums across the sound, using these words interchangeable as Ecology has over the last year is confusing and costly to future planning. By stating a WWTP is capped at 2014 flows and needs to meet concentrations of 3/5/8 or 3/3/3 mg/L of either TN or TIN, actually means meeting levels of under 3mg/L due to flow caps if growth is not stopped. You could potentially rely on water conservation to slow the hydraulic flow increase; however, the influent nitrogen loads are still going increase with every new connection to the system. Ecology keeps trying to say they are not promoting moratoriums through this plan; however, the language used for setting targets and limits says otherwise. In the initial phase 1 optimization scenarios technical memo published by Ecology, Ecology notes the use of a "Flow Scalar" and project flow increases based on project populations growths. When establishing loads at technology-based concentration limits, ecology should be using projected growth-based flows when setting limits. Figure 4 in the phase 1 optimization tech memo shows growth from roughly 60 MGD on the low end to 200MGD worth of growth on the high end. I don't believe we can count on just reuse and conservation to accommodate that growth.

31	Nitrogen Loading Targets	Second Paragraph	"Total nitrogen was selected as the parameter of interest for targets, as it is inclusive of all nitrogen species." Throughout this document, Ecology sites Technical and Economic Evaluation of Nitrogen and Phosphorus Removal at Municipal Wastewater Treatment Facilities (Tetratech, 2011). The definition of objectives per Table ES - 1 of the Tetratech 2011 document was expressed in limits of "Effluent TIN" in mg/L. switching from effluent total inorganic nitrogen to total nitrogen (TN) would put ecology outside of their own basis what is technologically feasible for WWTPs to achieve.
31	Nitrogen Loading Targets	Second Paragraph	Organic carbon assumptions are not found in the cited source. Please provide the correct source indicating the ability to achieve below 8mg/L CBOD.
31	Nitrogen Loading Targets	Selected model scenario	There is little to be gained for the small loaders to have to achieve less than 8mg/L at any point in the year and will come at a significant cost to their ratepayers. Recommend the first implementation of this plan to restore incentives for small loaders and early adopters and omit them from seasonal requirements. With their loads already small enough to be considered "small loaders" per the Nutrients General Permit, this would be an inefficient use of the limited funds available and would be a significant cost incurred by their ratepayers for a minimal gain to the sound. Rather than Monthly loads as established in Appendix E, Small loaders should be held at most an annual limit, allowing them to potentially come up with innovative cost saving ways to meet their targets.

31	Nitrogen Loading Targets	Bullet Point 1 and Footnote 7	Conflicting language with the General Permit. Most of the "Small Loaders" as detailed in the general permit would not meet the standards set in these sections with regards to TN and TIN loading.
32	Nitrogen Loading Targets	Paragraph 1	"Dissolved inorganic nitrogen was used as the target nitrogen species for applying nitrogen reductions from marine point sources in the model based on previous technical and economical evaluations" Again citing the source from Tetratech's 2011 evaluation. This evaluation did not account for the inability to stop growth, which is ecology's assumptions in the model and in this plan. Unless Ecology is requiring utilities to place a moratorium on growth throughout the region, the model needs to account for it.
32	Nitrogen Loading Targets	Paragraph 1	Ecology should at a minimum, update the model with updated flows.
33	Nitrogen Loading Targets	Table 4	Ecology should site the sources used to developing the watershed reduction framework. If these watershed reductions are not met by 2050, what will ecology's path forward be? There should be assurances here that if the WWTPs are able to meet their targets, ecology won't turn back to the WWTPs and require further investment until all efforts are exhausted in the watersheds.

33	Nitrogen Loading Targets	Table 4	If these watershed reductions are not met by 2050, what will ecology's path forward be? There should be assurances here that if the WWTPs are able to meet their targets, ecology won't turn back to the WWTPs and require further investment until all efforts are exhausted in the watersheds.
33	Nitrogen Loading Targets	Paragraph 5	Per Puget Sound Institute Article - Salish Sea Model Evaluation and Proposed action to improve confidence in Model Application: "Model results suggest there are at least 16 areas where human activities may further decrease dissolved oxygen (DO), especially during late summer and early fall. Compared to domain-wide analysis, there has been less model performance assessment at a scale relevant to these areas and times of concern. In this review analyzing a subset of available data in the literature, a mean of 1.64, and a range of 1.04 - 3.05 mg/L DO RMSE was calculated for 28 model-to-measured comparisons across 22 sites in these embayment's. This error calculation is based on existing condition results (not the difference between existing and reference scenarios) as the error for the pre-anthropogenic reference condition is inherently unknowable. However, for context, these RMSE results are approximately an order of magnitude greater than the natural condition threshold of 0.2 mg/L DO that has been used to determine regulatory compliance. Furthermore, the current regulatory determination of non-compliance was found to be quite sensitive to the natural conditions threshold defined by the state's water quality standards. For example, in 2014, 58% of the non-compliant area had a predicted change of 0.2-0.3 mg/L." The degree of error within the model is too great in its current state to set target loads. Ecology should work on updating the data and furthering

			the model accuracy before the region invests billions of dollars in plant upgrades.
33	Nitrogen Loading Targets	Paragraph 3	Selection of scenario Opt2_8 - What dictates the amount of layer aggregation that ecology can use in its scenarios. Scenarios should be run with further aggregation based on habitat considerations throughout the sound, rather than only applying this to the Budd Inlet TMDL. Ecology is able to aggregate the bottom 2 layers to meet its 100% compliance goal, indicating that aggregating layers may result in less non-compliant days. Scenarios should be run with further aggregation, again like the Budd Inlet aggregation which was narrowed down from 19 layers to 3 layers.
33	Nitrogen Loading Targets	General Comment on Model Scenarios	Ecology should look at phased or targeted approaches in the region for reductions to WWTPs. This would align with the intent of the adaptive management plan. This allows Ecology to further the accuracy of its model, gather data to refine model inputs, and address the problem in phases rather than all at once. It is not feasible for the region to upgrade 58 treatment plants by 2050. Does ecology even have the bandwidth to

			oversee 58 treatment plant upgrades in the Sound alone over that period?
33	Nitrogen Loading Targets	Paragraph 5	"the predicted values were .1 mg/L DO below human use allowance.." Ecology insinuates that even without vertical aggregation of Scenario 2_8, the .1% of non-compliant days were only .1mg/L out of compliance by the human use allowance. Based on appendix N of the Phase 2 scenarios report, it appears that over 50% of the non-compliant area is within .1-.2mg/L away from compliance. Would further aggregation of the vertical layers within the areas of non-compliance show these areas then within the DO standards?
34	Nitrogen Loading Targets	Paragraph 1	Ecology using these model inputs as the basis for WQBELs while also noting the model isn't ready to create WQBELs seems conflicting. Again, ecology should further the model accuracy and the science/data collection before capping loads and setting limits.
36	Nitrogen Loading Targets	Table 5 and paragraph 1	The 2014 model scenario run accounted for Total inorganic Nitrogen loads not Total Nitrogen. Remove mention of Total Nitrogen and revert to the model backed loading inputs of TIN, Total Inorganic Nitrogen.
39	Non-Local Regional Sources	Paragraph 1	By saying "we have not allocated a portion of the .2mg/L DO human use allowance into these sources [Canadian WWTP, rivers, atmospheric deposition, open ocean boundary], and they were

			not assigned nutrient targets". How has Ecology ensured, through the model, that these sources do not contribute any DO depletion both near and far? How can these be input into the model but not have an effect? Please clarify specifically for any Canadian inputs.
40	Implementation	General	Nowhere in this section are there any incentives given for those who had early adoptions of tertiary treatment. The early adoption incentives that are mentioned in the general permit are not mentioned in this document and in fact, this document changes the definition of a small loader and eliminates the prior incentives for being under 10mg/L. Ecology should find a way for this document to credit those early adopters. One way to potentially do that would be a phased compliance approach to meet the water quality limits for marine point dischargers as detailed in this plan.
40	Implementation	Sentence 1	Replace the use of TN with TIN.
40	Marine Point Sources	Paragraph 2	Mention of the 2022 General Permit should note that it is invalidated
40	Marine Point Sources	Paragraph 2	The 2022 General Permit also placed load caps on facilities which are not mentioned here. Will the facilities who opt out of the general permit receive the same load caps, if any, as mentioned in the reissued permit?
41	Marine Point Sources	Paragraph 1	"WQBELs in permits must be consistent with targets set in this plan" All the data needs to be updated, and model scenarios reran for actual conditions if WQBELs are to be established from what is in this plan. This insinuates the modeling is complete and ready for WQBELs. Is that true? The data sets used for 2014 are not sufficient to develop WQBELs being that much of it was

			created using "bootstrapping". Ecology has 3 plus years of data from WWTPs, they should start using it.
41	Compliance Schedules	Paragraph 2	When the Clean Water Act (CWA) was first enacted in 1972 (as the Federal Water Pollution Control Act Amendments of 1972, Pub. L. 92–500), Congress paired the new permitting and technology requirements with a massive federal funding program to help municipalities upgrade wastewater treatment facilities. From 1973 to 1977, nearly $25 billion were invested, covering up to 75% of construction costs. This was all to meet the new secondary treatment standards to comply with permit requirements. With the limits expressed in this plan, Ecology is requiring at a minimum, tertiary treatment technology throughout the Sound. What funding sources does Ecology believe will be available for 58 utilities to adopt construct these treatment technologies over the next 25 years, to achieve the 2050 commitment? What is ecology's plan to promote for funding? We are anticipating costs in the tens of billions of dollars just for the Puget Sound. Ecology can't just enact technological based effluent limits, as done in this plan, and offer no meaningful plans at all for funding.

41	Compliance Schedules	Paragraph 2	For reference, from start of planning, to final commissioning, it took nearly 15 years to construct the new Picnic Point Wastewater Treatment Facility. This was to upgrade from a standard activated sludge plant to an MBR, without additional property acquisition. The planning portion alone was over 10 years. This is for a very small plant with somewhat ideal conditions. As noted in this section, most of these upgrades across the sound are going to take decades not years to complete. That should be reflected in your target dates and compliance schedules.
41	Compliance Schedules	Paragraph 2	Can ecology be more specific as to how the AKART analyses and nutrient reduction evaluations will be used to establish future compliance schedules and interim loading limits?
42/43	Nutrient Credit Trading	Last paragraph on 42 and bullet points	Limiting trading eligibility in any way would limit the trading pool and the effectiveness of a trading program. Trade ratios can be prohibitive if not reasonable.
43	Nutrient Credit Trading	Paragraph 3	Instead of using two permits, NPDES and the voluntary General Permit, to dictate caps and discharge limits, Ecology should use the general permit strictly to develop a trading program? This would eliminate the potential of a split pool, and all discharger's limits would be administered the same way.

43	Nutrient Credit Trading	Paragraph 2	The new technical advisory committee created should speak to the details of a potential trading program, including ratios and geographic constraints. These questions need some general answers prior to permittees being able to provide constructive input on overall interest. If ecology plans to make things like ratios unreasonable, then a credit system is unlikely to be economically beneficial and will therefore see a lack of interest.
44	Reclaimed Water	General	Ecology should work with the legislator to incentivize reclaimed water in the region.
46	Watersheds	General	Ecology is taking a phased, prioritized approach in dealing with watershed nutrient reductions. Why can't a phased prioritized approach be used for marine point dischargers as well?
52	Managing Nutrients	Bullet Points	What are the anticipated nitrogen removal efficiencies of respective watershed BMPs? Can Ecology relate some of these removal efficiencies to projected watershed nutrient load reductions stated in Table 6
53	Financial Assistance	General	Though the grant funding appropriated by the legislature is greatly needed and appreciated by WWTPs in their planning efforts to reduce nitrogen, the annual funds needed to be available to complete the requirements laid out in this plan need to be an order of magnitude larger each year. Ecology's water quality combined funding needs to have significant increases as well. $100-$200 million a year will not be sufficient once 58 plants are all attempting to meet the target concentrations. Utilities and their ratepayers are going to need billions of dollars, similar to what

			was granted when the Clean Water Act was established, not millions to solve the issues as laid out in this plan. Though WIFIA funding is a great tool for wastewater projects and will be needed for this effort, it again will not be nearly enough. The numbers ecology continues to reference in the 2011 tetra tech document are no longer relevant. What ecology is requiring in this plan, will mean a large majority of utilities competing against each other for funding, consultants, ecology administrators and reviews, and Contractors. This will drive the cost of each step up considerably. Once again, ecology needs to look at WWTPs upgrades in a prioritized phased approach with checks along the way to ensure the public does spends the limited dollars available efficiently.
57	Schedule and Milestones	General	What is requiring ecology to achieve these goals by 2050, or in 24 years after this plan is submitted to EPA for acceptance? Its ambitious and potentially infeasible goals could put utilities at risk.

58	Table 8	Footnote 42	Allow utilities to participate in workshops to assist in developing the framework of a credit trading program. If ecology insists on taking full control without actual utility input consideration, there is little chance a trading program would succeed. It is recommended that a 3rd party association oversee the development of the trading program.
58	Table 8	Table 8	The Salish Sea Model, the basis for this plan, did not use Total Nitrogen. Change back to Total Inorganic Nitrogen.
65	Marine Point Source nitrogen loads	Paragraph 1	The Salish Sea Model, the basis for this plan, did not use Total Nitrogen. Change back to Total Inorganic Nitrogen.
66	Watershed Nitrogen loads	Paragraph 2	2021 continuous nitrogen monitoring should have 3-4 years' worth of data by now. Ecology should utilize this data for model calibration and reestablish baselines. Again, ecology really has an opportunity here to take into account the last 10 years of work within the sound by utilities and within watersheds and see what impact optimization and upgrades to date have had.
71	Puget Sound Dissolved Oxygen	Paragraph 2	"We have set milestones to re-run the Salish sea model, or its equivalent in 2040 and 2053" What is preventing ecology from running the model more often Similar to the comment before this, Ecology seems intent on using the outdated and lacking 2014 data to dictate existing conditions for this plan. Why would ecology, with the creation of this plan, want to ignore the more recent, accurate, real, and abundant data it received from the 2022 General Permit. Why make ratepayers incur the increased cost of testing if ecology has no intentions of utilizing the

			data? Update the model with more current data and more accurate existing conditions.
72	Adaptive Management	General	Adaptive management is meant to be a tool that allows for evaluation of changes made to evaluate effectiveness towards environmental restoration. This is a great tool when used correctly. However, this adaptive management plan, in the case of the marine point dischargers, has almost no checks. Making all plants upgrade to tertiary treatment and chemical addition meet a 3mg/L **at 2014 flows** leave little room for change if it does not work. A phased or prioritized approach should be utilized along with monitoring for validation. This will allow both the science, modeling, and treatment technologies and innovations to improve along the way. It may take a bit longer to reach the ultimate goal, but it will have a much better chance of actually achieving it.
Appendix E			
3			Appendi

Appendix H				
Page 1				Appendi
Page 5	Appendix H: Basin-wide Loading and Facility Allocations	General	Option 3 is the only one that accounts for growth in the region. If this is accompanied by WQBELs then facilities are still incentivized to shed volume via reclaimed water.	
Page 5	Appendix H: Selecting Pollutants for Limits	CBOD	Not all plants can achieve 8mg/L CBOD as a biproduct of nitrogen removal, as assumed by ecology through this document. This was/is not required in the general permit required AKART/NRE analyses. There is also no source provided by Ecology that describes the regional feasibility of achieving this CBOD limit. There is no reference to 8mg/L CBOD in the Tetratech 2011 document.	

Page 5	Appendix H: Selecting Pollutants for Limits	TN	Provide cited sources for why ecology believes Total Nitrogen is the best parameter to use for the reduction plan.
Page 5	Appendix H: Selecting Pollutants for Limits	TN	"Monitoring for TIN alone, especially in domestic WWTPs, can result in the false impression that their treatment process is generating nitrogen when in fact they are simply converting influent organic nitrogen to inorganic form. Changing the limits to TN vs TIN could cut the actual target loads to dischargers by 50% or more. Advanced BNR /MBR technologies can achieve 70-80% removal of Soluble Organic Nitrogen (SON) in practice, to a level of 1-2mg/L. Now that combined with the TIN loads, makes 3mg/L unachievable without advanced chemical polishing, which is rarely implemented. Ecology should research the actual contributions of SON to algae blooms in the sound before considering implementing such restrictive limits.
Page 6	Appendix H Loads vs. Concentration	General	Ecology has identified the problem in this section. Unless growth stops completely in our region, the model is saying treatment plants need to go beyond AKART to achieve the targets listed in the PSNRP. Ultimately, the only way to do this is mass loading, however that mass loading may never be achievable with today's technological limits. These limits aren't just from a treatment standpoint, but from an electrical grid perspective as well. BNR is energy intensive.

Page 6	Appendix H Effluent Limit Averaging period	General	Yes, at a minimum the averaging would need to be seasonal or preferably annual to give facilities more flexibility.
Page 7	Appendix H Compliance Schedules	General	What is dictating the 2050 deadline to meet WQBELs in the sound?
Page 7	Appendix H Interim Limits	General	Ecology has already essentially implemented interim limits via the PSNGP and load caps. This section should instead reference the optimization efforts of the PSNGP optimization reports and load caps and note that either through the PSNGP or individual permits, will be required to optimize their facilities per their optimization report results.
Page	Appendix H Next Steps	General	We stress the need for 3rd party oversight of the next technical advisory committee. Committee members should be able to make agenda recommendations and ecology should respond to why input from the committee was unable to be used in its regulatory decisions, to promote a sense of transparency.