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Submission from Carmichael Clark, P.S. on behalf of Birch Bay Water & Sewer District.



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RE: Comment on Draft Puget Sound Nutrient General Permit

To whom it may concern:

We submit this comment on behalf of Birch Bay Water and Sewer District ("BBWSD") to the Washington State Department of Ecology ("DOE") in response to its draft Puget Sound Nutrient General Permit released on June 16, 2021 ("Draft Permit").

The Draft Permit represents a significant change in the permitting of wastewater treatment plants ("WWTPs"). It proposes to cover municipal WWTPs discharging directly into the Salish Sea, and not non-municipal sources or WWTPs discharging into rivers. The most significant change is the imposition of annual load limits of total inorganic nitrogen ("TIN," the combined amount of ammonia, nitrates, and nitrites) for most WWTPs, the so-called "Dominant Loaders." BBWSD is classified as a Dominant Loader under the Draft Permit.

BBWSD is covered by an individual NPDES Permit, released in January 2021 ("Individual Permit"), which limits its TIN load to 74,900 lb/year. Under its Individual Permit, if this maximum of 74,900 lbs/year TIN level is exceeded for two consecutive years, then BBWSD must implement a plan to reduce TIN loads below this limit. Both BBWSD and Northwest Environmental Advocates appealed the issuance of BBWSD's Individual Permit.

Also in January 2021, DOE released a preliminary draft general permit. That preliminary draft general permit proposed two different TIN limits at which different actions were triggered. These two different TIN limit action levels were denoted as AL₀ and AL₁. AL₀ was set at 67,900 lb/year, and AL₁ was set at

71,295 lb/year (both lower than the TIN limit in BBWSD's Individual Permit). If AL_0 was surpassed, then Tier 2 actions, including somewhat substantial changes to process control, configuration, aeration, and/or chemical feed would be triggered to ensure the WWTP did not exceed AL_0 again. If AL_1 was surpassed, more drastic Tier 3 actions would be required.

Now, under the Draft Permit issued June 16th, DOE will instead impose just one action level, but only on those WWTPs it determined are "Dominant Loaders." BBWSD's TIN action level is now 64,600 lb/year. Most WWTPs' action levels in the Draft Permit were different than the AL_0 and AL_1 in the preliminary draft permit; some were in between, some were increased over both and some were decreased under both. If the action level is exceeded once during the five-year permit window, a WWTP must implement at least one optimization strategy and submit a plan to reduce TIN loads by 10%. If the action level is exceeded two years consecutively or three nonconsecutive years within the five-year permit window, then the WWTP must implement the plan to reduce TIN loads by 10%. This is a significant deviation from both BBWSD's Individual Permit and the preliminary draft permit in both the TIN limits imposed and consequences of failing to meet the TIN limits. No explanation was provided for the different TIN limits imposed.

BBWSD urges DOE to reconsider whether it should be regulated under the Draft Permit. BBWSD certainly has no appreciable impact on DO levels in Puget Sound. Required TIN output reductions would be at great expense to District customers for no appreciable environmental benefit. Furthermore, anti-backsliding provisions in the CWA will prevent DOE from loosening restrictions on BBWSD once it becomes clear that the BBWSD TIN limit harms BBWSD customers for no sound reason.

- I. The way "Dominant Loaders" was determined is unreasonable or otherwise unlawful.

"Dominant Loaders" are those WWTPs that will be required to stay under a certain annual TIN cap. The Fact Sheet states both that the Dominant Loaders are those covered WWTPs that contribute 100 lbs of TIN per day or more and those which cumulatively contribute 99% of the TIN entering the Salish Sea from the covered WWTPs. BBWSD was included among the Dominant Loaders because, according to DOE's calculations,¹ it produced 169 lbs of TIN per day and approximately 0.2% of the total TIN produced by the covered WWTPs in 2019. Of the Dominant Loaders, BBWSD produced the least amount of TIN.

BBWSD takes issue with the way Dominant Loaders were determined for three primary reasons. First, DOE provides no justification for the 100 lb/day and 99% cut off. Neither the Fact Sheet nor the Draft Permit explain the significance of this cut off. Why not include all WWTPs? Or why not set the cut off at 98% and 400 lb/day, 95% and 500 lb/day, or 85% and 1,000 lb/day? DOE gives no indication that it ran the Salish Sea Model with any alternative cut off point (or for that matter, that it ran the model with and without the 99% and 100 lb/day cut off point). It certainly appears that the 99%/100 lb/day thresholds for imposing the regulatory burden associated with being a "Dominant Loader" were arbitrarily chosen simply because it was a pair of numbers that to some sounded good. Consequently, BBWSD, purportedly falling between the top 98.9-99.1% of nutrient dischargers, is subject to the same regulatory requirements as Metro West Point, despite having less than 1% of its daily nutrient discharge.

Second, DOE did not consider the actual impact of the WWTPs it labeled Dominant Loaders. Only the actual quantity of TIN produced by the WWTP was considered in determining whether it was a Dominant Loader. Several of the Dominant Loaders do not discharge into Puget Sound. For example, BBWSD and

¹ BBWSD was unable to recreate this number.

Blaine both discharge into the Strait of Georgia. Port Angeles discharges into the Strait of Juan de Fuca. The water quality for both of these water bodies are rated as extraordinary for DO, which is the highest water quality rating possible. DOE has not produced evidence showing that TIN from these plants reaches the DO-deficient areas of Puget Sound. BBWSD questions whether such evidence exists, especially in light of DOE's statement that the parts of Puget Sound with the worst DO levels receive minimal flushing from outside waters.² On the other hand, some WWTPs not considered Dominant Loaders, such as Oak Harbor, Coupeville, and Boston Harbor, discharge directly into severely DO-depleted waters. Thus, WWTPs are being labeled Dominant Loaders—and therefore being required to limit their TIN loads—without regard to their actual impact on DO levels in Puget Sound. This is not a reasonable regulatory approach to rehabilitating DO impairments in Puget Sound, and places unnecessary burdens on BBWSD in particular.

Finally, under the Draft Permit, status as a Dominant Loader is based on a snapshot in time of nutrient loading data, and remains frozen in place without any ability for a municipal discharger to be moved out of or into the Dominant Loader category based on changes in discharges. For example, BBWSD data shows it no longer discharges 100 lbs. of nutrients per day. It is also likely the top 99% will change over time, and may have already. Yet there is no opportunity under the Draft Permit for reclassification of Dominant Loaders to recognize these changes over time. This is a material defect in the Draft Permit's Dominant Loader classification scheme and should be rectified.

The list of Dominant Loaders should not include BBWSD. BBWSD's small TIN load is discharged into the Strait of Georgia, which generally flows north, away from Puget Sound. No modeling BBWSD is aware of shows that BBWSD's TIN load has any appreciable impact on the Strait of Georgia, much less the DO-impaired areas of Puget Sound. Imposition of TIN limits on BBWSD will have no positive impact on Puget Sound, but will have a significant negative impact on BBWSD and its customers. Individual permits are a better way to target WWTPs that are having an actual impact on DO levels, and spares those that are not from senseless additional burdens and costs.

II. The impact of staying under the TIN Action Level is not known.

DOE has imposed TIN limits without consideration of the potential impacts to the WWTPs of maintaining TIN below those levels. BBWSD has performed some preliminary calculations and ensuring its TIN discharges remain below the action level will increase costs and energy consumption. For example, in its aeration basins, BBWSD will need to adjust its DO setpoints higher under the Draft Permit. This will result in increased energy use and wear and tear on the blowers. BBWSD will also require automatic control valves for its aeration basins, which it estimates will cost around \$25,000 to install; nutrient probes to provide real-time data on nitrates, ammonium, and potassium with an estimated cost of \$23,000, and additional biosolids hauling, likely in the range of \$15,000/year. With other associated costs the total will approach or may even exceed \$100,000 per year. This does not include what will be at least significant six figure capital costs to permanently alter piping, mixers, and other required infrastructure. At this point BBWSD knows the cost of compliance with the Draft Permit will be significant, but the total cost is not yet calculable. Increased costs will need to be passed on to BBWSD's customers.

BBWSD understands that these impacts and others will be analyzed in the Annual Report in the Economic Evaluation and the Environmental Justice Review. However, the anti-backsliding provisions of the CWA will likely prevent DOE from loosening the TIN action level on BBWSD or other WWTPs. Hence, corrective action to lower unnecessary burdens will probably not be possible later. This means it is vital that DOE

² Fact Sheet at 26

get the standards right the first time. Unfortunately, it is clear it has not taken the time to do so. If DOE's current approach stands, BBWSD will pay the price for no discernable reason.

III. BBWSD urges DOE to reconsider the bootstrapping analysis.

The bootstrapping analysis DOE has performed may be flawed, or else produces such variable results that it cannot reasonably be relied upon. BBWSD has been given a TIN limit in its individual permit, issued January 29, 2021, in the preliminary draft permit, also issued January 2021, and in the Draft Permit, issued June 16, 2021. Each of these TIN limits was calculated with the past 36 months of data so that BBWSD would have only a 1% chance of exceeding the TIN limit in any given year.³ However, each of the TIN limits is different. The individual permit imposed a TIN limit of 74,900 lb/year, the preliminary draft general permit imposed a TIN limit of 67,900 lb/year, and the Draft Permit imposes a TIN limit of 64,600 lb/year. The TIN load in the current Draft Permit is 10,300 lbs, or 14% lower than the TIN limit in BBWSD's individual permit.

How is it that these TIN limits can be so wildly different, if each was calculated with the same data to give BBWSD a 1% chance of exceedance in any one year? BBWSD asked this question in a meeting with DOE on July 14, 2021, and was told it might have something to do with the frequency of data collection. BBWSD does not find this to be satisfying answer. Either the bootstrapping calculation has been done incorrectly, or that bootstrapping as a method of calculating TIN limits is so variable in the results it generates that it cannot reasonably be used to determine TIN loads.

Additionally, as stated in its comment on its individual permit, the data used for the bootstrapping analyses may not be representative of BBWSD's highest load days. BBWSD's service area includes substantial resort-type use. Many of its sewer connections are to vacation homes, and its service area also includes a number of RV parks. Its water usage and effluent discharge increase significantly on the weekends, during summer, and on holidays; weather also has an impact. BBWSD collected its nitrogen data once per month as mandated by DOE. Many events, such as holiday weekends or weather events, may not have been captured.

IV. The Draft Permit calls for duplicative and unnecessary testing.

BBWSD's individual permit requires two Biochemical Oxygen Demand ("BOD") tests per week on its influent and effluent, for a total of four BOD tests per week. The Draft Permit would require two

³ Individual Permit Fact Sheet at 31: "The last 36 months were used as representative of existing loading... The numeric cap was calculated so that there is no more than a one percent chance of exceedance when annual loads remain similar to historic loads. The calculation uses a bootstrap method to estimate distribution of possible means over a year."

Preliminary Draft General Permit at 9: "The bootstrapping calculation, a non-parametric method emerged as Ecology's preferred calculation alternative given that this approach can accommodate any data distribution using random sampling methods with replacement... Ecology has determine [sic] that the confidence level of interest is 99% for determining the annual loading baseline, AL₀. The simulated means are ranked from smallest to largest, and the 99th percentile is identified. If each facility behaves over the course of the permit cycle in a manner similar to its historical record, we can assume that there is only a 1% chance of exceeding AL₀ by chance in any year. Ecology used at least 3 years of data in the baseline action level (AL₀) calculation."

Draft Permit Fact Sheet at 41: "Ecology developed a calculation tool for AL₀ that uses a non-parametric method called 'bootstrapping' to calculate the annual load from facility data that represents a load that would only have a 1% chance of exceeding if the loads are consistent with existing loading.... Where possible Ecology used at least 3 years of data (36 data points) in the AL₀ calculation."

Carbonaceous Biochemical Oxygen Demand (“CBOD”) tests per week on influent and effluent, for a total of four per week. The sampling requirements in Section S6 of the Draft Permit do not appear to replace the sampling requirements in BBWSD’s individual permit. Does this mean that BBWSD will need to run both CBOD and BOD tests? If so, BBWSD’s lab staffing needs will increase by about 4 hours per day. The additional CBOD tests themselves are estimated to cost about \$350 per month, plus staff time and chemicals to run the tests.

The Draft Permit also adds new nitrogen testing. BBWSD was previously testing ammonia and nitrate/nitrite once or twice per month. Now each test must be done twice per week on both influent and effluent, adding about seven sample sets per month. Each ammonia test costs \$26 and each nitrate/nitrite test costs \$52. Just the additional tests, and not the staff time to run them, will require an average additional expenditure of \$546 per month. BBWSD operates with a small budget. \$546 per month represents a more than 3% increase in its total service budget. BBWSD asks that DOE consider whether the various nitrogen tests could be consolidated or performed less frequently.

- V. The anti-backsliding provisions of the Clean Water Act will prevent DOE from loosening TIN levels in the future.

In its comment on its individual permit, BBWSD expressed concern that Section 402(o) of the Clean Water Act (33 USC § 1342(o)) prevents DOE from issuing a subsequent NPDES permit containing a higher TIN limit. In this Draft Permit, not only has BBWSD’s TIN limit been lowered, but DOE acknowledges that the anti-backsliding provisions of the CWA apply. Fact Sheet at 37. This makes it all the more important that the TIN limit be thoughtfully tailored to the particular circumstances of each WWTP. See also comments in Section II. To proceed now, without any evidence that BBWSD actually impacts DO levels in Puget Sound, is unreasonable.

- VI. Concurrent individual and general permits are unlawful.

DOE is promulgating this Draft Permit under the General Permit provisions of the CWA. Section 122.28(a)(1) of the CWA states, “The general permit shall be written to cover one or more categories or subcategories of discharges or sludge use or disposal practices or facilities described in the permit under paragraph (a)(2)(ii) of this section, except those covered by individual permits, within a geographic area.” (Emphasis added). The plain terms of the CWA exclude permittees already covered by individual permits from general permits. Additionally, concurrent general and individual NPDES permits is also unlawful pursuant to the “permit shield” contained in the CWA, 33 U.S.C. §1342(k), which provides that compliance with the terms and conditions of a permit is deemed in compliance with the CWA for the purposes of potential government enforcement actions and third-party citizen suits.

This is echoed in the WACs authorizing DOE to issue general permits. In both the chapters on the NPDES program generally and general permits specifically, a “general permit” is defined as being “in lieu of individual permits.” WAC 173-220-030(11) and 173-226-030(13). WAC 173-226-080(3) and (4) state that an individual permit terminates a general permit. WAC 173-226-200(5)-(7) states that an individual permit remains effective unless terminated, and repeats that an individual permit terminates the general permit as to the individual permittee. The clear intention in the CWA and in Washington state regulations is that a discharger should not be beholden to both a general permit and an individual permit. As long as BBWSD and other WWTPs are covered by their individual NPDES permits, the intended coverage under the Draft Permit is unlawful.

VII. Concerns about the impact on WWTPs' GMA obligations are still unaddressed.

As described in its comment on its individual permit, BBWSD has significant concerns about how the TIN limit in the Draft Permit will impact its ability to meet its obligations under the Growth Management Act ("GMA"). Much of BBWSD's service area is Urban Growth Area ("UGA"). The current Whatcom County Comprehensive Plan predicts that BBWSD's UGA will reach a population of 12,822 by 2036, an increase of 41% over the UGA's current population. The TIN load limit in the Draft Permit does not give BBWSD room to accommodate this growth. DOE stated in its meeting on July 14, 2021 that it is not in the business of passing moratoria, but it will be complicit in any moratoria resulting from the burdens of its unnecessary TIN limitations placed on local dischargers.

Finally, BBWSD believes the comments it submitted on its individual permit remain relevant to this Draft Permit. Said comments are attached and incorporated herein.

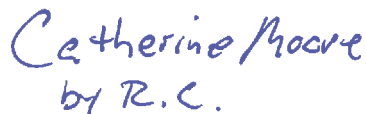
BBWSD respectfully requests that DOE wholly reconsider its approach under the Draft Permit consistent with these comments. At minimum, BBWSD requests that the Dominant Loaders list be revised such that it is excluded from the list.

Thank you for the opportunity to comment on the Draft Puget Sound Nutrient General Permit.

Yours Truly,



Robert A. Carmichael



Catherine A. Moore

c: Board of Commissioners, Birch Bay Water & Sewer District



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July 24, 2020

Submitted to the eComments portal at:
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RE: Comment on draft NPDES Permit for Birch Bay Water and Sewer District

To whom it may concern:

We submit this comment on behalf of Birch Bay Water and Sewer District ("BBWSD") to the Washington State Department of Ecology ("DOE") in response to its draft National Pollution Discharge Elimination System ("NPDES") permit released for comment on June 10, 2020. The Board of Commissioners BBWSD reviewed this comment and unanimously approved it in its entirety at its July 24, 2020 meeting. For reasons herein described, BBWSD objects to imposition of an annual nutrient load cap and requirement to develop a Nutrient Optimization Plan.

The draft NPDES permit contains an annual total inorganic nitrogen ("TIN," the combined amount of ammonia, nitrates and nitrites) load cap of 74,900 pounds per year. A nutrient load cap has never previously been imposed on BBWSD. A draft permit released by DOE for comment in August 2019 and then revoked also did not contain such a cap. It is BBWSD's understanding that before 2019, DOE did not impose nutrient load caps on wastewater treatment plants.

I. The Annual TIN Load Cap

BBWSD objects to the imposition of an annual TIN load cap at all, and of 74,900 lb/year in particular, for several reasons.

A. The load cap was not calculated using data designed to indicate BBWSD's highest nutrient loads.

DOE calculated the average daily TIN load based on data collected by BBWSD once per month starting in July 2014 and ending in January 2020. DOE then applied a bootstrap analysis to the five years of daily load data collected once per month, took the 99th percentile mean of the data produced by the bootstrap analysis, and multiplied by 365 to get the 74,900-pound annual load. Essentially, DOE attempted to calculate the TIN load cap such that BBWSD should have a 1% chance of violating its NPDES permit and a 99% chance of not violating its NPDES permit each year.

However, the data BBWSD collected may not be representative of its largest TIN load. BBWSD's service area includes substantial resort-type use. Many of its sewer connections are to vacation homes, and its service area also includes a number of RV parks. Its water usage and effluent discharge increase significantly on the weekends, during summer, and on holidays; weather also has an impact. BBWSD collected its nitrogen data once per month as mandated by DOE. Many events, such as holiday weekends or weather events, may not have been captured. That being the case, the 74,900 lb/year TIN cap is based on insufficient data, and there is likely a greater than 1% chance BBWSD will exceed the load cap each year. Neither the draft Fact Sheet nor the draft Permit acknowledge this point. In addition, the permit does not include a compliance schedule for this cap to allow the District to evaluate how it will remain in compliance with this new proposed limit.

B. The impact of the nutrient load in BBWSD's effluent on dissolved oxygen levels in the Strait of Georgia and the Salish Sea is unknown.

The draft Permit and draft Fact Sheet are generally characterized by a lack of data supporting the annual TIN load cap. The Clean Water Act ("CWA") describes two types of effluent limitations: technology-based effluent limitations and water-quality-based effluent limitations ("WQBELs"). In the draft Fact Sheet, DOE explains that it does not currently have enough data to impose WQBELs. Despite this, it still imposed an annual TIN load limit on BBWSD. DOE fails to explain why the data supports the annual TIN load cap but is insufficient to support WQBELs.

1. The data does not show that BBWSD has a measurable impact on nitrogen levels in the Salish Sea. BBWSD contributes an extremely tiny amount of nitrogen into the Strait of Georgia. According to the "Nitrogen in Puget Sound" story map produced by DOE,¹ which uses data from 1999 through 2008, BBWSD's treatment plant produced an average of 25 kilograms of dissolved inorganic nitrogen (DIN) per day (the story map provides DIN loads, not TIN loads). BBWSD observes that the Fraser River contributed an average of 33,140 kilograms per day of DIN to the Strait of Georgia and the Salish Sea – 1,325 times the amount produced by BBWSD. BP Cherry Point Refinery, the next-closest plant to

¹ Available by link from this website: <https://ecology.wa.gov/Water-Shorelines/Puget-Sound/Issues-problems/Dissolved-oxygen-nitrogen>

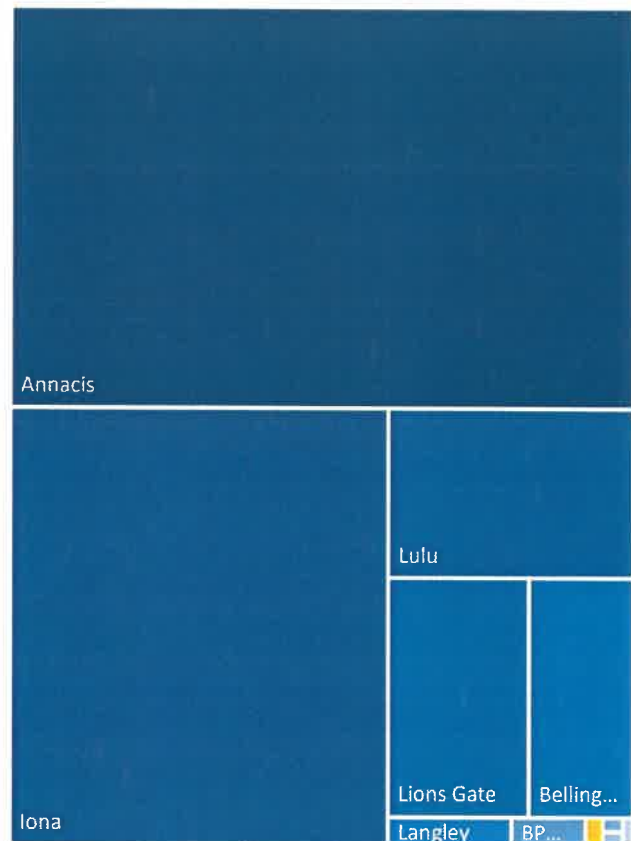
BBWSD, produced an average of 90 kg per day; the City of Bellingham produced 1,280 kg per day; Canadian wastewater treatment plants produced tens of thousands of kilograms of DIN per day. These are all dwarfed by the amount of nitrogen contributed by the Pacific Ocean, which is the source of roughly up to 70% of the DIN in Puget Sound. The treemap to the right shows the DIN loads of just wastewater treatment plants into Georgia Strait; BBWSD is the yellow rectangle in the bottom right corner. Assuming TIN and DIN are roughly proportional, it is clear that BBWSD contributes a minuscule amount nitrogen compared to other human and natural sources. It is doubtful that BBWSD even has a measurable impact on the total amount of nitrogen in the Strait of Georgia.

For another example, in a February 2019 email to Dustin Bilhimer and Mark Henderson at DOE, BBWSD Operations Manager Mike Sowers pointed out that BBWSD discharged 0.866 MGD with a biochemical oxygen demand (“BOD”) of 12-15 mg/l. By contrast, just two of the treatment plants in the Vancouver area produced 23.2 MGD with a BOD of 90 mg/l and 150 MGD with a BOD of 80 mg/l. BBWSD’s BOD production was only 0.09% of what just those two Vancouver plants produced. There are three other treatment plants in Vancouver also discharging into the Strait of Georgia; BBWSD’s contribution of BOD when those other plants are added becomes almost incalculably small. BOD is not TIN because nitrogen is not the only component of BOD, but the two are roughly proportional. The point stands that BBWSD contributes a negligible and likely immeasurable amount of nitrogen to the Strait of Georgia and the Salish Sea.

Daily DIN Loads of WWTPs Discharging into Strait of Georgia

Source: DOE Nitrogen in Puget Sound Story Map

- Annacis
- Lulu
- Bellingham
- BP Cherry Point
- Intalco
- BBWSD
- Iona
- Lions Gate
- Langley
- Blaine
- Conoco Phillips



2. The data suggests that the Strait of Georgia has “extraordinary” dissolved oxygen levels. The lack of data to support WQBELs may be because the Strait of Georgia does not seem to have a dissolved oxygen problem. According to DOE Publication 19-03-001, the Strait of Georgia experienced no days in 2006, 2008, or 2014 during which dissolved oxygen levels fell below acceptable levels. Diagram pg. 10. That same publication labeled the Strait of Georgia’s dissolved oxygen levels as “extraordinary,” with at least 7 mg/L. Diagram pg. 16. There is no mention of the healthy dissolved oxygen levels in the Strait of Georgia in the draft Fact Sheet or draft Permit. And, of course, if the dissolved oxygen levels in the Strait of Georgia are “extraordinary,” there is nothing to be gained by attempting to reduce BBWSD’s TIN load.

3. The data does not demonstrate that BBWSD has a measurable impact on dissolved oxygen levels in the Salish Sea. The Draft Fact Sheet states that DOE uses nitrogen as an indicator parameter for dissolved oxygen. Draft Fact Sheet pg. 27. “Use of this indicator parameter requires modeling to demonstrate water quality impacts from a discharge.” *Id.* BBWSD is not privy to any modeling showing that BBWSD’s minimal TIN discharge has any impact on dissolved oxygen in the Strait of Georgia or the Salish Sea. BBWSD is aware that DOE concludes that some areas of the South Sound have less than ideal dissolved oxygen levels, but BBWSD has also seen no analysis of how the minimal TIN it discharges into the Strait of Georgia impacts the South Sound. In fact, currents in the Strait generally flow north, away from those areas. Further, the total amount of nitrogen is not the only significant factor in a discharger’s impact on dissolved oxygen levels. The location of the discharge, its placement in the water column, the currents and water flow around the discharge, and other factors all contribute to how much the discharged nitrogen actually impacts the dissolved oxygen levels. As far as BBWSD is aware, none of these factors have yet been studied or modeled for BBWSD’s nitrogen discharge. It appears that BBWSD’s actual impact on dissolved oxygen, either with or without the annual TIN load cap, has not been studied at all.

4. BBWSD encourages DOE to wait until further modeling more clearly shows its impact on nitrogen and dissolved oxygen levels in the Salish Sea. DOE’s Puget Sound Nutrient Reduction Project is currently underway. The end result will be a Nutrient Reduction Plan to reduce human-generated nitrogen discharges into the Salish Sea, a draft of which is scheduled for release in 2022. BBWSD is also aware that the Puget Sound Institute at the University of Washington is working on further refinements to the Salish Sea Model, which may allow it to take more factors into account. BBWSD suggests that if a load cap is to be proposed for it at all, that DOE wait until the Nutrient Reduction Plan is released, the Salish Sea Model is updated, or even sufficient data is gathered to support WQBELs. These are all projects actively being worked on, so the delay will be a few years at most. Right now, DOE simply does not have the data to justify a TIN load cap on BBWSD.

C. The impact of the load cap proposed for BBWSD is unknown.

Because there is not enough data to support imposition of a WQBEL, to calculate the annual TIN load cap, DOE simply used the data BBWSD has already collected on the levels of nitrogen in its effluent. There has been no analysis of whether BBWSD’s TIN load cap of 74,900 lb/year will actually alleviate or prevent the worsening of any perceived problems with either nitrogen or dissolved oxygen. BBWSD anticipates that capping its TIN discharges will have no measurable impact on the Strait of Georgia and Salish Sea, but that has not been studied.

The annual TIN load cap is unnecessary and premature. No data has been supplied demonstrating the need for a TIN load cap for BBWSD at all, and nothing shows the impact that this particular TIN load cap will have on the Strait of Georgia or the Salish Sea. Instead, it appears DOE decided to begin imposing nutrient load caps on wastewater treatment plants, and what little justification that has been provided is post-hoc rationalization of that decision. Because BBWSD already has such a minimal impact on nitrogen released into the area, the most likely outcome of the proposed annual TIN load cap is that BBWSD will devote a portion of its limited budget to studying and attempting to ameliorate a problem of unknown scope to which it is not meaningfully contributing.

D. DOE's imposition of the 74,900 lb/year cap without consideration of the above-described factors is unreasonable and arbitrary and capricious.

There must be a reasonable basis for NPDES terms issued by Ecology. "Arbitrary or capricious action is willful and unreasoning action taken without regard to the attending facts or circumstances." *Squaxin Island Tribe v. Washington State Dep't of Ecology*, 177 Wn. App. 734, 742, 312 P.3d 766, 771 (2013). An agency "must not act cursorily in considering the facts and circumstances surrounding its actions." *Puget Sound Harvesters Ass'n v. Washington State Dep't of Fish & Wildlife*, 157 Wn. App. 935, 951, 239 P.3d 1140, 1148 (2010). Instead, it should "carefully consider and weigh the pros and cons of various proposed responses." *Squaxin Island Tribe*, 177 Wn. App. at 747.

State environmental review boards have found permit conditions to be arbitrary and capricious or unreasonable where they are the product of insufficiently analyzed data or a flawed pro/con analysis. See, e.g. *Puget Soundkeeper Alliance v. DOE*, PCHB No. 13-137c, 21-22 (July 23, 2015) (PCHB found the granting of a mixing zone exception within a pollution discharge permit to be arbitrary and capricious where DOE relied on a study that failed to adequately analyze known critical discharge scenarios); *Taylor Shellfish Farms v. Pierce County*, SHB No. 06-039, 6-8 (January 23, 2009) (SHB found permit's day and time restrictions on Petitioner's geoduck harvesting operations were arbitrary where County failed to consider the intertidal nature of Petitioner's operations when weighing the benefits and burdens of those restrictions). Likewise, Washington courts have been critical of major permit decisions underpinned by thin evidence. See, e.g. *Hayes v. City of Seattle*, 131 Wn.2d 706, 709, 717-18, 934 P.2d 1179, 1180, 1184-85 (1997) (Permit condition restricting length of proposed building was arbitrary and capricious where little evidence to support the restriction beyond notion that "smaller was better."); *Norquest/RCA-W Bitter Lake P'ship v. City of Seattle*, 72 Wn. App. 467, 476-77, 865 P.2d 18, 23-24 (1994) (Denial of building permit was arbitrary and capricious where decision was based on City's drawing of unreasonable conclusions from the information in the permit application and surrounding circumstances).

BBWSD believes that DOE's imposition of the nutrient load cap suffers from many of the same flaws as the cases above cited and as a consequence is unreasonable and arbitrary and capricious. DOE has determined that there may be higher-than-ideal levels of inorganic nitrogen in the South Sound. However, this seems to be all that DOE considered when it imposed the 74,900 lb/year TIN load cap on BBWSD. It cannot be said that DOE considered the other "attending facts or circumstances," namely because: (a) BBWSD's data may not accurately reflect its highest nutrient loads; (b) the Strait of Georgia has "extraordinary" dissolved oxygen levels; (c) BBWSD contributes barely a fraction of one percent of the total nitrogen flowing into the Strait of Georgia; (d) there has been no analysis of the TIN BBWSD discharges into the Strait of Georgia on areas of the Sound that do have higher nitrogen or lower dissolved oxygen levels; (e) factors such as BBWSD's depth of discharge were not considered when DOE assumed that BBWSD's TIN impacts dissolved oxygen levels; (f) DOE has not analyzed the impact the load cap will have on the Strait, the Salish Sea, or the parts of the Salish Sea with poorer water quality; and (g) DOE has not considered the impact the annual TIN load cap will have on BBWSD, which will be significant.

Nor can it be said that DOE weighed the pros and cons of imposing an annual TIN load cap or imposing a load cap of a different amount. Determining the "pros" for the annual TIN load cap would require analyzing the impact it will have on the Strait and the Salish Sea, which DOE has not done, and given BBWSD's small size, would be negligible. On the other hand, the "cons" are apparent: BBWSD's customers will pay the cost of studying the issue and determining how to ensure BBWSD's effluent

meets the TIN load cap, which could require expensive plant improvements, restrictions on growth, or both. Nor does DOE explain how the data can support imposing the annual TIN load cap, but not imposition of WQBELs. BBWSD believes that the annual TIN load cap requirement generally and the TIN load cap of 74,900 lb/year specifically are unreasonable and arbitrary and capricious, and urges DOE to carefully consider whether it has the data needed to support the annual TIN load cap.

E. DOE may not be able to remove or raise the load cap in a future permit if it imposes a load cap in this permit under the anti-backsliding provisions of the CWA.

Section 402(o) of the Clean Water Act (33 USC § 1342(o)) states that, with some exceptions, a permit may not be “renewed, reissued, or modified... to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.” DOE may take the position that the annual TIN load cap does not fall within the scope of Section 402(o), but a plain reading of the definition of “effluent limitation” leads BBWSD to conclude that the anti-backsliding provisions would apply. An “effluent limitation” is “any restriction established by a State or the Administrator on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean, including schedules of compliance.” Section 502(11). The annual TIN load cap is a restriction on the quantity of total inorganic nitrogen that BBWSD may discharge into the Strait of Georgia. The TIN load cap appears to be an “effluent limitation” within the meaning of the CWA and Section 402(o).

DOE may take the position that the exception in Section 402(o)(2)(B)(i) would apply to the annual TIN load cap, so that a less stringent standard could be imposed in the future. That section allows application of a less stringent effluent limitation if “information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.” BBWSD is concerned that refinements to or re-analyses of the Salish Sea Model and information on costs to optimize will not constitute new information within the meaning of this exception. Even if DOE disagrees with BBWSD’s reading, a third-party group might not, and a court will evaluate the above definition and exception.

The Draft Fact Sheet states that DOE intends to develop numeric water quality based effluent limitations (“WQBELs”) for nitrogen for BBWSD based on modeling to be performed in the future. The state-wide Nutrient Management Plan is also forthcoming. But because of the anti-backsliding provision in the CWA, the limits for total inorganic nitrogen will likely need to be at least as stringent as the 74,900 lb annual load cap, even if the modeling suggests that a looser limit would be more appropriate. Given this potential consequence, which was not factored into DOE’s analysis, BBWSD again asks that DOE eliminate the new nutrient load cap in this draft permit until such time as it does have sufficient information.

If DOE is unwilling to eliminate the annual TIN load cap, it should consider clarifying in the permit that it intends to replace the annual nutrient load cap with WQBELs or a general permit in the future. This would at least demonstrate that DOE intended the load cap to fall within the cited exception to the anti-backsliding provisions.

F. The proposed nutrient load cap may prevent BBWSD from providing services required to accommodate urban growth in the Birch Bay UGA as planned under the Whatcom County Comprehensive Plan per GMA requirements.

Much of BBWSD's service area is designated as an Urban Growth Area (UGA) in Whatcom County's Comprehensive Plan. The County's Comprehensive Plan predicts that the Birch Bay UGA will reach a population of 12,822 by 2036, an increase of 41% over the UGA's current population. BBWSD anticipates that its entire service area will have a population of 13,381 in 2036. The TIN load cap of 74,900 lb/year does not give BBWSD room to accommodate this growth. DOE anticipates that BBWSD will be able to accommodate growth and stay under the annual load cap by optimizing its plant, but this is merely wishful thinking. BBWSD will need to study the options available to it for optimization, but as described above, it does not currently have representative data to do so. If it is unable to optimize its plant to stay under the annual TIN load cap while accepting more growth, BBWSD may be forced to stop permitting growth in its service area in contravention of the Whatcom County Comprehensive Plan and its implementation of the GMA.

Finally, these considerations must be taken in the context of the anti-backsliding provision of the CWA. Due to what appears to be a needless interim requirement, there is a real risk that BBWSD will be indefinitely subject to an annual TIN load cap it cannot meet while accommodating future growth assigned to it by Whatcom County under the GMA. How substantial that risk is cannot be known until more data is collected and BBWSD's ability to optimize its plant is analyzed. Given this, BBWSD requests that DOE refrain from imposing the TIN load cap during this permit cycle.

II. The Nutrient Optimization Plan

If the annual TIN load cap is ultimately not eliminated from BBWSD's NPDES permit, BBWSD needs: (1) clarification of what is expected in the required Nutrient Optimization Plan; and (2) more time for completion than was allotted. The Nutrient Optimization Plan must "evaluate existing treatment processes for nutrient optimization," including "identifying opportunities through operational adjustments designed to enhance nitrification and denitrification, minor retrofits such as the incorporation of anoxic zones, review of septage receiving policies and procedures, side-stream management opportunities, and minor upgrades" as well as "describing changes already made, and changes that are not possible without a major upgrade, and estimates in nutrient load reductions related to any process changes." Fact Sheet pg. 28. BBWSD has one year to compile the Plan and it must be updated annually. Id.

BBWSD finds this description of the Plan to be too vague to guide its development. The Plan requires BBWSD to evaluate various ways its systems could be improved. The suggested areas of evaluation are broad and may or may not be applicable to BBWSD. The level of investigation and detail BBWSD should put into the Plan is also unclear. Is DOE anticipating a 15-page document or a 15-chapter document? Most confusing to BBWSD, while the Plan requires it to evaluate changes that could be made to its system, BBWSD is not actually required to take any action based on the analysis in the Plan. BBWSD presumes that the Plan is meant to inform its decision as to how to meet the TIN load cap, but if no modifications are needed, or if larger modifications beyond those contemplated by the Plan are required, then the Plan is not necessary. This is especially true as DOE will require a "formal engineering evaluation" once DOE develops numeric WQBELs for BBWSD.

Further, BBWSD will need more than one year to write a useful Plan. The data BBWSD previously collected on nutrient loading, as explained above, was not collected to be representative of BBWSD's true highest nutrient loads. At least a year's worth of additional data will be needed to support a useful Plan. Once this data is collected, BBWSD can use it to inform planning decisions in the Plan.

In short, if the annual TIN load cap ultimately remains in place, DOE should amend its draft Fact Sheet and draft Permit to provide a clearer explanation of what it is looking for with the Nutrient Optimization Plan and to give BBWSD at least two years to complete the Plan.

Finally, BBWSD questions the purpose of updating the Plan annually. Annual updates will not provide enough time to make and evaluate improvements. Changes that are made during peak summer months may not have an immediate impact and would warrant further testing and scrutiny the following year, before moving onto planning for additional changes. Likewise, BBWSD will need to study changes made during the "off season." If the annual TIN load cap and Plan requirement remain in BBWSD's permit, DOE should require an update to the Plan not more than every other year, or only in years where BBWSD exceeds the TIN load cap.

Thank you for the opportunity to comment on BBWSD's draft NPDES Permit and Fact Sheet. I look forward to DOE's response.

Yours Truly,



Robert A. Carmichael



Catherine A. Moore

c: Board of Commissioners, Birch Bay Water & Sewer District