

Deschutes Estuary Restoration Team

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Comments on the Dept. of Ecology's Budd Inlet TMDL
July 25, 2022

DERT wishes to thank Ecology for completing this historic TMDL, which has been in the works for over two decades. We recognize the high complexity and significance of this TMDL given the unique nature of the Deschutes Watershed, including Capitol Lake and Budd Inlet, which is impacted by both local and external sources of pollutants. The water quality data collected by Ecology and the models that were developed and used for this TMDL have been highly reviewed and are unequivocal in their conclusions: the 5th Avenue Dam that formed Capitol Lake and the external sources of pollution are the largest drivers of poor water quality in Budd Inlet. We agree with and support these conclusions of the TMDL and its requirements for major reductions of pollutant inputs from both of these sources as well as other point and nonpoint sources located within and outside of the watershed.

Fortunately, there are few local point sources of pollution to the Deschutes River and to Budd Inlet ♦ they can be easily identified for required reductions in nutrient loading. Of course, those reductions may be costly and difficult to achieve but they are in the end achievable as has been shown many times in other watersheds in our state and nation. However, it is not clear how Ecology hopes to achieve a 65% reduction in upstream nonpoint sources in the Deschutes River, especially since it appears there has been little follow-up on them since the Deschutes River TMDL was issued and then parts of it reissued by EPA.

Unfortunately, there are very many large and small point and nonpoint sources contributing to the external sources of pollution coming from the north of Budd Inlet with the incoming tides.

Ecology's approach to reducing those external sources of pollution through the Nutrient Source Reduction Project and the Puget Sound Nutrient General Permit are expected to result in significant reductions in loading from those sources over the next 10 or more years. This approach is really the first time that Ecology has determined that there is an upper limit to the aggregate amount of pollution that can be safely discharged by point and nonpoint sources of pollution to Puget Sound marine waters.

Together the Budd Inlet TMDL and the PS Nutrient General Permit establish the overall limit for nutrient discharges and individual limits for the individual pollutant sources which discharge directly to marine waters. We strongly support this effort as it is long overdue. It is critical to establish these limits for the current and future health of Budd Inlet and Puget Sound as a whole as our human population and accompanying pollution continues to rapidly increase on a per capita basis. What are Ecology's backup plans if the PSNGP is overturned on appeal, or if the DES either doesn't decide to remove the dam or if they do that decision is not supported by the State Legislature?

The TMDL should be able to be applied ♦ meaning include sufficient wasteload and load allocations to meet water quality standards ♦ regardless of the outcome of the Capitol Lake evaluation process. That is, if the Department of Enterprise Services (DES) decides against removing the Capitol Lake dam and restoring the lake to an estuary, the TMDL must still contain sufficient allocations to meet water quality standards. We

do not read this TMDL as to include two or more alternatives to meet standards. Instead, it merely states that if DES does not decide to remove the dam, it may choose some other method to meet water quality standards.

Because nonpoint sources of pollution are more difficult to identify and control and point sources discharging to rivers that flow into Puget Sound are not yet included in the PS Nutrient General Permit, we urge Ecology to stay the course to develop watershed models for each major river system to develop the information necessary to set aggregate goals for each river and individual limits where appropriate for those upstream sources.

The TMDL does not discuss any effort by Ecology to identify the impacts on water quality from winter and shoulder season loads, loading that accumulates in sediments for example or remains in the water column. Did Ecology use its model to evaluate these loads? If so, what were the results? Did Ecology use its model to evaluate a zero discharge from one or more of the individual point sources?

The Budd Inlet TMDL relies on an adaptive management approach to continually re-evaluate water quality conditions and discharges and to respond to other changes such as climate change. In order to succeed, we recommend that Ecology support the creation of a permanent Deschutes Watershed Council to regularly review and comment on the successes and failures of efforts to implement the Budd Inlet and Deschutes River TMDLs. The Capitol Lake/Deschutes Estuary Long-Term Management Project Environmental Impact Statement is also likely to recommend establishment of such a Council. These efforts to improve conditions in Budd Inlet, Capitol Lake and the Deschutes Watershed should go forward in a complementary way, with a unified Council overseeing implementation of these separate but related efforts.

Table of Contents: This should include the appendixes where so much of the information is buried. Water quality criteria: while some may have concerns that the water quality criteria for dissolved oxygen in Budd Inlet is too stringent or needs to be changed in some way, there is really no basis for an argument that continuing the current high loadings of nutrients and carbon is a healthy course of action for Puget Sound, let alone accounting for the anticipated increases in future loading from an ever-increasing human population in the Puget Sound Basin. The request to modify the DO criteria is really a red herring to cause even more delay in addressing the high and increasing nutrient loadings.

Aggregate total limits of pollution based on loading capacity: As we have seen in other efforts in our State to establish upper aggregate limits to pollution loadings, the old method of depending solely on concentration-based effluent limits for point sources does not work to establish a safe limit for the overall pollutant loading to a watershed. ♦ only an aggregate limit in pounds per day, week and/or year can do that. That limit then must be equitably apportioned to the various sources of pollution loading, including new effluent limit for point sources.

Naturally, that means that in the future in addition to installing additional treatment or using other means to meet the effluent limits based on today's population, additional technologies and innovative approaches will need to be implemented to ensure that the aggregate limits are met as population increases. ♦ no more unlimited expansions. This is not terribly difficult to comprehend, but it can be difficult to achieve, at least initially as planning to meet the new limits is a completely different goal than simply achieving a concentration-based limit. Under the latter, Ecology has for years authorized the expansion of wastewater treatment plants, seemingly without any concern for the effects of the increased loading of pollutants to Puget Sound as a whole, except in a small number of unique cases such as Budd Inlet, where the LOTT

WWTP has been required to remove nutrients for many years. This TMDL is likely to require all of the WWTPs that have direct discharges to Puget Sound to reduce and limit their total loadings, and some WWTPs that discharge upstream in rivers that are tributary to Puget Sound.

For clarity, the statement that sewage treatment plant permits "require them to remove organic compounds" should be followed by "but not nitrogen." For consistency, the sentence pertaining to LOTT should make clear that it is LOTT's permit requires it to have the additional treatment for nitrogen removal and it should read "remove some nitrogen from its effluent." The use of the phrase "organic compounds" will leave most lay readers confused as to what Ecology is talking about given that it has earlier said that carbon and nitrogen are the problem.

Budd Inlet loading capacity and subsequent waste load allocations: Ecology has completed very extensive research, monitoring and modeling to develop the overall loading capacity for Budd Inlet and the waste load allocations to achieve but not exceed the loading capacity. It would be helpful to the reader to note to what degree the new waste load allocations for the Budd Inlet WWTPs are a reduction to the current loadings from those WWTPs (similar to the notes relating to the stormwater loading reductions which show the need for 65-70% reductions). It is also worth noting that the current total nutrient loadings from stormwater sources to Budd Inlet appear to be much larger than the total nutrient loadings from the three smaller local WWTPs, LOTT being the exception.

Capitol Lake impacts to Budd Inlet: We agree with and support the conclusions and conditions required of DES by Ecology on pages 37 ♦ 38 of the draft TMDL. Ecology has previously shown that construction of the dam to create the lake has had enormous negative impacts on Budd Inlet. Maintaining the dam would have very significant consequences for LOTT and other point sources of nutrients to Budd Inlet, essentially requiring them to eliminate their discharges.

Puget Sound Aggregate "Bubble" Allocation: We support and agree with the "bubble allocation" for point and nonpoint sources of pollution that are external to Budd Inlet and the Deschutes Watershed. While this is a relatively new wrinkle in a TMDL developed by Ecology, it may be a workable solution to the complex problem of addressing and reducing the impacts of the large number of point and nonpoint sources that are outside of the Budd Inlet/Deschutes Watershed. However, achieving success depends on the PCHB and courts upholding the PS Nutrient General Permit and its eventual implementation, and the other elements of the PS Nutrient Management Plan in parallel development by Ecology. Due to the large number of external sources and difficulty of achieving an average of 65% reductions simultaneously within a reasonable time period across many watersheds, Ecology needs to provide a showing of reasonable assurance that the aggregate bubble can indeed be achieved.

Implementation Plan:

Capitol Lake Dam -- We strongly support Ecology's recommendation to remove the Capitol Lake Dam to restore the Deschutes Estuary as the most important action needed to reach water quality standards in Budd Inlet. The research and modeling have shown that without removing the dam it is highly unlikely that water quality standards can ever be achieved in Budd Inlet. The timelines suggested by Ecology for DES to implement the preferred alternative appear to be reasonable based on the amount and type of restoration work that will be required.

Need for Watershed Council -- The TMDL points out that nonpoint source reduction actions are necessary within the Deschutes Watershed as determined by the Deschutes River TMDL. To ensure that those actions are undertaken and are effective, we again recommend the creation of a permanent Watershed Council for the Deschutes Watershed to oversee implementation of these TMDLs to help ensure that agencies are held accountable and that implementation actions are tracked, and to provide a public forum for regular reports and updates on implementation and the

results of those actions on water quality. The Council could serve to provide: (1) a continuing focus on implementation of these TMDLs; (2) a regular forum to review progress and success or lack thereof; and (3) a forum to recommend adaptive management actions which would enhance the success of the TMDLs.

Reissue PS Nutrient General Permit with water quality-based effluent limits by 2026 -- we continue to believe that this timeline can and should be shortened somewhat. Ecology already has most of the information needed to establish effluent limits and will gather any remaining data in the next year or so. The sooner the WWTPs begin seriously evaluating the technologies required to meet their new effluent limits the sooner those technologies will be installed.

Costs of implementing the TMDL ♦ while not required, we appreciate the discussion of estimated costs and potential funding sources to implement this TMDL. While some may offer estimates that differ from those you include, the overall total cost to be spread over 20 years will undoubtedly be very high. It is likely that special state and possibly federal funding will be needed to fully implement some of the actions outlined in the implementation plan.

Climate change -- Ecology acknowledges that climate change will be a contributing factor in meeting water quality standards in the future ("Climate change impact analysis was not specifically included in the scope of this TMDL; however it will likely impact DO levels in Budd Inlet (see Appendix A for more details).") Even though the TMDLs pertain only to the future, and have little or no relevance to the past, Ecology has decided to ignore this factor. Ecology implies, by including references to "adaptive management" immediately after its statement about climate change, that a "continued re-evaluation of the TMDL" will be sufficient to fix the errors in this TMDL including the omission of climate change. Ecology also appears to suggest that "climate change and changes to land use" are "changes occurring in the natural world" as if to suggest these two types of changes are not anthropogenic in origin. This is incorrect.

Page 16: Ecology provides various maps including the applicable numeric criteria (fig. 3) but does not include a map showing the degree of impairment. As Ecology has produced such maps, it is unclear why it would not include them here.

Page 18: Please explain why and how "Capitol Lake produces anthropogenic carbon loading" that it discharges to Budd Inlet. Ecology has produced material on this but has not included it here.

Page 19: Ecology has not explained how "the Budd Inlet TMDL determines an aggregate load allocation, or bubble allocation, for these sources external to Budd Inlet" when not only does this bubble allocation "include both point sources and nonpoint sources" but it includes a very significant number of point sources that Ecology has already determined cause or contribute to the violations of water quality standards in Budd Inlet. Please explain how point sources can be given load allocations instead of wasteload allocations.

Page 19. Ecology notes that the critical period for dissolved oxygen depletion is in late summer but that the pollutants that fuel algal growth "must be managed during the preceding months." It does not explain the rationale for "tighter allocations during the critical period from April through October," in that it does not explain what happens with the less tight allocation during the winter months. What has Ecology determined happens with the nutrients that enter the Sound, including Budd Inlet, during November through March?

Page 20. Ecology is incorrect in stating that "[a] waterbody's loading capacity is the sum of anthropogenic and naturally occurring pollutant loading." The correct definition of a loading capacity is "[t]he greatest amount of loading that a water can receive without violating water quality standards." 40 C.F.R. ♦ 130.2(f). What Ecology has said is that to obtain the loading capacity it need only add the existing loads together.

Page 21. We disagree that Ecology has "summarize[d] the total wasteload allocations for all point

sources" in Table 3 because it has included wasteload allocations in its "bubble allocation" not shown in Table 3.

Page 23. Table 4 provides the wasteload allocations for LOTT but it does not include any information on current LOTT discharges or current LOTT permit limits. The same is true of the subsequent tables for other sewage treatment plants. Please provide the existing permit limits so that readers of the TMDL can see what, if any, changes the TMDL is having on these facilities' operations.

Page 27: Ecology acknowledges that "[a]llocations at other times of year are also required as these loads may impact DO in the critical period" but it does not explain why given the TMDL's inability to control the major sources of pollution to Budd Inlet ♦ Capitol Lake and Puget Sound ♦ it has not written a TMDL with allocations that control nutrients year around at the most stringent level possible.

Pages 29 ♦ 36: Ecology states that "in order to meet the waste load allocations shown above, reductions of 65-70% will be needed from 1997 levels" but again does not explain why those reductions should be less during the winter months or that not reducing loads during winter months will not have a water quality impact.

Page 37: Ecology is not clear what type of "allocation" it is making to Capitol Lake. In the regulatory world of TMDLs, there is no such thing as an "allocation" that does not apply to permitted sources, nonpoint sources, or natural background. The reason for this is clear: TMDLs are supposed to be the means by which waters with unsafe levels of pollution are cleaned up. If allocations are not named, they are not real. (Note that on the subsequent page, Ecology's confusion manifests as saying there is no permit but the allocation is a "WLA.")

Page 37: At a minimum Ecology will want to clean the following sentence up so that it makes sense: "To derive an allocation for Capitol Lake we remove the Capitol Lake Dam from the Budd Inlet model and determine the final DO under the TMDL scenario in Budd Inlet. Capitol Lake's allocation is the difference between the final DO in Budd Inlet and the water quality standard." What exactly is a "final DO in Budd Inlet"? This appears to be a description of how Ecology might determine the natural conditions, an approach that is no longer applicable in Washington's water quality standards. Then again, it is not clear what this is describing.

Page 38: Ecology cannot issue a TMDL with a purported "allocation" with the caveat attached that says "[u]nless approved by the Department of Ecology." Once EPA approves a TMDL, the allocations are binding and cannot be changed unilaterally by Ecology.

Page 38: The TMDL needs to explain the allocation, not bury it in an appendix. As it is, the reader has no idea what precisely Ecology is talking about because it states that the "natural estuary condition is described in Appendix D6." There is no such appendix and page 6 of Appendix D does not set out a description of the natural estuary condition. As such, Ecology has put out a TMDL for which public comment is impossible. Without that information, we are left with a purported allocation that "DES may not deplete dissolved oxygen levels in Budd Inlet at any time or location beyond the impact of the natural estuary condition." A narrative statement is not an allocation.

Page 38: After years and years of modeling, Ecology's answer as to what the allocation to Capitol Lake is, in the event that it is not returned to being a natural estuary, that "DES must show how water quality standards will be met" through more modeling. It is unclear how this future modeling exercise is a TMDL. Moreover, the ambiguous reference to DES's being required to "submit any request for an alternative to Ecology" is ambiguous. To what is Ecology referring? Alternative models? Alternative assumptions? Alternative contributions to the DO deficits in Budd Inlet? Alternative to returning Capitol Lake to being an estuary?

Page 38: Ecology admits that "DES's inability to meet this WLA will jeopardize other point and nonpoint source load allocations into Budd Inlet." In fact, it states, correctly, that "[b]y meeting this allocation, DES provides capacity for other discharges into Budd Inlet." However, there is no basis for Ecology's belief that DEQ will, in fact, meet the allocation. Even if it does eventually, for this TMDL to stand the test right now, it must establish alternative allocations that will also meet water quality standards. Ecology cannot punt that question to DES or the future unless it is in the form of: "if DES does not meet the allocation, the allocations for the other sources will be x, y, and z," not just a statement that a failure "will jeopardize" other allocations.

Pages 42-46: Ecology fails to explain why it has determined that for the marinas, ports, and boatyards, "compliance with the permit constitutes compliance with the goals of the TMDL."

Page 47: Then we get to the "aggregate bubble allocation" for Puget Sound point and nonpoint sources. This, too, is a significant reduction of 61 percent in the 1997 anthropogenic loads. This too is uncontrolled by the Budd Inlet TMDL because it will, we are told, be met by a combination of "actions to be described in the 2024 nutrient management plan." A TMDL that relies on a future plan that is not even developed pursuant to the Clean Water Act does not provide reasonable assurance.

Pages 47-48: Ecology tells us what the allocation is from "natural sources," Table 24, but fails to explain how it arrived at the determination that these sources are natural.

Pages 49-50: Why did Ecology present the load allocations for nonpoint sources by county? It is unclear why this would be helpful. Do such activities as farming and logging vary by county? Is there some way in which compliance with load allocations can be measured at the county level rather than, say, at the mouths of streams that represent watersheds or subwatersheds? How is compliance with the anthropogenic load allocations measured given that Ecology provides the total for the entire drainage basin, Table 25, anthropogenic loads by county, Tables 26-27, and natural loads by the entire drainage basin? How would one determine what portion of the total load by county was natural? How will the purported adaptive management scheme be used given the statement of loads as are on these pages?

Pages 50: Ecology then goes on to talk about watersheds purportedly "to inform implementation," yet tables 29 and 30 combine point and nonpoint sources within each of the subwatersheds and Ecology states that "we define 'watershed load' as the sum of all natural and anthropogenic sources of pollution point and nonpoint distributed within a particular subwatershed." How is combining point, nonpoint, and natural loading together helpful for implementation? How will Ecology determine compliance with allocations or use the results of any future monitoring in its use of "adaptive management," *id.* at 15, when it has not separated out loading by source? How does the concept of "watershed load" comply with EPA regulations as cited above?

Page 50: Ecology has determined that a significant reduction from watersheds, including both point and nonpoint sources, is required -- a reduction of 65 percent. See also *id.* at 52, Table 29. The reference to "numbers" presumably means that the figures discussed in Tables 29 and 30 are "loading capacities" for the watersheds. Why doesn't Ecology call these loading capacities? The phrase "watershed loads" is ambiguous; it could refer to loads not to be exceeded in order to meet water quality standards or, frankly, anything else. And here it appears to mean unaggregated loads from all sources. How does this meet the definition of a TMDL or "inform implementation"? Not separating out the natural contribution and the point source contribution means that the load allocations for nonpoint sources are not clear.

Page 54: While Ecology claims a margin of safety based on the lack of likelihood that some

permittees will discharge to surface waters, it fails to include in its discussion of the margin of safety the lack of likelihood that nonpoint source reductions will take place.

Any discussion of conservative assumptions should include all the assumptions that Ecology made in evaluating and preparing the TMDL that are not conservative. It is simply not believable that all assumptions have been made in one direction. Please provide a complete discussion of all assumptions not just those that support the assertion that the margin of safety is ensured by conservative assumptions.

Page 55: The "bubble allocation" listed as a "LA" actually includes numerous and significant NPDES-permitted sources and so cannot correctly be characterized as a load allocation.

Pages 57-61: Despite breaking the basins down by land cover, Ecology fails to state which land covers, aka nonpoint sources, are the greatest contributors of nitrogen.

Page 61: Ecology states that some of the agricultural uses include "dairy, livestock, poultry" but as the TMDL makes no reference to CAFOs, it appears that all of these animal activities are not permitted. There is no discussion of how Ecology will ensure these unpermitted animal activities meet load allocations or even if they have load allocations.

Page 64: Ecology correctly states: "Most septic systems are not designed to remove nutrients and even a properly functioning onsite septic system releases much higher nitrogen loads than a home connected to a sewage treatment plant." However, later in the TMDL, Ecology states that "regularly inspecting and maintaining septic systems is an effective way of limiting their impact on the surrounding environment and water quality." Id. at 66; see also id. at 73 (responsibility of local government to address septic systems), 77 (property owners should "properly maintain[] and operat[e] on-site septic systems"), 82 (priority actions for inspection, replacement, and maintenance of septic systems include zero actions pertaining to nutrient removal); 95 (cost of addressing "noncompliance septic systems"). The failure to provide a load allocation and a plan to meet the load allocation by controlling nutrients from septic systems, and concurrently admitting that even perfectly performing septic systems do not remove nitrogen but pretending that performance is the issue, demonstrates an assumption that is not conservative and no reasonable assurance these load allocations will be met.

Page 66-67: The following statements is at least partly false: "The state's forest practices rules are intended to bring waters into compliance with the load allocations established in this TMDL on private and state forest lands." So is this: "The state's Forest Practices Rules were developed with the expectation that the stream buffers and harvest management prescriptions were to be stringent enough to meet state water quality standards for temperature and turbidity, and provide protection equal to what would be required under a TMDL." As Ecology states further, the rules were not deemed to be adequate but, rather, a "formal adaptive management program was established" precisely because it was well understood that they likely were not adequate. The forest practices rules which have been adopted are designed to avoid exceedances in water quality standards. While they may or may not be achieving that goal in all places, it is clear that TMDLs which consider all sources of pollution may require both point and nonpoint sources of pollution to go beyond standard practices if that is necessary to achieve water quality standards. Ecology needs to demonstrate how the forest practices rules meet the requirements of this TMDL.

Page 78: What will Ecology do in its adaptive management if the 2026 and the 2035 deadlines are not met by the DES? Why does the TMDL not specify what Ecology will do?

Page 80: Ecology has not provided an evaluation of why the existing logging practice rules and its general riparian buffers will provide sufficient "large woody debris within the active riverbed to

promote bank stabilization and pool formation, and within riparian zones to provide self-armoring elements as banks are eroded." The erosion of sediments is an important issue in this watershed, and large woody debris provides a significant natural source of both erosion prevention and sediment deposition.

Page 81: If groundwater infiltration is a source of nutrients that affects the Deschutes River and Budd Inlet, the TMDL must identify it -- not simply say that it should be done in the future. If it is, how does the margin of safety address this lack of conservatism?

Page 81: Please explain how the action item "[e]nsure that all timber harvests and other forestry related work must comply with the state Forest Practices Rules" complies with the load allocations in this TMDL. Has Ecology evaluated whether the 2000 MOA between the U.S. Forest Service, EPA, and Ecology ensures that riparian buffers will meet the load allocations in this TMDL? Is it not irrelevant that "[t]he intent of the MOA is meet [sic] environmental responsibilities"?

Page 82: What effect on nutrient pollution does Ecology expect from the first action item in Table 38: "Replace noncompliant septic systems, with an emphasis on areas that drain directly to Budd Inlet." Does "noncompliant" pertain in any way to nutrients?

Ecology states that "future efforts should examine and implement options to reduce nutrient loading from OSS systems. This includes conversion to sewer in urban areas and nitrogen reducing onsite systems in rural areas, if and when reliable and affordable technology becomes available." Are load allocations only applicable when mitigation efforts are

"affordable"? What is Ecology's definition of affordable? If load allocations are not affordable, what does the TMDL say should happen with the unattainable load allocations with regard to other nutrient sources?

Page 85-87: If the timeline for priority implementation actions for agriculture and livestock set out in Table 40 is "ongoing," how and when will Ecology determine that the actions have been taken and the load allocations met?

Are the actions proposed for agriculture and livestock any different here, to meet a load allocation, than they are for any other waterbody in the state? For example, what will Ecology do to ensure that there are protective nutrient management plans and that they are met or that manure is collected, stored, and used such that it does not enter surface or ground water?

Does Ecology think that agricultural and livestock sources are currently sufficiently managing wastes such that they do not enter surface or ground waters and meet the load allocations? If not, what in Table 40 represents a change in how these pollution sources will be managed?

Why does Ecology not include meeting, at a minimum, the guidance for agriculture that it plans to complete by December 31, 2022?

Pages 90-101: Does Ecology consider the costs of not implementing the pollution reduction actions in the TMDL, that is the costs to the environment and human health? Does Ecology consider the costs to NPDES permitted sources if load allocations are not met? This section should evaluate both sides of the equation in costs and benefits.

Page 103: Ecology's reference to using "adaptive management" for the Budd Inlet TMDL is not supported by any specific reference to monitoring data ♦ what data will be collected, when, and by whom ♦ and its use to make adjustments. Plus, what will be adjusted? For example, if the BMPs that Ecology thinks are necessary are not defined clearly, how will it adjust the BMPs to make them more stringent? Moreover, Ecology states that "[t]he success of this TMDL project will be assessed using monitoring data from Budd Inlet," which omits the entire concept of assessing whether load allocations are being met upstream of Budd Inlet and whether wasteload allocations to Budd Inlet and Puget Sound are being met. .

Page 105: How will Ecology carry out step 2, involving evaluating BMPs for "technical adequacy of design and installation"? Will this include evaluating riparian buffer BMPs? Will it involve septic systems for which Ecology has included no nitrogen removal actions? Does Ecology have a budget for this evaluation of programs and BMPs?

Appendices -- Finally, if we had been given more time to develop our comments as we requested, we would have included additional comments regarding the substantial body of information that is included in the appendices.

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Aggregate total limits of pollution based on loading capacity: As we have seen in other efforts in our State to establish upper aggregate limits to pollution loadings, the old method of depending solely on concentration-based effluent limits for point sources does not work to establish a safe limit for the overall pollutant loading to a watershed – only an aggregate limit in pounds per day, week and/or year can do that. That limit then must be equitably apportioned to the various sources of pollution loading, including new effluent limit for point sources.

Naturally, that means that in the future in addition to installing additional treatment or using other means to meet the effluent limits based on today's population, additional technologies and innovative approaches will need to be implemented to ensure that the aggregate limits are met as population increases – no more unlimited expansions. This is not terribly difficult to comprehend, but it can be difficult to achieve, at least initially as planning to meet the new limits is a completely different goal than simply achieving a concentration-based limit. Under the latter, Ecology has for years authorized the expansion of wastewater treatment plants, seemingly without any concern for the effects of the increased loading of pollutants to Puget Sound as a whole, except in a small number of unique cases such as Budd Inlet, where the LOTT WWTP has been required to remove nutrients for many years. This TMDL is likely to require all of the WWTPs that have direct discharges to Puget Sound to reduce and limit their total loadings, and some WWTPs that discharge upstream in rivers that are tributary to Puget Sound.

For clarity, the statement that sewage treatment plant permits “require them to remove organic compounds” should be followed by “but not nitrogen.” For consistency, the sentence pertaining to LOTT should make clear that it is LOTT's permit requires it to have the additional treatment for nitrogen removal and it should read “remove some nitrogen from its effluent.” The use of the phrase “organic compounds” will leave most lay readers confused as to what Ecology is talking about given that it has earlier said that carbon and nitrogen are the problem.

Budd Inlet loading capacity and subsequent waste load allocations: Ecology has completed very extensive research, monitoring and modeling to develop the overall loading capacity for Budd Inlet and the waste load allocations to achieve but not exceed the loading capacity. It would be helpful to the reader to note to what degree the new waste load allocations for the Budd Inlet WWTPs are a reduction to the current loadings from those WWTPs (similar to the notes relating to the stormwater loading reductions which show the need for 65-70% reductions). It is also worth noting that the current total nutrient loadings from stormwater sources to Budd Inlet appear to be much larger than the total nutrient loadings from the three smaller local WWTPs, LOTT being the exception.

Capitol Lake impacts to Budd Inlet: We agree with and support the conclusions and conditions required of DES by Ecology on pages 37 – 38 of the draft TMDL. Ecology has previously shown that construction of the dam to create the lake has had enormous negative impacts on Budd Inlet. Maintaining the dam would have very significant consequences for LOTT and other point sources of nutrients to Budd Inlet, essentially requiring them to eliminate their discharges.

Puget Sound Aggregate “Bubble” Allocation: We support and agree with the “bubble allocation” for point and nonpoint sources of pollution that are external to Budd Inlet and the Deschutes Watershed. While this is a relatively new wrinkle in a TMDL developed by Ecology, it may be a workable solution to the complex problem of addressing and reducing the impacts of the large number of point and nonpoint sources that are outside of the Budd Inlet/Deschutes Watershed. However, achieving success depends on the PCHB and courts upholding the PS Nutrient General Permit and its eventual implementation, and the other elements of the PS Nutrient Management Plan in parallel development by Ecology. Due to the large number of external sources and difficulty of achieving an average of 65% reductions simultaneously within a reasonable time period across many watersheds, Ecology needs to provide a showing of reasonable assurance that the aggregate bubble can indeed be achieved.

Implementation Plan:

Capitol Lake Dam -- We strongly support Ecology’s recommendation to remove the Capitol Lake Dam to restore the Deschutes Estuary as the most important action needed to reach water quality standards in Budd Inlet. The research and modeling have shown that without removing the dam it is highly unlikely that water quality standards can ever be achieved in Budd Inlet. The timelines suggested by Ecology for DES to implement the preferred alternative appear to be reasonable based on the amount and type of restoration work that will be required.

Need for Watershed Council -- The TMDL points out that nonpoint source reduction actions are necessary within the Deschutes Watershed as determined by the Deschutes River TMDL. To ensure that those actions are undertaken and are effective, we again recommend the creation of a permanent Watershed Council for the Deschutes Watershed to oversee implementation of these TMDLs to help ensure that agencies are held accountable and that implementation actions are tracked, and to provide a public forum for regular reports and updates on implementation and the results of those actions on water quality. The Council could serve to provide: (1) a continuing focus on implementation of these TMDLs; (2) a regular forum to review progress and success or lack thereof; and (3) a forum to recommend adaptive management actions which would enhance the success of the TMDLs.

Reissue PS Nutrient General Permit with water quality-based effluent limits by 2026 -- we continue to believe that this timeline can and should be shortened somewhat. Ecology already has most of the information needed to establish effluent limits and will gather any remaining data in the next year or so. The sooner the WWTPs begin seriously evaluating the technologies required to meet their new effluent limits the sooner those technologies will be installed.

Costs of implementing the TMDL – while not required, we appreciate the discussion of estimated costs and potential funding sources to implement this TMDL. While some may offer estimates that differ from those you include, the overall total cost to be spread over 20 years will undoubtedly be very high. It is likely that special state and possibly federal funding will be needed to fully implement some of the actions outlined in the implementation plan.

Climate change -- Ecology acknowledges that climate change will be a contributing factor in meeting water quality standards in the future ("Climate change impact analysis was not specifically included in the scope of this TMDL; however it will likely impact DO levels in Budd Inlet (see Appendix A for more details).") Even though the TMDLs pertain only to the future, and have little or no relevance to the past, Ecology has decided to ignore this factor. Ecology implies, by including references to "adaptive management" immediately after its statement about climate change, that a "continued re-evaluation of the TMDL" will be sufficient to fix the errors in this TMDL including the omission of climate change. Ecology also appears to suggest that "climate change and changes to land use" are "changes occurring in the natural world" as if to suggest these two types of changes are not anthropogenic in origin. This is incorrect.

Page 16: Ecology provides various maps including the applicable numeric criteria (fig. 3) but does not include a map showing the degree of impairment. As Ecology has produced such maps, it is unclear why it would not include them here.

Page 18: Please explain why and how "Capitol Lake produces anthropogenic carbon loading" that it discharges to Budd Inlet. Ecology has produced material on this but has not included it here.

Page 19: Ecology has not explained how "the Budd Inlet TMDL determines an aggregate load allocation, or bubble allocation, for these sources external to Budd Inlet" when not only does this bubble allocation "include both point sources and nonpoint sources" but it includes a very significant number of point sources that Ecology has already determined cause or contribute to the violations of water quality standards in Budd Inlet. Please explain how point sources can be given load allocations instead of wasteload allocations.

Page 19. Ecology notes that the critical period for dissolved oxygen depletion is in late summer but that the pollutants that fuel algal growth "must be managed during the preceding months." It does not explain the rationale for "tighter allocations during the critical period from April through October," in that it does not explain what happens with the less tight allocation during the winter months. What has Ecology determined happens with the nutrients that enter the Sound, including Budd Inlet, during November through March?

Page 20. Ecology is incorrect in stating that "[a] waterbody's loading capacity is the sum of anthropogenic and naturally occurring pollutant loading." The correct definition of a loading capacity is "[t]he greatest amount of loading that a water can receive without violating water quality standards." 40 C.F.R. § 130.2(f). What Ecology has said is that to obtain the loading capacity it need only add the existing loads together.

Page 21. We disagree that Ecology has "summarize[d] the total wasteload allocations for all point sources" in Table 3 because it has included wasteload allocations in its "bubble allocation" not shown in Table 3.

Page 23. Table 4 provides the wasteload allocations for LOTT but it does not include any information on current LOTT discharges or current LOTT permit limits. The same is true of the subsequent tables for other sewage treatment plants. Please provide the existing permit limits so that readers of the TMDL can see what, if any, changes the TMDL is having on these facilities' operations.

Page 27: Ecology acknowledges that “[a]llocations at other times of year are also required as these loads may impact DO in the critical period” but it does not explain why given the TMDL’s inability to control the major sources of pollution to Budd Inlet—Capitol Lake and Puget Sound—it has not written a TMDL with allocations that control nutrients year around at the most stringent level possible.

Pages 29–36: Ecology states that “in order to meet the waste load allocations shown above, reductions of 65-70% will be needed from 1997 levels” but again does not explain why those reductions should be less during the winter months or that not reducing loads during winter months will not have a water quality impact.

Page 37: Ecology is not clear what type of “allocation” it is making to Capitol Lake. In the regulatory world of TMDLs, there is no such thing as an “allocation” that does not apply to permitted sources, nonpoint sources, or natural background. The reason for this is clear: TMDLs are supposed to be the means by which waters with unsafe levels of pollution are cleaned up. If allocations are not named, they are not real. (Note that on the subsequent page, Ecology’s confusion manifests as saying there is no permit but the allocation is a “WLA.”)

Page 37: At a minimum Ecology will want to clean the following sentence up so that it makes sense: “To derive an allocation for Capitol Lake we remove the Capitol Lake Dam from the Budd Inlet model and determine the final DO under the TMDL scenario in Budd Inlet. Capitol Lake’s allocation is the difference between the final DO in Budd Inlet and the water quality standard.” What exactly is a “final DO in Budd Inlet”? This appears to be a description of how Ecology might determine the natural conditions, an approach that is no longer applicable in Washington’s water quality standards. Then again, it is not clear what this is describing.

Page 38: Ecology cannot issue a TMDL with a purported “allocation” with the caveat attached that says “[u]nless approved by the Department of Ecology.” Once EPA approves a TMDL, the allocations are binding and cannot be changed unilaterally by Ecology.

Page 38: The TMDL needs to explain the allocation, not bury it in an appendix. As it is, the reader has no idea what precisely Ecology is talking about because it states that the “natural estuary condition is described in Appendix D6.” There is no such appendix and page 6 of Appendix D does not set out a description of the natural estuary condition. As such, Ecology has put out a TMDL for which public comment is impossible. Without that information, we are left with a purported allocation that “DES may not deplete dissolved oxygen levels in Budd Inlet

at any time or location beyond the impact of the natural estuary condition.” A narrative statement is not an allocation.

Page 38: After years and years of modeling, Ecology’s answer as to what the allocation to Capitol Lake is, in the event that it is not returned to being a natural estuary, that “DES must show how water quality standards will be met” through more modeling. It is unclear how this future modeling exercise is a TMDL. Moreover, the ambiguous reference to DES’s being required to “submit any request for an alternative to Ecology” is ambiguous. To what is Ecology referring? Alternative models? Alternative assumptions? Alternative contributions to the DO deficits in Budd Inlet? Alternative to returning Capitol Lake to being an estuary?

Page 38: Ecology admits that “DES’s inability to meet this WLA will jeopardize other point and nonpoint source load allocations into Budd Inlet.” In fact, it states, correctly, that “[b]y meeting this allocation, DES provides capacity for other discharges into Budd Inlet.” However, there is no basis for Ecology’s belief that DEQ will, in fact, meet the allocation. Even if it does eventually, for this TMDL to stand the test right now, it must establish alternative allocations that will also meet water quality standards. Ecology cannot punt that question to DES or the future unless it is in the form of: “if DES does not meet the allocation, the allocations for the other sources will be x, y, and z,” not just a statement that a failure “will jeopardize” other allocations.

Pages 42–46: Ecology fails to explain why it has determined that for the marinas, ports, and boatyards, “compliance with the permit constitutes compliance with the goals of the TMDL.”

Page 47: Then we get to the “aggregate bubble allocation” for Puget Sound point and nonpoint sources. This, too, is a significant reduction—of 61 percent in the 1997 anthropogenic loads. This too is uncontrolled by the Budd Inlet TMDL because it will, we are told, be met by a combination of “actions to be described in the 2024 nutrient management plan.” A TMDL that relies on a future plan that is not even developed pursuant to the Clean Water Act does not provide reasonable assurance.

Pages 47–48: Ecology tells us what the allocation is from “natural sources,” Table 24, but fails to explain how it arrived at the determination that these sources are natural.

Pages 49–50: Why did Ecology present the load allocations for nonpoint sources by county? It is unclear why this would be helpful. Do such activities as farming and logging vary by county? Is there some way in which compliance with load allocations can be measured at the county level rather than, say, at the mouths of streams that represent watersheds or subwatersheds? How is compliance with the anthropogenic load allocations measured given that Ecology provides the total for the entire drainage basin, Table 25, anthropogenic loads by county, Tables 26–27, and natural loads by the entire drainage basin? How would one determine what portion of the total load by county was natural? How will the purported adaptive management scheme be used given the statement of loads as are on these pages?

Pages 50: Ecology then goes on to talk about watersheds purportedly “to inform implementation,” yet tables 29 and 30 combine point and nonpoint sources within each of the

subwatersheds and Ecology states that “we define ‘watershed load’ as the sum of all natural and anthropogenic sources of pollution – point and nonpoint – distributed within a particular subwatershed.” How is combining point, nonpoint, and natural loading together helpful for implementation? How will Ecology determine compliance with allocations or use the results of any future monitoring in its use of “adaptive management,” *id.* at 15, when it has not separated out loading by source? How does the concept of “watershed load” comply with EPA regulations as cited above?

Page 50: Ecology has determined that a significant reduction from watersheds, including both point and nonpoint sources, is required -- a reduction of 65 percent. *See also id.* at 52, Table 29. The reference to “numbers” presumably means that the figures discussed in Tables 29 and 30 are “loading capacities” for the watersheds. Why doesn’t Ecology call these loading capacities? The phrase “watershed loads” is ambiguous; it could refer to loads not to be exceeded in order to meet water quality standards or, frankly, anything else. And here it appears to mean unaggregated loads from all sources. How does this meet the definition of a TMDL or “inform implementation”? Not separating out the natural contribution and the point source contribution means that the load allocations for nonpoint sources are not clear.

Page 54: While Ecology claims a margin of safety based on the lack of likelihood that some permittees will discharge to surface waters, it fails to include in its discussion of the margin of safety the lack of likelihood that nonpoint source reductions will take place.

Any discussion of conservative assumptions should include all the assumptions that Ecology made in evaluating and preparing the TMDL that are not conservative. It is simply not believable that all assumptions have been made in one direction. Please provide a complete discussion of all assumptions not just those that support the assertion that the margin of safety is ensured by conservative assumptions.

Page 55: The “bubble allocation” listed as a “LA” actually includes numerous and significant NPDES-permitted sources and so cannot correctly be characterized as a load allocation.

Pages 57–61: Despite breaking the basins down by land cover, Ecology fails to state which land covers, aka nonpoint sources, are the greatest contributors of nitrogen.

Page 61: Ecology states that some of the agricultural uses include “dairy, livestock, poultry” but as the TMDL makes no reference to CAFOs, it appears that all of these animal activities are not permitted. There is no discussion of how Ecology will ensure these unpermitted animal activities meet load allocations or even if they have load allocations.

Page 64: Ecology correctly states: “Most septic systems are not designed to remove nutrients and even a properly functioning onsite septic system releases much higher nitrogen loads than a home connected to a sewage treatment plant.” However, later in the TMDL, Ecology states that “regularly inspecting and maintaining septic systems is an effective way of limiting their impact on the surrounding environment and water quality.” *Id.* at 66; *see also id.* at 73 (responsibility of local government to address septic systems), 77 (property owners should “properly maintain[] and operat[e] on-site septic systems”), 82 (priority actions for inspection,

replacement, and maintenance of septic systems include zero actions pertaining to nutrient removal); 95 (cost of addressing “noncompliance septic systems”). The failure to provide a load allocation and a plan to meet the load allocation by controlling nutrients from septic systems, and concurrently admitting that even perfectly performing septic systems do not remove nitrogen but pretending that performance is the issue, demonstrates an assumption that is not conservative and no reasonable assurance these load allocations will be met.

Page 66–67: The following statements is at least partly false: “The state's forest practices rules are intended to bring waters into compliance *with the load allocations established in this TMDL* on private and state forest lands.” So is this: “The state’s Forest Practices Rules were developed with the expectation that the stream buffers and harvest management prescriptions were to be stringent enough to meet state water quality standards for temperature and turbidity, *and provide protection equal to what would be required under a TMDL.*” As Ecology states further, the rules were not deemed to be adequate but, rather, a “formal adaptive management program was established” precisely because it was well understood that they likely were not adequate. The forest practices rules which have been adopted are designed to avoid exceedances in water quality standards. While they may or may not be achieving that goal in all places, it is clear that TMDLs which consider all sources of pollution may require both point and nonpoint sources of pollution to go beyond standard practices if that is necessary to achieve water quality standards. Ecology needs to demonstrate how the forest practices rules meet the requirements of this TMDL.

Page 78: What will Ecology do in its adaptive management if the 2026 and the 2035 deadlines are not met by the DES? Why does the TMDL not specify what Ecology will do?

Page 80: Ecology has not provided an evaluation of why the existing logging practice rules and its general riparian buffers will provide sufficient “large woody debris within the active riverbed to promote bank stabilization and pool formation, and within riparian zones to provide self-armoring elements as banks are eroded.” The erosion of sediments is an important issue in this watershed, and large woody debris provides a significant natural source or both erosion prevention and sediment deposition.

Page 81: If groundwater infiltration is a source of nutrients that affects the Deschutes River and Budd Inlet, the TMDL must identify it -- not simply say that it should be done in the future. If it is, how does the margin of safety address this lack of conservatism?

Page 81: Please explain how the action item “[e]nsure that all timber harvests and other forestry related work must comply with the state Forest Practices Rules” complies with the load allocations in this TMDL. Has Ecology evaluated whether the 2000 MOA between the U.S. Forest Service, EPA, and Ecology ensures that riparian buffers will meet the load allocations in this TMDL? Is it not irrelevant that “[t]he intent of the MOA is meet [sic] environmental responsibilities”?

Page 82: What effect on nutrient pollution does Ecology expect from the first action item in Table 38: “Replace noncompliant septic systems, with an emphasis on areas that drain directly to Budd Inlet.” Does “noncompliant” pertain in any way to nutrients?

Ecology states that “future efforts should examine and implement options to reduce nutrient loading from OSS systems. This includes conversion to sewer in urban areas and nitrogen reducing onsite systems in rural areas, if and when reliable and affordable technology becomes available.” Are load allocations only applicable when mitigation efforts are “affordable”? What is Ecology’s definition of affordable? If load allocations are not affordable, what does the TMDL say should happen with the unattainable load allocations with regard to other nutrient sources?

Page 85-87: If the timeline for priority implementation actions for agriculture and livestock set out in Table 40 is “ongoing,” how and when will Ecology determine that the actions have been taken and the load allocations met?

Are the actions proposed for agriculture and livestock any different here, to meet a load allocation, than they are for any other waterbody in the state? For example, what will Ecology do to ensure that there are protective nutrient management plans and that they are met or that manure is collected, stored, and used such that it does not enter surface or ground water?

Does Ecology think that agricultural and livestock sources are currently sufficiently managing wastes such that they do not enter surface or ground waters and meet the load allocations? If not, what in Table 40 represents a change in how these pollution sources will be managed?

Why does Ecology not include meeting, at a minimum, the guidance for agriculture that it plans to complete by December 31, 2022?

Pages 90-101: Does Ecology consider the costs of not implementing the pollution reduction actions in the TMDL, that is the costs to the environment and human health? Does Ecology consider the costs to NPDES permitted sources if load allocations are not met? This section should evaluate both sides of the equation in costs and benefits.

Page 103: Ecology’s reference to using “adaptive management” for the Budd Inlet TMDL is not supported by any specific reference to monitoring data—what data will be collected, when, and by whom—and its use to make adjustments. Plus, what will be adjusted? For example, if the BMPs that Ecology thinks are necessary are not defined clearly, how will it adjust the BMPs to make them more stringent? Moreover, Ecology states that “[t]he success of this TMDL project will be assessed using monitoring data from Budd Inlet,” which omits the entire concept of assessing whether load allocations are being met upstream of Budd Inlet and whether wasteload allocations to Budd Inlet and Puget Sound are being met. .

Page 105: How will Ecology carry out step 2, involving evaluating BMPs for “technical adequacy of design and installation”? Will this include evaluating riparian buffer BMPs? Will it involve

septic systems for which Ecology has included no nitrogen removal actions? Does Ecology have a budget for this evaluation of programs and BMPs?

Appendices -- Finally, if we had been given more time to develop our comments as we requested, we would have included additional comments regarding the substantial body of information that is included in the appendices.