Total Maximum Daily Loads for the Lower Columbia-Sandy Subbasin

Temperature

Response to Public Comments

August 2024

Table of Contents

1. Introduction

This response to public comments document addresses comments and questions received on the proposed rule for the Lower Columbia-Sandy Subbasin Temperature Total Maximum Daily Loads (TMDL) and Water Quality Management Plan (WQMP). The individuals and organizations shown in Table 1 provided comments on the draft TMDL and WQMP during the public comment period which was held from January 10 through February 26, 2024. DEQ held a public hearing on February 16, 2024. Comments received during the public comment period and public hearing have been reviewed by DEQ and are addressed in this document to the best extent possible. Comments that required modifications to the TMDL, WQMP, or technical support documents are noted. In total there were 56 unique comments from 13 entities. DEQ made modifications based on 34 of the comments.

Table 1: Commenters who provided comments during the public comment period on the January 2024 Draft Temperature Total Maximum Daily Loads (TMDL) and Water Quality Management Plan (WQMP) for the Lower Columbia-Sandy Subbasin.

Commenter #	Commenter	Commenter Tag
1	Bureau of Land Management	BLM
2	City of Gresham	Gresham
3	City of Portland Water Bureau	Portland
4	City of Sandy	Sandy
5	City of Troutdale	Troutdale
6	Clackamas Water Environment Services	WES
7	Oregon Department of Forestry	ODF
8	Oregon Department of Fish and Wildlife	ODFW
9	Oregon Forest Industries Council	OFIC
10	Oregon Association of Clean Water Agencies	ACWA
11	Stantec/City of Sandy	Stantec
12	USFS	USFS
13	WaterWatch of Oregon	WaterWatch

2. Comments from: BLM

BLM #1

Description: WQMP - Reconsider the applicability of the draft requirements to intermittent, non-fish bearing streams

Comment: Management strategies for these streams should reflect their distinct hydrological characteristics, acknowledging that their impact on overall water temperature and quality is significantly different from that of perennial streams.

Point 1: We argue that intermittent streams, by their very nature, do not contribute to increased temperature during periods of potential non-attainment. Point 2: WQMP supporting reference (Roon et al., 2021) is not applicable/irrelevant. DEQ cites this study to support the management strategies, but (A) the studies streams are not analogous to the headwater intermittent streams

managed by BLM. The referenced study focuses on larger, fish-bearing perennial streams, which fundamentally differ in both ecological function and hydrological dynamics from intermittent streams. The application of findings from perennial stream studies to intermittent stream management overlooks critical differences in stream ecology and hydrology, potentially leading to ineffective or inappropriate management prescriptions for intermittent streams. Moreover, it's crucial to note that the temperature signal measured in Roon et al. dissipated downstream within 75-200m. Also (B), Re: Silvicultural Prescription and No-Cut Buffers. The silvicultural prescription used in the Roon et al. is not directly transferable to the context of BLM's management practices, particularly due to our implementation of no-cut buffers along streams. The study's approach involved thinning vegetation up to the stream bank, a practice not permitted under BLM's management policies for streams within our jurisdiction. BLM maintains no-cut buffers (50 feet for intermittent, non fish-bearing), a critical measure to protect water quality and streamside habitat by preserving canopy cover and minimizing direct human impact to the riparian zone. This distinction is crucial as it underscores the differing potential for shade reduction and temperature increase. BLM's management practices are designed to maintain, if not enhance, effective shade and reduce the risk of stream warming, contrary to the implications of applying the study's findings to our context.

BLM believes that a nuanced understanding of the hydrological and ecological characteristics of these streams, along with a careful consideration of BLM's existing management practices, will lead to more effective and appropriate water quality management strategies.

Response: The TMDL allocations apply to intermittent streams because they may contain residual pools that support aquatic life or be flowing during periods when the TMDL allocations apply. The classification and mapping of intermittent streams often do not account for these situations. DEQ agrees that intermittent streams that do not have surface flow during the TMDL allocation period will not contribute heat to downstream perennial and fish-bearing streams. The WQMP and TMDL rule were updated to clarify, and an expanded discussion was added to TMDL Technical Support Document Section 2.4.

In terms of thinning, DEQ agrees that thinning treatments applied in Roon et al 2021 are not the same as BLM thinning treatments. Our intent in citing Roon was that we believe their conclusion is applicable to BLM's thinning treatments. Roon's conclusion is that the intensity, scale, and spatial proximity of thinning treatments are the relevant factors that influence the temperature response and propagation of that response downstream. USEPA and BLM studies evaluating different thinning treatments most similar to BLM's (summarized in Technical Support Document Appendix G) found that shade response was a function of 1) the width of an "inner no-harvest" buffer, 2) the density of the "inner no-harvest" buffer, and 3) the amount of vegetation retained in the "outer thinned" buffer zone. Some of the treatments using a 40 foot and 60 foot no harvest inner zone, had shade reductions (> 6%) when the pretreatment canopy cover is less than 80%. A shade reduction of 6% is the threshold Groom et al 2011 found would have a consistently positive temperature response. We removed the reference to Roon in the WQMP and pointed to the summary in Technical Support Document Appendix G which provides more context.

Changes were made based on this comment.

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3. Comments from: City of Gresham

Gresham #1

Description: Sandy WQMP (& TMDL) should allow DMAs more flexibility in how they meet requirements

Comment: Due to the TMDL and the WQMP eventually becoming law, (we) strongly encourage DEQ to give DMAs flexibility in the manner they can meet requirements and update Implementation Plans. Note A: There are potentially many unknown costs associated with the new requirements that ultimately would be passed down to sanitary sewer rate payers/other stakeholders. Grants are administratively burdensome to DMAs such as the City and should not be considered the primary method of payment. Note B: DEQ isn't allowing flexibility for ODF to deploy the new Forest Practice Act (FPA) rules and the Adaptive Management process that was established as part of the updates that were made to the FPA in 2022; if a numeric shade target is included in the TMDL, we simply do not see how the streamside evaluation process in 5.3.2 provides any alternative path for compliance to DMAs and the landowners that they regulate. Note C: Recent water quality monitoring on Johnson Creek has resulted in DEQ expanding the critical period window for Johnson Cr. to Feb 15th – Nov 15th, newly reflecting heat exceedances in the time of year that we have leaf-off conditions. It is unlikely that direct solar radiation is the source of heat loading in the late fall and late winter months that have been added to the critical period, thus strategies other than shade are especially important to explore.

Response: Thank you for your comment. Effective shade surrogate measure targets represent a surrogate for the amount of solar loading that will attain the human use allowance and load allocations for nonpoint sources managing streamside vegetation. DEQ effective shade targets are regulatory and can be used to assess implementation progress in the future. However, DEQ recognizes that it will take decades for these targets to be met in areas where woody, overstory shade vegetation needs to mature, so DEQ will rely on tracking implementation compliance through DEQ approved implementation plans, annual reports, and comprehensive year five reviews. The WQMP and streamside evaluation gives responsible persons, including DMAs, the flexibility to provide a rationale for how they will prioritize implementation of strategies that increase streamside shade and other restoration efforts to improve stream temperature. Specifically, the streamside evaluation allows for responsible persons and DMAs to prioritize implementation using alternative metrics or criteria, in addition to DEQ shade targets and gaps. DEQ will evaluate other restoration efforts that have been implemented to improve stream temperature, for example, channel morphology and stream flow restoration, protection and enhancement of cold water refuges, etc.

Language has been added to Section 6 of the WQMP to better describe monitoring and evaluation of progress for implementation of this TMDL.

Changes were made based on this comment.

Gresham #2

Description: WQMP - Fiscal Analysis is outdated & non-comprehensive

Comment: The fiscal analysis as currently written doesn't speak to implementation feasibility or inform implementation rate projections for at least one low-income suburb. 1) We recommend DEQ begins requesting basic, standard reporting metrics on actual incurred costs for riparian and in-stream restoration costs when either annual or 5-year progress reports are submitted by DMAs. 2) Fiscal analysis statements about income generated by Portland-area tourism should not be portrayed as a relevant compensating variable for low-income suburbs, which are rarely tourist destination hot spots. 3) Data used in Fiscal Analysis are obsolete. (See Notes field)

Response: DEQ acknowledges that the fiscal analysis relied on dated project costs in absence of updated information. The rulemaking advisory committee did not provide cost information to DEQ. DEQ also recognizes that DMAs have different levels of funding available to implement their TMDL plans and that some cities may need to increase fees, such as stormwater fees to help supplement costs of implementation.

DEQ removed language in the Willamette Subbasins Statement of Fiscal and Economic Impact regarding tourism dollars generated from tourists in Portland.

The commenter suggested that DEQ staff request standard reporting metrics on actual incurred costs for stream restoration with either the TMDL annual reports or as part of the Year Five TMDL reviews. This cost information could help inform future temperature TMDL updates. DEQ agrees with this suggestion and added language to the Implementation Costs and Funding section in the WQMP giving DMAs an option for including actual implementation costs as part of TMDL annual reporting. This reporting would not be a requirement.

Changes were made based on this comment.

Gresham #3

Description: WQMP - Requirements for all in-channel ponds greater than 1 acre

Comment: The WQMP strategies listed in Table 2 of the Willamette Subbasin WQMP should include the following: "The impacts of private reservoirs/in-channel impoundments." We recommend adding language that requires all in-channel ponds over an acre to be addressed, instead of focusing only on those located on publicly owned land. The City lacks authority to require private in-channel impoundments be retrofit to address heat loading without TMDL language necessitating these areas be addressed, yet it may be private impoundments that are the larger heat source in some systems (examples provided).

Response: DEQ appreciates the City of Gresham's motivation to invest in efforts to reduce instream heat loads. DEQ also acknowledges that small in-channel impoundments may create an environment that introduces heat into waterways. A wide range of features unique to each impoundment will affect the amount of heat introduced. These features include residence time, canopy cover, location of the outlet, water clarity, etc. The TMDL considers the impact of small, in-channel reservoirs to the extent that TMDL modeling includes empirical data from watersheds containing small in-channel reservoirs. DEQ has prioritized implementation for a subset of

reservoirs holding the largest volume of water within the Willamette Basin. DEQ supports voluntary in-channel pond removal as a generally effective best management practice to reduce water temperature. Anecdotal evidence suggests that in-channel dam removal or modification is a feasible, effective, and landowner-acceptable solution that also benefits fish passage and water quality. DMAs who have legal authority, through municipal code or other land use rules, over riparian areas will help achieve riparian shade targets along small in-channel impoundments.

Gresham #4

Description: WQMP - Protection of shallow subsurface groundwater

Comment: The WQMP strategies listed in Table 2 of the Willamette Subbasin WQMP should include the following:

"Protection of shallow subsurface groundwater." Protection of "groundwater inflows" and correspondingly, "stream volume" are mentioned specifically in OAR 340-041-0028(11) yet aren't part of the criterion or considerations presented in either the Willamette or Lower Columbia-Sandy Subbasin WQMPs. We recommend that Department of State Lands (DSL) and Oregon Department of Geology and Mineral Industries (DOGAMI) have more explicit requirements for managing temperature than what is currently indicated in both the Sandy and Willamette Subbasin WQMPs. While DSL and DOGAMI are listed as DMAs under the Temperature TMDL updates, both are currently exempted from having any type of implementation plan responsibility due to their limited ownership of streamside property that could be shaded.

Response: Neither DOGAMI nor DSL has been exempted from developing a plan, as DEQ may require a plan in the future. DEQ evaluated whether DOGAMI should develop a TMDL implementation plan as suggested by the commenter. DOGAMI is DEQ's primary agent for implementing two DEQ permits: the 1000 WPCF and 1200-A. The 1000 WPCF permit is for sand, gravel, and other non-metallic mineral quarrying and mining operations that dispose of process wastewater and storm water by recirculation, evaporation, and/or controlled seepage with no discharge to surface waters. The 1200-A general permit is for mining and quarrying of nonmetallic minerals, such as sand and gravel mining, that may discharge stormwater or mine dewatering water from a point source to surface waters or conveyance systems to surface waters. DOGAMI does not own or manage land near waterbodies, but ensures these two permits are implemented according to permit conditions.

Oregon's 1200-A general permit expired in 2017. DEQ is currently researching best practices for managing the discharge of stormwater and pond dewatering from sand and gravel mining activity covered under this permit, including evaluating if discharges have the potential to exceed the temperature standard, or other considerations around hydrologic impacts to nearby waterbodies. DEQ believes evaluation of these permits, rather than DOGAMI developing a TMDL implementation plan would be a better pathway for implementing any needed protective measures. DOGAMI will remain as a DMA for both the Willamette Subbasins and Sandy Temperature TMDLs in the event that new information indicates there would be water quality benefits from DOGAMI developing and implementing a TMDL plan.

DSL regulates activities that occur in wetlands and other waters within the Sandy Basin. DSL administers Oregon's Removal-Fill Law, whose purpose is to protect water resources, navigation, recreation, fisheries, wildlife habitat, and water quality. DSL jurisdiction extends up to the ordinary high-water mark, and therefore is less relevant to streamside shade-producing trees. DSL may require compensatory wetland mitigation in some cases, and shade is generally one of the functions under consideration. The current limited role of DSL in riparian protection does not indicate that an implementation plan for streamside shade is needed at this time. DEQ did not assess whether any needed changes, including permitted activity and mitigation impact evaluation, to DSL's removal-fill permits are warranted, or how various DSL jurisdictional decisions could impact stream warming.

Gresham #5

Description: WQMP - Locally Significant Wetlands

Comment: The WQMP strategies listed in Table 2 of the Willamette Subbasin WQMP should include the following:

"Locally Significant Wetlands." Gresham requests that DEQ incorporate into their Temperature TMDL update process a review and collaborative revision of OAR 141-086-0350 (2)(b), in conjunction with the relevant state agencies. The existing language was developed by a technical advisory committee in the late 1990s in association with DSL, DLCD, and DEQ staff, prior to any TMDL approvals in Oregon. The language is the primary directive used by local jurisdictions to require buffer protections of wetlands meeting local significance criteria. Recent challenges to Gresham's legal ability to consider a wetland "locally significant" due to proximity of a 303(d)-listed waterway have highlighted the need for this language to be reviewed and updated at such times that DEQ alters their assessment of streams for inclusion on the 303(d) list and for TMDL listing. If that language does not reflect current DEQ practices, local jurisdictions may lose justification for local wetland protections, and therefore lose the ability to protect these areas on the landscape that are critical for infiltration, groundwater flow, bank storage, and hyporheic flow support.

Response: The request to coordinate and revise Department of State Lands rule language in OAR 141-086-0350(2)(b) is outside the scope of this rulemaking. However, DEQ's limited understanding of this language continues to give local governments the ability to identify a wetland as locally significant if it occurs within a horizontal distance of less than a quarter mile from a waterbody listed by DEQ as water quality limited (303(d) list), and the wetland's water quality function is described as "intact" or "impacted or degraded" using the Oregon Freshwater Wetland Assessment Methodology. If the commenter's concern is that local governments may lose the ability to protect these wetlands if DEQ does not make a determination that the nearby waterbody is impaired for a pollutant, or that a TMDL is effective for that waterbody, then DEQ suggests reaching out to DSL about potentially clarifying this language. In general, DEQ is supportive of wetland protections and recognizes their water quality contribution to lakes and streams.

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4. Comments from: City of Portland Water Bureau

Portland #1

Description: HUAs - Other NPSs – Water Quality Trading Discussion

Comment: The TMDL documents should include specific discussion of the water quality trading framework. We request that DEQ clarify in the documents if such a lack of a HUA allocation for "other" NPSs may affect the ability for DMAs to use water quality trading or other strategies to protect water temperatures.

Response: DEQ has expanded discussion of WQ trading and other management/trading strategies in the Sandy and Willamette WQMPs. Water quality trading is allowed statewide if the conditions listed under OAR Chapter 340 Division 39 are met. As noted in OAR 340-039-0020(3), a trading framework is not required in order for DEQ to approve a water quality trading plan.

Changes were made based on this comment.

Portland #2

Description: EPA's Columbia River Cold Water Refuge Plan isn't discussed

Comment: Given the potential for new heat sources in the Sandy Subbasin (e.g., Sandy WWTP, ODFW Sandy R. Hatchery outfall) and that it may take several decades for 'background' temperatures to decrease as shade slowly develops, it is important that DEQ explicitly integrate EPA's CWR Plan into the Sandy TMDL and identify near-term (0-20 yrs) strategies to protect and maintain the Sandy River CWR during the critical summer period of July-August. DEQ does not mention EPA's Columbia River CWR Plan in the Sandy TMDL or associated documents such as the WQMP. DEQ does not identify strategies, such as water quality trading, that could be used throughout the Sandy Subbasin by DMAs to protect and maintain the Sandy River CWR during the critical summer period.

Response: Thank you for your comment. Identifying and protecting cold water refuges is included in Table 1 (Management strategies by sources) in the draft Water Quality Management Plan. The WQMP has been updated to specifically reference EPA's Columbia River Cold Water Refuges Plan (Section 2.4).

Changes were made based on this comment.

Portland #3

Description: WQMP Withdrawal Management Strategies - Revise Table 1. (p 3)

Comment: Add “protect and enhance cold water refuges” to management strategies for ‘Water Withdrawals and Flow Alteration’. Add “flow augmentation and reservoir operations” to management strategies for ‘Channel Modification and Hydromodification’. This is consistent with strategies listed for hydromodification management strategies in Section 2.3.

Response: Thank you for your comment. Table 1 is not meant to be an exhaustive list of all management measures an entity may implement. Because the management actions noted in the comment are already in or referenced (‘develop dam management strategies for temperature’) in Table 1, no changes will be made to the table.

Portland #4

Description: WQMP – Point Source Priority Management Strategies

Comment: The discussion of PS priority management strategies is inadequate. PS dischargers cannot implement the priority management strategies without viable permitting pathways. To allow PS dischargers access to the priority management strategies as a means of permit compliance for temperature limits, the WQMP should include the range of permitting pathways that exist and that need to be developed (e.g., WQ trading; mechanisms for pilot projects or a specific set of performance metrics; broader set of mechanisms to credit water left instream and offset by recycled water use; pathways to site-specific variances and implementation of pollution reduction plans in-lieu-of numeric temperature limits).

Response: Thank you for your comment. Limits and compliance requirements will vary for each individual and general permit issued or renewed by DEQ. As compliance options can vary for each permit holder and specific circumstance, DEQ encourages permit holders to contact DEQ’s permit program representatives to discuss circumstances prior to finalizing any compliance strategy. Additionally, permit holders will be informed and involved in permit development discussions when new wasteload allocations are implemented, and compliance strategies are needed. A list of potential compliance strategies that may be used to ensure compliance with WLAs in the TMDL includes:

- Trading – watershed/riparian repair
- Mechanical – cooling tower or chiller
- Aquifer recharge and recovery
- Physical shading – tents, awnings, and enclosures
- Land application
- Natural and Artificial Wetlands

This list is not meant to be exhaustive, and absence of any compliance strategy does not preclude its potential use to comply with WLAs for temperature.

Portland #5

Description: Sandy TMDL, TSD, WQMP - Cross-referencing & other errors present (e.g., Figs, Tables, Equations)

Comment: There are several errors throughout the TMDL, TSD, and WQMP where figures, tables, and equations are inaccurately referenced, labeled, or do not exist at all. A few examples are provided below. These errors create confusion and could compromise the integrity of the TMDL. The City requests that DEQ thoroughly review documents to resolve such errors. E.g., a. TMDL (pg 24), the surrogate measure is calculated using Equation 9-4, not 9-3. i. There are several more incorrect references throughout this section. b. TMDL has Table 9-9 and a Table 9-12, but no Table 9-10 nor Table 9-11. c. In the TSD, Table 10-6 is referred to as 10-7 in-text. d. In the TSD, it appears that the vertical axis label for Figure 10-6 should be "Surrogate-NoDam". e. The City can provide a pdf that identifies more (likely not all) errors to DEQ upon request.

Response: As the Commenter suggested, DEQ has reviewed all draft TMDL documents to correct such errors. DEQ welcomes additional notification from the Commenter or others if such errors are noted in the revised documents.

Changes were made based on this comment.

Portland #6

Description: Sandy Shade targets clarification needed - TMDL 9.1.4.2 (p 24-25) and TSD 9.3.2 (p 69-70)

Comment: The City requests that DEQ clarify that the restored conditions model results were what was used to set background conditions and the surrogate measure target. The City's understanding is that the restored conditions model was used as an additional level of conservatism.

Response: DEQ revised some of the narrative in TSD Appendix E to improve documentation of the surrogate measure analysis including which model outputs were used for the regression. The response variables used to develop the surrogate measure regression were derived from segment 7 of the Lower Bull Run No dam (background) CE-QUAL-W2 model for the period of 2014 to 2018. The upstream boundary condition input into this model is from the Middle Bull River No dam (background) scenario that includes restored vegetation conditions and an estimated natural channel. The only difference between the No dam and No dam (background) models is that vegetation outside of the reservoir footprint were set to restored conditions in the background model. In the No dam model vegetation outside of the reservoir is the same as current. The temperature differences between the models at segment 7 are very small, however the background version was used for regression development as a margin of safety because it results in slightly cooler temperatures.

Changes were made based on this comment.

Portland #7

Description: Sandy TMDL – Bull Run scenarios (App. A) Text Clarifications

Comment: Appendix A, Section 4.5.1 (pg 69). Please add text (in brackets) to the following section for clarification: “Results of the CCC model and the No Dams scenario, [both using the contributing flow boundary conditions consistent with observed dam releases in 2016,] were compared to determine the effect of existing dams and reservoirs on the Bull Run in terms of maximum 7DADM change. The results indicated a maximum 7DADM change of 0.87°C at the POMI (model segment 99 (the mouth) on 2016-09-07 due to the presence of existing dams and reservoirs (Table 4-16, Figure 4-25).”

Appendix A, Section 4.5.2 (pg 70). Please add text (in brackets) to the following section for clarification: “Results of the RV and CCC models, [both using the contributing flow boundary conditions consistent with observed dam releases in 2016,] were compared to determine the maximum 7DADM effect of existing vegetative shading that is under human control. Further details on the Bull Run River setup for this scenario are provided in TSD Appendix D.”

Response: DEQ revised the sentences specified by the Commenter. DEQ added an edited version of the text the Commenter suggested, i.e.: “both using flow boundary conditions corresponding to observed dam releases in 2016”

Changes were made based on this comment.

Portland #8

Description: Map Data Error - TSD Figure 2.7 (p 14) and WQMP Figure 2 (p 13)

Comment: The map is inaccurate. The City and the USFS completed a land exchange in the Bull Run Watershed in 2022. The map has not been updated to show the new land ownership configuration. The City now owns 5497.6 acres; previously, the City owned 4819.9 acres. The City provided DEQ with GIS data to update the map on April 21, 2023.

Response: Thanks for bringing this to our attention. The GIS data provided to DEQ in April 2023 did not appear to reflect the updated taxlot information resulting from the land exchange. The City of Portland provided updated taxlot and land ownership details to DEQ in March 2024. DEQ used these (March 2024) data to revise the maps in the TSD and WQMP, which now accurately represent the updated land ownership configuration.

As a side note, the TMDL includes an equation and provision to allow mean shade recalculation following changes in ownership and jurisdictional boundaries. Part of the rationale for including that provision is to accommodate situations like this.

Changes were made based on this comment.

Portland #9

Description: City of Portland, Bull Run Lake/Dam - Protecting Cold Water rule applicability (TSD 9.3.1.1)

Comment: TSD Section 9.3.1.1 (p 69). In 2020, DEQ issued a CWA 401 Certification to the City of Portland for continued use of Bull Run Lake as a water supply source. In the Evaluations and Findings Report (June 2020), DEQ stated that "the 'protecting cold water' rule does not apply" to Bull Run Lake (p 19-20). This seems to contradict TSD Section 9.3.1.1 text that states "the protecting cold water criterion likely applies" to Bull Run Lake dam. The City requests that DEQ consider its prior analysis and findings in the 401 Certification regarding the applicability of the PCW criterion to Bull Run Lake dam and then revise Table 9.3 and Section 9.3.1.1 accordingly to either exclude Bull Run Lake dam or clarify why these findings differ from previous findings.

The City acknowledges that the hydrology of Bull Run Lake is very complex and has extensive data to share with DEQ if additional information is needed. If DEQ determines that no TSD changes are warranted regarding the Bull Run Lake dam, the City requests further discussion with DEQ to better understand the rationale and any requirements that may differ from the 2020 401 Certification.

Response: DEQ agrees the protecting cold water criterion does not apply to the Bull Run Lake or the Bull Run River above the diversion dam due to their being no salmon, steelhead, or bull trout in those waters. In the draft TSD, DEQ evaluated only the component of the protecting cold water criterion related to ambient 7DADM temperatures always being cooler than the biologically based criteria. DEQ has updated the TSD language and included review findings for other PCW components outlined in the rule including, salmon, steelhead, and bull trout (SSBT) presence; threatened or endangered salmonid presence, and critical habitat designation.

Changes were made based on this comment.

Portland #10

Description: City of Portland, Bull Run Lake/Dam - Sandy WQMP Tbl 7 & Section 5.3.6.1 (multiple changes)

Comment: Sandy WQMP, Table 7 and Section 5.3.6.1 (p 21-22). (1) Bull Run Lake is included as a dam that would require monitoring outlined in section 5.3.6.1. Depending on DEQ's response to the City's related comment on the TSD Section 9.3.1.1 (p 69), the City requests that DEQ edit this section accordingly and remove Bull Run Lake dam if applicable. (2) The City requests that DEQ remove the "Spillway Dam" from Table 7 due to its redundancy with Development No 2. "Spillway Dam" is included in Table 7 with a reservoir storage capacity listed as 25,000 ac-feet. This is redundant with the inclusion of the Development No. 2 dam. The City is not sure if DEQ is referring to the actual spillway of Dam 2 or the 'diversion dam', which impounds the diversion pool for the water supply system and is immediately downstream of Dam 2. Regardless, both the spillway and the diversion dam are integrated into Development No 2. (3) The City requests that DEQ remove discussion of "spillway dam" from this section. Monitoring of the type described in Section 5.3.6.1 is not possible for the "spillway dam", regardless of if it is referring to the spillway or the diversion dam, as it is impossible to separate

these out from Development No. 2 dam. It would also be redundant with monitoring already occurring for the Development No. 2 dam.

Response: Thank you for your comment. Due to its integration with Development Dam #2, the spillway dam has been removed from Table 7 and from Section 5.3.6.1. Regarding the Bull Run Lake dam, DEQ has determined that the protecting cold water criterion (OAR 340-041-0028(11)) does not apply to this dam. However, the City is still required to conduct monitoring for this dam as described in Section 5.3.7.1 of the Water Quality Management Plan.

Changes were made based on this comment.

Portland #11

Description: City of Portland - WQMP Sec 5.3.2

Comment: Section 5.3.2 (p 18-19). The City requests that DEQ provide the City with site-specific shade results and shade gap analysis pertaining to the City of Portland.

Response: DEQ provided the requested information for the Sandy River mainstem to the Commenter by email.

Portland #12

Description: City of Portland - WQMP Sec 5.3.7

Comment: It's unclear why the implementation schedule for the Sandy TMDL is tied to the Willamette Mainstem TMDL. Please include information explaining the rationale for this and expectations for how the Sandy Subbasin TMDL implementation will occur if EQC adoption of the Willamette Mainstem TMDL is significantly delayed. This has important staffing and funding resource planning implications for the City.

Response: Thank you for your comment. Because some entities will be named as DMAs in both the Lower Columbia-Sandy Subbasin TMDL and the Willamette Mainstem and Major Tributaries TMDL and will have similar implementation and reporting requirements for the two TMDLs, DEQ believes delaying implementation of the Lower Columbia-Sandy Subbasin TMDL will allow those entities named in both to more efficiently implement the TMDLs. While official implementation of the Lower Columbia-Sandy Subbasin TMDL is tied to the Willamette Mainstem and Major Tributaries TMDL, there is nothing to preclude an entity named as a DMA in the Lower Columbia-Sandy Subbasin TMDL from beginning to implement the requirements of that TMDL at an earlier date.

Portland #13

Description: City of Portland - WQMP Sec 6.1

Comment: Section 6.1 (p 30). The gages used by the City for monitoring are USGS gages with a defined QA/QC protocol. The City requests that ODEQ allow the USGS QA/QC protocol to suffice for the QAPP; if this is not accepted, the City requests additional detail from ODEQ on QAPP requirements.

Response: Thank you for your comment. Section 6.1 of the Water Quality Management Plan has been updated to allow use of the USGS QA/QC protocol for the City's monitoring requirements.

Changes were made based on this comment.

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5. Comments from: City of Sandy

Sandy #1

Description: HUA - Warming from tributaries should be categorized as a background source

Comment: From TMDL Section 7.3, it appears that "warming from tributaries" should be categorized as a background source. This will enable DEQ to include an allocation for reserve capacity, which will provide the communities served served by STPs to potentially use some of the reserve capacity for future growth and development.

Response: In the public notice version of the TMDL, DEQ modeled the "Comprehensive Attainment" model scenario assuming all reserve capacity was allocated and utilized in Sandy River tributaries. This assumption limited the amount of reserve capacity available on the Sandy River. DEQ revised this approach to only include the portion of the human use allowance assigned to sources, excluding reserve capacity. These revised models yielded smaller temperature changes in the Sandy River. DEQ used some of this capacity to increase allocations for existing sources and retain the remainder as reserve capacity for the Sandy River mainstem. If reserve capacity is requested at a future date, an analysis to determine available loading capacity will occur at that time. The TMDL language and allocations have been updated to reflect these revisions.

Changes were made based on this comment.

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6. Comments from: City of Troutdale

Troutdale #1

Description: HUA - Warming from tributaries should be categorized as a background source

Comment: From TMDL Section 7.3, it appears that “warming from tributaries” should be categorized as a background source. This will enable DEQ to include an allocation for reserve capacity, which will provide the communities served served by STPs to potentially use some of the reserve capacity for future growth and development.

Response: In the public notice version of the TMDL, DEQ modeled the “Comprehensive Attainment” model scenario assuming all reserve capacity was allocated and utilized in Sandy River tributaries. This assumption limited the amount of reserve capacity available on the Sandy River. DEQ revised this approach to only include the portion of the human use allowance assigned to sources, excluding reserve capacity. These revised models yielded smaller temperature changes in the Sandy River. DEQ used some of this capacity to increase allocations for existing sources and retain the remainder as reserve capacity for the Sandy River mainstem. If reserve capacity is requested at a future date, an analysis to determine available loading capacity will occur at that time. The TMDL language and allocations have been updated to reflect these revisions.

Changes were made based on this comment.

Troutdale #2

Description: Stormwater WLAs - Revise statements

Comment: DEQ should revise its statement about insufficient evidence of stormwater discharges contributing to temperature standard exceedances to make a clearer, definitive, affirmative position, such as the following: “Based on a review of published literature and other studies related to stormwater runoff and stream temperature in Oregon, DEQ concluded that stormwater discharges authorized under the current municipal (MS4s) permits or the construction (1200-C) and industrial (1200-A and 1200-Z) general stormwater permits do not contribute to exceedances of the temperature standard. Therefore, wasteload allocations for these sources are not included in the TMDL.”

Response: DEQ updated the narrative in section 7.1. to the following: “DEQ completed a review of published literature and other studies related to stormwater runoff and stream temperature in Oregon and concluded that stormwater discharges authorized under the current municipal (MS4), construction (1200-C) and industrial (1200-A and 1200-Z) general stormwater permits are unlikely to contribute to exceedances of the temperature standard. Therefore, no additional TMDL requirements are needed for stormwater sources to control temperature, other than those included in the current permits. More specific wasteload allocations can be

considered if subsequent data and evaluation demonstrates a need and if reserve capacity is available."

Changes were made based on this comment.

Troutdale #3

Description: Stormwater WLAs - Revise statements (2)

Comment: References to general stormwater permits in TMDL Section 9.1.2 should be deleted. Section 9.1.2 says that for general stormwater permit (MS4 Phase II, 1200-A, 1200-C and 1200-Z) registrants and general permit registrants not identified in Table 9-11, their WLA is equal to any existing thermal load authorized under the current permit. But, this statement conflicts with the TMDL Section 7.1, which states that there is insufficient evidence to demonstrate that stormwater discharges authorized under this set of general permits contribute to temperature standard exceedances in the Sandy Subbasin.

Response: Thank you for your comment. DEQ clarified the language in TMDL Section 9.1.2. as follows:

"DEQ completed a review of published literature and other studies related to stormwater runoff and stream temperature in Oregon and concluded that stormwater discharges authorized under the current municipal (MS4), construction (1200-C) and industrial (1200-A and 1200-Z) general stormwater permits are unlikely to contribute to exceedances of the temperature standard. Therefore, no additional TMDL requirements are needed for stormwater sources to control temperature, other than those included in the current permits. More specific wasteload allocations can be considered if subsequent data and evaluation demonstrates a need and if reserve capacity is available."

Changes were made based on this comment.

Troutdale #4

Description: Stormwater WLAs - Provide WLA to MS4s

Comment: DEQ should provide a modest WLA to all MS4s in both TMDLs to avoid unintended compliance problems if it turns out that any MS4s are someday found to be significant heat contributors.

Response: DEQ is not assigning WLAs to MS4s in these TMDLs because this would require revisions to the NPDES MS4 General Permit to include any such WLAs. However, if stormwater in general or a specific MS4 is later determined to cause temperature impacts that affect TMDL attainment, then the associated MS4(s) may apply for available Reserve Capacity.

Troutdale #5

Description: WLAs - should be provided for each use period

Comment: Multiple criteria (i.e., spawning, core cold water, rearing/migration) apply during the TMDL period for many streams in the Sandy Subbasin. The TMDL should specify WLAs for each use period (see Tbl 4.15 Willamette 2006 TMDL). Why aren't there separate WLAs for salmon and steelhead spawning and salmon and trout rearing and migration in Table 9.6 as are in Table 4.15 of the Willamette Basin 2006 TMDL?

Response: Separate wasteload allocations for each criterion and fish use designation period are not necessary because the wasteload allocation and the portion of the human use allowance assigned to each facility is the same regardless of criteria. DEQ set the human use allowance and corresponding wasteload allocations considering the maximum temperature change at each facility regardless of fish use (TMDL Technical Support Document Table 7-1). Therefore, based on the data available to DEQ, we believe the allocations should be sufficient in either fish use period. One of the reasons this approach was used is because EQC has approved, and DEQ has submitted to EPA updates to the fish and aquatic life use designations. As of August 2024, EPA has not taken action on the updated use designations. If approved, the updates will change the applicable temperature criteria and spawning periods for some assessment units in the Lower-Columbia Sandy Subbasin. A single human use allowance will accommodate these use designation changes. The other reasons DEQ used this approach is because it required less time to characterize, calculate, and evaluate allocations. DEQ had to consider timing in all aspects of the analysis in order to meet the court ordered schedule.

Troutdale #6

Description: LAs - Effective shade curves & the 120' buffer width (Table 9-13).

Comment: We recommend that DEQ include discussion in Section 9.1.4.4 that the shade curves presented in Figures 9-5 to 9-8 and in the Appendix of Effective Shade Curve Tables are based on an assumed vegetation height, density, overhang, and buffer width; these are idealized conditions and not representative actual field conditions. Thus, the effective shade targets obtained from the shade curves do not reflect site potential conditions; the effective shade obtained from the shade curves should be used as a guide to evaluate progress and not as actual effective shade targets.

Response: As stated in the TMDL, the shade targets derived from shade curves are applicable to any stream that does not have site specific shade targets. The TMDL also states that the effective shade curves represent the maximum possible effective shade for a given vegetation type. These targets are regulatory however, DEQ recognizes that it will take decades for these targets to be met. The WQMP and streamside evaluation gives responsible persons including DMAs the flexibility to provide a rationale for how they will prioritize implementation of strategies that increase streamside shade. Specifically, the streamside evaluation allows for responsible persons and DMAs to prioritize implementation using metrics or criteria in addition to DEQ shade targets. DEQ will assess compliance with the TMDL through DMA tracking and reporting on their DEQ approved implementation plans.

For these reasons, DEQ will not add the recommended language to Section 9.1.4.3. However, DEQ will consider using shade targets submitted in DMA implementation plans for compliance assessment.

Troutdale #7

Description: WQMP - Measurement/Modeling/Reporting on Effective shade & Temperature is infeasible for DMAs

Comment: Measuring effective shade, conducting temperature modeling, and reporting on monitoring performance is impractical and potentially costly for DMAs such as the City of Troutdale. The City does not have authority to access private properties to conduct shade assessments or to confirm that any width of buffer zone from the stream bank is protected. Therefore, DEQ's expressed desire to have local DMAs conduct "boots on the ground" assessments is not practicable. Small DMAs do not have resources to conduct complex analyses through LiDAR, solar pathfinder, or other means. Rather than have individual agencies conduct a shade assessment, this is an action that should be taken on by DEQ at defined intervals to assess shade with the implementation of the TMDL management practices. DEQ has the necessary tools and expertise to conduct this assessment and should take on this responsibility to define the effectiveness of the TMDL management practices.

Response: The streamside evaluation described in the WQMP will provide a baseline for assessing a DMA's progress in implementing restoration actions. The streamside evaluation will characterize streamside areas where management strategies can be implemented, as well as areas where various constraints preclude implementing actions. Unless named in Section 5.3.4.2 of the WQMP, entities are not required to conduct a shade gap analysis; however, they are required to use the DEQ shade gap analysis, where completed, to inform their streamside evaluation. Characterizing the streamside acres within a DMA's jurisdiction is important, as DEQ will rely on tracking implementation compliance through DEQ approved implementation plans, annual reports, and comprehensive year five reviews in the coming years. As described in Section 6 of the WQMP, DEQ will work with specific partners to develop an overall monitoring strategy for the Lower Columbia-Sandy Subbasin project area.

Troutdale #8

Description: WQMP - Withdrawal Management Strategies Need Development

Comment: This strategy must be more fully developed. The WQMP recommends pursuit of "out-of-stream rights and converting these rights to instream uses". Reliance on instream water rights as the vehicle to implement this management strategy will not tap its full potential. There is significant untapped potential to leave cool water instream and offset its consumption with recycled water. DEQ should take necessary steps to facilitate expansion of the permitted use of recycled water, which would allow entities to transfer water rights for in-stream use. For this WQMP, DEQ should incorporate the framework for additional means (other than water rights transfers or leases; see examples provided) to achieve temperature compliance through recycled water offsets to withdrawals, such as contracts, and DEQ should develop strategies in the WQMP (see examples provided).

Response: DEQ has expanded discussion of WQ trading and other management/trading strategies in the Sandy and Willamette WQMPs. The strategies described by the commenters are and will continue to be available to permittees, and DEQ is supportive of their expanded use.

Changes were made based on this comment.

Troutdale #9

Description: WQMP – Point Source Priority Management Strategies

Comment: The discussion of PS priority management strategies is inadequate. PS dischargers cannot implement the priority management strategies without viable permitting pathways. To allow PS dischargers access to the priority management strategies as a means of permit compliance for temperature limits, the WQMP should include the range of permitting pathways that exist and that need to be developed (e.g., WQ trading; mechanisms for pilot projects or a specific set of performance metrics; broader set of mechanisms to credit water left instream and offset by recycled water use; pathways to site-specific variances and implementation of pollution reduction plans in-lieu-of numeric temperature limits).

Response: Thank you for your comment. Limits and compliance requirements will vary for each individual and general permit issued or renewed by DEQ. As compliance options can vary for each permit holder and specific circumstance, DEQ encourages permit holders to contact DEQ's permit program representatives to discuss particular circumstances prior to finalizing any compliance strategy. Additionally, permit holders will be informed and involved in permit development discussions when new wasteload allocations are implemented, and compliance strategies are needed. A list of potential compliance strategies that may be used to ensure compliance with WLAs in the TMDL includes:

- Trading – watershed/riparian repair
- Mechanical – cooling tower or chiller
- Aquifer recharge and recovery
- Physical shading – tents, awnings, and enclosures
- Land application
- Natural and Artificial Wetlands

This list is not meant to be exhaustive, and absence of any compliance strategy does not preclude its potential use to comply with WLAs for temperature.

Troutdale #10

Description: WQMP - OWRD should be a DMA in Implementation Responsibilities and Schedule.

Comment: Since flow management strategies are an essential component of the proposed management strategies, OWRD has an important role in achieving TMDL objectives and thus should be identified as a DMA in both TMDLs. Why was OWRD omitted from the draft list of DMAs?

Response: The comment asserts that the Oregon Water Resources Department (OWRD) should be listed as a DMA because of OWRD's role in water management. DEQ recognizes the temperature impacts that water withdrawals can have. However, OWRD's role as the state agency that administers the laws governing the allocation of water rights can be distinguished from the roles of other state agencies that have regulatory authority managing activities and uses of property that contribute to water quality impairments, such as ODA and ODF. The EQC TMDL rules specifically address the roles that ODA and ODF have in implementing TMDLs in OAR 340-042-0080. Given OWRD's unique role that does not involve land management, rather than designating OWRD as a DMA at this time, DEQ has determined that it will work with OWRD to evaluate ways in which the agencies can further partner in efforts to increase flows to improve water temperature, such as through commitments specified in a MOU or MOA.

Troutdale #11

Description: TMDL Pollutant sources or source categories (Tbl 7-1 error)

Comment: In Table 7-1, the Troutdale WPCF is listed as river mile 1.3 (2.15 km), but its NPDES Discharge Permit lists the outfall at river mile 2.3 (3.70 km). This should be rectified.

Response: Thank you for bringing this to our attention. DEQ staff corrected the location information in the referenced table in the final TMDL.

Changes were made based on this comment.

Troutdale #12

Description: RC - Sandy R. from Troutdale WPCF outfall to the mouth.

Comment: Based on a preliminary data review, the City of Troutdale is unsure if the 0.03°C RC (Table 9-1) will be enough to meet the 13°C criterion in future shoulder seasons.

Response: DEQ updated the assigned HUA for the City of Troutdale WPFC from 0.06°C in the public notice version to 0.09°C in the final TMDL.

Changes were made based on this comment.

Troutdale #13

Description: Sandy Allocations: Table 9-7, dam and reservoir operations

Comment: Was the Mt. Hood Community College reservoir contribution considered in Table 9-7 and the 0.00°C HUA allocated to dam and reservoir operations?

Response: DEQ did not evaluate the temperature impact from the Mt. Hood Community College Reservoir. This TMDL assigned a zero human use allowance and equivalent thermal load allocation to dam and reservoir operations, including the Mt. Hood Community College Reservoir. The allocation requires that dam and reservoir operations not increase 7-day average daily maximum temperatures.

Troutdale #14

Description: WQMP - Table 1, Pollutant ID error?

Comment: Why is solar radiation listed as a pollutant instead of temperature in Table 1?

Response: DEQ revised the pollutant identification from “solar radiation” to “heat” in the table in question.

Changes were made based on this comment.

Troutdale #15

Description: WQMP - Bacteria Source Tracking

Comment: How much bacteria source tracking is required? How will the results be used to reduce bacteria input by a DMA if the bacteria sources are upstream of the DMA jurisdiction? Are construction sites contributing enough bacteria to warrant a management strategy as listed in Table 1?

Response: Thank you for your comment. Bacteria source tracking was identified as a possible management action in the 2005 Sandy River Basin Total Maximum Daily Load and has been carried forward in the current Water Quality Management Plan (WQMP). The WQMP does not require entities to conduct bacteria source tracking, but includes it as a possible action that could help identify sources of bacteria pollution.

Troutdale #16

Description: WQMP Section 5 - Why are DMA requirements “one size fits all”?

Comment: Why are many Section 5 requirements treated as a “one size fits all” for DMAs if the approximate percentage of total subbasin area and approximate percentage of acreage within 150’ of stream (see Table 4) differ by a significant margin and some entities are exempt?

Response: Thank you for your comment. Due to the size of the project area, the variety of DMAs named in the Water Quality Management Plan, and the timeline for developing the TMDL, it was not feasible to develop prescriptive requirements for each DMA or type of DMA.

Although DMAs have different acreages within the project area and within 150' of streams, DMAs required to develop implementation plans must address the deficiencies in streamside shade and implement actions to address the deficiency. Entities not required to develop a TMDL implementation plan at this time were excluded due to reasons such as having very few acres within riparian areas, or because DEQ determined the entity was unlikely to be able to implement riparian shading projects. It is important to note that some DMAs have more responsibilities than other DMAs, including shade gap analysis requirements, as well as dam and reservoir monitoring requirements.

Troutdale #17

Description: Sandy WQMP (& TMDL) should allow DMAs more flexibility in how they meet requirements

Comment: Due to the TMDL and the WQMP eventually becoming law, (we) strongly encourage DEQ to give DMAs flexibility in the manner they can meet requirements and update Implementation Plans. Note A: There are potentially many unknown costs associated with the new requirements that ultimately would be passed down to sanitary sewer rate payers/other stakeholders. Grants are administratively burdensome to DMAs such as the City and should not be considered the primary method of payment. Note B: DEQ isn't allowing flexibility for ODF to deploy the new Forest Practice Act (FPA) rules and the Adaptive Management process that was established as part of the updates that were made to the FPA in 2022; if a numeric shade target is included in the TMDL, we simply do not see how the streamside evaluation process in 5.3.2 provides any alternative path for compliance to DMAs and the landowners that they regulate. Note C: Recent water quality monitoring on Johnson Creek has resulted in DEQ expanding the critical period window for Johnson Cr. to Feb 15th – Nov 15th, newly reflecting heat exceedances in the time of year that we have leaf-off conditions. It is unlikely that direct solar radiation is the source of heat loading in the late fall and late winter months that have been added to the critical period, thus strategies other than shade are especially important to explore.

Response: Thank you for your comment. Effective shade surrogate measure targets represent a surrogate for the amount of solar loading that will attain the human use allowance and load allocations for nonpoint sources managing streamside vegetation. DEQ effective shade targets are regulatory and can be used to assess implementation progress in the future. However, DEQ recognizes that it will take decades for these targets to be met in areas where woody, overstory shade vegetation needs to mature, so DEQ will rely on tracking implementation compliance through DEQ approved implementation plans, annual reports, and comprehensive year five reviews. The WQMP and streamside evaluation gives responsible persons, including DMAs, the flexibility to provide a rationale for how they will prioritize implementation of strategies that increase streamside shade and other restoration efforts to improve stream temperature. Specifically, the streamside evaluation allows for responsible persons and DMAs to prioritize implementation using alternative metrics or criteria, in addition to DEQ shade targets and gaps. DEQ will evaluate other restoration efforts that have been implemented to improve stream temperature, for example, channel morphology and stream flow restoration, protection and enhancement of cold water refuges, etc.

Language has been added to Section 6 of the WQMP to better describe monitoring and evaluation of progress for implementation of this TMDL.

Changes were made based on this comment.

Troutdale #18

Description: Shade targets not achievable

Comment: Local jurisdictions have limited ability to require or incentivize private property owners to provide a 120' buffer width. Local jurisdictions do not have legal authority to access private property for the purposes of conducting a shade assessment, which the draft WQMP document requires. Additionally, site constraints often restrict the establishment of a 120' buffer. Regulatory buffer widths are subject to site constraints, existing structures, established land use laws and regulations (e.g., ESA considerations), overlapping jurisdictions, and property owner rights to develop their sites consistent with zoning and land use designations. Thus, the assumed buffer width used to derive the effective shade curve targets will likely not be achievable in many areas. (as noted in the discussion regarding the HUA allocations)

Response: The 120' buffer width is one way that a jurisdiction can achieve their shade target. These targets are regulatory however, DEQ recognizes that it will take decades for these targets to be met. The WQMP and streamside evaluation gives responsible persons including DMAs the flexibility to provide a rationale for how they will prioritize implementation of strategies that increase streamside shade. Specifically, the streamside evaluation allows for responsible persons and DMAs to prioritize implementation using metrics or criteria in addition to DEQ shade targets. DEQ will assess compliance with the TMDL through DMA tracking and reporting on their DEQ approved implementation plans. DEQ will also consider using shade targets submitted in DMA implementation plans for compliance assessment.

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7. Comments from: Clackamas Water Environment Services

WES #1

Description: HUA - Warming from tributaries should be categorized as a background source

Comment: From TMDL Section 7.3, it appears that "warming from tributaries" should be categorized as a background source. This will enable DEQ to include an allocation for reserve capacity, which will provide the communities served served by STPs to potentially use some of the reserve capacity for future growth and development.

Response: In the public notice version of the TMDL, DEQ modeled the "Comprehensive Attainment" model scenario assuming all reserve capacity was allocated and utilized in Sandy River tributaries. This assumption limited the amount of reserve capacity available on the Sandy River. DEQ revised this approach to only include the portion of the human use allowance assigned to sources, excluding reserve capacity. These revised models yielded smaller

temperature changes in the Sandy River. DEQ used some of this capacity to increase allocations for existing sources and retain the remainder as reserve capacity for the Sandy River mainstem. If reserve capacity is requested at a future date, an analysis to determine available loading capacity will occur at that time. The TMDL language and allocations have been updated to reflect these revisions.

Changes were made based on this comment.

WES #2

Description: Reserve Capacity Allocation (Zero)

Comment: Table 9-3. Please explain why RC receives no allocation on the Sandy R. from the headwaters to the Bull Run R. If possible, we recommend that some of the large allocation for "warming from tributaries" be re-distributed to RC to ensure that additional loading is available for distribution to sources in the future in this reach of the river.

Response: In the public notice version of the TMDL, DEQ modeled the "Comprehensive Attainment" model scenario assuming all reserve capacity was allocated and utilized in Sandy River tributaries. This assumption limited the amount of reserve capacity available on the Sandy River. DEQ revised this approach to only include the portion of the human use allowance assigned to sources, excluding reserve capacity. These revised models yielded smaller temperature changes in the Sandy River. DEQ used some of this capacity to increase allocations for existing sources and retain the remainder as reserve capacity for the Sandy River mainstem. If reserve capacity is requested at a future date, an analysis to determine available loading capacity will occur at that time. The TMDL language and allocations have been updated to reflect these revisions.

Changes were made based on this comment.

WES #3

Description: Stormwater WLAs - Provide WLA to MS4s

Comment: DEQ should provide a modest WLA to all MS4s in both TMDLs to avoid unintended compliance problems if it turns out that any MS4s are someday found to be significant heat contributors.

Response: DEQ is not assigning WLAs to MS4s in these TMDLs because this would require revisions to the NPDES MS4 General Permit to include any such WLAs. However, if stormwater in general or a specific MS4 is later determined to cause temperature impacts that affect TMDL attainment, then the associated MS4(s) may apply for available Reserve Capacity.

WES #4

Description: WQMP - OWRD should be a DMA in Implementation Responsibilities and Schedule.

Comment: Since flow management strategies are an essential component of the proposed management strategies, OWRD has an important role in achieving TMDL objectives and thus should be identified as a DMA in both TMDLs. Why was OWRD omitted from the draft list of DMAs?

Response: The comment asserts that the Oregon Water Resources Department (OWRD) should be listed as a DMA because of OWRD's role in water management. DEQ recognizes the temperature impacts that water withdrawals can have. However, OWRD's role as the state agency that administers the laws governing the allocation of water rights can be distinguished from the roles of other state agencies that have regulatory authority managing activities and uses of property that contribute to water quality impairments, such as ODA and ODF. The EQC TMDL rules specifically address the roles that ODA and ODF have in implementing TMDLs in OAR 340-042-0080. Given OWRD's unique role that does not involve land management, rather than designating OWRD as a DMA at this time, DEQ has determined that it will work with OWRD to evaluate ways in which the agencies can further partner in efforts to increase flows to improve water temperature, such as through commitments specified in a MOU or MOA.

WES #5

Description: Sandy TMDL WLAs - Hoodland STP

Comment: The January 2024 draft Sandy River TMDL includes a wasteload allocation (WLA) of 23.4 million kcal/day for the Hoodland STP. This draft allocation is substantially lower than the current NPDES permit limits which are based on the 2005 Sandy River TMDL. The current 2022-2027 NPDES permit for the Hoodland STP specifies a WLA of 29.9 million kcal/day, which raises the question of why is the Hoodland STP's WLA proposed to be reduced by 6.5 million kcal/day? Is this portion of the Hoodland STP's load proposed to be given to the City of Sandy's proposed new wastewater treatment plant discharge into the Sandy River? Please see the attached Excel file with Excess Thermal Load data from the Hoodland STP from May 2020 through October 2023. Within this set of data, the highest 7-day average ETL discharged was 7.2 million kcal/day, so a 23.4 million kcal/day allocation to the Hoodland STP in the new TMDL should be satisfactory, because it will allow for some increase in its ETL over time (due to population growth, for example) without causing noncompliance.

Response: DEQ's approach to Human Use Allowance allocations to various thermal sources, including NPDES-permitted point sources, is described in the Technical Support Document to the Sandy Subbasins TMDL. Wasteload Allocations were assigned based on current thermal loads, potential future loads based on population growth, and/or loads necessary to attain the TMDL and the associated components of the Human Use Allowance. DEQ is happy to hear that the Commenter agrees with our analysis that the allocation to the Hoodland STP should be satisfactory.

WES #6

Description: Willamette WQMP Appendix A - WES name is incorrect

Comment: At Row #125 in the table in App. A, WES' name isn't spelled correctly. It says "Water and Environment Services". The correct name to use here is Water Environment Services.

Response: Thank you for your comment. DEQ has made this correction in the WQMP.

Changes were made based on this comment.

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8. Comments from: ODF

ODF #1

Description: WQMP - Forestland implementation

Comment: The draft WQMP should allow for flexibility for implementation on forestland. With the Board of Forestry adopting new and revised Forest Practices Act rules in the fall of 2022 (effective January 2024), ODF staff are fully engaged in forestland owner outreach, internal and external training, and on the ground rule implementation assistance and enforcement. ODF encourages the ability to evaluate how these new rules are protective of water quality. Additionally, to ensure successful implementation of FPA rules and associated programs, ODF does not have additional capacity or resources to devote to the shade gap analysis and streamside evaluations prescribed in the draft Lower Columbia-Sandy Subbasin Temperature TMDL WQMP, and certainly not in the proposed required timeframe. Having a prioritized implementation strategy and appropriate timeline would allow ODF to fully engage in this work.

Response: DEQ recognizes the efforts between ODF and timber and conservation groups to update the Forest Practices Act through the Private Forest Accord to create additional streamside protections for fish and non-fish bearing streams and other actions.

DEQ has completed a shade gap analysis for some streamside areas under ODF jurisdiction that ODF may use to inform their streamside evaluation and prioritize subbasins with the largest shade gaps. Although DEQ may have resources to complete a shade gap analysis for the remaining streamside areas under ODF jurisdiction, DEQ recognizes that ODF has the flexibility to conduct its own shade gap analysis using remote sensing technologies, such as satellite imagery, coupled with ground-truthing field measurements. DEQ is happy to collaborate with ODF to assess remote sensing technologies with potential utility for shade gap analysis and streamside evaluation.

DEQ also acknowledges that conducting a streamside evaluation within 18 months of the Environmental Quality Commission's adoption of the Willamette Basin Mainstem Temperature TMDL may not allow enough time for ODF to evaluate potential streamside assessment methodologies and conduct the assessment. Therefore, DEQ has updated the timeline in Table 10 (final version of WQMP) from 18 months to up to three years for all DMAs to conduct a

streamside evaluation. In addition, ODF may prioritize streams with less streamside buffer protection and collaborate with local watershed councils to fund and implement riparian planting opportunities on private lands.

Changes were made based on this comment.

ODF #2

Description: WQMP - Streamside Vegetation Mgmt Strategies correlated to ODF's FPA rules

Comment: In section 2.1 Streamside vegetation management strategies of the draft Lower Columbia-Sandy Subbasin Temperature TMDL WQMP, DEQ identifies the necessary strategies to meet the water quality standards in the temperature impaired waterbodies in the Lower Columbia-Sandy Subbasin. ODF implements rules and programs that employ best management practices, targeting DEQ's identified WQMP strategies: riparian vegetation planting and plant establishment, riparian vegetation protection and riparian vegetation thinning and management. ODF is actively engaged in working with landowners to ensure proper riparian protection, management, and compliance. ODF desires to be successful as a Designated Management Agency (DMA) in helping Oregon private forestland owners meet the Willamette temperature TMDL non-point source load allocation targets. We will do this by working collaboratively with DEQ staff to adopt language in the WQMP that allows for flexibility in implementation approach and effectively uses the resources and authorities under ODF's existing framework. ODF also recommends that DEQ assist ODF in obtaining additional resources before "requiring" ODF to carry out such prescriptive and time intensive activities (i.e. shade gap analysis and streamside evaluations) for the Lower Columbia-Sandy subbasin.

Response: DEQ recognizes the efforts between ODF and timber and conservation groups to update the Forest Practices Act through the Private Forest Accord to create additional streamside protections for fish and non-fish bearing streams and other actions.

DEQ has completed a shade gap analysis for some streamside areas under ODF jurisdiction that ODF may use to inform their streamside evaluation and prioritize subbasins with the largest shade gaps. Although DEQ may have resources to complete a shade gap analysis for the remaining streamside areas under ODF jurisdiction, DEQ recognizes that ODF has the flexibility to conduct its own shade gap analysis using remote sensing technologies, such as satellite imagery, coupled with ground-truthing field measurements. DEQ is happy to collaborate with ODF to assess remote sensing technologies with potential utility for shade gap analysis and streamside evaluation.

DEQ also acknowledges that conducting a streamside evaluation within 18 months of the Environmental Quality Commission's adoption of the Willamette Basin Mainstem Temperature TMDL may not allow enough time for ODF to evaluate potential streamside assessment methodologies and conduct the assessment. Therefore, DEQ has updated the timeline in Table 10 (final version of WQMP) from 18 months to up to three years for all DMAs to conduct a streamside evaluation. In addition, ODF may prioritize streams with less streamside buffer protection and collaborate with local watershed councils to fund and implement riparian planting opportunities on private lands.

Changes were made based on this comment.

ODF #3

Description: Sandy TMDL - Requested Corrections ODF

Comment: Correction 1: The statement “These rules are not expected to result in after-the-fact restoration of riparian areas” on page 14 of the draft WQMP is inaccurate for the following reasons: if a forest harvest operation occurred, forest practice rules require reforestation when stocking level fall below established thresholds. (OAR 629-610-0020 & -643-0500).

Landowners/operators conducting harvest operations under the FPA rules any time prior to January 1, 2024, are required to replant any harvested areas that fall below stocking standards due to tree harvest including areas within the wider no-touch Riparian Management Area’s (RMAs) effective January 2024. After-the-fact restoration would have already occurred. Under the new buffer rules those areas planted that now fall within the wider required RMA buffers are not allowed to be harvested. ODF requests DEQ remove this sentence from the draft WQMP.

Response: In this context, “after-the-fact restoration” was intended to indicate special efforts to address deficiencies in previous riparian rules, such as narrower RMAs or lower basal area retention targets. We agree that reforestation to address harvest and low stocking is required under the FPA. These statements were removed.

Changes were made based on this comment.

ODF #4

Description: WQMP - Requested Corrections ODF

Comment: The following statement in draft WQMP is misleading: “elfective shade is likely to be deftcient for those riparian areas adjacent to small and medium salmon, steelhead and bull trout streams that were harvested prior to implementation of the new rules.” Page 14. This statement suggests increased streamside vegetation regulatory improvements were not made until 2022. The Oregon Board of Forestry adopted new rules in July of 2017 for streams that are identified as having salmon, steelhead, and bull trout (SSBT) distribution. The SSBT rules resulted in wider RMA’s and increased tree retention along such streams. ODF implemented wider stream buffer rules on small and medium salmon, steelhead, and bull trout streams seven years earlier than this sentence suggests. ODF requests this sentence be revised or removed from the draft WQMP.

Response: The sentence referenced by the commenter as misleading was removed from the WQMP. Additionally, DEQ revised this section in the WQMP to focus on the current Forest Practice Act rules, including the rules associated with the Private Forest Accord and Senate Bills 1501, 1502 and HB 4055.

Changes were made based on this comment.

9. Comments from: ODFW

ODFW #1

Description: WQMP - DMA status

Comment: ODFW was identified as a DMA in the draft TMDL and maintains approximately 0.06% of total subbasin area and 0.11% of acreage within 150 feet of streams within the Sandy River subbasin. As a DMA, ODFW is required to develop a TMDL implementation plan. ODFW feels this is a substantial amount of agency resources directed at an insignificant contribution of heat relative to other sources in the basin.

Response: Thank you for your comment. The Oregon Department of Fish and Wildlife was included as a Designated Management Agency (DMA) not only due to its jurisdiction over land within the project area, but also because it must monitor two reservoirs (Trillium Lake and the Wahkeena Rearing Reservoir) under its jurisdiction, and may be required to implement reservoir management strategies. It is possible that new information could result in a DMA ultimately not being required to develop an implementation plan; the WQMP has been updated to reflect this possibility.

Changes were made based on this comment.

10. Comments from: OFIC

OFIC #1

Description: Sandy WQMP (& TMDL) should allow DMAs more flexibility in how they meet requirements

Comment: Due to the TMDL and the WQMP eventually becoming law, (we) strongly encourage DEQ to give DMAs flexibility in the manner they can meet requirements and update Implementation Plans. Note A: There are potentially many unknown costs associated with the new requirements that ultimately would be passed down to sanitary sewer rate payers/other stakeholders. Grants are administratively burdensome to DMAs such as the City and should not be considered the primary method of payment. Note B: DEQ isn't allowing flexibility for ODF to deploy the new Forest Practice Act (FPA) rules and the Adaptive Management process that was established as part of the updates that were made to the FPA in 2022; if a numeric shade target is included in the TMDL, we simply do not see how the streamside evaluation process in 5.3.2 provides any alternative path for compliance to DMAs and the landowners that they regulate. Note C: Recent water quality monitoring on Johnson Creek has resulted in DEQ expanding the critical period window for Johnson Cr. to Feb 15th – Nov 15th, newly reflecting heat exceedances in the time of year that we have leaf-off conditions. It is unlikely that direct solar

radiation is the source of heat loading in the late fall and late winter months that have been added to the critical period, thus strategies other than shade are especially important to explore.

Response: Thank you for your comment. Effective shade surrogate measure targets represent a surrogate for the amount of solar loading that will attain the human use allowance and load allocations for nonpoint sources managing streamside vegetation. DEQ effective shade targets are regulatory and can be used to assess implementation progress in the future. However, DEQ recognizes that it will take decades for these targets to be met in areas where woody, overstory shade vegetation needs to mature, so DEQ will rely on tracking implementation compliance through DEQ approved implementation plans, annual reports, and comprehensive year five reviews. The WQMP and streamside evaluation gives responsible persons, including DMAs, the flexibility to provide a rationale for how they will prioritize implementation of strategies that increase streamside shade and other restoration efforts to improve stream temperature. Specifically, the streamside evaluation allows for responsible persons and DMAs to prioritize implementation using alternative metrics or criteria, in addition to DEQ shade targets and gaps. DEQ will evaluate other restoration efforts that have been implemented to improve stream temperature, for example, channel morphology and stream flow restoration, protection and enhancement of cold water refuges, etc.

Language has been added to Section 6 of the WQMP to better describe monitoring and evaluation of progress for implementation of this TMDL.

Changes were made based on this comment.

OFIC #2

Description: WQMP Sec 5.3.2 - Shade target values - Better language & allowance of alternate BMPs Needed

Comment: The target shade values developed under the shade surrogate concept become the de facto regulatory targets that DMAs must meet. We ask DEQ to clarify whether and how DMAs can receive credit for stream restoration work that cools waterways absent increases in effective shade when stream temperature is not the regulatory target that DMAs must meet.

DEQ explained by e-mail that “Basin Coordinators have understood these types of restoration activities (stream channel work, etc.) as making progress in DMA implementation plans.” (Martin, 2023). While we agree that stream restoration projects by land managers are desirable, we ask DEQ to include explicit language in the TMDL and WQMP that allows DMAs to outline a process by which DMAs define the relationship between restoration activities, shade, and desired stream cooling. In particular, we ask DEQ to include clear language in WQMP 5.3.2 indicating that implementation of BMPs (including, but not limited to those outlined in 5.3.2 subsection f.) may serve as an alternative strategy to increase effective shading to meet a prescriptive shade target in areas where such alternatives can be shown as adequate to protect water quality or where it can be demonstrated that hitting a shade target is not determinative of achieving water quality standards in impaired waters.

Response: Thank you for your comment. The WQMP includes strategies other than those that increase streamside shade (including flow augmentation and channel morphology-related restoration) in the table of priority management strategies because DEQ recognizes the

importance of these strategies in reducing stream temperatures. At this time DEQ does not plan to develop a framework for DMAs to obtain thermal "credits" for implementing these strategies. However, DEQ continues to encourage DMAs to consider all strategies from Table 1: Management strategies by source, for inclusion in DMA implementation plans. DEQ will continue to assess implementation compliance with the TMDL through DMA tracking and reporting on DEQ-approved implementation plans in the coming years. Any future evaluation of progress towards meeting effective shade targets will include an evaluation of other implementation efforts that have been completed to improve stream temperatures. Language has been added to Section 6 of the WQMP to better describe monitoring and evaluation of progress for implementation of this TMDL.

OFIC #3

Description: Sandy WQMP - FPA is sufficient

Comment: We believe that the revised FPA rules abrogate any perceived shortcomings in Oregon's riparian protections on private forestland and are sufficient to address both aquatic species habitat concerns and water quality concerns, and that the Adaptive Management process will ensure that any shortcomings or changes in our understanding of the science will be timely addressed.

Response: DEQ revised this section in the WQMP to focus on the current Forest Practice Act rules, including the rules associated with the Private Forest Accord and Senate Bills 1501, 1502 and HB 4055. DEQ agrees that the revised rules have increased protections and that buffers of 100-110 feet (e.g. large SSBT, Large F, small and medium SSBT/F standard practice) may be sufficient to meet shade targets at many locations. However, based on the findings summarized in Technical Support Document Appendix G, it is probable that in some cases these buffers will not provide shade equivalent to 120-foot no-harvest buffer. Smaller no-harvest buffers are progressively less likely to meet shade targets and more likely to result in temperature increases beyond the assigned TMDL human use allowance of (0.0°C). This is more pronounced for the rules under the Small Forestland Option.

Changes were made based on this comment.

OFIC #4

Description: Sandy TMDL – Numeric effective shade targets should be removed from final rule

Comment: Please see 1.5 page rationale in comment letter, which outlines concerns about the inclusion of these numeric targets for three reasons: (1) Numeric Shade Targets Effectively Treat Nonpoint Sources as Point Sources. But, the CWA maintains a clear distinction between the regulation of point sources and nonpoint sources for purposes of allocating loading for waters that are impaired as to a given water quality criteria. By assigning a an effective shade target to each DMA authorized by DEQ to implement the TMDL, DEQ is essentially treating each nonpoint source category as a single point source, merely swapping in a numeric shade measurement for the numeric effluent limits that would be imposed on a permitted point source.

Myriad factors impact water temperatures on the landscape (a fact reflected by the complexity built into the Heat Source model used by DEQ), and that complexity means that a single surrogate measure, such as shade, effects different waterbodies in different ways depending on a host of attendant factors. The draft rule ignores this, and essentially treats shade the same way as it treats effluent from a single, discreet conveyance.

(2) Numeric Shade Targets Treat Temperature Impacts from Solar Radiation Flux as Uniform and Non-Attenuating. Even assuming that the amount of effective shade is in all instances directly correlated to the temperature of a waterbody (which may not be the case), DEQ ignores evidence suggesting that the magnitude of the impact of solar radiation flux is different for different waterbodies and that such impacts have been shown not to be persistent, but to attenuate over space and time. Abundant evidence suggests that uncovering a portion of a stream does not result in a persistent increase in stream temperature, but that downstream shading will attenuate upstream impacts. This casts doubt on DEQ's reliance on basin-wide shade targets as necessary and sufficient for meeting nonpoint source load allocations and calls for a more circumspect approach when it comes to addressing landscape-level loading from nonpoint sources.

(3) Unrealistic Restored Vegetation Scenarios in DEQ Modeling Calls for Removal of Prescriptive Shade Targets. For the restored vegetation scenario in the Sandy River models, all pastures and cultivated fields are assumed to be restored to high density mixed conifer/hardwood forests. This assumption is unrealistic and problematic for nonpoint source sectors and casts doubt on the accuracy of the "restored vegetation scenario" used by DEQ to establish shade targets for various land classes.

Response: Thank you for your comment. DEQ respectfully disagrees that assigning numeric shade targets to nonpoint sources is equivalent to regulating nonpoint sources as point sources. Nonpoint sources still have flexibility in demonstrating compliance with TMDL allocations, as discussed in the Water Quality Management Plan.

DEQ also respectfully disagrees that the assumptions used to model system potential vegetation and effective shade should result in the removal of effective shade targets from the TMDL. Site potential vegetation conditions were developed through extensive collaboration with experts in the field, and the shade models have gone through extensive review by DEQ and others. DEQ believes the models to be sound and the best available tools for meeting TMDL objectives.

DEQ must develop temperature TMDLs based on the current water quality standards and set allocations such that they add up to the Loading Capacity defined in OAR 340-042-0040(4)(d) and 40 CFR 130.2(f) as the amount of a pollutant or pollutants that a waterbody can receive and still meet water quality standards. We have provided allocations that add up to the Loading Capacity and will meet the current water quality standards. It is DEQ's expectation, per OAR 340, division 42, that DMAs or responsible persons evaluate their operations and propose management strategies in their TMDL implementation plans that will show achievement of allocations.

Effective shade surrogate measure targets represent a surrogate for the amount of solar loading that will attain the human use allowance and load allocations for nonpoint sources managing streamside vegetation. The surrogate shade targets are regulatory however DEQ recognizes that it will take decades for these targets to be met in areas where woody, overstory shade vegetation needs to mature. The WQMP and streamside evaluation gives responsible persons

including DMAs the flexibility to provide a rationale for how they will prioritize implementation of strategies that increase streamside shade. Specifically, the streamside evaluation allows for responsible persons and DMAs to prioritize implementation using metrics or criteria in addition to DEQ shade targets and gaps. DEQ will assess compliance with the TMDL through DMA tracking and reporting on their DEQ- approved implementation plans.

For the reasons discussed, DEQ will maintain the numeric shade targets for each jurisdiction in the Sandy Temperature TMDL. However, DEQ will consider using shade targets submitted in DMA implementation plans for compliance assessment.

OFIC #5

Description: Sandy TMDL – Restored Vegetation specifications should be adjusted

Comment: If, notwithstanding our request that DEQ remove prescriptive targets for effective shade, DEQ opts to follow this course, we ask DEQ to leave these land uses (pastures/cultivated fields) as they are in the restored vegetation models.

Response: Based on past modeling completed by DEQ, it is rare for all existing pastures to attain the assigned HUA and load allocation for buildings, roads, and utility infrastructure. Further, based on aerial imagery, it is unlikely that pastures in other Sandy watersheds will attain the assigned HUA, particularly Beaver Creek, where most of the agricultural land is concentrated. Therefore, in the restored vegetation models, DEQ specified that pastures/cultivated fields be included as restored vegetation, i.e., they are restored to the "Mixed Conifer/Hardwood - High Density" land use category. DEQ notes that existing pastures included in the Sandy River and Salmon River models do attain the assigned HUA (zero), which may be due to sufficient existing vegetated buffers between the rivers and existing pastures/cultivated fields.

Changes were made based on this comment.

OFIC #6

Description: Sandy WQMP/TMDL - DEQ Assumes FPA Inadequacy in Contravention of Legal Standard in ORS 527.770. Language should be revised.

Comment: 1) In TMDL & WQMP (Sec 5.2.1), DEQ Assumes FPA Inadequacy in Contravention of Legal Standard in State Statute (ORS 527.770), which states the FPA is deemed adequate to meet water quality standards. 2) The language implying a presumed inadequacy – right out the gate – of the revised FPA rules to restore areas harvested under the old forest practice rules is a premature conclusion that completely ignores the fact that, even under the old rules, landowners were required to replant harvested acres (including riparian areas) and that any uncovering of stream segments resulting from harvest was therefore mitigated over time as those harvested areas regrew. 3) Thus, ODF request that DEQ amend the language in WQMP 5.2.1 as follows (final proposed language below, please see changes highlighted in Notes field) moved language indicated by strikethrough and new language indicated in bold): "With the publication of the Private Forest Accord Report and subsequent passage of Senate Bill 1501,

1502 and HB 4055, Forest Practices Act rule revisions were adopted by the Board of Forestry in October 2022 and additional amendments are anticipated through 2025. Implementation of these rules, which include increased riparian widths and additional tree retention, shall be deemed effective at meeting shade allocations pursuant to ORS 527.770. The effects of the revised rules on riparian areas and on water quality will be assessed over multiple years as previously harvested areas are regrown and new harvests are conducted in accordance with revised restrictions on harvest activities in riparian areas. DEQ will work with ODF to develop a TMDL implementation plan focused on evaluating the adequacy of the revised rules over time in meeting the load allocations and surrogate measures required by the Sandy River Subbasin Temperature TMDL."

Response: This section of the WQMP was revised to more clearly focus on the current Forest Practice Act rules, including the rules associated with the Private Forest Accord and Senate Bills 1501, 1502 and HB 4055.

DEQ's generalized statements about the interplay of the revised TMDL and the former and current Forest Practice Act rules do not conflict ORS 527.770. To develop a TMDL, DEQ must complete a technical analysis of pollution reductions necessary to comply with water quality standards. This is a different analysis than was completed in the updates to the Forest Practices Act Rules. As referenced by the commenter, state law anticipates the potential that through development of a TMDL DEQ determines that certain requirements of the Forest Practices Act are not sufficient to meet standards.

Regarding revisions suggested under 2) and 3), "after-the-fact restoration" was intended to indicate special efforts to address deficiencies in previous riparian rules, such as narrower RMAs or lower basal area retention targets. We agree that reforestation to address harvest and low stocking is required under the FPA. These statements were removed.

Changes were made based on this comment.

OFIC #7

Description: Sandy TMDL – Restored Vegetation specifications should be adjusted (2)

Comment: We ask DEQ to use Restored Vegetation scenario B, instead of Restored Vegetation scenario A (from the technical support document), in the development of shade targets for the Sandy River and Salmon River basins. It is unrealistic to expect anthropogenic structures to be restored to high density forests.

Response: DEQ revised the TMDL shade targets to use the Restored Vegetation scenario B specifications for the Sandy River and Salmon River subbasins.

Changes were made based on this comment.

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11. Comments from: Oregon ACWA

ACWA #1

Description: HUA - Warming from tributaries should be categorized as a background source

Comment: From TMDL Section 7.3, it appears that “warming from tributaries” should be categorized as a background source. This will enable DEQ to include an allocation for reserve capacity, which will provide the communities served served by STPs to potentially use some of the reserve capacity for future growth and development.

Response: In the public notice version of the TMDL, DEQ modeled the “Comprehensive Attainment” model scenario assuming all reserve capacity was allocated and utilized in Sandy River tributaries. This assumption limited the amount of reserve capacity available on the Sandy River. DEQ revised this approach to only include the portion of the human use allowance assigned to sources, excluding reserve capacity. These revised models yielded smaller temperature changes in the Sandy River. DEQ used some of this capacity to increase allocations for existing sources and retain the remainder as reserve capacity for the Sandy River mainstem. If reserve capacity is requested at a future date, an analysis to determine available loading capacity will occur at that time. The TMDL language and allocations have been updated to reflect these revisions.

Changes were made based on this comment.

ACWA #2

Description: HUA - Other NPSs

Comment: Please explain why the sector-specific HUAs do not include an HUA for solar loading from NPSs other than existing transportation and utility infrastructure. No justification is provided in the documents. DEQ must include a reasonable NPS HUA to recognize existing constraints. DEQ should adjust the sector-specific HUAs to provide an allocation for solar loading from other non-point sources. We recommend that DEQ include a similar allowance for “other NPSs” as provided for the “transportation corridor, buildings and existing infrastructure” (0.02° C).

Response: DEQ’s rationale for the human use allowance assignments is summarized in section 9 of the Technical Support Document. That section was updated to provide additional clarity.

Changes were made based on this comment.

ACWA #3

Description: HUAs - Other NPSs – Water Quality Trading Discussion

Comment: The TMDL documents should include specific discussion of the water quality trading framework. We request that DEQ clarify in the documents if such a lack of a HUA allocation for "other" NPSs may affect the ability for DMAs to use water quality trading or other strategies to protect water temperatures.

Response: DEQ has expanded discussion of WQ trading and other management/trading strategies in the Sandy and Willamette WQMPs. Water quality trading is allowed statewide if the conditions listed under OAR Chapter 340 Division 39 are met. As noted in OAR 340-039-0020(3), a trading framework is not required in order for DEQ to approve a water quality trading plan.

Changes were made based on this comment.

ACWA #4

Description: Stormwater WLAs - Revise statements

Comment: DEQ should revise its statement about insufficient evidence of stormwater discharges contributing to temperature standard exceedances to make a clearer, definitive, affirmative position, such as the following: "Based on a review of published literature and other studies related to stormwater runoff and stream temperature in Oregon, DEQ concluded that stormwater discharges authorized under the current municipal (MS4s) permits or the construction (1200-C) and industrial (1200-A and 1200-Z) general stormwater permits do not contribute to exceedances of the temperature standard. Therefore, wasteload allocations for these sources are not included in the TMDL."

Response: DEQ updated the narrative in section 7.1. to the following: "DEQ completed a review of published literature and other studies related to stormwater runoff and stream temperature in Oregon and concluded that stormwater discharges authorized under the current municipal (MS4), construction (1200-C) and industrial (1200-A and 1200-Z) general stormwater permits are unlikely to contribute to exceedances of the temperature standard. Therefore, no additional TMDL requirements are needed for stormwater sources to control temperature, other than those included in the current permits. More specific wasteload allocations can be considered if subsequent data and evaluation demonstrates a need and if reserve capacity is available."

Changes were made based on this comment.

ACWA #5

Description: Stormwater WLAs - Revise statements (2)

Comment: References to general stormwater permits in TMDL Section 9.1.2 should be deleted. Section 9.1.2 says that for general stormwater permit (MS4 Phase II, 1200-A, 1200-C and 1200-Z) registrants and general permit registrants not identified in Table 9-11, their WLA is equal to any existing thermal load authorized under the current permit. But, this statement conflicts with the TMDL Section 7.1, which states that there is insufficient evidence to demonstrate that stormwater discharges authorized under this set of general permits contribute to temperature standard exceedances in the Sandy Subbasin.

Response: Thank you for your comment. DEQ clarified the language in TMDL Section 9.1.2. as follows:

"DEQ completed a review of published literature and other studies related to stormwater runoff and stream temperature in Oregon and concluded that stormwater discharges authorized under the current municipal (MS4), construction (1200-C) and industrial (1200-A and 1200-Z) general stormwater permits are unlikely to contribute to exceedances of the temperature standard. Therefore, no additional TMDL requirements are needed for stormwater sources to control temperature, other than those included in the current permits. More specific wasteload allocations can be considered if subsequent data and evaluation demonstrates a need and if reserve capacity is available."

Changes were made based on this comment.

ACWA #6

Description: Stormwater WLAs - Provide WLA to MS4s

Comment: DEQ should provide a modest WLA to all MS4s in both TMDLs to avoid unintended compliance problems if it turns out that any MS4s are someday found to be significant heat contributors.

Response: DEQ is not assigning WLAs to MS4s in these TMDLs because this would require revisions to the NPDES MS4 General Permit to include any such WLAs. However, if stormwater in general or a specific MS4 is later determined to cause temperature impacts that affect TMDL attainment, then the associated MS4(s) may apply for available Reserve Capacity.

ACWA #7

Description: WLAs - should be provided for each use period

Comment: Multiple criteria (i.e., spawning, core cold water, rearing/migration) apply during the TMDL period for many streams in the Sandy Subbasin. The TMDL should specify WLAs for each use period (see Tbl 4.15 Willamette 2006 TMDL). Why aren't there separate WLAs for salmon and steelhead spawning and salmon and trout rearing and migration in Table 9.6 as are in Table 4.15 of the Willamette Basin 2006 TMDL?

Response: Separate wasteload allocations for each criterion and fish use designation period are not necessary because the wasteload allocation and the portion of the human use

allowance assigned to each facility is the same regardless of criteria. DEQ set the human use allowance and corresponding wasteload allocations considering the maximum temperature change at each facility regardless of fish use (TMDL Technical Support Document Table 7-1). Therefore, based on the data available to DEQ, we believe the allocations should be sufficient in either fish use period. One of the reasons this approach was used is because EQC has approved, and DEQ has submitted to EPA updates to the fish and aquatic life use designations. As of August 2024, EPA has not taken action on the updated use designations. If approved, the updates will change the applicable temperature criteria and spawning periods for some assessment units in the Lower-Columbia Sandy Subbasin. A single human use allowance will accommodate these use designation changes. The other reasons DEQ used this approach is because it required less time to characterize, calculate, and evaluate allocations. DEQ had to consider timing in all aspects of the analysis in order to meet the court ordered schedule.

ACWA #8

Description: LAs - Effective shade curves & the 120' buffer width (Table 9-13).

Comment: We recommend that DEQ include discussion in Section 9.1.4.4 that the shade curves presented in Figures 9-5 to 9-8 and in the Appendix of Effective Shade Curve Tables are based on an assumed vegetation height, density, overhang, and buffer width; these are idealized conditions and not representative actual field conditions. Thus, the effective shade targets obtained from the shade curves do not reflect site potential conditions; the effective shade obtained from the shade curves should be used as a guide to evaluate progress and not as actual effective shade targets.

Response: As stated in the TMDL, the shade targets derived from shade curves are applicable to any stream that does not have site specific shade targets. The TMDL also states that the effective shade curves represent the maximum possible effective shade for a given vegetation type. These targets are regulatory however, DEQ recognizes that it will take decades for these targets to be met. The WQMP and streamside evaluation gives responsible persons including DMAs the flexibility to provide a rationale for how they will prioritize implementation of strategies that increase streamside shade. Specifically, the streamside evaluation allows for responsible persons and DMAs to prioritize implementation using metrics or criteria in addition to DEQ shade targets. DEQ will assess compliance with the TMDL through DMA tracking and reporting on their DEQ approved implementation plans.

For these reasons, DEQ will not add the recommended language to Section 9.1.4.3. However, DEQ will consider using shade targets submitted in DMA implementation plans for compliance assessment.

ACWA #9

Description: WQMP - Withdrawal Management Strategies Need Development

Comment: This strategy must be more fully developed. The WQMP recommends pursuit of "out-of-stream rights and converting these rights to instream uses". Reliance on instream water rights as the vehicle to implement this management strategy will not tap its full potential. There

is significant untapped potential to leave cool water instream and offset its consumption with recycled water. DEQ should take necessary steps to facilitate expansion of the permitted use of recycled water, which would allow entities to transfer water rights for in-stream use. For this WQMP, DEQ should incorporate the framework for additional means (other than water rights transfers or leases; see examples provided) to achieve temperature compliance through recycled water offsets to withdrawals, such as contracts, and DEQ should develop strategies in the WQMP (see examples provided).

Response: DEQ has expanded discussion of WQ trading and other management/trading strategies in the Sandy and Willamette WQMPs. The strategies described by the commenters are and will continue to be available to permittees, and DEQ is supportive of their expanded use.

Changes were made based on this comment.

ACWA #10

Description: WQMP – Point Source Priority Management Strategies

Comment: The discussion of PS priority management strategies is inadequate. PS dischargers cannot implement the priority management strategies without viable permitting pathways. To allow PS dischargers access to the priority management strategies as a means of permit compliance for temperature limits, the WQMP should include the range of permitting pathways that exist and that need to be developed (e.g., WQ trading; mechanisms for pilot projects or a specific set of performance metrics; broader set of mechanisms to credit water left instream and offset by recycled water use; pathways to site-specific variances and implementation of pollution reduction plans in-lieu-of numeric temperature limits).

Response: Thank you for your comment. Limits and compliance requirements will vary for each individual and general permit issued or renewed by DEQ. As compliance options can vary for each permit holder and specific circumstance, DEQ encourages permit holders to contact DEQ's permit program representatives to discuss particular circumstances prior to finalizing any compliance strategy. Additionally, permit holders will be informed and involved in permit development discussions when new wasteload allocations are implemented, and compliance strategies are needed. A list of potential compliance strategies that may be used to ensure compliance with WLAs in the TMDL includes:

- Trading – watershed/riparian repair
- Mechanical – cooling tower or chiller
- Aquifer recharge and recovery
- Physical shading – tents, awnings, and enclosures
- Land application
- Natural and Artificial Wetlands

This list is not meant to be exhaustive, and absence of any compliance strategy does not preclude its potential use to comply with WLAs for temperature.

ACWA #11

Description: WQMP - OWRD should be a DMA in Implementation Responsibilities and Schedule.

Comment: Since flow management strategies are an essential component of the proposed management strategies, OWRD has an important role in achieving TMDL objectives and thus should be identified as a DMA in both TMDLs. Why was OWRD omitted from the draft list of DMAs?

Response: The comment asserts that the Oregon Water Resources Department (OWRD) should be listed as a DMA because of OWRD's role in water management. DEQ recognizes the temperature impacts that water withdrawals can have. However, OWRD's role as the state agency that administers the laws governing the allocation of water rights can be distinguished from the roles of other state agencies that have regulatory authority managing activities and uses of property that contribute to water quality impairments, such as ODA and ODF. The EQC TMDL rules specifically address the roles that ODA and ODF have in implementing TMDLs in OAR 340-042-0080. Given OWRD's unique role that does not involve land management, rather than designating OWRD as a DMA at this time, DEQ has determined that it will work with OWRD to evaluate ways in which the agencies can further partner in efforts to increase flows to improve water temperature, such as through commitments specified in a MOU or MOA.

ACWA #12

Description: Shade targets not achievable

Comment: Local jurisdictions have limited ability to require or incentivize private property owners to provide a 120' buffer width. Local jurisdictions do not have legal authority to access private property for the purposes of conducting a shade assessment, which the draft WQMP document requires. Additionally, site constraints often restrict the establishment of a 120' buffer. Regulatory buffer widths are subject to site constraints, existing structures, established land use laws and regulations (e.g., ESA considerations), overlapping jurisdictions, and property owner rights to develop their sites consistent with zoning and land use designations. Thus, the assumed buffer width used to derive the effective shade curve targets will likely not be achievable in many areas. (as noted in the discussion regarding the HUA allocations)

Response: The 120' buffer width is one way that a jurisdiction can achieve their shade target. These targets are regulatory however, DEQ recognizes that it will take decades for these targets to be met. The WQMP and streamside evaluation gives responsible persons including DMAs the flexibility to provide a rationale for how they will prioritize implementation of strategies that increase streamside shade. Specifically, the streamside evaluation allows for responsible persons and DMAs to prioritize implementation using metrics or criteria in addition to DEQ shade targets. DEQ will assess compliance with the TMDL through DMA tracking and reporting

on their DEQ approved implementation plans. DEQ will also consider using shade targets submitted in DMA implementation plans for compliance assessment.

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12. Comments from: Stantec/City of Sandy

Stantec #1

Description: HUA - Warming from tributaries should be categorized as a background source

Comment: From TMDL Section 7.3, it appears that "warming from tributaries" should be categorized as a background source. This will enable DEQ to include an allocation for reserve capacity, which will provide the communities served by STPs to potentially use some of the reserve capacity for future growth and development.

Response: In the public notice version of the TMDL, DEQ modeled the "Comprehensive Attainment" model scenario assuming all reserve capacity was allocated and utilized in Sandy River tributaries. This assumption limited the amount of reserve capacity available on the Sandy River. DEQ revised this approach to only include the portion of the human use allowance assigned to sources, excluding reserve capacity. These revised models yielded smaller temperature changes in the Sandy River. DEQ used some of this capacity to increase allocations for existing sources and retain the remainder as reserve capacity for the Sandy River mainstem. If reserve capacity is requested at a future date, an analysis to determine available loading capacity will occur at that time. The TMDL language and allocations have been updated to reflect these revisions.

Changes were made based on this comment.

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13. Comments from: USFS

USFS #1

Description: Support for the draft proposed rule

Comment: We appreciate the opportunity to comment on DEQ's TMDL rulemaking process for the Lower Columbia - Sandy River Subbasin. As a Designated Management Agency, we appreciated the invite to participate on its Rule Advisory Committee. The Mt Hood Nat. Forest is committed in supporting DEQ's efforts to improve stream temperature in the subbasin and welcomes the partnership to achieve mutually beneficial objectives. We look forward to this continued partnership and working toward the development of an implementation plan that advances water quality restoration in the basin.

Response: Thank you for your comment.

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14. Comments from: WaterWatch of Oregon

WaterWatch #1

Description: WQMP - DMA

Comment: Given the express recognition of water management and water withdrawals as a source of heat pollution, the Oregon Water Resources Department (OWRD) should be a Designated Management Agency (DMA) required to prepare an implementation plan. OWRD has "legal authority" over water management and water withdrawals in the basin. (See WQMP at 11 (defining DMA).) OWRD can influence water management and withdrawals in many ways, including by adequately conditioning or not issuing permits for new withdrawals, requiring measurement and reporting of water withdrawals to ensure withdrawals are within legal limits, enforcing laws against withdrawing water without a permit and withdrawing more water than legally allowed under a water right, enforcing instream water rights, and ensuring forfeiture of unused water rights to prevent resumption of withdrawals at a future date.

Response: The comment asserts that the Oregon Water Resources Department (OWRD) should be listed as a DMA because of OWRD's role in water management. DEQ recognizes the temperature impacts that water withdrawals can have. However, OWRD's role as the state agency that administers the laws governing the allocation of water rights can be distinguished from the roles of other state agencies that have regulatory authority managing activities and uses of property that contribute to water quality impairments, such as ODA and ODF. The EQC TMDL rules specifically address the roles that ODA and ODF have in implementing TMDLs in OAR 340-042-0080. Given OWRD's unique role that does not involve land management, rather than designating OWRD as a DMA at this time, DEQ has determined that it will work with OWRD to evaluate ways in which the agencies can further partner in efforts to increase flows to improve water temperature, such as through commitments specified in a MOU or MOA.

WaterWatch #2

Description: WQMP - Management Strategies

Comment: Management strategies for limiting the impact of water management and water withdrawals should including more than conservation and transfers of existing water rights to instream rights.

Response: Thank you for your comment. The management strategies included in the Water Quality Management Plan are considered to be priority management strategies, but Table 1 in the Water Quality Management Plan is not meant to be an exhaustive list of all management strategies that could be included in an entity's implementation plan.

WaterWatch #3

Description: WQMP - Management Strategies water rights

Comment: the WMCP should discuss whether any new/additional instream water rights (which could be sought to ODEQ as well as ODFW) would be beneficial.

Response: Thank you for your comment. The management strategy of pursuing new instream water rights has been added to Table 1 in the Water Quality Management Plan.

Changes were made based on this comment.

WaterWatch #4

Description: TMDL - Surrogate Measure

Comment: We appreciate the “surrogate measure” for the load limit from water withdrawals (consumptive use of 1.9 percent of monthly median natural flow). However, we question whether consumptive use, instead of water withdrawals, is the appropriate measure given lack of information regarding the location and quality of return flows and the potential for reuse that reduces return flows.

Response: DEQ modeled consumptive use instead of water withdrawals in favor of better estimates of the former than the latter. In the revised TMDL documents, DEQ has updated the text and headings to explain that the impacts of estimated consumptive use were modeled in this scenario.

Changes were made based on this comment.

WaterWatch #5

Description: Sandy TMDL - Surrogate Measure calculation

Comment: Technical Appendix C, Section 9, indicates that the surrogate measure was calculated only for the 0.05 load allocation at one location on the Sandy River that is not the point of maximum impact. Absent additional explanation, we suggest basing the surrogate measure on the impact at the point of maximum impact and surrogate measures for Camp Creek, other tributaries with a load allocation, and the portion of the river where the load allocation is 0.01 (assuming zero load allocation means zero consumptive use without offsets on tributaries).

Response: DEQ determined the Reference Location based on the location of available monitoring data, i.e., the existing flow gage location. For this scenario, DEQ conducted modeling to describe the maximum temperature changes at this specific location. Accordingly, surrogate measure attainment was modeled and assessed at the Reference Location. DEQ notes that the 0.05°C HUA applies across the entire subbasin, not only at the Reference

Location. Thus, upstream areas must meet this HUA because it incorporates the consumptive flow in these areas. In the updated TMDL documents, DEQ preserved the use of the reference location as described in the public notice version of the TMDL documents and by the Commenter. DEQ has, however, added the following methodological explanation to Section 9 of Appendix C: “DEQ determined the Reference Location based on the location of available monitoring data (i.e., USGS 14142500). Note that the 0.05°C HUA applies across the entire subbasin, not only at the Reference Location.”

Changes were made based on this comment.
