



State of Oregon Department of Environmental Quality

Oregon Environmental Quality Commission Meeting

Aug. 6, 2024

Rulemaking Action Item A

Willamette Subbasins Temperature TMDL Replacement

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DEQ recommendation to the EQC

The Oregon Department of Environmental Quality recommends the Environmental Quality Commission adopt the proposed rules in Attachment A as part of Chapter 340, Division 42 of the Oregon Administrative Rules and to incorporate, by reference, the Willamette Subbasins Total Maximum Daily Load (Attachment B) and Water Quality Management Plan (Attachment C) for temperature.

Language of Proposed EQC Motion:

“I move that the commission adopt the proposed rules as seen in Attachment A as part of Chapter 340, Division 42 of the Oregon Administrative Rules and to incorporate, by reference, the Willamette Subbasins Total Maximum Daily Load (Attachment B) and Water Quality Management Plan (Attachment C) for temperature.”

Overview

Consistent with Oregon Revised Statute 468B.110 and OAR chapter 340 division 42, DEQ proposes the Total Maximum Daily Load and Water Quality Management Plan for the Willamette Subbasins to address temperature impairments. DEQ is proposing the TMDL and Water Quality Management Plan for adoption by Oregon's Environmental Quality Commission, by reference, into OAR 340-042-0090. The U.S. Environmental Protection Agency will review the TMDL by Sept. 15, 2024, after the commission adopts the rule.

DEQ is under a court order to update and replace this temperature TMDL to be consistent with current temperature standards. This TMDL must be updated because it was based, in part on the Natural Conditions Criterion, a section of the temperature standard that was subject to litigation and has since been disapproved by EPA. The court order identifies the schedule for EPA approval or disapproval of the replacement TMDL.

The federal Clean Water Act and implementing regulations require Oregon to biennially submit, for EPA approval, a list of all impaired waterways in the state and to establish TMDLs for pollutants in waters listed as impaired. The biennial list submittal must include a priority ranking of TMDL development and identify waters targeted for TMDL development within the next two years.

Statement of Need

What need would the proposed rule address?

In 2013, the United States Environmental Protection Agency disapproved the Natural Conditions Criterion contained in Oregon's water quality standard for temperature due to the 2012 U.S. District Court decision for *NWEA v. EPA*, 855 F. Supp. 2d 1199 (D. Or., 2012). This portion of the temperature water quality standard was used in most temperature TMDLs issued from 2003 through 2012. On Oct. 4, 2019, the U.S. District Court issued a judgment in *NWEA v. EPA*, No. 3:12-cv-01751-HZ (D. Or., Oct. 4, 2019) and required DEQ and EPA to replace 15 Oregon temperature TMDLs that were based on the Natural Conditions Criterion and to reissue the temperature TMDLs based on the remaining elements of the temperature water quality standard. This temperature TMDL replacement for the Willamette Subbasins is one of the required TMDLs to be replaced for temperature.

How would the proposed rule address the need?

The proposed rule would meet the requirements of temperature replacement according to the court order.

How will DEQ know the rule addressed the need?

The rule will be adopted by the Environmental Quality Commission and DEQ would submit the TMDL to U.S. Environmental Protection Agency for approval or disapproval by Sept. 15, 2024.

Federal Relationship

ORS 183.332, 468B.110 and OAR 340-011-0029 require DEQ to attempt to adopt rules that correspond with existing equivalent federal laws and rules unless there are reasons not to do so.

The proposed rules implement federal requirements found in 40 CFR 130.7(c). Under the federal Clean Water Act, the state is required to establish TMDLs for water quality limited segments of waterways listed on the submittal required by Clean Water Act Section 303(d).

Rules Affected, Authorities, Supporting Documents

Lead division

Water Quality

Program or activity

Watershed Management

Chapter 340 action

Adopt: 340-042-0090

Statutory Authority - ORS				
468.020	468.065	468B.020	468B.030	468B.035
468B.110				

Statutes Implemented - ORS				
468B.020	468B.110			

Documents relied on for rulemaking

Document title	Document location
DEQ's Oregon Administrative Rules 340-042-0080 Implementing a Total Maximum Daily Load	secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=1459
Willamette Subbasins TMDL Replacement rulemaking webpage	https://www.oregon.gov/deq/rulemaking/Pages/willamettetempTMDL.aspx

Fee Analysis

This rulemaking does not involve fees.

Statement of Fiscal and Economic Impact

The federal Clean Water Act requires states, or EPA, to develop a TMDL for each water body on the state's polluted waters list, also known as the 303(d) list. The TMDL process is one strategy used to clean up polluted waters. Issuance and subsequent implementation for the proposed TMDL and WQMP may have fiscal or economic impacts (both positive and negative) on businesses, farms and ranches, forestlands, and federal, state, county, and city lands or operations in the Willamette Subbasins. DEQ is not able to quantify costs, but generally the costs of meeting the water quality standard for temperature and associated TMDL allocations may be minimal for those responsible persons, including Designated Management Agencies, that have existing implementation plans under current WQMPs for temperature. New requirements in the WQMP that existing DMAs have not previously implemented may result in additional costs. New DMAs that are required to develop plans will incur costs to develop and implement a plan, and administrative costs associated with reporting on implementation progress.

This fiscal impact statement does not quantify the costs of on-going water quality impairment to beneficial uses of waters of the state, nor the potential economic or ecosystem service benefits of improving water quality and attaining beneficial uses. Implementation of these TMDLs is intended to address water pollution, as required by the relevant sections of the federal Clean Water Act. The negative economic and health impacts of water pollution potentially affect all those who live, work, and recreate within the watershed, as well as those downstream, including commercial, recreational and subsistence fishing communities. The external costs of water pollution may disproportionately negatively affect poor, rural, indigenous and minority communities in Oregon.

In contrast, direct economic costs of TMDL implementation are borne only by those entities contributing excess pollutants to waterways. These costs can be reduced by choosing pollutant control or reduction strategies or options that align with their circumstance, perspective and/or business needs. The potential economic and ecosystem service benefits of improved water quality and beneficial use access may be realized by all those who live, work, and recreate within and downstream of the Willamette Subbasins.

The Willamette Subbasins TMDL applies to individual and general permit holders that have thermal impacts. The degree to which these permits are affected by this TMDL will depend on whether they can meet waste load allocations for temperature.

Statement of Cost of Compliance

Costs of compliance with this TMDL rule can include administrative and implementation costs. DEQ did not receive specific information for potentially affected operations within the watershed to quantify economic impacts to

landowners or business operators. DEQ expects costs of compliance to vary for one or more of the following issues:

- Whether the responsible person, including DMAs are already implementing a temperature TMDL, or they are a new DMA.
- Strategies may already be in place in some locations that prevent or reduce exceedances of temperature water quality standards.
- Costs vary to implement different temperature control strategies in the WQMP.
- Multiple temperature pollution controls may be needed at some locations.
- The presence of buildings or transportation infrastructure may preclude the ability to implement temperature control strategies in some locations.
- DEQ does not have information to determine all potential sources or what actions are currently occurring that could be modified or enhanced to prevent exceedances of temperature criteria.
- Temperature load allocations are calculated by source sector, not by individual property or activity.
- A range of organizational capacity and funding exists for implementation plan development and there are varying levels of complexity needed in plans.
- In 2010, DEQ estimated costs for riparian restoration in the Willamette Basin, equivalent to standard buffers in the Natural Resources Conservation Service, conservation reserve program. The total restoration cost for the first 15-year period was estimated to average around \$900 million with a range between \$600 million to about \$1.2 billion. Restoration costs were estimated and categorized by DMA.¹ This information could potentially be extrapolated to estimate approximate costs for temperature TMDL implementation improvements for large areas depending on the existing condition of the riparian areas.

The fiscal impact of the new or revised waste load allocations (WLAs) on point source discharge will be variable. In the event the WLA is more stringent, the point source may incur additional capital improvement or other costs necessary to achieve compliance with the new WLA.

Where investments are necessary to meet TMDL effective shade targets and implementation requirements, DEQ identifies funding resources in the WQMP and online that include, but are not limited to, state and federal grants (including Oregon Watershed Enhancement Board and Clean Water Act Section 319 nonpoint source implementation grants) and below-market interest rate loans for public entities (that can include principal forgiveness) through the Clean Water State Revolving Fund program. Other state and federal opportunities are provided on [DEQ's Water Quality Funding Resource web page](#).

¹ Cost Estimate to Restore Riparian Forest Buffers and Improve Stream Habitat in the Willamette Basin, Oregon. 2010. Michie, Ryan- Oregon Department of Environmental Quality.

- [EPA's funding resources for watershed protection and restoration web page](#)
- [EPA's Clean Water State Revolving Fund Best Practices Guide for Financing Nonpoint Source Solutions web page](#)

Federal agencies

The proposed rule will have an impact on some federal agencies named as DMAs in the TMDL. Costs by federal agencies for TMDL implementation may be required for compliance with DEQ's federal Clean Water Act requirement to issue a TMDL.

Federal agencies will be assigned responsibility for revising existing TMDL implementation plans or for developing a new TMDL implementation plan. Federal agencies may incur administrative costs associated with TMDL implementation development or revision. DEQ does not know the exact costs for the previously described reasons above. The following federal agencies will need to develop or revise a TMDL implementation plan.

U.S. Bureau of Land Management (BLM) is responsible for developing plans for management strategies and implementing practices to achieve nonpoint source pollutant load allocations on forest, range, and other land types managed by the federal government. BLM management areas make up approximately eight percent of the land area within the Willamette Subbasins watershed adjacent to streams. The BLM's current Resource Management Plans dictate how Riparian Reserves are managed. BLM will likely incur costs to implement temperature-related management strategies, administrative costs for development of a TMDL implementation plan and reporting costs associated with this TMDL. In addition, DEQ will require the BLM to participate in stream monitoring as part of the Monitoring Strategy identified in the WQMP. It is unknown what those costs will be, but potential costs incurred may be alleviated depending on whether existing BLM monitoring sites are compatible with future monitoring needs.

U.S. Forest Service is responsible for developing plans for management strategies and implementing practices to achieve nonpoint source pollutant load allocations on forest and other land types managed by the federal government. USFS management areas make up approximately 39 percent of the land area within the watershed adjacent to streams. The U.S. Forest Service's current Resource Management Plan dictates how riparian reserves are managed. The U.S. Forest Service will likely incur costs to implement temperature-related management strategies, administrative costs for development of a TMDL implementation plan and reporting costs associated with this TMDL. In addition, DEQ will require the U.S. Forest Service to participate in stream monitoring as part of the Monitoring Strategy identified in the WQMP. It is unknown what those costs will be, but potential costs incurred may be alleviated depending on whether existing U.S. Forest Service monitoring sites are compatible with future monitoring needs.

U.S. Army Corps of Engineers is responsible for updating their TMDL Implementation Plan to meet the requirements of the new WQMP. The Army Corps manages operations of 13 dams and reservoirs and the associated storage and

flows from the reservoirs. The Willamette Subbasins TMDL project area includes river miles above the dams, including reservoir storage area and surrounding Army Corps managed land that makes up less than one percent of land use. The Army Corps operation and maintenance plans outline how reservoirs are managed to balance various needs and demands throughout the year such as flood control, fish and wildlife, hydropower, recreation, irrigation, water supply, water quality, and navigation. The Army Corps will likely incur costs to implement temperature-related management strategies, temperature monitoring at reservoirs, temperature modelling and administrative costs for revising the plan and reporting costs associated with this TMDL. The Army Corps existing plan does not outline how riparian areas are managed; it addresses the releases of flows from the dam.

U.S. Fish and Wildlife Service is responsible for developing management plans for strategies and implementation of practices to achieve nonpoint source pollutant load allocations on land owned by the federal government. U.S. Fish and Wildlife manages fish, wildlife, and natural habitats in three wildlife refuges, which makes up less than one percent land area within the Willamette Subbasins adjacent to streams. The Fish and Wildlife conservation management plans outline how refuge lands are managed and protected. U.S. Fish and Wildlife will likely incur costs to implement temperature-related management strategies, administrative costs for development of a TMDL implementation plan and reporting costs associated with this proposed TMDL.

State agencies

Under the proposed rule, some state agencies will be assigned responsibility for developing TMDL implementation plans and implementing management strategies to achieve cumulative pollutant load reductions, specified in the draft TMDL and WQMP.

Oregon Department of Environmental Quality implements pollutant waste load allocations through National Pollutant Discharge Elimination System (NPDES) permits. The proposed rule will have an impact on DEQ through ongoing work to ensure elements of the TMDL are adopted into regulatory documents such as permits, or TMDL implementation plans to achieve water quality standards and to ensure permits and plans are implemented. Because allocations are applied in permits upon evaluation for renewal or new applications, this does not represent additional fiscal impact to DEQ for the TMDL implementation.

The following state agencies will need to develop or revise a TMDL implementation plan:

Oregon Department of Forestry is responsible for developing plans for management strategies of forest lands and overseeing implementation of the state Forest Practices Act rules to achieve nonpoint source pollutant load allocations, and to meet water quality standards on non-federal forestlands (state, county, and private). ODF management areas make up approximately 32 percent of the land

area within the watershed adjacent to streams. ODF maintains forestry standards within the basin, performs annual reporting, and participates in monitoring and progress reviews. ODF state statutes and rules include a mix of existing practices, programs and voluntary measures that are promoted to landowners and other partners for restoration activities to improve or protect water quality, land condition and aquatic habitat on non-federal forestlands. Administrative costs for implementing these existing rules and programs are not dependent on TMDLs, but ODF will likely incur costs to implement temperature-related management strategies, administrative costs for development of a TMDL implementation plan and reporting costs associated with this TMDL. In addition, DEQ will require ODF to participate in stream monitoring as part of the Monitoring Strategy identified in the WQMP. It is unknown what those costs will be at this time. Financial incentives and technical assistance programs are available to assist private forest landowners or operators to support implementation of assessment, pollution controls, watershed restoration activities or land condition improvements that may be necessary to meet TMDL requirements. Rule advisory committee comment from the Feb. 23, 2023, meeting acknowledged that financial incentive programs can be challenging for individual landowners or operators to navigate, and a local ODF stewardship forester, watershed council, or soil and water conservation district may be able to provide landowner assistance.

Oregon Department of Agriculture is responsible for developing management plans for implementation of practices to achieve nonpoint source pollutant load allocations, meet water quality standards on private lands for agricultural activities within the watershed, annual reporting, and to participate in monitoring and periodic progress reviews. ODA management areas make up approximately 14 percent of the land area within the watershed adjacent to streams. ODA state statutes and rules are a mix of existing regulatory programs and voluntary measures used for implementation to improve or protect water quality and land conditions on agricultural lands or related to agricultural activities. ODA does this work in partnership with local Soil Water Conservation Districts and Local Advisory Committees. Administrative costs for implementing these existing rules and programs are not dependent on TMDLs, but ODA will likely incur costs to implement temperature-related management strategies, administrative costs for development of a TMDL implementation plan and reporting costs associated with this TMDL. In addition, DEQ will require ODA to participate in stream monitoring as part of the Monitoring Strategy identified in the WQMP. It is unknown what those costs will be at this time. Financial incentives and technical assistance programs are available to assist private landowners. Grant and low interest loan funding (for public entities) is available to ODA, Soil Water Conservation Districts, and individual landowners or operators to support implementation of assessment, pollution controls, and watershed restoration actions or land condition improvements that may be necessary to meet TMDL requirements.

Oregon Department of Transportation is responsible for implementing practices to achieve pollutant allocations related to highways within the watershed. ODOT is required to comply with its DEQ-issued Municipal Stormwater Permit, including

development of a statewide TMDL implementation plan. ODOT will likely incur costs to implement temperature-related management strategies, administrative costs for development of a TMDL implementation plan and reporting costs associated with this TMDL. The plan must include practices to achieve Willamette Subbasins temperature TMDL allocations related to nonpoint sources of excess solar radiation.

Oregon Parks and Recreation Department is responsible for implementing practices to achieve pollutant allocations related to state park lands within the subbasin. OPRD is an existing DMA who has been implementing a plan to address temperature impairments under the 2006 Willamette Basin and the 2008 Molalla-Pudding temperature TMDLs. Administrative costs for managing state park lands are not dependent on TMDLs, but OPRD may incur incremental costs to update their existing plan to incorporate any new requirements in this proposed WQMP.

Oregon Department of Fish and Wildlife is responsible for implementing practices to achieve pollutant allocations related to lands managed by ODFW within the subbasin. ODFW will likely incur costs to implement temperature-related management strategies, administrative costs for development of a TMDL implementation plan and reporting costs associated with this TMDL. ODFW also operates hatcheries within the project area that will need to meet any updated permit requirements.

Local governments

There are 79 cities and counties in the Willamette Subbasins project area that are named in the draft proposed WQMP as DMAs. Of these DMAs, 75 will be required to complete a TMDL implementation plan and reporting. A list of the cities and counties can be found in the WQMP in Appendix A and in meeting materials for the second Rule Advisory Committee meeting.² Many cities and counties are existing DMAs who have been implementing plans to address temperature impairments under the 2006 Willamette Basin and the 2008 Molalla-Pudding temperature TMDLs. For these existing DMAs there may be incremental costs to update their existing plans to incorporate any new requirements in this draft proposed WQMP. DEQ is proposing additional cities and counties to be new DMAs for this proposed WQMP. The WQMP includes 64 existing city DMAs and two new city DMAs who will be required to complete TMDL implementation plans. The proposed WQMP also includes seven existing county DMAs, and two new county DMAs who will be required to complete TMDL implementation plans. DEQ expects additional costs for any new DMA to develop an implementation plan, implement temperature strategies if the new DMA is not currently conducting these activities, and administrative costs associated with reporting requirements.

Some of these DMAs are required to conduct water temperature monitoring at large dams that they operate within the project area. A reservoir TMDL implementation

² oregon.gov/deq/rulemaking/Pages/willamettetempTMDL.aspx

plan may also be required based on the monitoring results. This requirement may result in potentially significant costs to these DMAs.

Financial incentives and technical assistance programs are available to assist local governments and private landowners within cities and counties. Grants or low interest loan funding (for public entities) are available to support implementation of assessment, pollution controls and watershed restoration actions or landscape improvements that may be necessary to meet TMDL requirements.

Public utilities

Eugene Water and Electric Board

EWEB is currently implementing the 2006 Willamette Basin Temperature TMDL. Therefore, there may be incremental costs to develop an implementation plan for this proposed WQMP. EWEB may incur additional costs related to temperature monitoring and temperature modelling at some of their reservoirs within the project area.

Portland General Electric

PGE is currently implementing the 2006 Willamette Basin Temperature TMDL. Therefore, there may be incremental costs to develop an implementation plan for this proposed WQMP. PGE may incur additional costs related to temperature monitoring and temperature modelling at some of their reservoirs within the project area.

Special districts

Metro (Portland Metropolitan Government)

Metro has an existing TMDL implementation plan for temperature. Therefore, there may be incremental costs to update their existing plan to incorporate any new requirements in this proposed WQMP.

Water and Environment Services

WES has an existing TMDL implementation plan for temperature. Therefore, there may be incremental costs to update their existing plan to incorporate any new requirements in this proposed WQMP. WES may incur additional costs related to temperature monitoring and temperature modelling at some of their reservoirs within the project area.

Transportation

Port of Columbia County

The Port of Columbia County is a new DMA for a temperature TMDL. DEQ expects additional costs for any new DMA to develop a TMDL implementation plan, implement temperature strategies if the new DMA is not currently conducting these activities, and administrative costs associated with reporting requirements.

Port of Portland

The Port of Portland has an existing TMDL implementation plan for temperature. Therefore, there may be incremental costs to update their existing plan to incorporate any new requirements in this proposed WQMP.

Public

The proposed rule does not have direct costs to the public. There may be indirect costs to the public if DMAs, such as cities or counties, pass on implementation costs to the public through increased fees or taxes. The TMDL replacement for temperature will provide a positive indirect impact with potential economic benefits to the public who live, work, and recreate in the watershed. The positive impacts will also expand the ecological benefits of the natural resources in Willamette Subbasins. Threatened native populations of Chinook salmon, steelhead trout and bull trout, as well as rainbow and cutthroat trout, and other aquatic life are culturally and economically significant to the basin. Elevated stream temperatures are a factor in their decline.

The proposed rule supports the Oregon Plan for Salmon and Watersheds³ mission: “Restoring our native fish populations and the aquatic systems that support them to productive and sustainable levels that will provide substantial environmental, cultural, and economic benefits.” The Oregon Plan is a comprehensive partnership between government, communities, private landowners, industry, and citizens funded by the Oregon Legislature. Efforts under the Oregon Plan include regulatory and non-regulatory programs designed to restore native salmon runs, improve water quality, and maintain healthy watersheds and human communities throughout Oregon.

The proposed rule to maintain cold water temperatures supports state and federal conservation and recovery plans to restore or maintain healthy fisheries. The recovery plans identify TMDLs as a management strategy for fish recovery in waters that don't meet temperature standards. The Upper Willamette River Conservation and Recovery Plan⁴ serves as both a recovery plan under the Federal Endangered Species Act (ESA) and as a State of Oregon conservation plan under Oregon's Native Fish Conservation Policy, The Oregon Department of Fish and Wildlife Lower Columbia River Conservation and Recovery Plan; and National Marine Fisheries Service Endangered Species Act recovery plan for Lower Columbia River Coho salmon.⁵

³ Oregon Plan for Salmon and Watersheds Resources
oregon.gov/oweb/resources/pages/opsw.aspx

⁴ ODFW Upper Willamette River Conservation and Recovery Plan
dfw.state.or.us/fish/crp/upper_willamette_river_plan.asp

⁵ Lower Columbia River Chinook Salmon | NOAA Fisheries

In 2019, local recreationists and visitors spent \$2 billion in Willamette Valley Tourism Regions.⁶ Outdoor recreation spending includes recreational trips, gear, apparel, equipment, and repair. Consumer spending supports businesses and jobs throughout the state. The statewide economic contribution of recreational anglers to Oregon's economy as of 2018 was \$1.5 billion, supporting 13,120 jobs.⁷ It was estimated that 569,600 Oregon recreational anglers spent \$871.8 million in 2018. Willamette Basin communities may experience a positive cultural and economic impact due to the proposed rule. The proposed rule may have a positive economic impact on income from recreational anglers and the public.

Large businesses - businesses with more than 50 employees

DEQ evaluated available data from the Oregon Employment Department⁸ (2021) and identified large businesses that operate within the basin are varied, and include, among others, universities, multinational corporations, and agricultural and timber related businesses. The proposed rule change could impose costs associated with achieving required reductions in pollutant contributions to waterways from the lands or operations of businesses within riparian areas related to the agriculture and forestry sectors. Specifically, the rule may result in unknown additional costs to approximately 62 large agricultural and 8 timber-related businesses for compliance with the TMDL if they are determined to be located within riparian areas. Starting in July 2023, compliance costs for natural resource protections for industrial forestland owners may be associated with the Forest Practices Act rules, revised in October 2022 due to legislation associated with the Private Forests Accord, rather than this TMDL rule. This may reduce costs associated with implementing this proposed TMDL.

Small businesses – businesses with 50 or fewer employees

DEQ searched the Oregon Employment Department database (2021) list of all businesses registered in Oregon. Small businesses within the nine counties included

fisheries.noaa.gov/west-coast/endangered-species-conservation/lower-columbia-river-chinook-salmon

⁶ Oregon Outdoor Recreation Economic Impact Study - Travel Oregon
industry.traveloregon.com/resources/research/oregon-outdoor-recreation-economic-impact-study/

⁷ Oregon Commercial and Recreational Fishing Industry Economic Activity Coastwide and in Proximity to Marine Reserve Sites for Years 2018 and 2019, ODFW
dfw.state.or.us/agency/docs/TRG%20ec%20summary%20Oregon%20Coast%20fishing%20industry%202018-2019%20ES.pdf

⁸ Oregon Employment Department: Request public records
oregon.gov/employ/Agency/Pages/Request-a-Public-Record.aspx

in this proposed TMDL were filtered using North American Industry Classification System codes.

The proposed rule could impose costs associated with achieving required reductions in pollutant contributions to waterways from approximately 1,247 small agricultural and 254 timber-related businesses, if they are determined to be located within riparian areas. Some small woodlands owners, which are not identified as small businesses in OED's database of businesses in Oregon, within riparian areas could also have costs imposed. The proposed rule is unlikely to result in costs to approximately 92,414 small businesses that are unrelated to agriculture and forestry.

Although the proposed rule does not place specific requirements on small businesses in aggregate, the proposed rule identifies management strategies and practices for the agricultural and forestry sectors that are necessary to reduce pollutant loads. These activities may require changes in certain management practices or improvements in land conditions that could result in capital costs for small landowners. The Oregon Department of Agriculture and the Oregon Department of Forestry have current rules in place that involve a mix of regulatory and voluntary practices by agricultural and forest landowners to protect or improve water quality. In October 2022, ODF updated its rules based on the 2022 Private Forest Accord report and passage of Senate Bills 1501 and 1502 and House Bill 4055 during the 2022 legislative session. ODF's new stream buffer rules began to take effect in July 2023. The authors of the Private Forest Accord anticipated ODF's new rules would have a greater, but unquantified fiscal impact on small forest landowners. Compliance costs for landowners implementing ODA and ODF rules are generally not dependent on TMDLs, because landowners must implement existing ODA and ODF water quality rules.

Grant and low interest loan funding (for public entities) are available to support implementation of pollution controls and watershed restoration actions required for compliance with TMDL requirements. The U.S. Dept. of Agriculture, Natural Resources Conservation Service⁹ offers a variety of programs to help farmers, ranchers, family forests, Tribes and conservation partners perform voluntary conservation on private lands funded through the Farm Bill. Small rural landowners and agricultural operators are eligible for NRCS Financial Assistance, grant and cost-share programs through, including Environmental Quality Incentives Program, Conservation Innovation Grants, Voluntary Public Access and Habitat Incentives Program, Voluntary Conservation Stewardship Program, Regional Conservation Partnership Program, Conservation Easements, and Agricultural Conservation Easements Program. The Oregon Watershed Enhancement Board offers multiple grant types.

⁹ Natural Resources Conservation Service
<https://www.nrcs.usda.gov/>

Minority Owned Businesses

DEQ searched the Oregon Certification Office for Business Inclusion and Diversity (COBID) Certified Vendor Directory for all businesses currently certified as a Minority Business Enterprise (MBE). Businesses were selected from the nine counties included in the Willamette Basin and filtered based on NAICS codes to identify those related to agriculture or forestry.

There are a total of 547 minority business enterprises within the Willamette Basin. Two are agricultural and an additional two are timber related. The proposed rule could result in some costs to these businesses associated with achieving pollutant reductions if they are determined to operate within the riparian area.

Resources outlined for large and small businesses above may also be utilized by Minority Business Enterprises. Additionally, the Oregon Association of Minority Entrepreneurs (OAME) provides technical assistance, microlending/ access to capital, marketing, networking, and business incubation for minority business enterprises among other resources.

ORS 183.336 Cost of Compliance Effect on Small Businesses

a. Estimated number of small businesses and types of businesses and industries with small businesses subject to proposed rule.

The number of registered small businesses in the Willamette Basin (including Benton, Clackamas, Columbia, Lane, Linn, Marion, Multnomah, Polk, and Washington counties) is 93,915 (OED, 2021). Small businesses may or may not be regulated by DMAs that are federal, state, or local government agencies that have legal authority over a sector or source contributing pollutants, identified by DEQ in the TMDL. The number of small businesses that are regulated by DMAs can vary over time.

b. Projected reporting, record keeping and other administrative activities, including costs of professional services, required for small businesses to comply with the proposed rule.

The proposed rule could impose costs to small businesses that have NPDES permits if system upgrades, or repairs are needed. There are 11 small businesses that were given a waste load allocation in the Willamette Subbasins TMDL. These entities may incur costs associated with implementing their NPDES discharge permit when they renew their permit. Costs associated with potential upgrades or repairs for these businesses is not known at this time.

The proposed rule does not place specific administrative activities or requirements on most small businesses because implementation plan development and annual reporting responsibilities are assigned to responsible persons, including DMAs. Therefore, DEQ does not anticipate any significant costs to small businesses.

c. Projected equipment, supplies, labor and increased administration required for small businesses to comply with the proposed rule.

Although the proposed rule does not place specific requirements on small businesses in aggregate, the proposed rule identifies management strategies and practices for the agricultural and forestry sectors that are necessary to reduce pollutant loads. These activities may require changes in certain management practices or improvements in land conditions that could result in costs to small agricultural or timber-producing operations. Although compliance costs for implementing ODA and ODF rules are not dependent on TMDLs, addressing the proposed TMDL requirements may require additional supplies, labor, or administration for these businesses, including those that provide in-kind match to publicly funded restoration grants.

d. Describe how DEQ involved small businesses in developing this proposed rule.

DEQ provided notification of this rulemaking using the state opt-in email delivery system called GovDelivery. Small businesses that have signed up to receive DEQ notifications have been made aware of the proposed rule and informational webinar opportunities to ask questions and learn about the proposed rule. DEQ solicited feedback and information from the Rule Advisory Committee regarding potential fiscal impacts to small businesses.

Documents relied on for fiscal and economic impact

The requirement to list the documents relied on to determine fiscal impact is separate from and in addition to the similar list in the Rules affected, authorities, supporting documents section above.

Document title	Document location
DEQ's Oregon Administrative Rules 340-042-0080 Implementing a Total Maximum Daily Load	secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=1459
Oregon Employment Department Request public records	oregon.gov/employ/Agency/Pages/Request-a-Public-Record.aspx
DEQ's Cost Estimate to Restore Riparian Forest Buffers and Improve Stream Habitat in the Willamette Basin, Oregon (2010)	co.benton.or.us/sites/default/files/fileattachments/community_development/page/2516/willametteripcost030310.pdf
Economic Impacts of Pacific Salmon Fisheries	psc.org/download/333/special-reports/9337/economic-impacts-of-pacific-salmon-fisheries.pdf
Oregon Employment Department Small Business database (2021)	Please contact Oregon Employment Department for this information.

Private Forest Accord Report (2022)	oregon.gov/odf/Pages/private-forest-accord.aspx
Resource Management Plans for Western Oregon (U.S. Bureau of Land Management)	eplanning.blm.gov/public_projects/lup/57902/79046/91311/NCO ROD RMP ePlanning.pdf
U.S. Environmental Protection Agency Environmental Justice Screening Tool	epa.gov/sites/production/files/2021-04/documents/ejscreen technical document.pdf
U.S. Census Bureau – 2020 Census – Census Tract Reference Map	census.gov/geographies/reference-maps/2020/geo/2020pl-maps/2020-census-tract.html
EPA webinar, Understanding Environmental Justice through two EPA tools: EJScreen and EnviroAtlas	epa.gov/research-states/understanding-environmental-justice-through-two-epa-tools-ejscreen-and-enviroatlas
Environmental Justice Best Practices for Oregon’s Natural Resource Agencies	oregon.gov/dsl/About/Documents/Oregon EJTF Handbook Final.pdf
EJ 2020 Action Agenda: EPA's Environmental Justice Strategy	epa.gov/environmentaljustice/ej-2020-action-agenda-epas-environmental-justice-strategy
Oregon Plan for Salmon and Watersheds Resources	oregon.gov/oweb/resources/pages/opsw.aspx
ODFW Upper Willamette River Conservation and Recovery Plan	dfw.state.or.us/fish/crp/upper_willamette_river_plan.asp
NOAA Fisheries Lower Columbia River Chinook Salmon	fisheries.noaa.gov/west-coast/endangered-species-conservation/lower-columbia-river-chinook-salmon
Oregon Outdoor Recreation Economic Impact Study – Travel Oregon	industry.traveloregon.com/resources/research/oregon-outdoor-recreation-economic-impact-study/
Oregon Commercial and Recreational Fishing Industry Economic Activity Coastwide and in Proximity to Marine Reserve Sites for Years 2018 and 2019, ODFW	dfw.state.or.us/agency/docs/TRG%20ec%20summary%20Oregon%20Coast%20fishing%20industry%202018-2019%20ES.pdf
North American Industry Classification System (NAICS) codes	census.gov/naics/
U.S. Census Bureau QuickFacts	https://www.census.gov/programs-surveys/sis/resources/data-tools/quickfacts.html
DEQ Rulemaking webpage for the Willamette Subbasins Temperature TMDL	oregon.gov/deq/rulemaking/Pages/willametteTempTMDL.aspx

Advisory committee fiscal review

DEQ appointed an advisory committee.

As ORS 183.33 requires, DEQ asked for the committee's recommendations on:

- Whether the proposed rules would have a fiscal impact,
- The extent of the impact, and
- Whether the proposed rules would have a significant adverse impact on small businesses; if so, then how DEQ can comply with ORS 183.540 reduce that impact.

The committee reviewed the draft fiscal and economic impact statement and its findings are stated in the approved minutes dated April 6, 2023:

[Willamette Subbasins Temperature TMDL](#)

The committee was also provided a week after the rule advisory committee meetings to give input to DEQ in writing or otherwise. According to one committee member, the draft rule will have significant adverse impact on small businesses due to restriction on discharges to surface waters will decrease opportunities for businesses to locate or grow the project area. Restrictions on discharges to surface waters may increase costs on manufactured supplies sold to small businesses. In addition, restrictions on activities in riparian areas can impact the ability of traditional and new water-based businesses to operate. The committee member offered two ways to reduce the impact: 1) offering and supporting business grant opportunities, and 2) supporting TMDL compliance solutions.

Racial Equity

ORS 183.335(2)(a)(F) as amended by House Bill 2993, requires state agencies, when providing notice of a rulemaking, to provide a statement identifying how adoption, amendment or repeal of the proposed rules will affect racial equity in the state.

Tribal nations were made aware of the rulemaking process and invited to consult on the rule advisory committee including, the Confederated Tribes of Umatilla Indian Reservation, Confederated Tribes of Warm Springs, The Confederated Tribes of Grand Ronde, and Confederated Tribes of Yakama Nation. DEQ also engaged extensively with agricultural, forestry, fishery, and conservation communities through the Rule Advisory Committee.

DEQ expects the proposed rule to have a positive impact on and help promote racial equity, particularly in benefitting tribal interests. The externalized costs of water pollution often negatively affect poor, rural, indigenous and minority communities in Oregon and some underserved communities may not have equal access to technical and financial assistance or other resources. The proposed rules will help maintain healthy and abundant fisheries including subsistence salmonid fisheries and will also help minimize treatment costs of providing fresh, clean, and healthy water supplies to disadvantaged communities.

Environmental Justice Considerations

ORS 182.545 requires natural resource agencies to consider the effects of their actions on environmental justice issues.

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, culture, education, or income with respect to the development, implementation and enforcement of environmental laws, regulations, and policies. DEQ is committed to incorporating environmental justice best practices into its programs and decision-making, to ensure all people in Oregon have equitable environmental and public health protections.

The U.S. Environmental Protection Agency, Environmental Justice Screening tool was not utilized for this report at this time due to technical issues. DEQ used 2020 U.S. Census Bureau to source demographic data for Multnomah, Columbia, Yamhill, Benton, Polk, Linn, Marion, Clackamas, and Lane Counties. Based on county data it is recommended that bilingual educational materials are provided to the public for outreach. Based on county data (household internet subscriptions) it is also recommended that educational materials be provided in physical means in addition to electronic means.

The externalized costs of water pollution can negatively affect poor, rural, indigenous and minority communities in Oregon. The proposed rules will help restore and maintain healthy and abundant fisheries, including salmonid species. Indigenous, rural, minority and poor communities may use salmon as a subsistence food source. Abundant fish would also restore and protect beneficial uses including recreation. The proposed temperature TMDL rule will help address the localized impacts of stream temperature impairments, and potentially improve other related water quality parameters, such as dissolved oxygen.

Cost of DMAs' compliance with TMDL requirements may be passed on to local communities through increased charges, such as water-related bills or system development charges to help pay for TMDL implementation. A potential favorable offset to some of the issues described above will be in the 319 grant funding program. The EPA memorandum "Continued Actions in FY23 to Increase Equity and Environmental Justice in the Nonpoint Source Program" will be used as a tool for DEQ to leverage potential 319 grant funding for overburdened communities. This initiative is currently in development.

Land Use

Land-use considerations

In adopting new or amended rules, ORS 197.180 and OAR 340-018-0070 require DEQ to determine whether the proposed rules significantly affect land use. If so, DEQ must explain how the proposed rules comply with statewide land-use planning goals and local acknowledged comprehensive plans.

Under OAR 660-030-0005 and OAR 340 Division 18, DEQ considers that rules affect land use if:

- The statewide land use planning goals specifically refer to the rule or program, or
- The rule or program is reasonably expected to have significant effects on:
- Resources, objects, or areas identified in the statewide planning goals, or
- Present or future land uses identified in acknowledge comprehensive plans

DEQ determined whether the proposed rules involve programs or actions that affect land use by reviewing its Statewide Agency Coordination plan. The plan describes the programs that DEQ determined significantly affect land use. DEQ considers that its programs specifically relate to the following statewide goals:

Goal	Title
5	Natural Resources, Scenic and Historic Areas, and Open Spaces
6	Air, Water and Land Resources Quality
11	Public Facilities and Services
16	Estuarine Resources
19	Ocean Resources

Statewide goals also specifically reference the following DEQ programs:

- Nonpoint source discharge water quality program – Goal 16
- Water quality and sewage disposal systems – Goal 16
- Water quality permits and oil spill regulations – Goal 19

Determination

DEQ determined that these proposed rules do not affect land use under OAR 340-018-0030 or DEQ's State Agency Coordination Program.

The proposed rules will either have no effect or an indirect benefit on land use from cleaner water, and productive and healthier watersheds. Productive watersheds will enhance activities and beneficial uses such as water supply and livestock watering, salmon and steelhead fisheries, recreational economies that attract tourism and tourism-related jobs, and aesthetic quality from riparian planting.

EQC Prior Involvement

1. April 2022 EQC meeting: mention during the TMDL informational update
2. May 2022 EQC meeting: mention during the TMDL informational update
3. March 2023 EQC meeting: mention regarding the TMDL rule schedule during the Upper Yaquina River Watershed TMDL informational presentation
4. DEQ presented an informational update at the July 2023 EQC meeting

Advisory Committee

Background

DEQ convened a Willamette Subbasins rule advisory committee. The committee met twice on Feb. 23, 2023, and April 6, 2023. The committee's web page is located at: [Willamette Subbasins Temperature TMDL](#)

The committee members were:

Advisory Committee Membership	
Name	Affiliation
April Snell	Oregon Water Resources Congress
Becky Anthony	Oregon Department of Fish and Wildlife
Carrie Sanneman	Multnomah County Drainage District
Dave Gilbey	City of Corvallis
Jackie White	Northwest Pulp and Paper Association
Al Johnson	U.S. Forest Service
Julia Bond	City of Portland Bureau of Environmental Services
Kathryn Tackley	U.S. Army Corps of Engineers
Lauren Poor	Oregon Farm Bureau
Mike Brown	Bureau of Land Management
Rich Wildman	Geosyntec for Oregon Forest & Industries Council and Oregon Farm Bureau
Olivia Jasper	Oregon Department of Agriculture
Rebecca McCoun	Oregon Department of Forestry
Sharla Moffett	Oregon Business and Industry
Susie Smith	Oregon Association of Clean Water Agencies

Meeting notifications

To notify people about the advisory committee's activities, DEQ:

- Sent GovDelivery bulletins, a free opt-in, e-mail subscription service, to the following lists with an estimated total of 25,304 recipients at any given time:
 - Rulemaking
 - DEQ Public Notices
 - Nonpoint Source Water Quality
 - Total Maximum Daily Loads
 - Water Quality Standards
- Added advisory committee announcements to DEQ's calendar of public meetings at [DEQ Calendar](#).

Committee discussions

In addition to the recommendations described under the Statement of Fiscal and Economic Impact section above, the committee discussed the TMDL and WQMP. All agendas, meeting presentations and meeting summary are online [Willamette Subbasins Temperature TMDL](#)

Public Engagement

Public notice

DEQ provided notice of the proposed rulemaking and rulemaking hearing by:

- On Jan. 10, 2024, filing notice with the Oregon Secretary of State for publication in the February 2024 Oregon Bulletin;
- Posting the Notice, Invitation to Comment and Draft Rules on the web page for this rulemaking, located at: Willamette Subbasins Temperature TMDL;
- Emailing approximately 24,250 interested parties on the following DEQ lists through GovDelivery:
 - Rulemaking
 - DEQ Public Notices
 - TMDLs
- Emailing the following key legislators required under [ORS 183.335](#):
 - Senate Committee on Natural Resources:
 - Chair – Senator Jeff Golden
 - Vice-Chair – Senator Fred Girod
 - House Committee on Agriculture, Land Use, Natural Resources and Water:
 - Chair – Representative Ken Helm
 - Vice-Chair – Representative Mark Owens
 - Vice-Chair – Representative Annessa Hartman
 - Senator Rob Wagner
 - Representative Jules Walters
 - Representative Daniel Nguyen
 - Senator Aaron Woods
 - Representative Courtney Nieron
 - Senator Winsvey Campos
 - Representative Hai Pham
 - Senator Janeen Sollman
 - Representative Susan McLain
 - Senator Suzanne Weber
 - Representative Brian Stout
 - Senator Sara Gelser
 - Representative Dan Rayfield
 - Senator Brian Boquist
 - Representative Anna Scharf
 - Senator Fred Girod
 - Representative Ed Diehl
 - Representative Rick Lewis
 - Representative James Hieb
 - Senator Cedric Hayden
 - Representative Charlie Conrad
 - Representative Jami Cate

- Senator Floyd Prozanski
 - Representative Paul Holvey
- Emailing advisory committee members,
- Posting on the DEQ event calendar: [DEQ Calendar](#)

DEQ has considered all comments and testimony received before the closing date.
DEQ has summarized all comments and responded to comments in this staff report.

Public Hearing

DEQ held one public hearing. DEQ received three comments at the hearing. Later sections of this document include a summary of the comments received during the open public comment period, DEQ's responses, and a list of the commenters. Original comments are on file with DEQ.

Presiding Officers' Record

Hearing 1

Date	Friday, Feb. 16, 2024
Place	Virtual, Zoom
Start Time	9 a.m.
End Time	10:25 a.m.
Presiding Officer	Michele Martin

Presiding Officer:

The presiding officer convened the hearing, summarized procedures for the hearing, and explained that DEQ was recording the hearing. The presiding officer asked people who wanted to present verbal comments to sign the registration list, or if attending by phone, to indicate their intent to present comments. The presiding officer advised all attending parties interested in receiving future information about the rulemaking to sign up for GovDelivery email notices.

As Oregon Administrative Rule 137-001-0030 requires, the presiding officer summarized the content of the rulemaking notice.

67 people attended the hearing virtually. Three people commented orally and no people submitted written comments at the hearing.

Summary of Public Comments and DEQ Responses

Public comment period

DEQ accepted public comment on the proposed rulemaking from Jan. 10, 2024, until 4 p.m. on March 15, 2024. DEQ extended the public comment period for 21 days at the request of the public.

For public comments received by the close of the public comment period, the comments are organized by commenter. DEQ's response follows the summary and are in Attachment F. Original comments are on file with DEQ and are in Attachment G.

DEQ changed the proposed rules in response to comments. DEQ also made changes to provide additional clarity about the implementation responsibilities of responsible persons including DMAs. A summary of substantive changes are below:

TMDL revisions:

- Human use allowance (HUA) assignments and wasteload allocations to National Pollutant Discharge Elimination System (NPDES) permitted facilities were changed based on public comments received or on updated data and analysis.
- HUA assignments and load allocations to nonpoint sources were changed based on public comments received or on updated data and analysis.
- HUA assignments to reserve capacity were changed based on public comments received or on updated data and analysis.
- Wasteload allocations were added for some facilities not included in the draft TMDL, including the U.S. Army Corps of Engineers dam and reservoir projects that have applied for individual NPDES permits.
- Numeric wasteload allocations to 100-J General NPDES permitted facilities were replaced with narrative requirements. The TMDL narrative requirements reflect the permit conditions identified in the 100-J General Permit renewed on April 15, 2024.
- Added summary allocation tables showing how the allocations add up to the loading capacity.
- Critical periods for waterbodies were changed based on public comments received or on further consideration of the data used to determine critical periods.
- Allocation periods were changed based on critical period changes, to account for specific temperature water quality criteria periods.
- Revisions were made to clarify the TMDL expectations for stormwater dischargers.
- Revisions were made to clarify the relationship between surrogate measures, DMAs, shade targets, and HUA assignments.

- Revisions were made to clarify how dam and reservoir surrogate measures are implemented.
- Revisions to the TMDL scope to clarify how and where the TMDL applies to the point and nonpoint sources in the basin.
- Changes were made to which dam and reservoir operations the protecting cold water criterion applies to from updated analysis.
- Information was added or revised to identify the HUA assignments for each assessment unit, the receiving waterbody assessment unit for each NPDES permitted facilities receiving a wasteload allocation, and the applicable criteria and fish use designation period for each assessment unit.

WQMP revisions:

- Section 5.3.2 was revised to clarify that DEQ expects responsible persons including DMAs to prioritize implementation activities where DEQ has modeled the largest gaps between current shade and effective target shade.
- Section 5.3.2 was revised to clarify that entities that do not have a DEQ shade gap analysis may use other available data to estimate the quantities reported in the streamside evaluation.
- Section 5.3.4.2 was revised to clarify that the shade gap analysis is required for perennial and intermittent streams that have surface flow or residual pools during the TMDL allocation period.
- Table 8 was revised to provide additional time for responsible persons including DMAs to submit their streamside evaluation (Section 5.3.2).
- Section 5.3.6 was revised to require an implementation plan from all dam and reservoir owners identified in Table 7 to address the continuous temperature monitoring and assessment requirements outlined in Section 5.3.6.1.
- Section 5.3.6.1 was revised to provide additional clarification related to continuous temperature monitoring requirements for Table 7 dam and reservoir operators, i.e. duration and timing.
- Section 6 was revised to clarify that DEQ effective shade targets are regulatory and can be used to assess implementation progress in the future.
- Section 5 sufficiency analyses of streamside management strategies for ODF, USFS, and BLM in attaining TMDL load allocations and effective shade surrogates were updated.

Implementation Notification

The proposed rules will become effective upon filing on approximately Aug. 8, 2024, if adopted by the commission. DEQ will notify affected parties and persons who provided formal comments on the draft rules according to OAR 340-042-0060(4) within 20 business days of adoption by EQC. DEQ plans to notify affected parties by email and GovDelivery notification.

Compliance and enforcement

TMDL compliance is provided in OAR 340-042-0080. Compliance and enforcement of TMDLs is described in OAR 340-012-0053 and OAR 340-012-0055. DEQ staff will continue to coordinate with DEQ's Office of Compliance and Enforcement for guidance.

Measuring, sampling, monitoring, and reporting

The Water Quality Management Plan describes planned monitoring, reporting, and the strategy to develop a collaborative assessment and monitoring strategy to periodically evaluate progress on achieving the goals of the TMDL.

Systems

The rules and supporting documents will be posted to DEQ's website, which will periodically be updated as needed.

Training

DEQ staff will continue to provide outreach and technical assistance to affected parties and DEQ will schedule internal trainings, as needed.

Five Year Review

Requirement

Oregon law requires DEQ to review new rules within five years after EQC adopts them. The law also exempts some rules from review. DEQ determined whether the rules described in this report are subject to the five-year review. DEQ based its analysis on the law in effect when EQC adopted these rules.

Exemption from five-year rule review

The Administrative Procedures Act exempts all of the proposed rules from the five-year review because the proposed rules would:

- Amend or repeal an existing rule. ORS 183.405(4).

Supporting document

The Willamette Subbasins TMDL Technical Support Document is provided as Attachment D and is not included in the rule. This document will be available on DEQ's website to support information presented in the TMDLs and WQMP.

Attachment A: Draft Rules – Edits Highlighted

Key to Identifying Changed Text:

~~Deleted Text~~

New/inserted text

Division 42 TOTAL MAXIMUM DAILY LOADS (TMDLS)

OAR 340-042-0090

Total Maximum Daily Loads and Water Quality Management Plans

The following TMDLs are adopted by EQC by reference in this rule on the dates indicated. The TMDL documents and supporting information for TMDLs adopted as rule or issued by order are available on DEQ's website.

(1) Upper Yaquina River Watershed, USGS watershed of the Northern Oregon Coastal Basin (HUC 1710020401):

(a) TMDL: bacteria and dissolved oxygen, September 14, 2023.

(b) WQMP: bacteria and dissolved oxygen, September 14, 2023.

(2) Powder River Basin, USGS Subbasin of the Middle Snake-Powder Basin (HUC 170502), including the Powder River Subbasin (HUC 17050203), Burnt River Subbasin (HUC 17050202) and Brownlee Subbasin (HUC 17050201):

(a) TMDL: bacteria for *E. coli*, May 23, 2024

(b) WQMP: bacteria for *E. coli*, May 23, 2024

(3) Willamette Subbasins – Ten subbasins within the Willamette Basin (HUC 170900), including the Middle Fork Willamette Subbasin (HUC 17090001), Coast Fork Willamette Subbasin (HUC 17090002), Upper Willamette Subbasin (HUC 17090003), McKenzie Subbasin (HUC 17090004), North Santiam Subbasin (HUC 17090005), South Santiam Subbasin (HUC 17090006), Middle Willamette Subbasin (HUC 17090007), Molalla-Pudding Subbasin (HUC 17090009), Clackamas Subbasin (HUC 17090011), and Lower Willamette Subbasin (HUC 17090012). Waters excluded from the Willamette Subbasins TMDLs include the Willamette River, Multnomah Channel, and tributaries to the Willamette River downstream of the following dams: River Mill Dam, Detroit Dam, Foster Dam, Fern Ridge Dam, Dexter Dam, Fall Creek Dam, and Cottage Grove Dam.

(a) TMDL: temperature (date of EQC adoption)

(b) WQMP: temperature (date of EQC adoption)

Statutory/Other Authority: ORS 468.020, 468.065, 468B.030 & 468B.035 **Statutes/Other Implemented:** ORS 468B.020 & 468B.110

Accessibility Information

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