

Total Maximum Daily Loads (TMDLs): Temperature
TMDL Replacement project
**Lower Columbia-Sandy Subbasin and
Willamette Subbasins**

Tuesday, Jan. 31, 2023
Informational Webinar

Agenda

Time	Topic
1:00 p.m.	Welcome
1:05 p.m.	Agenda review
1:10 p.m.	Zoom logistics and ground rules
1:15 p.m.	Project overview and TMDL technical explanation and information
2:15 p.m.	Water Quality Management Plans (WQMPs)
2:50 p.m.	Rulemaking information
3:00 p.m.	Question and Answers
3:30 p.m.	Adjourn

Zoom logistics and meeting ground rules



Raise hand to be recognized for questions or comments



Use chat to:

Ask questions

Provide informational resources

Second good ideas/issues



Mute when not speaking



If using phone: press *9 to raise hand, *6 to mute/unmute

Webinar purpose: Total Maximum Daily Loads



Sandy River, Oregon

Temperature TMDL Replacement project litigation background

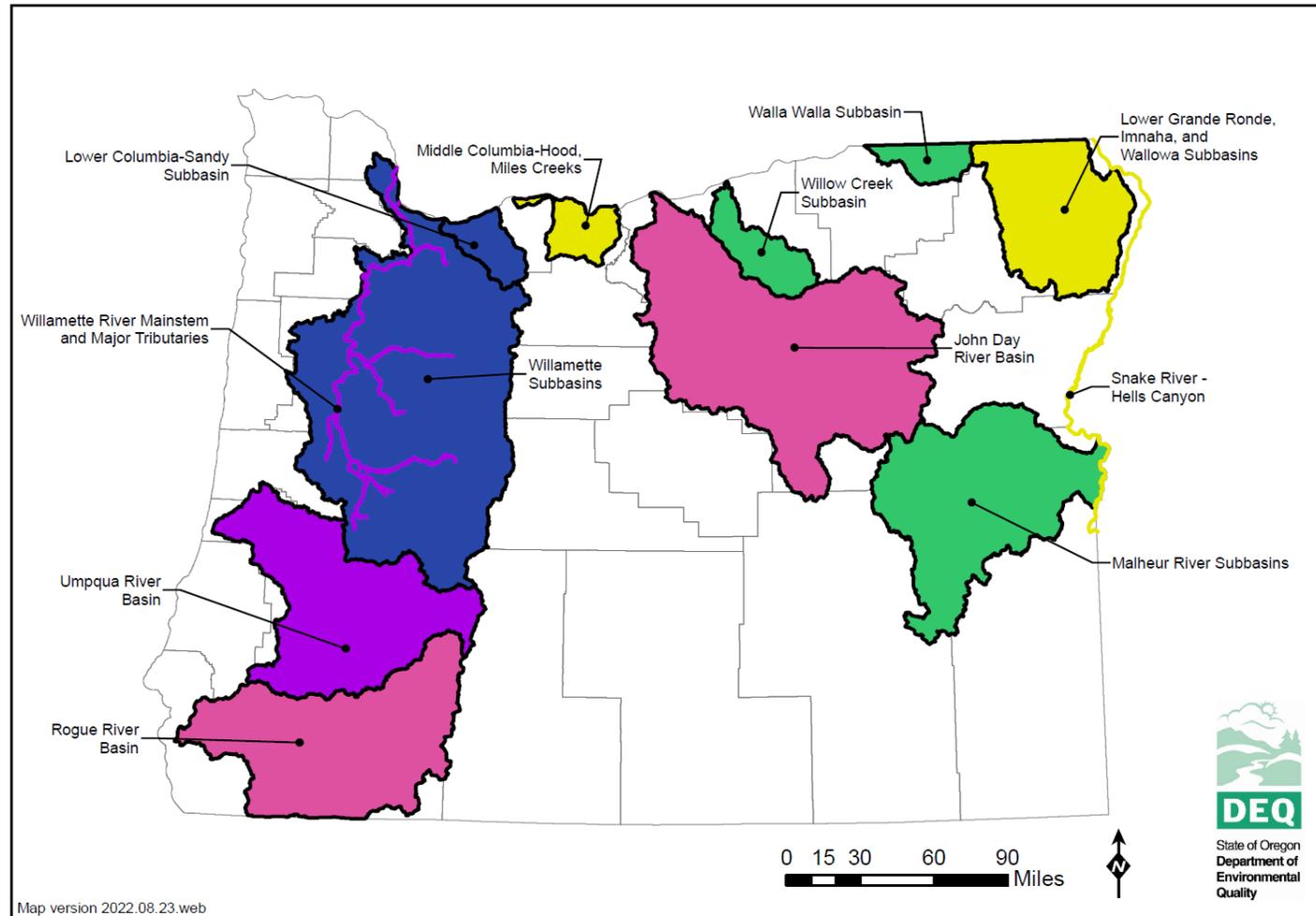
2012: NWEA vs. USEPA, NMFS, USFWS

- Lawsuit was seeking judicial review of the EPA's decision to approve Oregon's revised water quality standards (including the Natural Conditions Criteria) and the Services' "no jeopardy" BiOp.
- Judge found “the EPA was unable to articulate a rationale [sic] basis for its approval of the NCC”.
- Court’s judgment resulted in EPA’s disapproval of the Natural Conditions Criteria.

2019: NWEA vs. USEPA

- Lawsuit asserted the EPA unlawfully approved TMDLs that were based on the now disapproved Natural Conditions Criteria.
- The court issued a judgment on Oct. 4, 2019, requiring 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 criteria.

Temperature TMDL Replacement project areas



Project website: <https://www.oregon.gov/deq/wq/tmdls/Pages/tmdlreplacement.aspx>

Key dates for EPA approval or disapproval of Temperature TMDLs

January 15, 2024

- Willamette Subbasins*
- Lower Columbia-Sandy Subbasin

February 28, 2025

- Willamette River Mainstem and Major Tributaries*
- Umpqua River Basin

April 17, 2026

- Rogue River Basin
- John Day River Basin

June 4, 2027

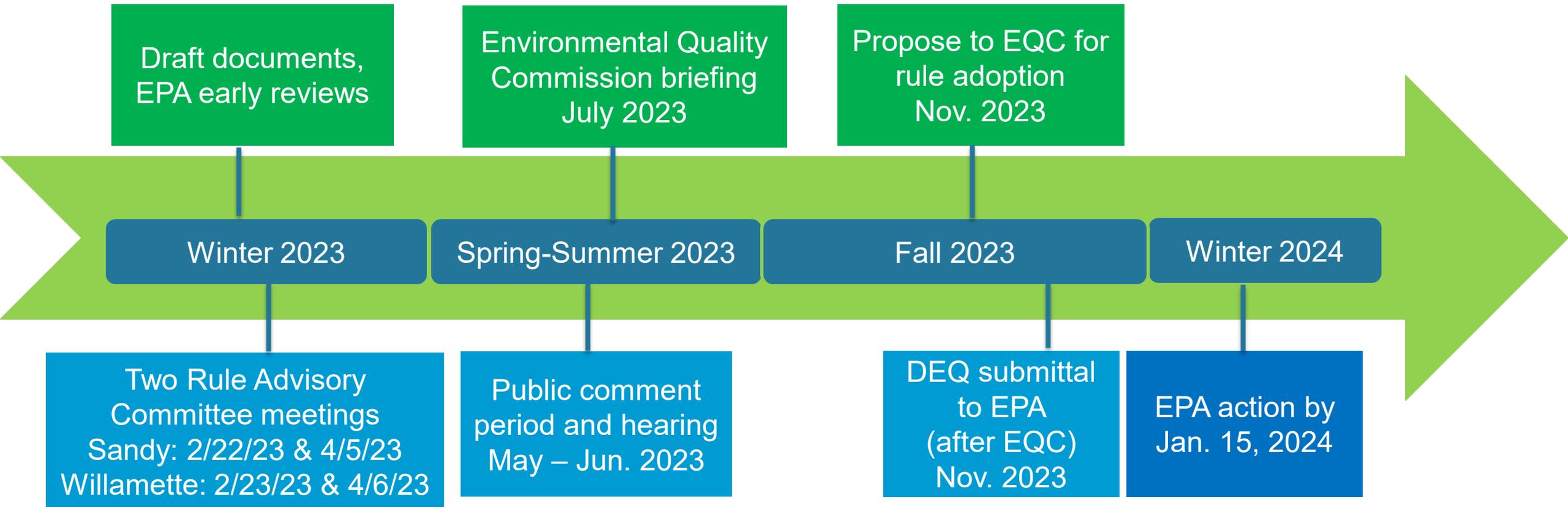
- Snake River - Hell's Canyon
- Lower Grande Ronde, Imnaha, and Wallowa Subbasins
- Middle Columbia-Hood, Miles Creeks

May 29, 2028

- Walla Walla Subbasin
- Willow Creek Subbasin
- Malheur River Subbasins

*The Willamette temperature TMDL replacement will occur in two waves: Jan. 15, 2024, and Feb. 28, 2025

Lower-Columbia Sandy Subbasin & Willamette Subbasins Temperature TMDL Replacement rulemaking milestones



Project website: <https://www.oregon.gov/deq/wq/tmdls/Pages/tmdlreplacement.aspx>

TMDLs

Total Maximum Daily Loads (TMDLs) are science based clean water plans used for cleaning up polluted water to meet water quality standards.

TMDLs are developed for each water body on the state polluted waters list known as the 303(d) list; the Clean Water Act section for listing impaired and threatened waters.

Oregon's Temperature Standard

Biologically Based Numeric Criteria (BBNC) 7-day avg max

- 20°C (68.0°F) - Migration corridors
- 18°C (64.4°F) - Salmon & Trout Rearing and Migration
- 16°C (60.8°F) - Core cold water habitat
- 13°C (55.4°F) - Salmon and Steelhead Spawning
- 12°C (53.6°F) - Bull trout spawning and juvenile rearing use

Human Use Allowance (when temps > BBNC)

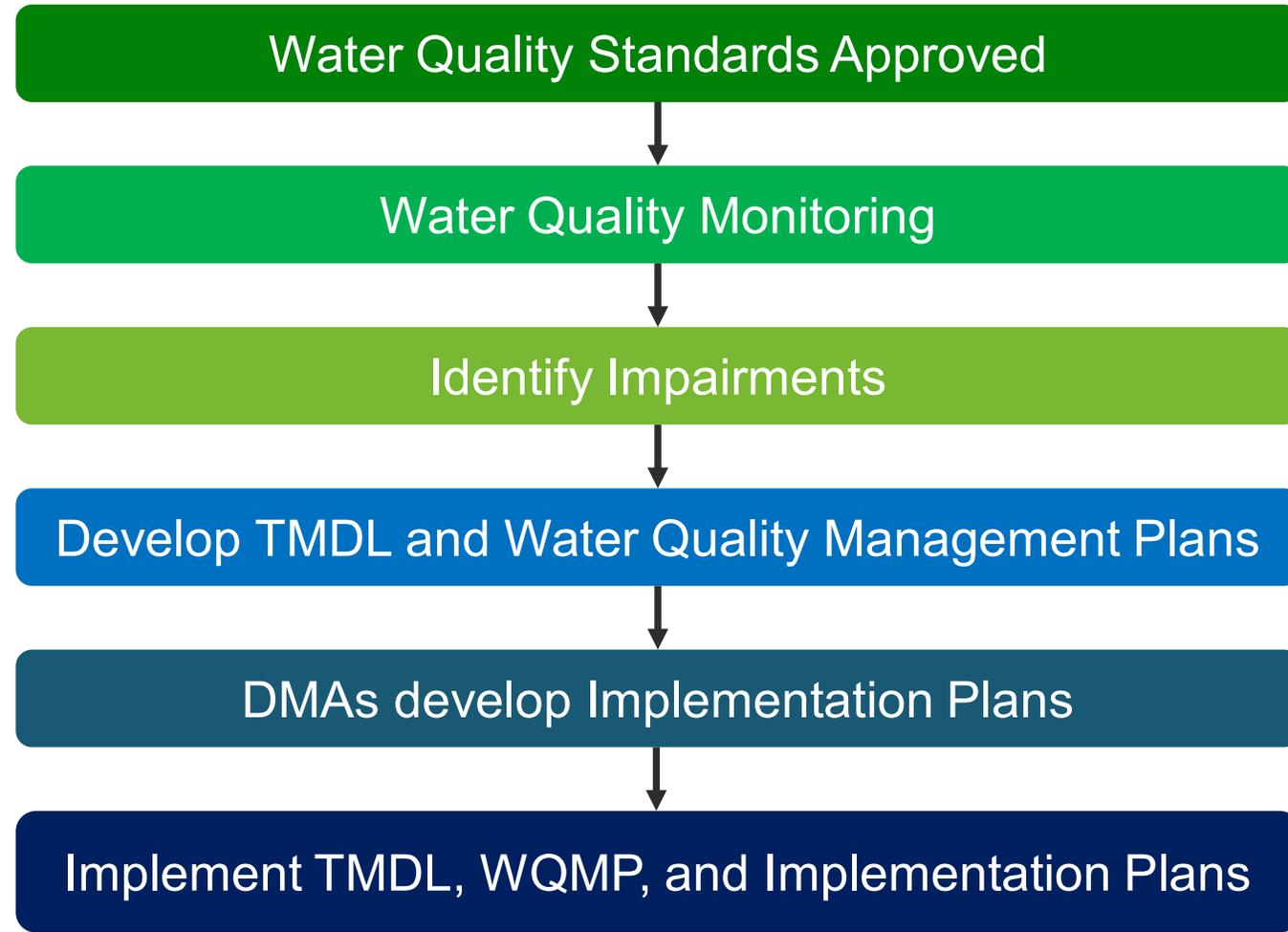
- 0.3°C (0.5°F) increase above the applicable standard

Protecting Cold Water (when temps < BBNC)

- 0.3°C increase above ambient for Non-point sources
- 0.5°C increase when 60-day rolling avg is 10°C - 12.8 °C
- 1.0°C increase when 60-day rolling avg is < 10°C

Reference: [Oregon Administrative Rule 340-041-0028](#)

Oregon TMDL process and development



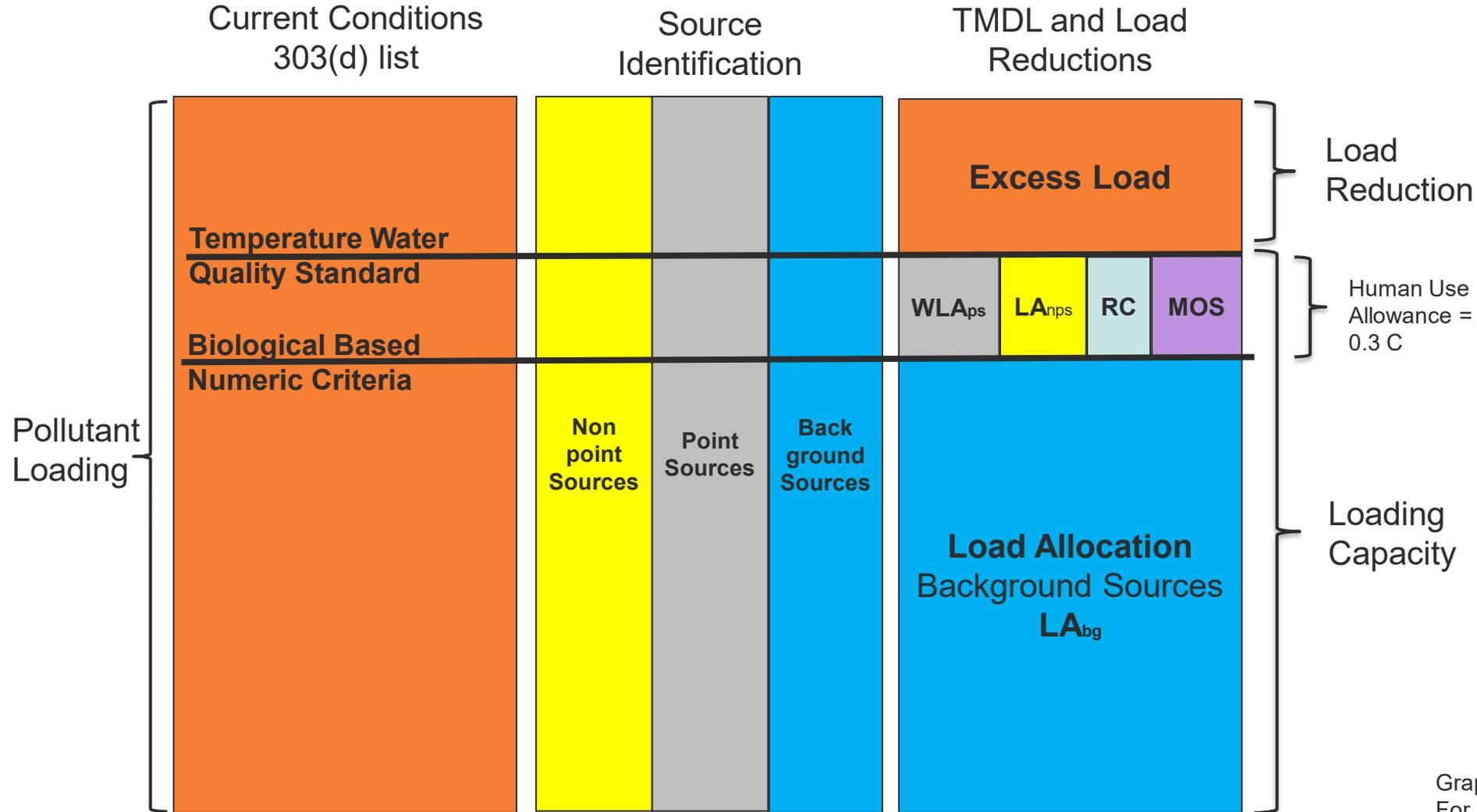
TMDLs include the following elements:

- Waterbody Name and Location
- Pollutant
- Water quality standard and beneficial uses
- Loading Capacity
- Excess Load / Load Reduction
- Sources or Source categories
- Allocations
 - Wasteload Allocations (WLA)
 - Load Allocations (LA)
 - Surrogate Measures
 - Reserve Capacity (RC)
 - Margin of Safety (MOS)
- Seasonal Variation
- Water Quality Management Plan

Reference: [Oregon Administrative Rule 340-042-0040\(4\)](#) and federal regulations: 40 CFR 130.2 and 40 CFR 130.7

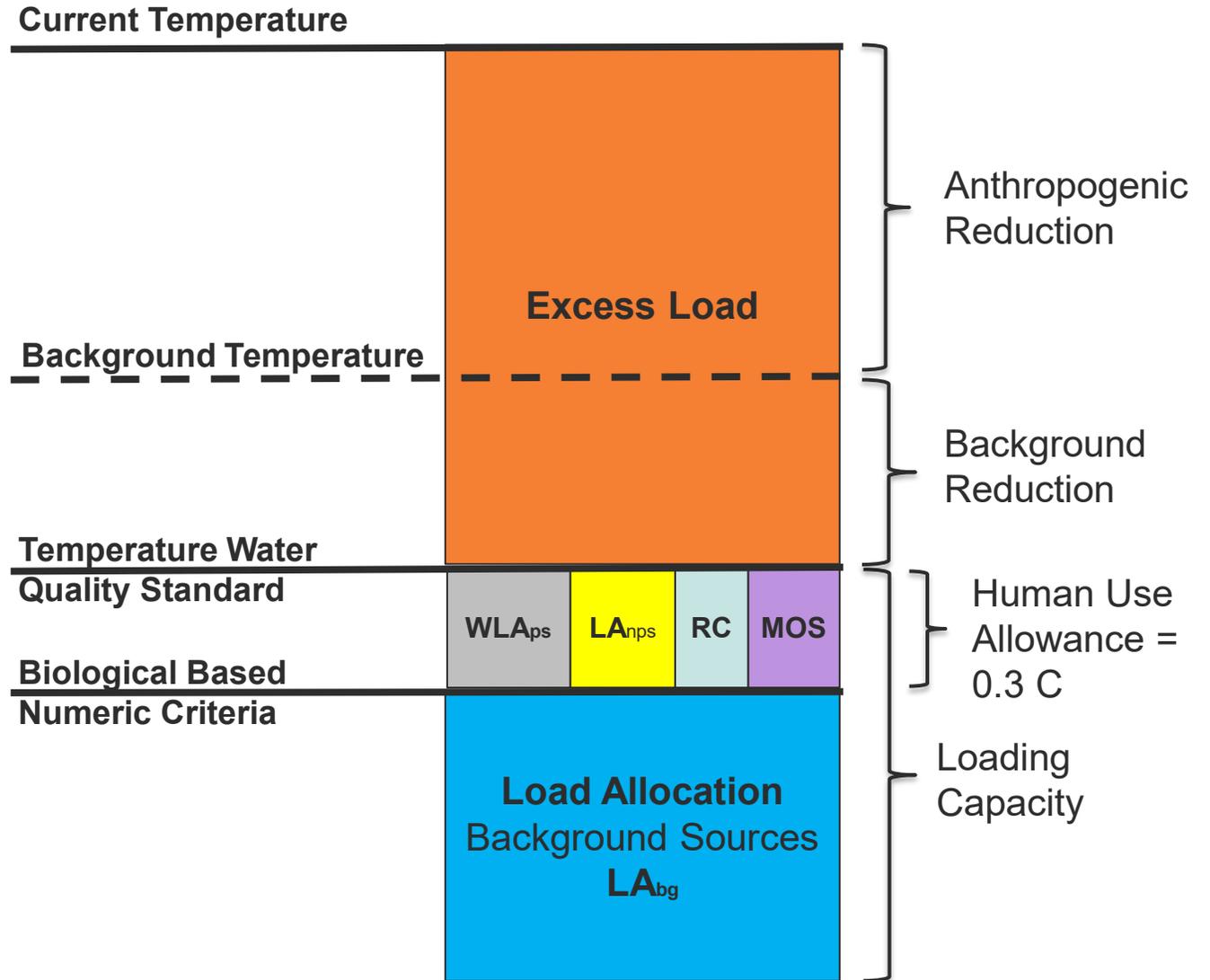
Temperature TMDL Equation

$$\text{TMDL} = \text{WLA}_{ps} + \text{LA}_{nps} + \text{LA}_{bg} + \text{MOS} + \text{RC}$$



Graphic not to scale.
For illustrative purposes only.

Temperature TMDL Equation



The temperature TMDL attainment approach is described further in the Upper Klamath and Lost Subbasins Temperature TMDL (DEQ, 2019) section 1.1, page 2-4.

<https://www.oregon.gov/deq/wq/Documents/tmdlUpKLosttempTMDL.pdf>

Graphic not to scale.
For illustrative purposes only.

Questions?



Bull Run, Oregon

Temperature Replacement TMDL development tasks

Oct. 2019 – Jan. 2023 technical tasks for TMDL preparation

- Project planning
- Data gathering organization (data solicitation)
- Development of modeling Quality Assurance Project Plans (QAPPs),
 - QAPPs guide the technical work
- Mapping of Land Use and Ownership
- Implementation of modeling QAPPs

QAPPs and interactive project maps are online:

- Lower Columbia-Sandy Subbasin: <https://www.oregon.gov/deq/wq/tmdls/Pages/tmdlRlc-sandy.aspx>
- Willamette Subbasins: <https://www.oregon.gov/deq/wq/tmdls/Pages/tmdlRwillamette.aspx>

TMDL elements that may remain unchanged

- Current condition model calibrations (some exceptions)
- Source identification
- Surrogate measure targets (some exceptions)
- Seasonal Variation

TMDL elements reviewed and updated

- Applicable temperature criteria
- Loading Capacity and Excess Load
- Human Use Allowance allocations
- Allocations
- Model scenarios
- Water Quality Management Plan

Sources of temperature warming

- NPDES point source discharges
- Vegetation removal or disturbance
- Water withdrawal activities
- Dam and reservoir management
- Channel modification
- Background warming

Allocation framework

- All NPDES **permitted sources** will receive a numeric or narrative Wasteload allocation
- Nonpoint source sectors, entities, or activities that have potential to contribute to stream warming will receive a Load Allocation
- Surrogate measures will be used for some Load Allocations

Technical information webinars

Rule advisory committee meetings #1 - February 22 & 23, 2023

Lower Columbia-Sandy Subbasin

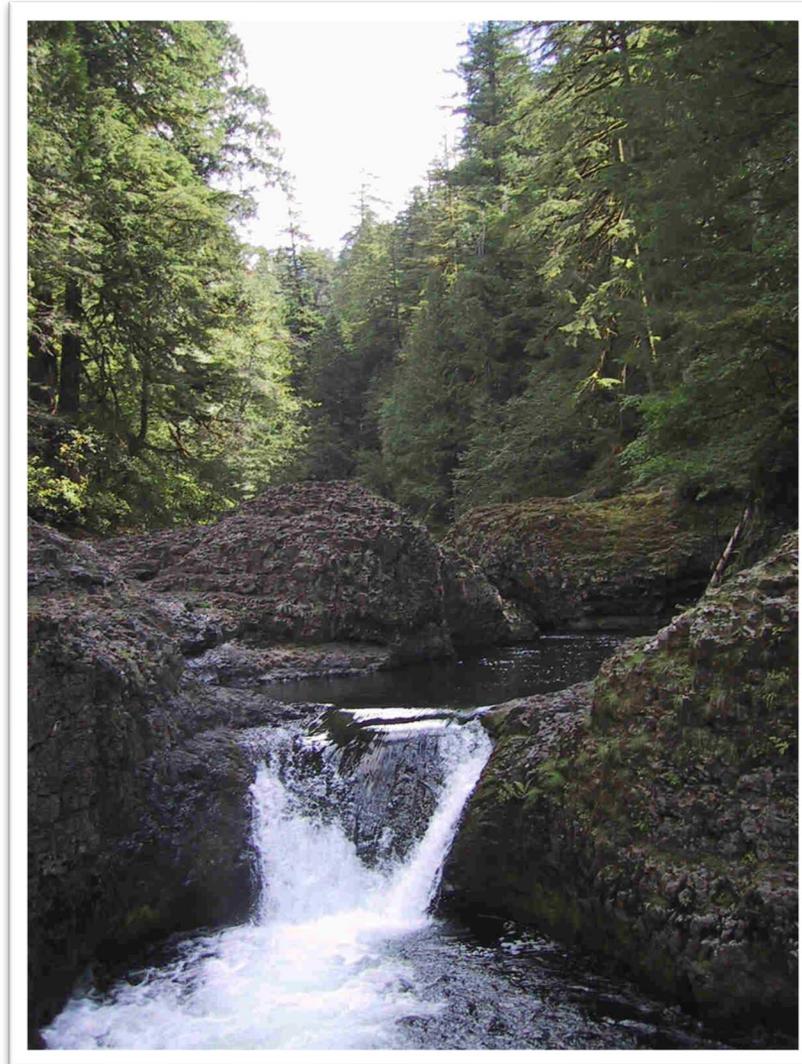
Tuesday, March 14, 2023, 10:00 to 11:30 a.m.

Willamette Subbasins

Wednesday, March 15, 2023, 1:00 to 2:30 p.m.

Rule advisory committee meetings #2 - April 5 & 6, 2023

Questions?



Bull Run River at
Upper Bull Run Falls,
Oregon

Water Quality Management Plan

“Water Quality Management Plan (WQMP)” means **the required element of a TMDL describing strategies to achieve allocations identified in the TMDL to attain water quality standards.**

The elements of a WQMP are described in [OAR 340-042-0040\(4\)\(I\)](#)

TMDL Water Quality Management Plan

Oregon Administrative Rule [340-042-0040\(4\)\(I\)](#)

- The WQMP is part of the TMDL document - it's the plan of action for implementing the TMDL pollutant allocations.
- The WQMP includes specific implementation information, including:
 - Identify responsible persons, including Designated Management Agencies, that must implement strategies to meet TMDL allocations.
 - Propose management strategies designed to meet the TMDL allocations.
 - Describe reasonable assurance that management strategies and sector-specific or source-specific implementation plans will be carried out through regulatory or voluntary actions.

WQMP process, changes, and new information

Willamette Basin will be completed in two separate state rulemakings, after which the TMDLs will be submitted for EPA action according to the court ordered schedule:

- 1 Jan. 15, 2024, Willamette Subbasins, and Lower Columbia-Sandy Subbasin
- 2 Feb. 28, 2025, Willamette mainstem and tributaries

Sandy and Willamette Temperature WQMPs

Elements that will not change for nonpoint source implementation plans

- Same management strategies/BMPs as previous TMDLs
- Existing implementation plans evaluated and revised, as needed
- Most existing DMAs/RPs will continue to be responsible for implementing strategies
- DMAs/RPs will continue submitting annual reports and Year Five updates

Sandy and Willamette proposed implementation strategies

Examples:

- Riparian tree and shrub planting (increase site effective shade); vegetation management and invasive weed control, riparian protection, maintain plants until free to grow
- Stream restoration to restore altered bank and channel morphology; dam management strategies; removal of in-channel ponds, etc.
- Protect and restore cold water refuges
- Stream flow protection measures
- Use regulatory programs and voluntary activities, including incentive-based projects, outreach and education



Mitchell Creek watershed restoration project,
Johnson Creek Watershed

Sandy and Willamette Temperature WQMPs

WQMP elements under review for adding specificity

- Approved tools to identify and prioritize shade gaps for restoration
- Measure effective shade at the stream surface
- Current and restored comparisons

Sandy and Willamette Temperature WQMPs

WQMP elements under review for adding specificity

- Timeline projections for water quality restoration - interim targets for vegetation management to establish measurable objectives, milestones and implementation timelines
- Priority source or activity - percentage riparian areas with excess solar radiation due to riparian vegetation canopy cover significantly below site potential vegetation target

Sandy and Willamette Temperature WQMPs

WQMP elements under review for adding specificity

- DEQ is providing site specific shade gap analysis for some DMAs/RPs
- Evaluating list of DMA and responsible persons for plan submittals

Sandy and Willamette Temperature WQMPs

WQMP elements under review for adding specificity

- Implementation plan timeline proposed to be due after the second rulemaking for the Willamette mainstem for both the Willamette Subbasins and the Lower Columbia-Sandy Subbasin
- Evaluating RPs including DMAs, to undertake monitoring actions in areas within their jurisdiction
- Sandy WQMP – may incorporate bacteria information from existing 2005 WQMP

Sandy and Willamette Temperature WQMPs

Implementation plan elements under review for adding specificity

- Specific timelines and measurable objectives for BMP implementation and completion

Examples:

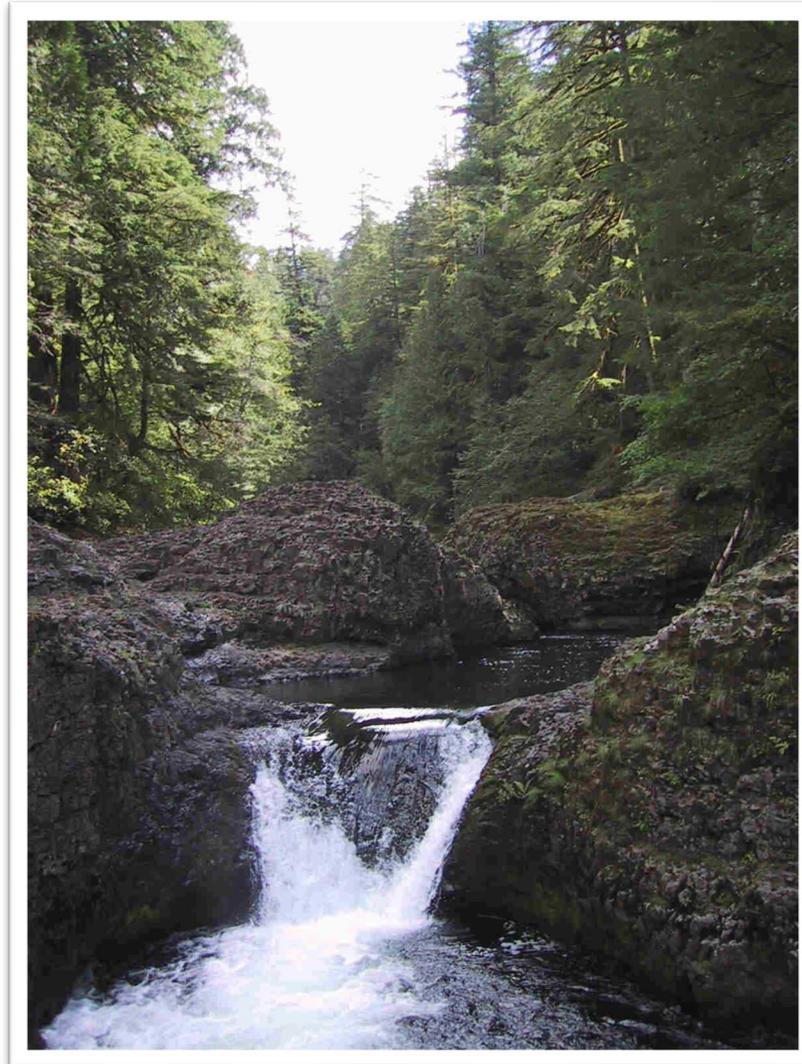
- Identify highest priority sites for planting riparian vegetation
- Actively promote and support riparian planting at priority sites
- Track progress; monitor survival rates years at selected sites

Sandy and Willamette Implementation Plans

Summary of expectations:

- Update existing plan or develop plan if new DMA/RP
- Incorporate strategies in preceding slides or other appropriate actions
- Contain specifics on priorities and where strategies and practices will be applied based on identified tools
- Include measurable objectives and milestones for documenting implementation and gaging effectiveness
- Education, outreach, partnerships
- Temperature monitoring for identified DMAs
- Submit annual reports on progress, and conduct Year Five Reviews

Questions?

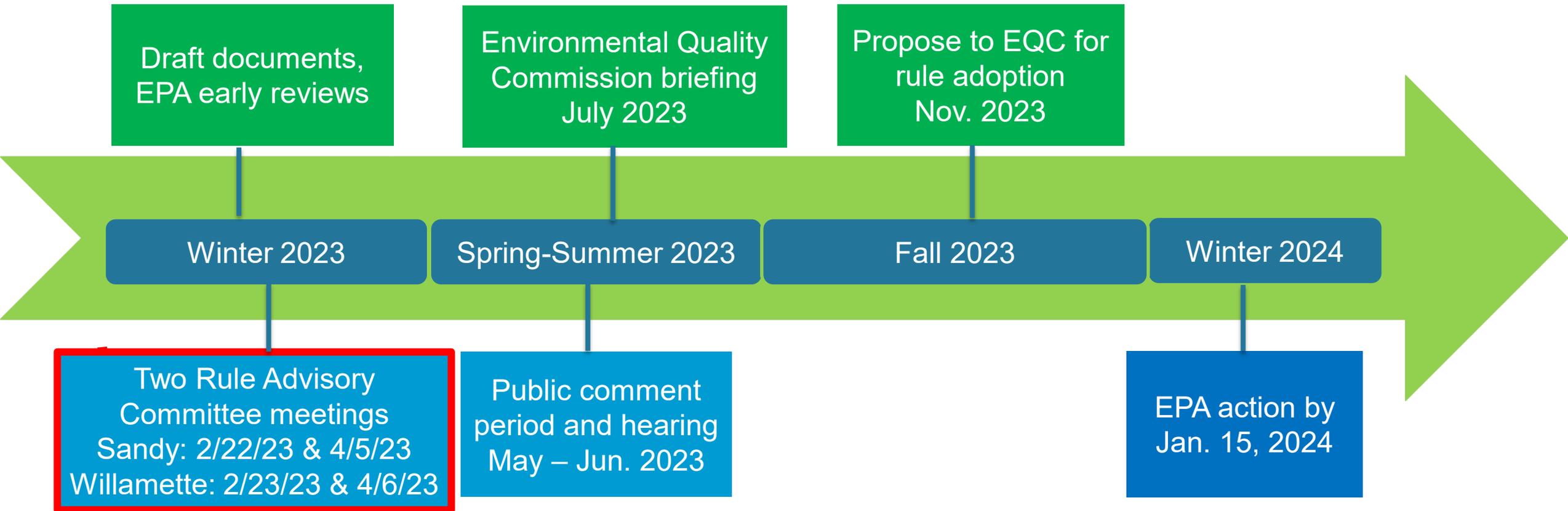


Bull Run River at
Upper Bull Run
Falls, Oregon

Rule advisory committees

- Meetings are open to non-committee members to listen
- Meeting materials are online at least two weeks prior to the meeting
- Committee members will provide input on the following:
 - Economic and fiscal impacts of the proposed rules for entities impacted by the proposed TMDL
 - Revision of required TMDL elements with a focus on the TMDL allocations to be updated based on the current temperature criteria for the project area
 - Revisions to the Water Quality Management Plans
- Committee members are provided five days after each meeting to submit feedback that may be considered for the next committee meeting or prior to posting documents for public comment

Rule advisory committees: Lower Columbia-Sandy Subbasin and Willamette Subbasins



Project website: <https://www.oregon.gov/deq/wq/tmdls/Pages/tmdlreplacement.aspx>

Resources

Total Maximum Daily Loads and Water Quality Management Plans being replaced

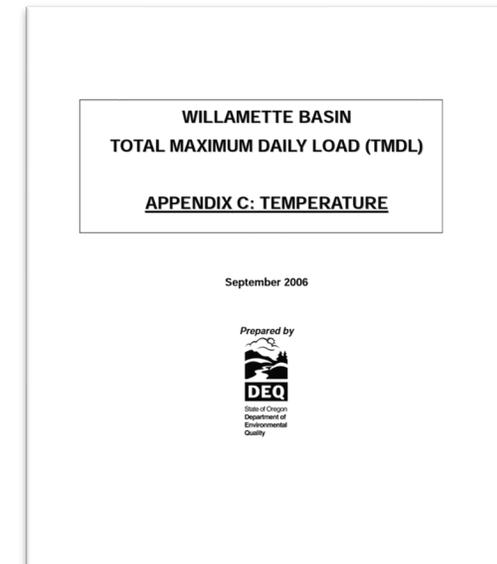
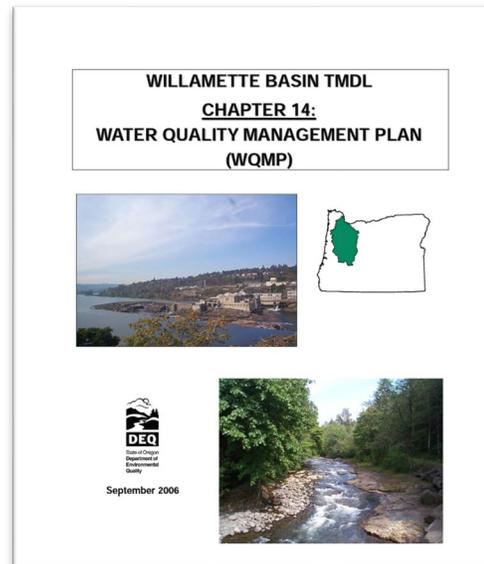
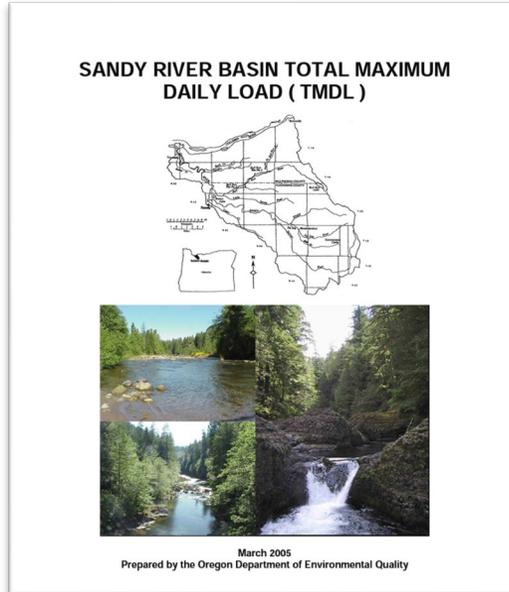
Willamette Basin TMDLs & WQMPs <https://www.oregon.gov/deq/wq/tmdls/Pages/TMDLs-Willamette-Basin.aspx>

Willamette 2006 WQMP <https://www.oregon.gov/deq/FilterDocs/chpt14wqmp.pdf>

Molalla-Pudding 2010 WQMP <https://www.oregon.gov/deq/FilterDocs/MoPudChapter7WQMP.pdf>

Sandy TMDL & WQMP <https://www.oregon.gov/deq/wq/tmdls/Pages/TMDLs-Sandy-Basin.aspx>

Sandy 2005 WQMP <https://www.oregon.gov/deq/FilterDocs/sandytmdlwqmp.pdf>



Resources

Lower Columbia-Sandy Subbasin:

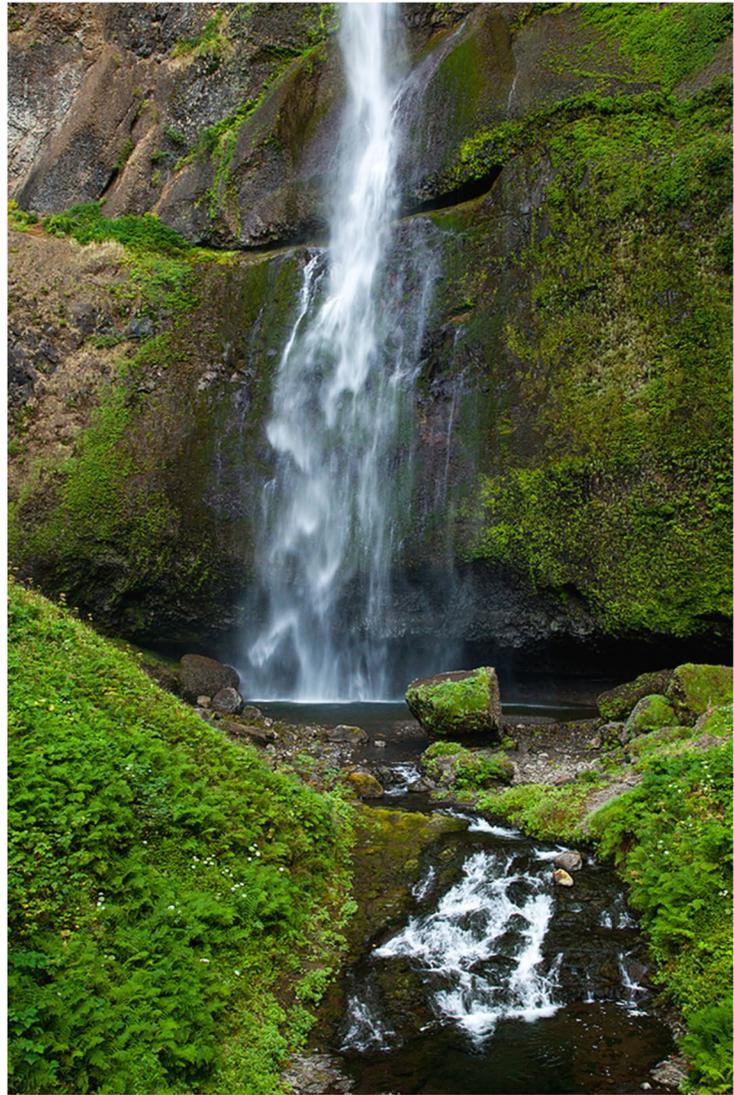
- Project page: <https://www.oregon.gov/deq/wq/tmdls/Pages/tmdlRlc-sandy.aspx>
- Rulemaking page: <https://www.oregon.gov/deq/rulemaking/Pages/sandytempTMDL.aspx>

Willamette Subbasins:

- Project page: <https://www.oregon.gov/deq/wq/tmdls/Pages/tmdlRwillamette.aspx>
- Rulemaking page: <https://www.oregon.gov/deq/rulemaking/Pages/willamettetempTMDL.aspx>



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