

Total Maximum Daily Loads (TMDLs): Temperature TMDL Replacement project: **Willamette** **Subbasins**

Feb. 23, 2023, 1 p.m. PT

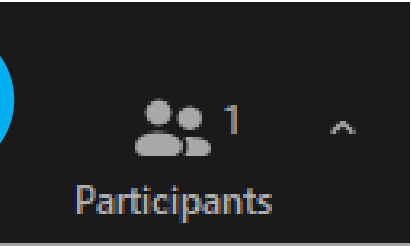
Rule Advisory Committee meeting #1

Agenda

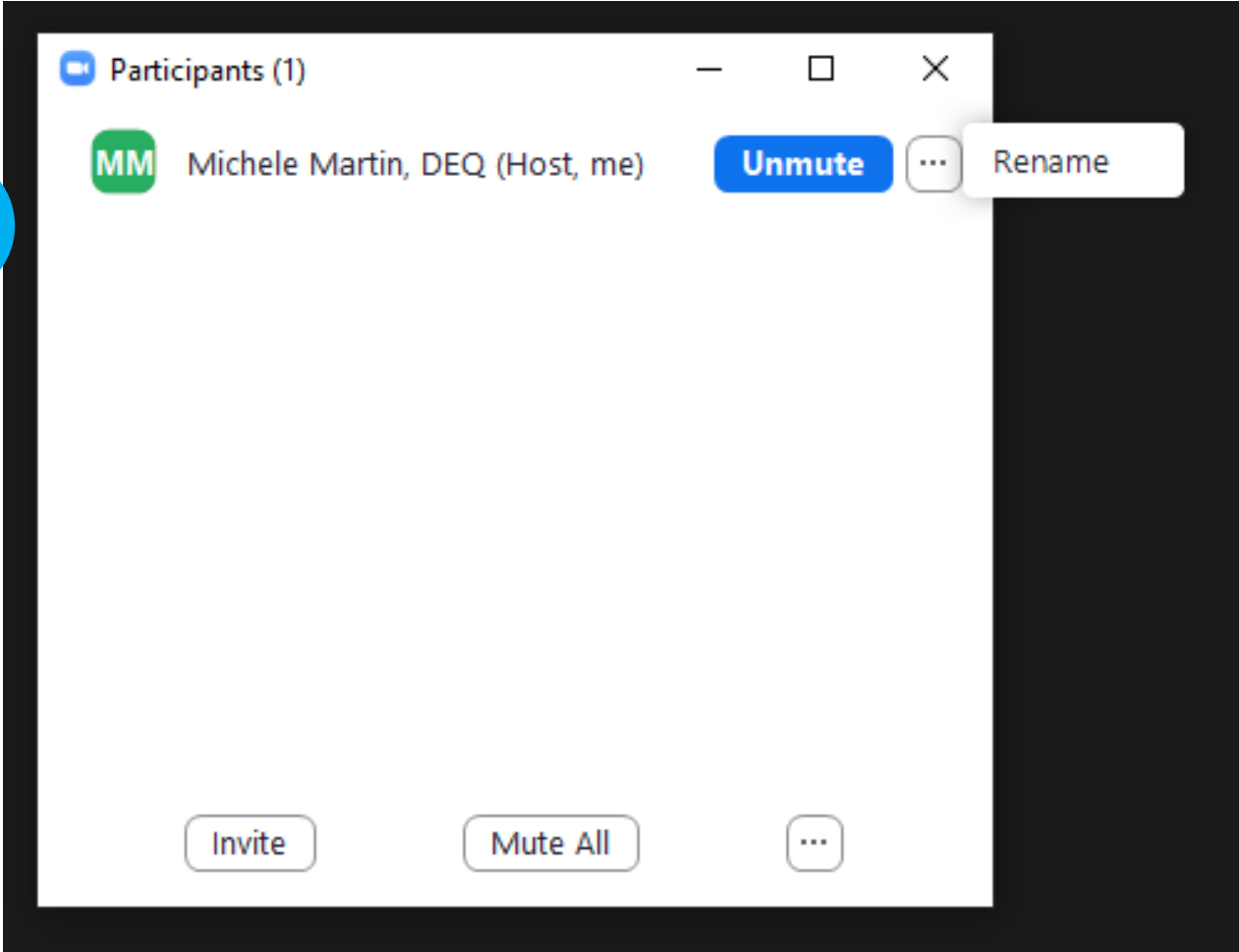
Time	Topic
1 p.m.	Welcome
1:05 p.m.	Agenda, and introductions
1:10 p.m.	Zoom logistics, ground rules, meeting materials, and charter
1:15 p.m.	Project overview and Total Maximum Daily Load (TMDL)
2:10 p.m.	5 min. break
2:15 p.m.	Water Quality Management Plan (WQMP)
3 p.m.	Fiscal Impact Statement and OAR language
3:25 p.m.	Next steps
3:30 p.m.	Adjourn

Add “AC” to your name in Zoom to identify you as an advisory committee member, e.g., AC Michele Martin

1



2



Zoom logistics and meeting ground rules



Raise hand to be recognized for questions or comments; please speak for yourself when recognized, let others speak without interruptions



Use chat to:

Ask questions

Provide informational resources

Second ideas/issues



Mute when not speaking



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

Rule advisory committee meeting materials

1. Agenda
2. Rule Advisory Committee Charter
3. **Rule** Draft Total Maximum Daily Loads for Willamette Subbasins, Temperature
4. **Rule** Draft Water Quality Management Plan, Willamette Subbasins, Temperature
5. **Rule** Draft Oregon Administrative Rule Language
6. Willamette Subbasins Quality Assurance Project Plan
<https://www.oregon.gov/deq/wq/tmdls/Pages/tmdlRwillamette.aspx>
7. Willamette Subbasins draft Fiscal and Economic Impact Statement
8. **Not included (not in rule): TMDL Technical Support Document**

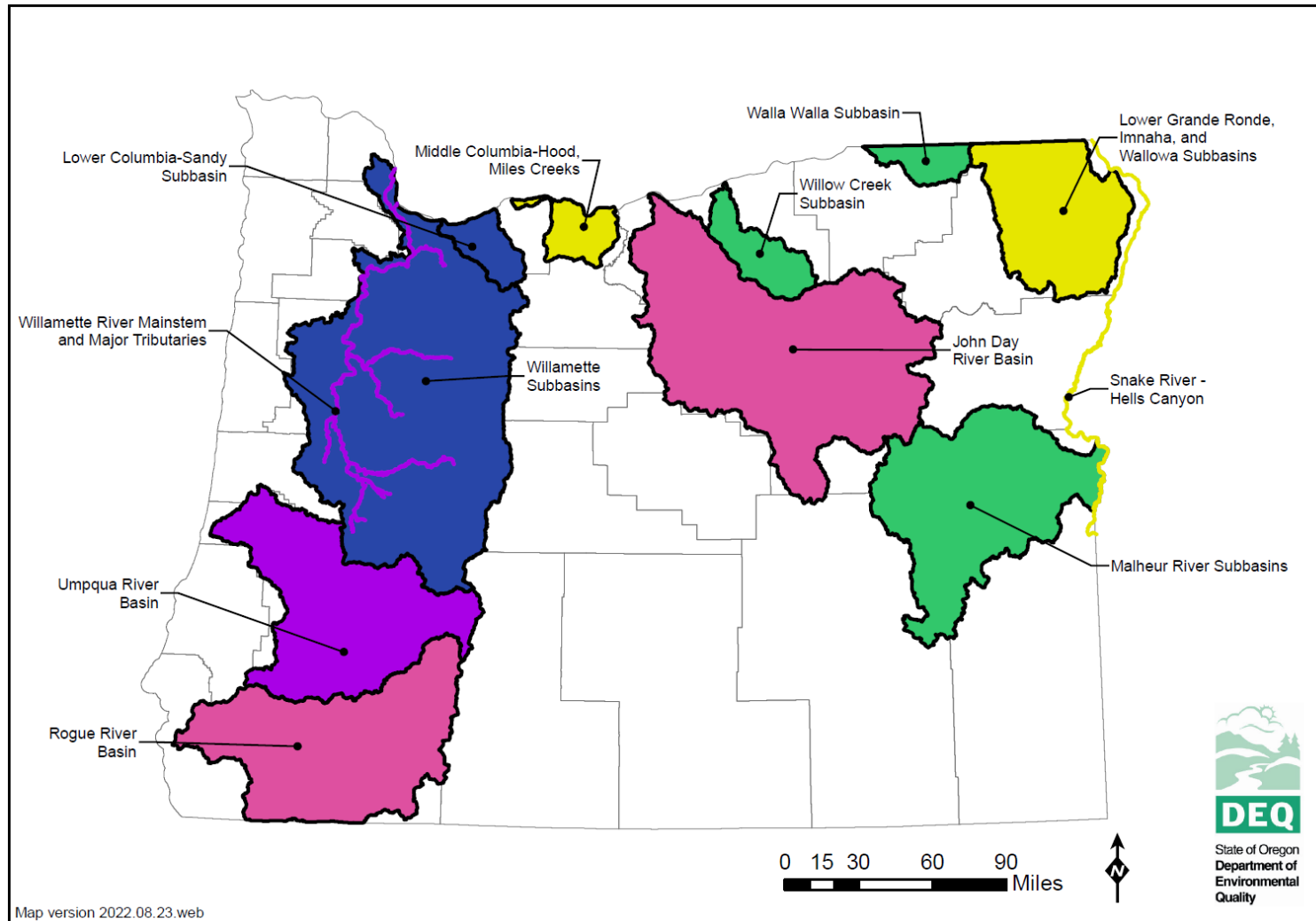
Meeting materials are online: <https://www.oregon.gov/deq/rulemaking/Pages/willamettetempTMDL.aspx>

Rule advisory committee charter

- Prepares for and sets aside time for the meetings;
- Provides DEQ staff with copies of relevant research and documentation cited during the meeting;
- Stays focused on the specific agenda topics for each meeting;
- Consults regularly with constituencies to inform them on the process and gather their input;
- Is courteous by not engaging in sidebar discussions; and
- Avoids representing the views of any other committee member or the entire committee to the public or media.

Webpage: <https://www.oregon.gov/deq/rulemaking/Pages/willamettetempTMDL.aspx>

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

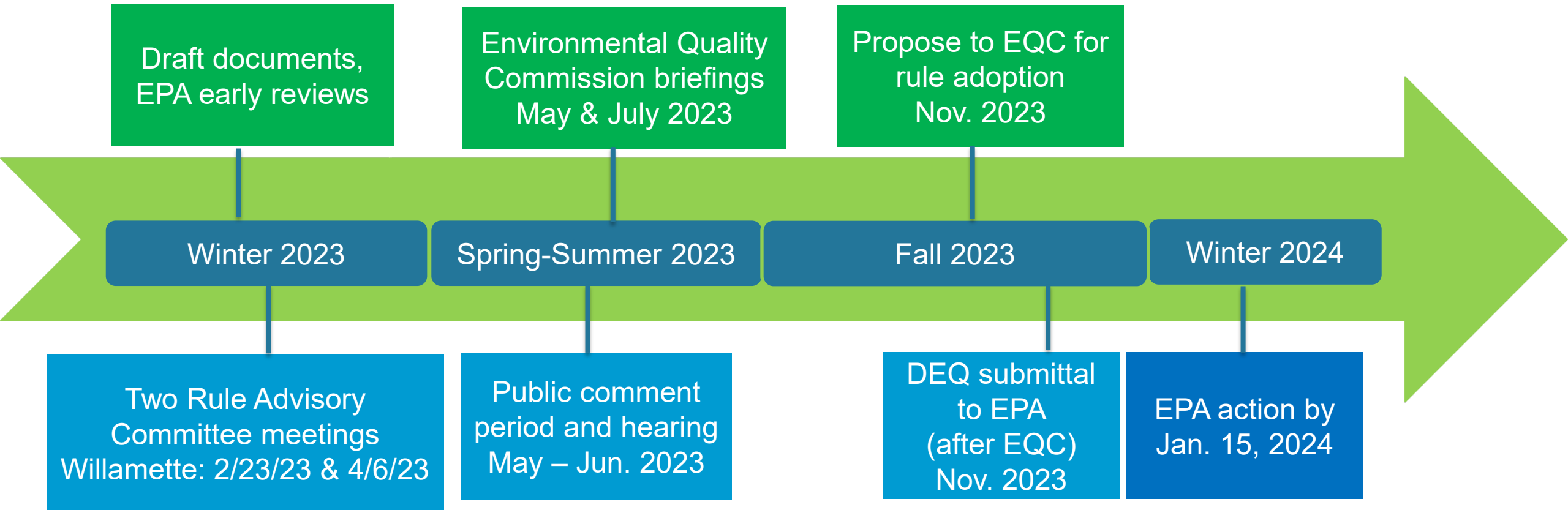
- Snake River - Hell's Canyon
- Lower Grande Ronde, Imnaha, and Wallowa Subbasins
- Middle Columbia-Hood, Miles Creeks

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

Willamette Subbasins Temperature TMDL Replacement rulemaking milestones



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

Total Maximum Daily Load: Willamette Subbasins



McKenzie River, Willamette Basin

TMDLs include the following elements:

- TMDL name and location
- Pollutant ID
- Water quality standards and beneficial uses
- Loading Capacity (LC)
- Excess Load / Load Reduction
- Pollutant 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 (WQMP)

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

TMDL elements: the basics

Name and location:

TMDL section 2, pgs. 2-4

Pollutant identification:

TMDL section 3, pgs. 4-5

Water quality standards and beneficial uses:

TMDL section 4, pgs. 13-15

Seasonal variation:

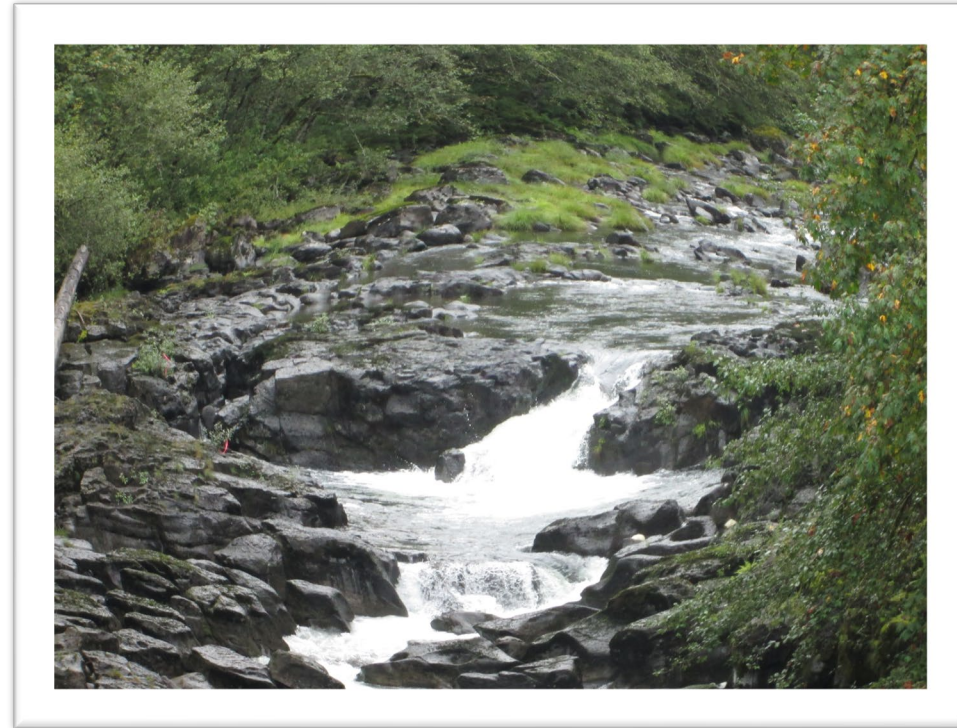
TMDL section 5, pg. 15 (more to come)

TMDL elements: sources or source categories

Point Sources

TMDL section 7, pgs. 15-20

- Individual permittees (60)
- General permittees
 - 100-J cooling water (11)
 - 200-J filter backwash (8)
 - 300-J fish hatcheries (2)



Note: Number in parentheses (#) denotes the count of facilities under each permit category that are provided a numeric wasteload allocation

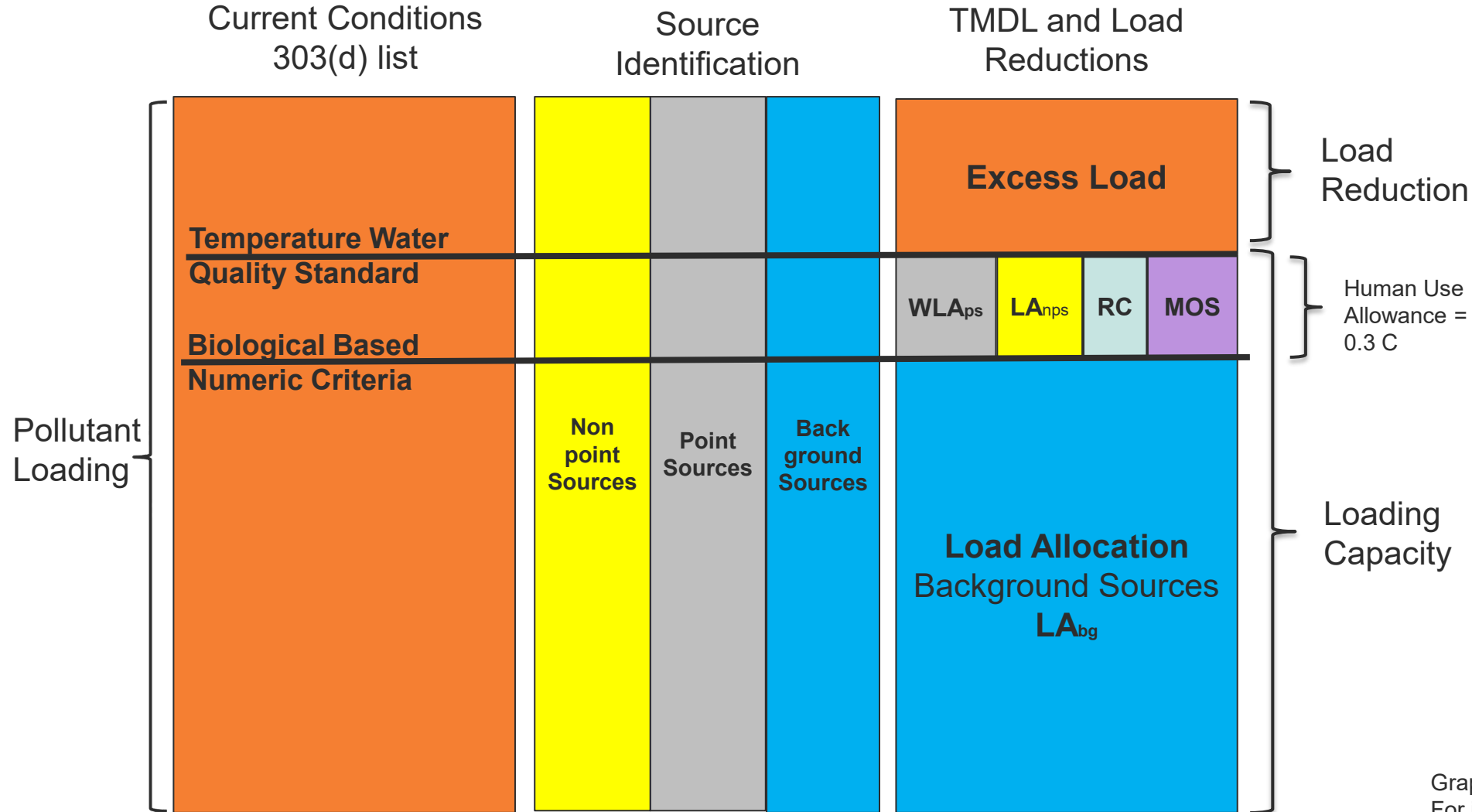
TMDL elements: sources or source categories

Nonpoint Sources

TMDL section 7, pgs. 15-20

- Background sources
- Solar radiation from the disturbance or removal of near-stream vegetation
- Channel modification and widening
- Dam and reservoir operation
- Activities that modify flow rate or volume

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



Graphic not to scale.
For illustrative purposes only.

TMDL elements: Loading Capacity (LC)

TMDL section 8, pgs. 20-21

A provision allows LC recalculation if the numeric standard is updated and approved by EPA.

LC calculated by **Equation 1** (in TMDL report): $LC = (T_c + HUA) \cdot Q_R \cdot C_f$

Q_R = daily mean river flow. If $day_x Q < 7Q_{10}$, $Q_R = 7Q_{10}$ for day_x

C_f = unit conversion factor. T_c = temp criterion

Table 8.1 Minimum thermal loading capacity for select assessment units by applicable fish use period.

AU Name and AU ID	Annual 7Q10 (cfs)	Non-Spawning Criterion + HUA (deg-C)	Spawning Criterion + HUA (deg-C)	Minimum Loading Capacity Non-Spawning (kilocalories/day)	Minimum Loading Capacity Spawning (kilocalories/day)
Mosby Creek OR_SR_1709000201_02_103752	10.7	16.3	13.3	426,722,843	348,184,896
Coyote Creek OR_SR_1709000301_02_103796	5.9	18.3	NA	264,166,420	NA
Luckiamute River OR_SR_1709000305_02_103829	15.9	18.3	13.3	711,373,841	517,009,404
Mohawk River OR_SR_1709000406_02_103871	15.7	16.3	13.3	624,217,004	509,330,439

Excess load / load reduction

TMDL section 8, pgs. 22 - 27

Table 8.2 Excess temperature and percent load reduction for various assessment units in the Willamette Subbasins.

Assessment Unit Name	Assessment Unit ID	Maximum 7DADM River Temperature (°C)	Applicable Criterion + HUA (°C)	Excess Temperature (°C)	Percent Load Reduction
Middle Fork Willamette River	OR_SR_1709000101_02_103713	13.4	12.3	1.1	8.1
Hills Creek	OR_SR_1709000102_02_103715	16.5	13.3	3.2	19.4
Hills Creek	OR_SR_1709000102_02_103715	18.7	16.3	2.4	12.8
Salt Creek	OR_SR_1709000103_02_103716	16.1	13.3	2.8	17.1
Salt Creek	OR_SR_1709000103_02_103716	17.9	16.3	1.6	8.7

TMDL elements: Human Use Allowance

TMDL section 9.1 pgs. 28-29

Table 9.2 Human Use Allowance allocations for all other waters in the Willamette Subbasins

Portion of Human Use Allowance (°C)	Source or source category
0.10	NPDES point sources
0.00	Dam and reservoirs operations
0.05	Water management activities and water withdrawals
0.02	Solar loading from existing transportation corridors and utility infrastructure
0.00	Solar loading from other nonpoint sectors
0.13	Reserve capacity
0.30	Total
<p>Note: * NPDES permitted point sources are allowed up to 0.10°C cumulatively at the point of maximum impact. The portion of the human use allowance at the point of discharge is described in Table 9.3.</p>	

TMDL elements: Wasteload Allocations (WLA)

TMDL section 9.1.1, pgs. 29-34

- Can be incorporated into NPDES permit as a static numeric limit; or as a dynamic flow-based limit (pg. 30)
- Permit writers are authorized to update 7Q10 or maximum effluent discharge
- Fish hatchery WLAs incorporate minimum duties provision.
- Facilities required in NPDES permits to have no discharge during the TMDL period were allocated zero human use allowance.

TMDL elements: Wasteload Allocations (WLA)

TMDL section 9.1.1, pgs. 29-34

$WLA = (\Delta T) \cdot (Q_E + Q_R) \cdot C_F$		Equation 2
<u>where,</u>		
$WLA =$	Waste load allocation (kilocalories/day).	
$\Delta T =$	The maximum temperature increase ($^{\circ}\text{C}$) above the applicable river temperature criterion using 100% of river flow not to be exceeded by each individual source from all outfalls combined. When the minimum duties provision at OAR 340-041-0028(12)(a) applies, $\Delta T = 0.0$.	
$Q_E =$	The daily mean effluent flow (cfs). When effluent flow is in million gallons per day (MGD) convert to cfs: $\frac{1 \text{ million gallons}}{1 \text{ day}} \cdot \frac{1.5472 \text{ ft}^3}{1 \text{ million gallons}} = 1.5472$	
$Q_R =$	The daily mean river flow rate, upstream (cfs). When river flow is $\leq 7Q_{10}$, $Q_R = 7Q_{10}$. When river flow $> 7Q_{10}$, Q_R is equal to the daily mean river flow, upstream.	
$C_F =$	Conversion factor using flow in cubic feet per second (cfs): 2,446,665 $\frac{1 \text{ ft}^3}{1 \text{ sec}} \cdot \frac{1 \text{ m}^3}{35.31 \text{ ft}^3} \cdot \frac{1000 \text{ kg}}{1 \text{ m}^3} \cdot \frac{86400 \text{ sec}}{1 \text{ day}} \cdot \frac{1 \text{ kcal}}{1 \text{ kg} \cdot 1^{\circ}\text{C}} = 2,446,665$	

TMDL elements: Wasteload Allocations (WLA)

TMDL section 9.1.1 pgs. 30

Table 9.3 Thermal waste load allocations for point sources

NPDES Permittee WQ File# : EPA Number	Allocated Human Use Allowance (°C)	WLA period start	WLA period end	Annual 7Q10 River flow (cfs)	Effluent discharge (cfs)	Minimum WLA (kcal/day)
Arclin 16037 : OR0021857	0.10	5/1	10/31	0	1.55	378,555
Forrest Paint Co. 100684 : ORG253508	0.05	5/1	10/31	0	0.77	94,639
Georgia-Pacific Chemicals LLC 32864 : OR0002101	0.00	5/1	10/31	0	0.0	0

TMDL elements: Wasteload Allocations (WLA)

Minimum Duties Provision

OAR 340-041-0028(12)(a)

...each anthropogenic point and nonpoint source is responsible only for controlling the thermal effects of its own discharge or activity in accordance with its overall heat contribution. In no case may a source cause more warming than that allowed by the human use allowance.

Minimum duties applies to NPDES “flow through” facilities where river water moves through the facility and is not processed.

Minimum duties applies ONLY when the daily maximum effluent temperature allowed under the waste load allocation (T_{E_WLA}) < the daily maximum influent temperature (T_i)

When the provision applies, the facility’s $\Delta T = 0$ and WLA = 0. Effluent cannot increase temperature above influent temperature

TMDL elements: Load Allocations (LA)

TMDL section 9.1.2, pgs. 34 – 35

$LA = (\Delta T) \cdot (Q_R) \cdot C_F$		Equation 3
<u>where,</u>		
$LA =$	Load allocation (kilocalories/day).	
$\Delta T =$	The maximum allowed temperature increase ($^{\circ}\text{C}$). When the minimum duties provision at OAR 340-041-0028(12)(a) applies, $\Delta T = 0.0$. For background nonpoint sources, $\Delta T =$ applicable temperature criteria.	
$Q_R =$	The daily average river flow rate (cfs).	
$C_F =$	Conversion factor using flow in cubic feet per second (cfs): 2,446,665 $\frac{1 \text{ ft}^3}{1 \text{ sec}} \cdot \frac{1 \text{ m}^3}{35.31 \text{ ft}^3} \cdot \frac{1000 \text{ kg}}{1 \text{ m}^3} \cdot \frac{86400 \text{ sec}}{1 \text{ day}} \cdot \frac{1 \text{ kcal}}{1 \text{ kg} \cdot 1^{\circ}\text{C}} = 2,446,665$	

Table 9.4 Thermal load allocations for background sources.

AU Name and AU ID	Annual 7Q10 (cfs)	Applicable criterion ($^{\circ}\text{C}$)	LA period start	LA period end	Minimum Loading Capacity Non-Spawning (kilocalories/day)	Minimum Loading Capacity Spawning (kilocalories/day)
Mosby Creek OR_SR_1709000201_02_103752	10.7	16.0 13.0	5/1	10/31	418,869,048	340,331,102
Coyote Creek OR_SR_1709000301_02_103796	5.9	18.0	5/1	10/31	259,835,823	NA
Luckiamute River OR_SR_1709000305_02_103829	15.9	18.0 13.0	5/1	10/31	699,711,975	505,347,537

TMDL elements: Surrogate Measures

Surrogate Measures

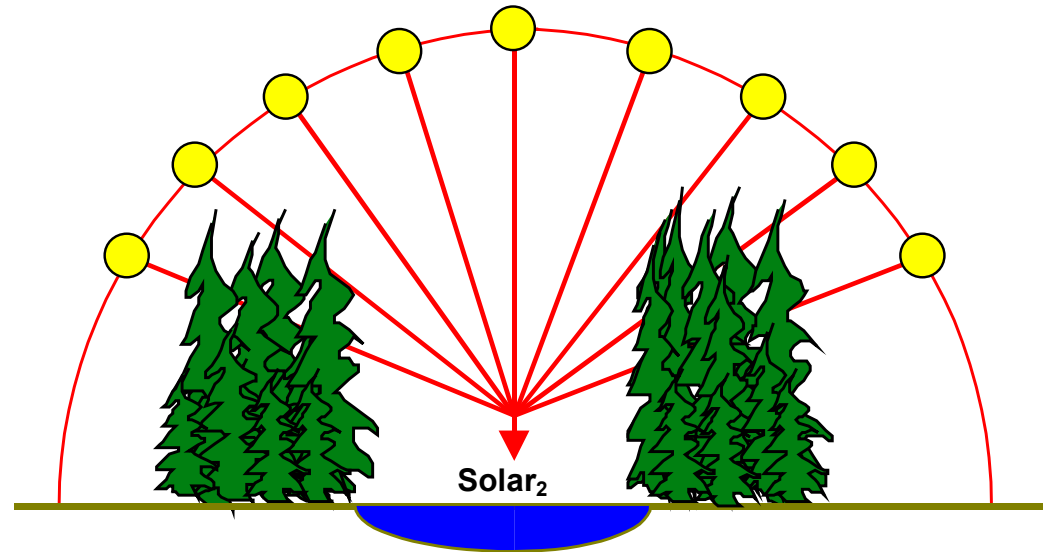
TMDL section 9.1.2.1 pgs. 36 – 52

Effective Shade

- By Designated Management Agency
- By River
- General Shade Curves

Effective shade defined

Solar₁ – Potential daily direct beam solar radiation load adjusted for julian day, solar altitude, solar azimuth and site elevation.



$$\text{Effective Shade} = \frac{(\text{Solar}_1 - \text{Solar}_2)}{\text{Solar}_1}$$

Where,

Solar₁: Potential Daily Direct Beam Solar Radiation Load

Solar₂: Daily Direct Beam Solar Radiation Load Received at the Stream Surface

TMDL elements: Surrogate Measures

Site-Specific Effective Shade

TMDL section 9.1.2.1.1 pgs. 36 – 39

Table 9.7 Effective shade surrogate measure targets to meet nonpoint source load allocations for specific model extents.

Model Stream	Total Kilometers Assessed	Assessed Effective Shade	TMDL Target Effective Shade	Shade Gap
Pudding River	85.55	44	52	8
Molalla River	75.36	27	41	14

Effective shade curves

TMDL section 9.1.2.1.1 pgs. 40 – 52

Table 9.8. Vegetation height, density, overhang, and horizontal distance buffer widths used to derive generalized effective shade curve targets for each mapping unit.

Mapping Unit	Height (m)	Height (feet)	Density (%)	Overhang (m)	Buffer Width (m)
Qff1	40.7	134	70%	4.9	36.8
Qfc	37.7	124	64%	4.5	36.8

Qff1

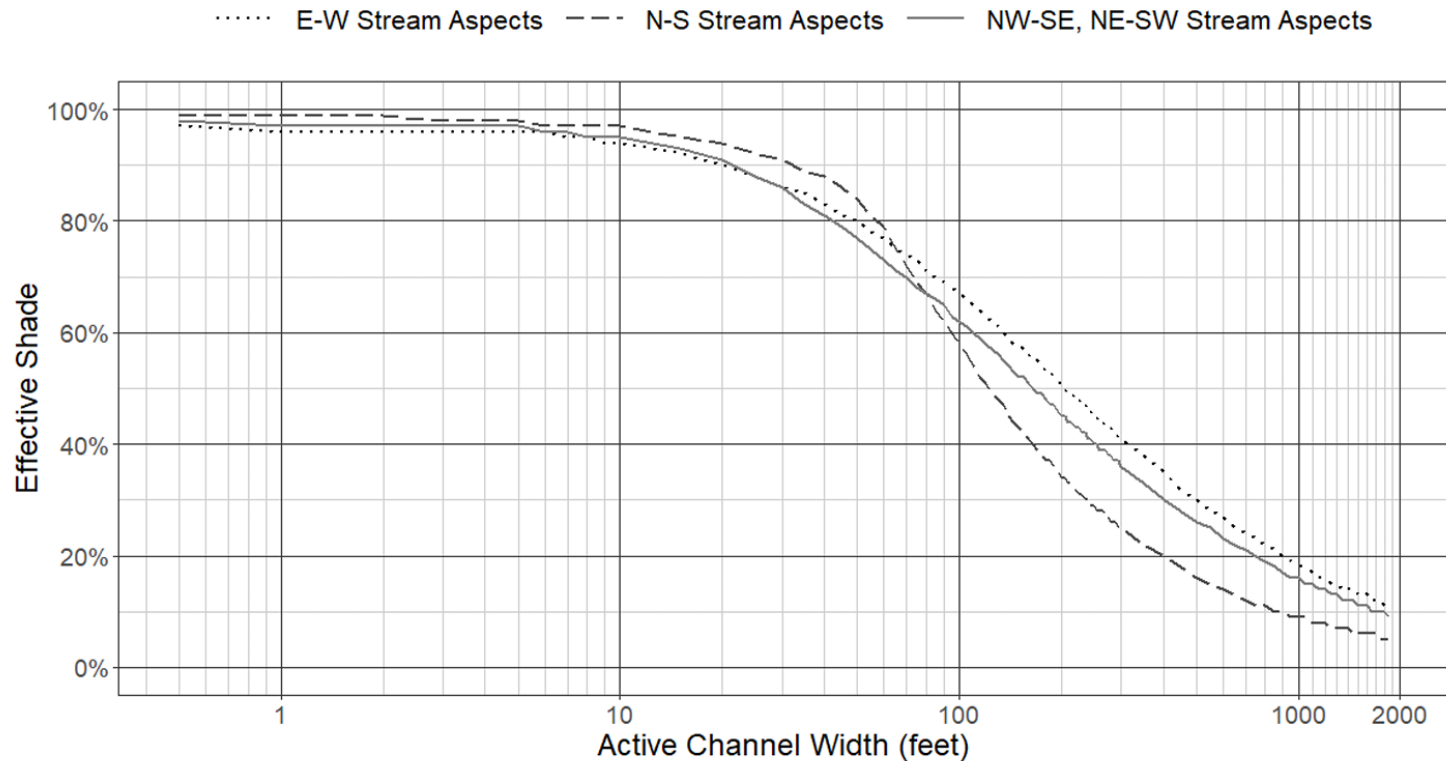
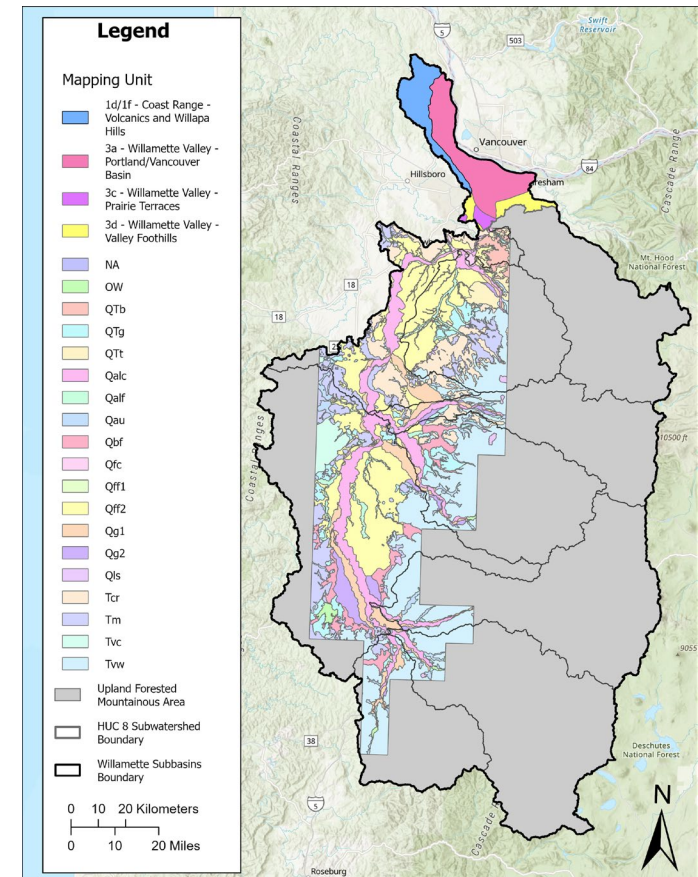


Figure 9.1 Effective shade targets for stream sites in the Qff1 mapping unit.



TMDL elements: Reserve Capacity (RC)

Reserve Capacity (RC)

TMDL section 9.1.3 pg. 52-53

- Explicit RC allocations are set aside for allocation to new/increased thermal loads or previously unidentified source(s)
- Tables 9.1-9.2

Table 9.2 Human Use Allowance allocations for all other waters in the Willamette Subbasins

Portion of Human Use Allowance (°C)	Source or source category
0.10	NPDES point sources
0.00	Dam and reservoirs operations
0.05	Water management activities and water withdrawals
0.02	Solar loading from existing transportation corridors and utility infrastructure
0.00	Solar loading from other nonpoint sectors
0.13	Reserve capacity
0.30	Total

Note: * NPDES permitted point sources are allowed up to 0.10°C cumulatively at the point of maximum impact. The portion of the human use allowance at the point of discharge is described in Table 9.3.

Total Maximum Daily Load: Willamette Subbasins

Willamette Subbasins technical informational webinar
Wednesday, March 15, 2023, 1 p.m. to 2:30 p.m.

Webinar registration on the rulemaking page under public involvement:
<https://www.oregon.gov/deq/rulemaking/Pages/willamettetempTMDL.aspx>

Break – back at 2:15



Water Quality Management Plan: Willamette Subbasins



Water Quality Management Plan components

WQMP section 5.3 Implementation plan requirements, pg. 13

- Name Responsible Persons, including Designated Management Agencies
- Management strategies that the entity will use to achieve load allocations and reduce pollutant loading
- Timeline for strategy implementation and a schedule for completing measurable milestones
- Performance monitoring and a plan for periodic review and revision of implementation plans

Reference: Oregon Administrative Rule 340-042-0040(4)(I)

Proposed Responsible Persons and Designated Management agencies

WQMP section 5.1 Implementation responsibility, pg. 10 and Appendix A

Responsible person/ DMA Type	Count
Cities	77
Water Conveyance Entities	19
Railways	15
Counties	11
State Agencies	11
Federal Agencies	6
Public or Private Utilities	3
Special Districts	3
Transportation	1

Rationale for being named as Responsible Person/Designated Management Agency in WQMP

- DEQ developed initial list from a DMA mapping exercise
 - Includes any entity that has ownership or jurisdiction within the Subbasins project area
 - Majority of list is existing DMAs from 2006 and 2008 TMDLs
- DEQ is still evaluating which responsible persons, including DMAs need to develop an implementation plan
 - Small or no ownership/ jurisdiction in riparian area
 - Cannot implement management strategies for specific reasons

Rationale for being named as Responsible Person/ Designated Management Agency in WQMP

Question:

What additional evaluation criteria should be considered?

Management strategies

WQMP table 2, pg. 6

Priority planting and management strategies

- Insufficient height and density of riparian vegetation
- Water withdrawals
- Channel morphology and hydromodification



U.S. Fish & Wildlife staff re-seeding wetland
Photo credit: Johnson Creek Watershed Council

Riparian vegetation

WQMP table 2, pg. 6

- Riparian tree and vegetation planting, riparian vegetation management, voluntary riparian tree retention, riparian invasive plant control, riparian fencing or other livestock riparian exclusion methods
- Increase site effective shade through streamside vegetation management strategies using regulatory programs and voluntary activities
- Maintain plants until free to grow; monitor survival rates.
- Develop, update and/or enforce riparian code/ordinance to ensure streamside native vegetation; acquire and designate conservation easements along riparian areas

Water withdrawals

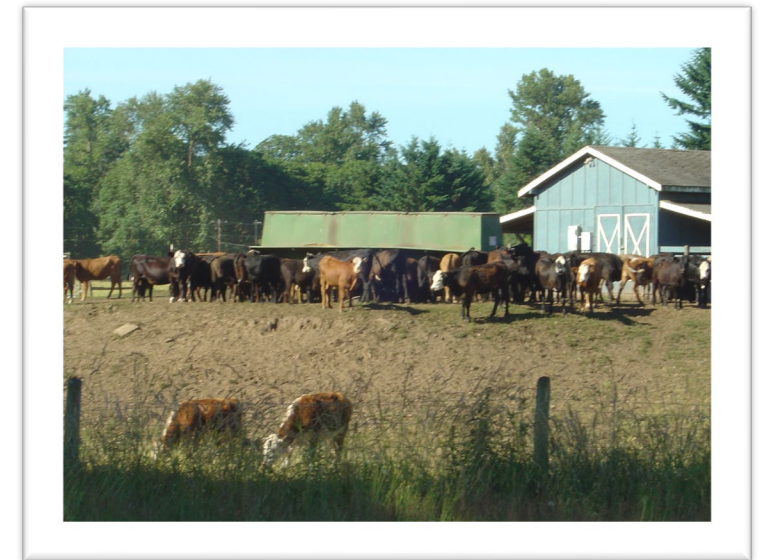
WQMP table 2, pg. 6

- Pursue instream water right transfers and leases; state agency water right application reviews
- Irrigation water conservation and management
- Repair or replace leaking pipes
- Water consumption restrictions during summer months and providing incentives for water conservation

Channel morphology and hydromodification

WQMP table 2, pg. 6

- Conduct whole channel restorations
- Riparian road re-construction/obliteration activities
- Riparian fencing or other livestock exclusion methods
- Protect and enhance cold water refuges
- Dam management strategies
- Remove in-channel ponds or modify pond structures



Western Oregon

Management strategies

Question:

What, if any, additional specific strategies should be added to the WQMP in table 2: List of priority management strategies?

WQMP pg. 6

Prioritizing areas for restoration and protection

WQMP section 5.3.2, pages 13-14

- Shade gap - percent difference between current effective shade and site potential effective shade (restored condition)
- Compare current riparian vegetation characteristics to a restored riparian condition



McKenzie River, Oregon

Proposed shade assessment tools requirement

WQMP section 5.3.2, page 14

- Measure effective shade at the stream surface using standard stream monitoring equipment, such as the Solar Pathfinder™, or advanced methods using hemispherical imagery. Determine vegetation type, canopy density, stream width and stream orientation.
- Conduct modeling using the Heat Source model (as used in this TMDL) or another method approved by DEQ through the implementation plan approval process.
- Confirm and protect or establish overstory, woody vegetation in a 120-foot width buffer zone from the stream bank.

Prioritizing implementation and assessing shade

Questions:

- What additional prioritization methods should DEQ consider?
- What other location-specific assessment methods should DEQ consider?



Butte Creek; Tributary South Fork Pudding
Shade can have more effect faster in tributaries than on mainstem. Important for fish, relatively good upstream conditions, and can contribute flow to the Pudding River

Designated Management Agency monitoring and reporting

WQMP section 5.3.4.1, page 14

Question:

Should responsible persons and DMAs be required to enter restoration data into Oregon Watershed Restoration Inventory (OWRI)?

Reference: Oregon Watershed Enhancement Board

<https://www.oregon.gov/oweb/data-reporting/Pages/owri.aspx>

Designated Management Agency required monitoring

WQMP section 4.2, pg.10; section 5.3.4, pgs. 14-15; section 6, pgs.19-20

- DEQ monitors and assesses stream temperatures overtime to determine status of water quality and landscape conditions
- DEQ anticipates developing a temperature monitoring plan with DMAs to assess attainment of temperature standards over time that will also include DMA monitoring data
- Some DMAs named in Section 5 will be required to undertake monitoring actions in areas within their jurisdiction or ownership to help determine the status of instream water quality and landscape conditions associated with water quality
- DEQ is currently evaluating which responsible persons and DMAs will be responsible for water quality monitoring

Schedule for implementation plan submittal

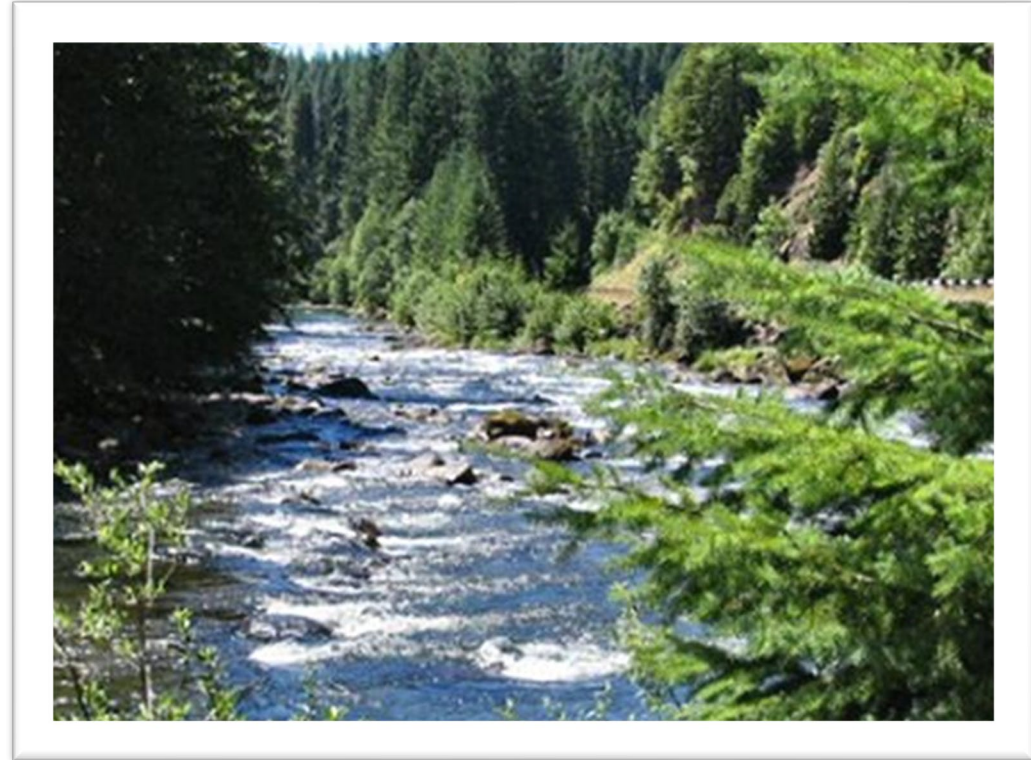
WQMP section 5.4, pg. 18

Plans proposed to be due 18 months after EPA-approval of the Willamette Mainstem Temperature TMDL and must include:

- Management strategies that the entity will use to achieve load allocations and reduce pollutant loading
- Timeline for strategy implementation and a schedule for completing measurable milestones
- Performance monitoring and a plan for periodic review and revision of implementation plans; annual and Year Five reporting
- Any other analyses or information specified in the WQMP

Water Quality Management Plan: Willamette Subbasins

Questions?



North Santiam River, Oregon

Draft fiscal impact statement and Oregon Administrative Rule: Willamette Subbasins



Note: This rule section would be added as a new section and shows proposed language for the four separate TMDL rulemaking efforts currently proposed for adoption this year. The language specific to this TMDL is highlighted below in blue.

Division 42 TOTAL MAXIMUM DAILY LOADS (TMDLS)

OAR 340-042-0090

Total Maximum Daily Loads and Water Quality Management Plans

(1) 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.

(a) Upper Yaquina River watershed (proposed rule placeholder)

(A) TMDL: (proposed rule placeholder)

(B) WQMP: (proposed rule placeholder)

(b) Powder River Basin (proposed rule placeholder)

(A) TMDL: (proposed rule placeholder)

(B) WQMP: (proposed rule placeholder)

(c) Willamette Subbasins – within the USGS subbasins of the of the Willamette Basin, 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). Excludes the Willamette River and tributaries to the Willamette River downstream of the following dams: River Mill Dam, Detroit Dam, Foster Dam, Fern Ridge Dam, Cougar Dam, Blue River Dam, Dexter Dam, Fall Creek Dam, Cottage Grove Dam.

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

(B) WQMP: temperature, (date of EQC adoption)

Fiscal impact analysis

Oregon APA (ORS Chapter 183)

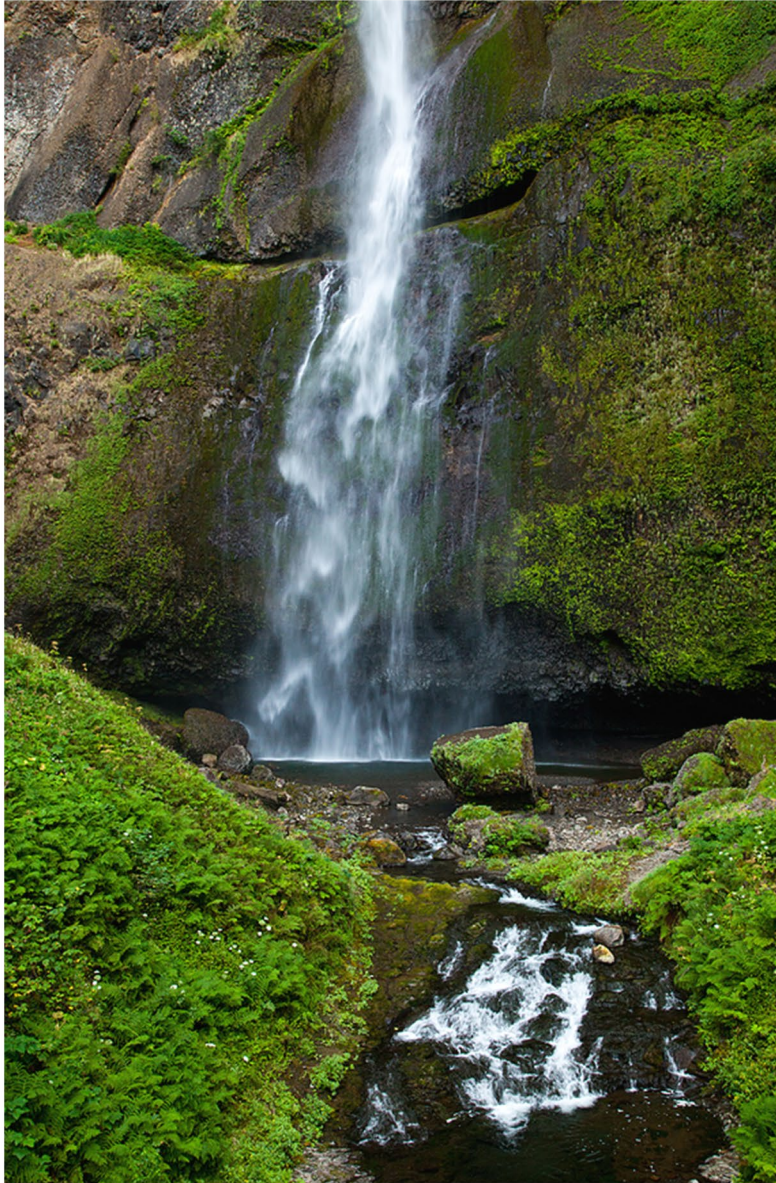
- Public notice must include a Statement of Fiscal Impact
- DEQ must solicit input from a rule advisory committee on:
 - Whether the rule has fiscal impact
 - The extent of that impact
 - Whether the rule will have a significant adverse impact on small businesses
- Racial equity statement ORS 183.335(2)(b)(F)
https://www.oregonlegislature.gov/bills_laws/ors/ors183.html
- Environmental justice consideration ORS 182.545
https://www.oregonlegislature.gov/bills_laws/ors/ors182.html
- Land use compatibility statement

Fiscal impact analysis, questions for feedback

1. Will the draft rule have a significant adverse impact on small businesses?
2. If a significant impact is identified, how could DEQ reduce the fiscal impact on small business (ORS 183.333 and 183.450)
3. Will the proposed rule impact racial equity?
4. What are additional considerations for environmental justice for this draft rule?
5. What types of entities will be impacted by the proposed rule?
6. How and to what extent will the proposed rule have a positive, negative, or no impact on these entities?

Next steps

Rule advisory committee input from meeting #1 email Willamette.TemperatureTMDL@DEQ.oregon.gov	Due Mar. 3, 2023
Rule advisory committee input - meeting #1 summary	Due Mar. 10, 2023 (approx.)
Webinar for TMDL technical information	Mar. 15, 2023, 1 p.m.
Meeting #2 meeting materials posted online	Mar. 23, 2023 (approx.)
Rule advisory committee meeting #2	Apr. 6, 2023, at 1 p.m.
Rule advisory committee input - meeting #2 email Willamette.TemperatureTMDL@DEQ.oregon.gov	Due Apr. 14, 2023
Public notice (45 days)	May 2023 – Jun. 2023



Contacts and resources

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Web pages (links to rulemaking pages, Quality Assurance Project Plans, more)

Project page:

<https://www.oregon.gov/deq/wq/tmdls/Pages/tmdlRwillamette.aspx>

Rulemaking page:

<https://www.oregon.gov/deq/rulemaking/Pages/willamettetempTMDL.aspx>

Committee input and rulemaking email:

Willamette.TemperatureTMDL@DEQ.oregon.gov