Columbia River Temperature Water Quality Management Plan – Local Advisory Group Meeting #1

Feb. 24, 2026
Virtual Webinar

State of Oregon
DEQ Department of Environmental Quality

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

Agenda

Time	Topic
11 a.m.	Welcome
11:05 a.m.	Agenda review; Zoom logistics and ground rules
11:10 a.m.	Local Advisory Group overview
11:20 p.m.	*Columbia and Lower Snake Rivers Temperature TMDL* Overview (EPA Region 10)
11:50 a.m.	Draft Water Quality Management Plan
12:30 p.m.	Local Advisory Group comments & discussion
1 p.m.	Adjourn

Local Advisory Group meeting materials

- Visit DEQ's Columbia River TMDL page to view meeting materials:
  - Local Advisory Group Roster
  - Local Advisory Group Charter
  - Meeting #1 Agenda
  - Draft Columbia River Temperature WQMP
  - Presentation Slides: EPA Region 10 Overview of the Columbia and Lower Snake Rivers Temperature TMDL
  - Presentation Slides: Draft Columbia R. Draft WQMP

Local Advisory Group 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;
- Is courteous by not engaging in sidebar discussions; and
- Avoids representing the reviews of any other advisory group members or the entire group to the public or media

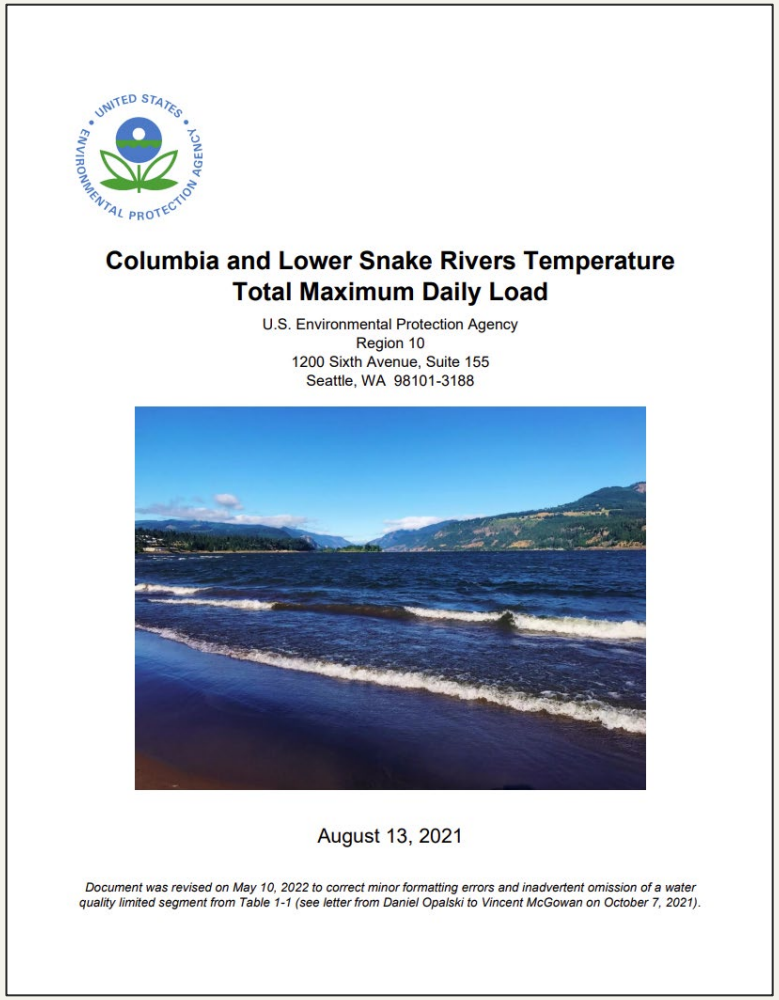
- Visit DEQ's Columbia River TMDL webpage to download the charter

Local Advisory Group roster

Name	Position	Organization
Paula Calvert	Clean Water Act Policy Advisor	Bonneville Power Administration
Sherrie Duncan	Senior Fish Biologist	Confederated Tribes and Bands of the Yakama Nation
Keri Handaly	Environmental Policy Analyst	Confederated Tribes of Grand Ronde
Miles Johnson	Legal Director	Columbia Riverkeeper
Ray Walton	Associate	WEST Consultants on behalf of Northwest RiverPartners
Liz Hamilton	Executive Director	Northwest Sportfishing Industry Association
Erick Van Dyke	Technical Analyst	Oregon Department of Fish and Wildlife
Neil Maunu	Executive Director	Pacific Northwest Waterways Association
Dan Turner	Environmental Engineer	U.S. Army Corps of Engineers
Todd Maguire	TMDL Implementation Lead	U.S. Environmental Protection Agency **[Agency Advisory Role]**
Robbie O'Donnell	Large Scale TMDL Lead	Washington State Department of Ecology
Charles Morrill	Fisheries Biologist	Washington State Department of Fish and Wildlife

Background

- Mainstem Columbia River in Oregon listed as impaired waterbody list for temperature from June – Oct.
- In 2021, U.S. Environmental Protection Agency (EPA) issued the revised *Columbia and Lower Snake Rivers Temperature Total Maximum Daily Load* (TMDL)
- States of Oregon and Washington are responsible for implementation of the TMDL allocations
- Oregon DEQ is developing a Water Quality Management Plan to achieve the required reductions in excess heat
- To view the TMDL, visit EPA's Columbia River webpage



Columbia and Lower Snake Rivers Temperature Total Maximum Daily Load

U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue, Suite 155
Seattle, WA 98101-3188

August 13, 2021

Document was revised on May 10, 2022 to correct minor formatting errors and inadvertent omission of a water quality limited segment from Table 1-1 (see letter from Daniel Opalski to Vincent McGowan on October 7, 2021).


Geographic Scope of Oregon's Columbia River Temperature Water Quality Management Plan
DEQ
State of Oregon
Department of
Environmental
Quality
COASTAL RANGES
CASCADE
Yakima
Columbia
Snake
Kennewick
McNary Dam
John Day Dam
Bonneville Dam
The Dalles Dam
Portland
Columbia
Legend
2022 Integrated Report Assessment Units
Mainstem Columbia River Dams
N
0 10 20 40 60 80 Miles
0 20 40 80 120 Kilometers
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, USGS

Water Quality Management Plan

- Oregon Administrative Rule 340-042-0040(8): if the EPA establishes a TMDL addressing waterbodies in Oregon, DEQ may prepare a WQMP to implement that TMDL

- The WQMP is part of the TMDL document – it is the plan of action for implementing the TMDL pollutant allocations.

- OAR 340-042-0040(4)(l): 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
  - Identifies timelines for implementing actions and achieving/maintaining water quality standards
  - Describe reasonable assurance that management strategies and sector-specific or source-specific implementation plans will be carried out through regulatory or voluntary actions

Local Advisory Group purpose

- **Purpose of the LAG**: to provide input and recommendations to DEQ on how to implement the *Columbia and Lower Snake Rivers Temperature TMDL* in Oregon's waters through the Water Quality Management Plan

Timeline

February – March 2026

Local Advisory Group Meetings

- Two Virtual Meetings:
  - Feb. 24, 2026
  - March 31, 2026

Spring/Summer 2026

Formal Public Comment Period

- DEQ will publish response to comments with final WQMP

Summer/Fall 2026

DEQ Director Order

- Final WQMP to be signed by DEQ Director

Columbia and Lower Snake Rivers Temperature TMDL Overview

U.S. Environmental Protection Agency (EPA) Region 10

State of Oregon
DEQ Department of Environmental Quality

TMDL implementation

- OAR 340-042-0060(1): If the EPA establishes a TMDL addressing waterbodies in Oregon, the [DEQ] Director may issue an order or the Environmental Quality Commission by rule a WQMP to implement that TMDL

Allocated sources

Table 6-3 Aggregate allocation: allowable 0.3°C

	WLA and LA (°C)	Source Group		
		Dams (Nonpoint source) (°C)	NPDES Point Sources and Reserve (°C)	Major Tributaries (°C)
Aggregate Allocations	0.3	0.1	0.1	0.1

- DEQ's WQMP will address the allocated sources in the TMDL
- The TMDL splits the 0.3°C allowable thermal loading capacity equally between three sectors:
  - National Pollutant Discharge Elimination System (NPDES) Permitted point sources
  - Tributaries
  - Dam impoundments
- The TMDL identifies climate change as a contributor to temperature impairments, but it does not assign it a portion of the load allocation
- **Cold Water Refuges**: the TMDL assigns temperature, flow, and volume targets to 13 tributaries

Permitted NPDES Point Sources

- NPDES dischargers included on TMDL Tables 6-11 and 6-12
- DEQ has issued NPDES permits with heat load allocations consistent with the TMDL to:
  - McNary Dam: permit number OR0055001
  - John Day Dam: permit number OR005500
- Modeled 90th percentile cumulative impact less than or equal to 0.1°C with current sources & maximum heat discharges
  - Reserve capacity available for new or expanded point source discharges on a reach-by-reach basis

Table 6-19 Estimated impacts of point source wasteload allocations and reserve allocations to the Columbia River (2011 – 2016)

		Estimated Increase in Temperature (°C)									
		Mean					90th Percentile				
Location	RM	June	July	Aug	Sept	Oct	June	July	Aug	Sept	Oct
Lake Roosevelt	639	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.00
Grand Coulee	595	0.01	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.01
Chief Joseph	546	NA	0.01	0.01	0.01	0.01	NA	0.02	0.01	0.02	0.02
Wells	515	NA	0.03	0.02	0.03	0.03	NA	0.04	0.03	0.05	0.05
Rocky Reach	474	0.04	0.03	0.02	0.03	0.03	0.06	0.04	0.03	0.05	0.04
Rock Island	453	0.05	0.04	0.04	0.05	0.05	0.08	0.06	0.05	0.08	0.07
Wanapum	416	0.06	0.05	0.04	0.06	0.05	0.08	0.06	0.06	0.08	0.08
Priest Rapids	397	0.07	0.05	0.05	0.07	0.07	0.10	0.07	0.06	0.10	0.10
McNary	291	0.08	0.06	0.05	0.07	NA	0.10	0.07	0.06	0.09	NA
John Day	216	0.07	0.05	0.04	0.04	NA	0.08	0.06	0.05	0.05	NA
Dalles	192	0.07	0.05	0.04	0.05	NA	0.08	0.06	0.05	0.06	NA
Bonneville	146	0.07	0.05	0.04	0.05	0.07	0.08	0.06	0.05	0.06	0.08
RM 42	42	0.08	0.07	0.06	0.08	NA	0.09	0.08	0.07	0.09	NA
RM 21	21	0.08	0.07	0.06	0.08	NA	0.09	0.08	0.06	0.09	NA

NA – Not applicable. River is not impaired at this target site/month

NPDES Permit Cycle

- TMDL Implementation through DEQ's Water Quality Permits Program
- NPDES permits have 5-year terms
- DEQ incorporates required TMDL wasteload allocations into NPDES permits when they are renewed

Tributaries impact

- Maximum modeled cumulative impact from tributaries is 0.08°C at RM 42 in July and Sept.
- DEQ will address temperature contributions from tributaries through waterbody-specific TMDLs

Table 6-21 Estimated impacts of 0.5°C tributary temperature impact on Columbia River temperature (2011 – 2016)

		Estimated Mean Impact on Columbia River (°C)				
Location	**RM**	**June**	**July**	**Aug**	**Sept**	**Oct**
Lake Roosevelt	639	0.05	0.02	0.02	0.01	0.01
Grand Coulee	595	0.03	0.03	0.01	0.02	0.01
Chief Joseph	546	NA	0.03	0.00	0.02	0.01
Wells	515	NA	0.05	0.02	0.02	0.03
Rocky Reach	474	0.07	0.06	0.03	0.03	0.04
Rock Island	453	0.09	0.07	0.03	0.03	0.05
Wanapum	416	0.08	0.06	0.03	0.03	0.04
Priest R.	397	0.07	0.06	0.03	0.02	0.04
McNary	291	0.04	0.04	0.02	0.02	NA
John Day	216	0.03	0.04	0.02	0.01	NA
Dalles	192	0.04	0.05	0.03	0.04	NA
Bonneville	146	0.04	0.05	0.03	0.04	0.04
RM 42	42	0.07	0.08	0.07	0.08	NA

NA - Not Applicable. River is not impaired at this location/month

Tributaries

- TMDL identifies 23 major tributaries
- Six of the tributaries discharge into the Columbia in Oregon waters
- DEQ is implementing temperature TMDLs in five of the six tributaries
  - Deschutes R. is impaired for temperature and included on DEQ's TMDL Prioritization list submitted to EPA

Table 6-23 23 major tributaries: temperature impairments and WQC

Tributary Name	Inflow Location (RM)	Temperature Impaired?	TMDL?	Water Quality Criteria (°C)
Columbia River				
Kettle, WA	706	Yes	No	16.0
Colville, WA	699	Yes	No	17.5
Spokane, WA	639	Yes	No	17.5
Okanogan, WA	533	Yes	No	17.5
Methow, WA	524	Yes	No	17.5
Chelan, WA	503	No	N/A	17.5
Entiat, WA[21]	483	Yes	No	17.5
Wenatchee, WA	468	Yes	Yes	17.5
Crab Creek, WA	410	Yes	No	17.5
Yakima, WA	335	Yes	No	21.0
Walla Walla, WA	314	Yes	Yes	17.5
Umatilla, OR	289	Yes	Yes	18.0
John Day, OR	218	Yes	Yes	20.0
Deschutes, OR	204	Yes	No	18.0
Klickitat, WA	180	Yes	No	16.0
Hood, OR	169	Yes	Yes	16.0
Sandy, OR	120	Yes	Yes	18.0
Willamette, OR	102	Yes	Yes	20.0
Lewis, WA	87	Yes	No	17.5
Kalama, WA	73	Yes	No	17.5
Cowlitz, WA	69	Yes	No	17.5
Snake River				
Tucannon, WA	62	Yes	Yes	17.5
Palouse, WA	60	Yes	Yes	17.5

Tributary TMDL implementation

- For each major tributary, DEQ has or will implement temperature TMDLs with numeric criteria at their respective mouths consistent with TMDL load allocation

- The Columbia River Temperature TMDL WQMP will not supplant or replace existing or planned tributary TMDL WQMPs

Tributary	TMDL Status
Umatilla River	Umatilla River Basin Total Maximum Daily Load and Water Quality Management Plan
John Day River	The John Day River Basin Total Maximum Daily Load (TMDL) and Water Quality Management Plan (WQMP) is under revision for temperature. DEQ is under a court-ordered deadline to submit a revised TMDL to EPA for approval by Oct. 18, 2027
Deschutes River	Lower Deschutes R. TMDL not started. Deschutes R. is impaired for temperature and included on DEQ's TMDL Prioritization list
Hood River	Western Hood Subbasin Temperature Total Maximum Daily Load
Sandy River	Total Maximum Daily Loads for the Lower Columbia-Sandy Subbasin: Temperature
Willamette River	Total Maximum Daily Loads for the Willamette Subbasins: Temperature

Dams

- Heat contributed by impounding the river in reservoirs behind dams is considered a nonpoint source of pollution
  - Discharges from cooling water structures, sump pumps, etc. are considered a point source and addressed through NPDES Permits
- 15 mainstem Columbia and Lower Snake River dams within the TMDL area
- Load allocation is cumulative – in most cases multiple upstream dams contribute to downstream exceedances

Table 4-1 Estimated range of current source impacts on Columbia and lower Snake River mainstems from June to October across RBM10 model domain

River	Point Sources (Δ°C)	Tributaries (Δ°C)	Dworshak Dam Cooling (Δ°C)	Dams (Δ°C)	Climate Change (Δ°C)
Columbia River	0.0 – 0.1	0.0 – 0.1	(-0.2) – 0.0	(-0.8) – 4.5	1.0 – 2.0
Snake River	0.0 – 0.1	0.0 – 0.1	(-3.8) – 0.0	(-0.2) – 3.2	1.0 – 2.0

Proposed Designated Management Agencies

- OAR 340-042-0040(I)(G): the WQMP will identify Designated Management Agencies (DMAs) responsible for implementing the management strategies and developing and revising sector-specific or source-specific implementation plans

Entity	Jurisdiction in Oregon Waters
U.S. Army Corps of Engineers	1. McNary Dam 2. John Day Dam 3. The Dalles Dam 4. Bonneville Dam

Implementation Plan requirements

- As required in OAR 340-042-0080(4)(a)(A)-(E), implementation plans 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; and,
  - Any other analyses or information specified in the WQMP.
    - Reporting on coordination with upstream contributing dams in the TMDL extent on actions to attain the cumulative dam load allocation

Dams – Proposed Management Strategies

- reduction in water withdrawals
- coordination with upstream dams within TMDL extent to reduce water temperature flowing into dam reservoirs
- changes to flow routing through dams
- lower minimum operating pool elevations
- reservoir drawdown or dam breach
- installation and operation of structural improvements, such as:
  - selective withdrawal systems
  - thermal curtains
  - mechanical chillers
  - artificial shading devices or structures
  - airlift/upswelling mixing systems
  - geothermal heat exchangers
  - evaporative cooling towers
  - managed aquifer recharge
  - spraying/misting

Narrative Cold Water Refugia Standard

- Oregon's narrative cold water refugia criterion applies to its portion of the mainstem Columbia River (RM 0 – 309)
  - Table 101B Beneficial Use Designations - Fish Uses Mainstem Columbia River
- "… In addition, these water bodies must have cold water refugia that are sufficiently distributed so as to allow salmon and steelhead migration without significant adverse effects from higher water temperatures elsewhere in the water body." (OAR 340-041-0028(4)(d))
- "Cold water refugia" means those portions of a water body where or times during the diel temperature cycle when the water temperature is at least 2 degrees Celsius colder than the daily maximum temperature of the adjacent well-mixed flow of the water body (OAR 340-041-0002(10))

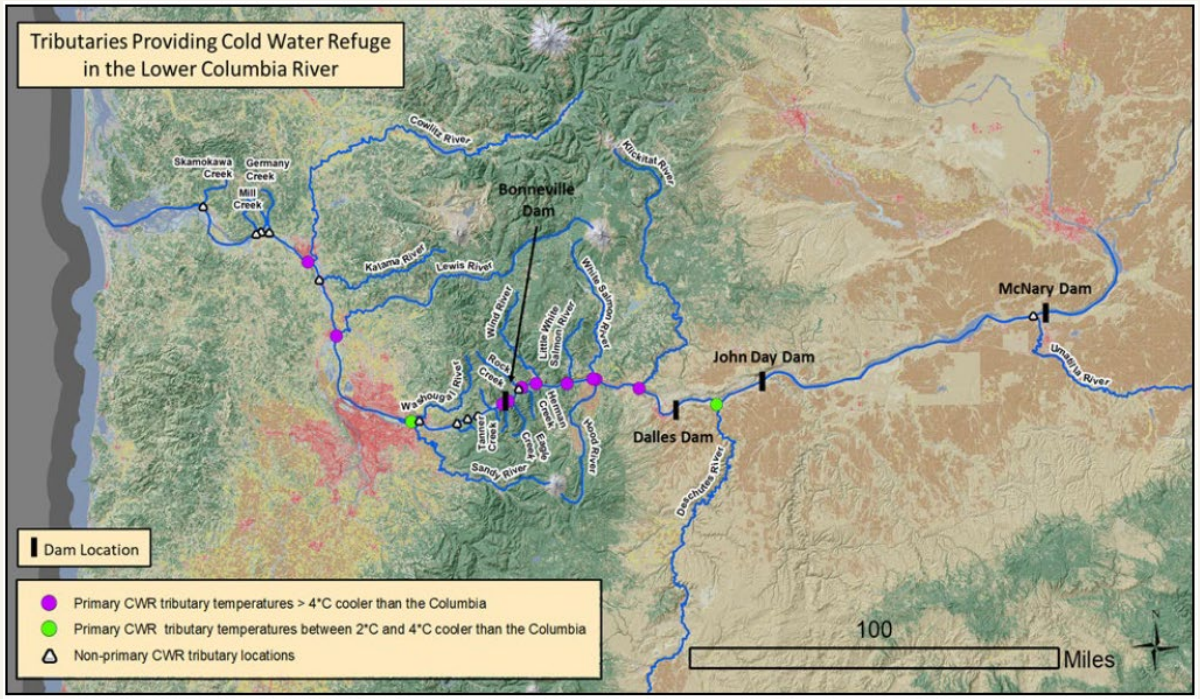


Figure 2-8 Twelve primary cold water refuge tributaries (purple and green) to the Lower Columbia River as well as the 11 non-primary cold water refuge tributaries (white)

Columbia Cold Water Refuges Plan (EPA, 2021)

Proposed timelines

Implementation strategies:

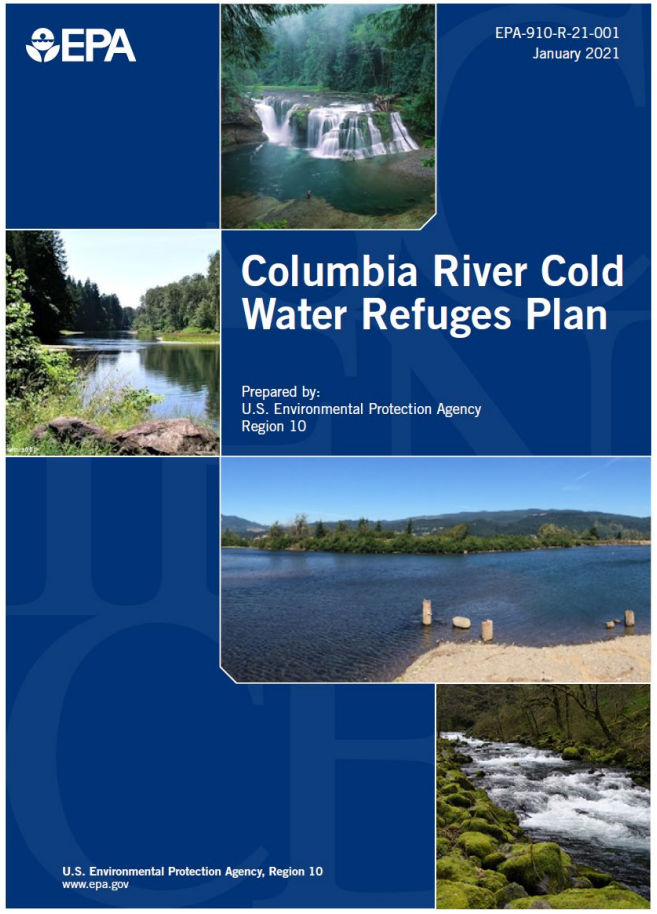
- DEQ anticipates the need for comprehensive water quality modeling to evaluate and prioritize strategies for implementation
- DEQ expects timelines for implementation will be informed by the DMA's first TMDL implementation report

Attain/maintain water quality standards:

- Significant uncertainty exists related to the dam management strategies required to address cumulative load allocation
- DEQ anticipates it could take years or decades to fully achieve the numeric and narrative water quality standards

Cold Water Refuges

- In the *Columbia Cold Water Refuges Plan*, EPA concluded that attainment of Oregon's cold water refuge standard will depend on:
  - maintaining the volume of the 12 primary cold water refuges, and
  - increased cold water refuge in the Umatilla River



TMDL Cold Water Refuge targets

Table 6-24 Temperature, flow, and CWR volume targets for 13 CWR in the lower Columbia River

Tributary Name	RM	Water Quality Standard	Tributary Temperature Maximum Target	Listed as Impaired[22]	Flow Target	CWR Volume Target
		7DADM (°C)	August Mean 5-Year Average (°C)		August Mean cfs	August Mean m^3
Cowlitz River	65.2	17.5	16.0	Yes	3634	1,554,230
Lewis River	84.4	17.5	16.6	Yes	1291	613,455
Sandy River	117.1	18	18.8	Yes*	469	31,915
Tanner Creek	140.9	18	11.7	No	38	1713
Eagle Creek	142.7	18	15.1	No	72	2988
Herman Creek	147.5	18	12.0	No	45	169,698
Wind River	151.1	16	14.5	Yes*	293	105,220
Little White Salmon River	158.7	16	13.3	Yes	248	1,108,661
White Salmon R	164.9	16	15.7	No	715	153,529
Hood River	165.7	16	15.5	Yes*	374	28,000
Klickitat River	176.8	16	16.4	Yes	851	222,029
Deschutes River	200.8	18	19.2	Yes	4772	880,124
Umatilla River	284.7	18	18.0[23]	Yes*	250[24]	31,512[25]

- The TMDL includes temperature, flow, and cold water refuge volume targets for the 12 primary cold water refuges and the Umatilla River
- Six tributaries in Oregon identified as primary cold water refuges
- The Sandy, Hood, and Umatilla Rivers have temperature TMDLs

Local Advisory Group Meeting #2

Local Advisory Group Meeting #2:

- **Date:** March 31, 2026
- **Time:** 11 a.m. – 1 p.m.
- **Location:** Virtual Zoom Meeting

Visit DEQ's Columbia River TMDL page for meeting details

State of Oregon
DEQ Department of Environmental Quality

Columbia River Temperature WQMP contacts

WQMP Development

- Steve Mrazik, Manager
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- Sign up to receive GovDelivery notifications online.

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