Total Maximum Daily Loads (TMDLs): Temperature TMDL Replacement project: **Willamette Mainstem and Major Tributaries**

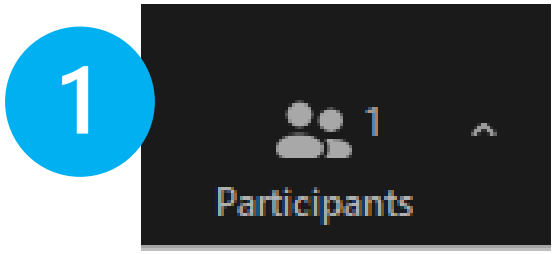
March 14, 2024, 1 p.m. PT

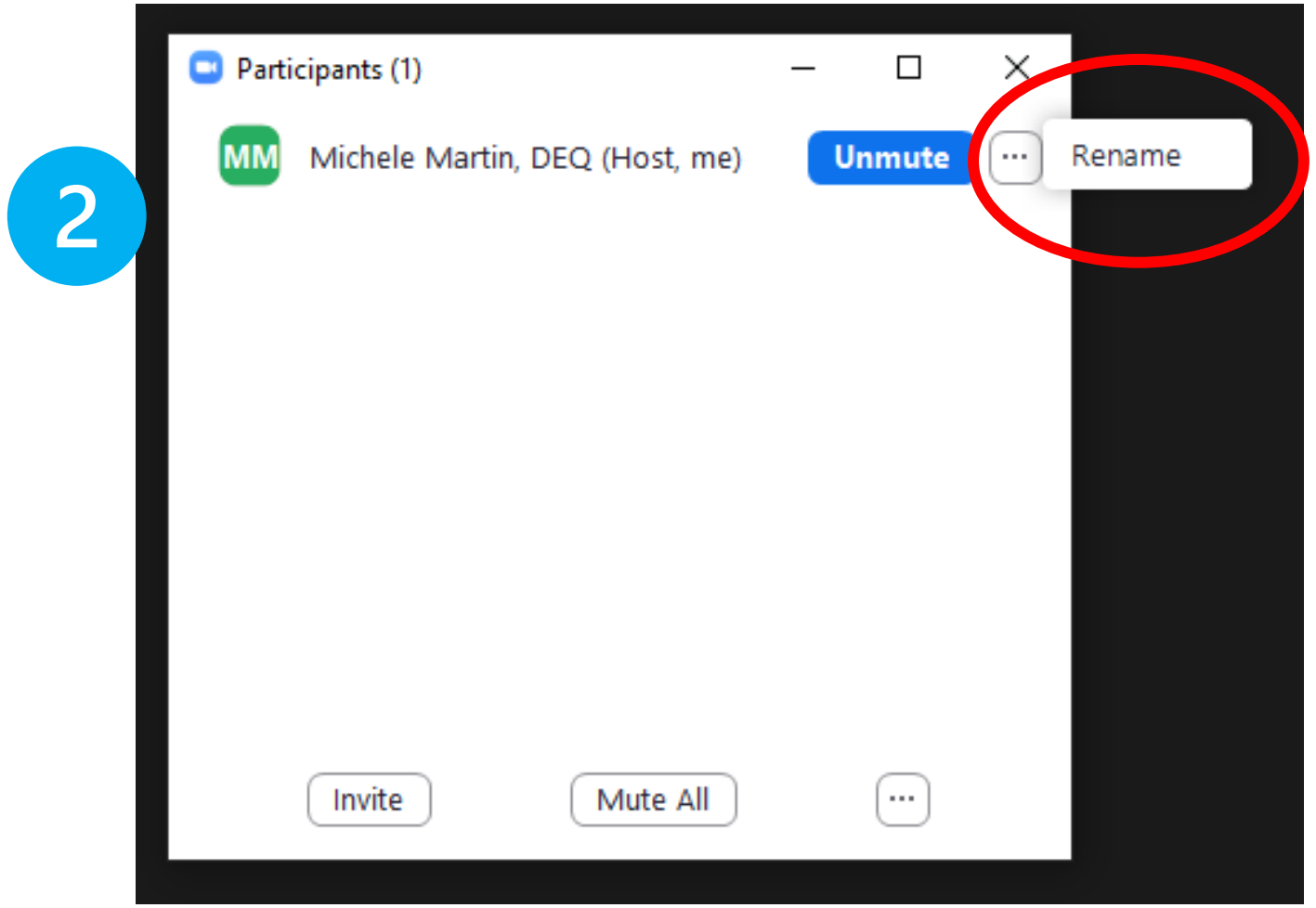
Rule Advisory Committee meeting #1

Agenda

Time	Topic
1 p.m.	Welcome, introductions, meeting agenda
1:10 p.m.	Draft Total Maximum Daily Load, rule
2:10 p.m.	Draft Water Quality Management Plan, rule
2:50 p.m.	Break (5 min.)
2:55 p.m.	Draft Fiscal and Economic Impact Statement
3:25 p.m.	Wrap up, 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, DEQ

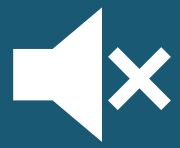




Zoom logistics and meeting ground rules

Raise hand to be recognized for questions

Use chat to: Ask questions



Mute when not speaking

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

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: Willamette Mainstem and Major Tributaries rulemaking
https://www.oregon.gov/deq/rulemaking/Pages/tmdlrwillmainstem.aspx

Temperature TMDL Replacement project litigation

2012: NWEA vs. USEPA, NMFS, USFWS

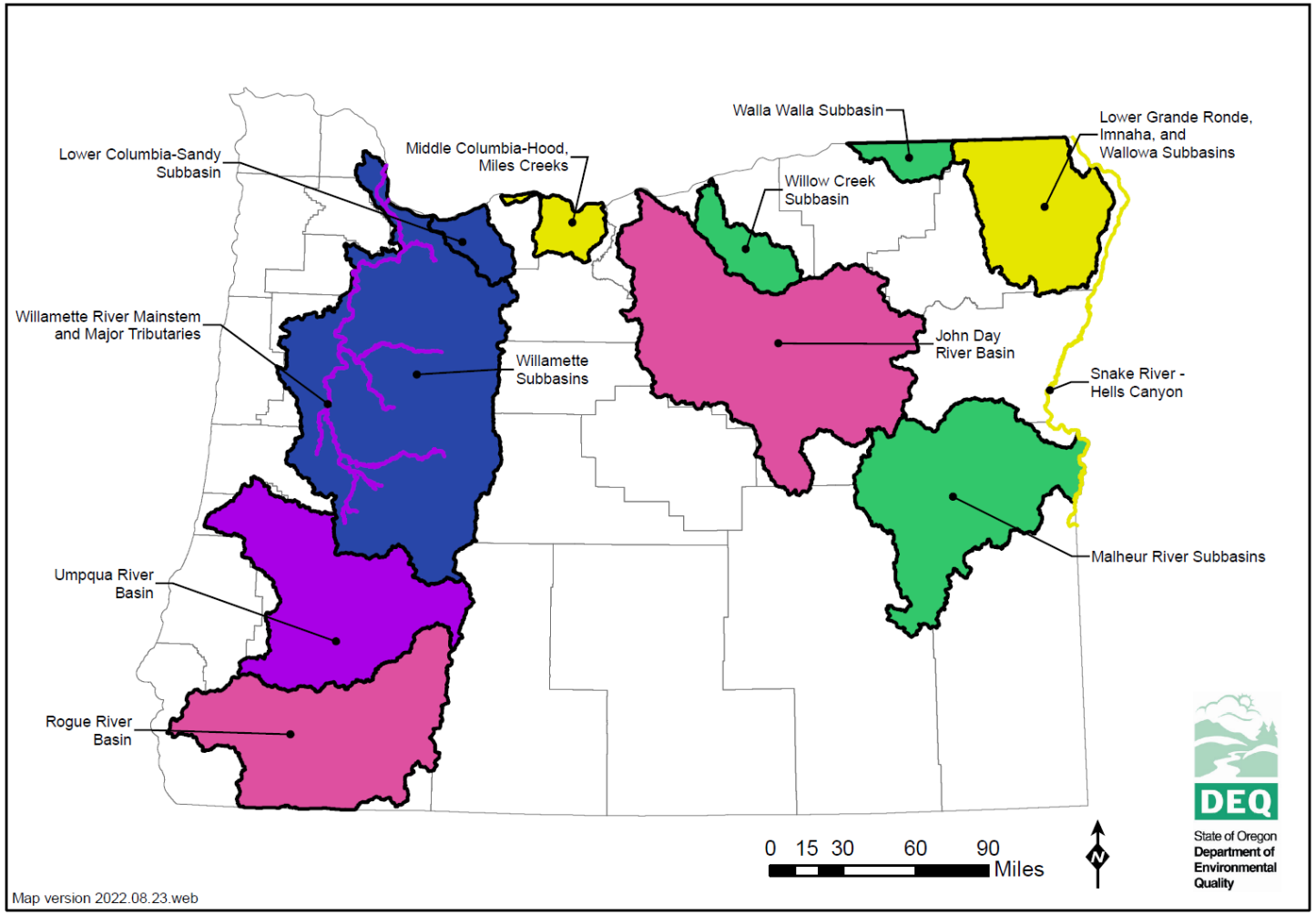
- Lawsuit was seeking judicial review of the EPA's decision to approve Oregon's revised water quality standards (including the Natural Conditions Criteria) and the Services' "no jeopardy" BiOp.
- Judge found “the EPA was unable to articulate a rationale [sic] basis for its approval of the NCC”.
- Court’s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

Website: https://www.oregon.gov/deq/wq/tmdls/Pages/tmdlreplacement.aspx

Temperature TMDLs 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

September 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

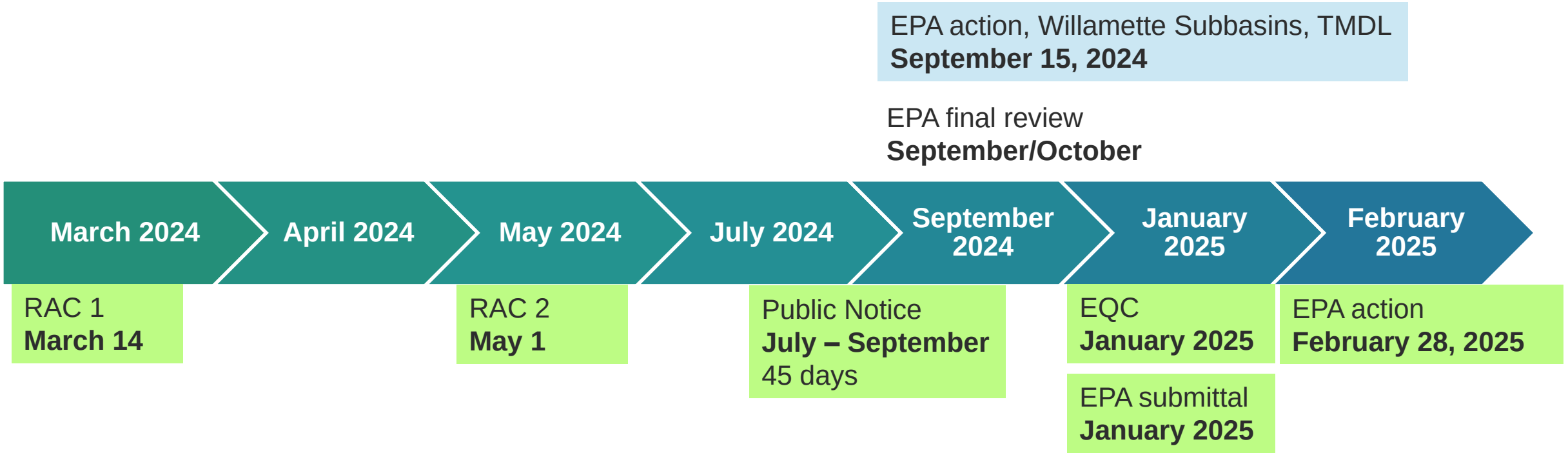
- Snake River - Hell's Canyon
- Lower Grande Ronde, Imnaha, and Wallowa Subbasins
- Middle Columbia-Hood, Miles Creeks

May 29, 2028

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

*The Willamette temperature TMDL replacements will occur in two waves and will be combined into one rule.
**Umpqua River Basin is a separate TMDL

Milestones, Willamette Mainstem and Major Tributaries



Willamette Subbasins rulemaking https://www.oregon.gov/deq/rulemaking/Pages/willamettetempTMDL.aspx

Willamette Mainstem and Major Tributaries rulemaking https://www.oregon.gov/deq/rulemaking/Pages/tmdlrwillmainstem.aspx

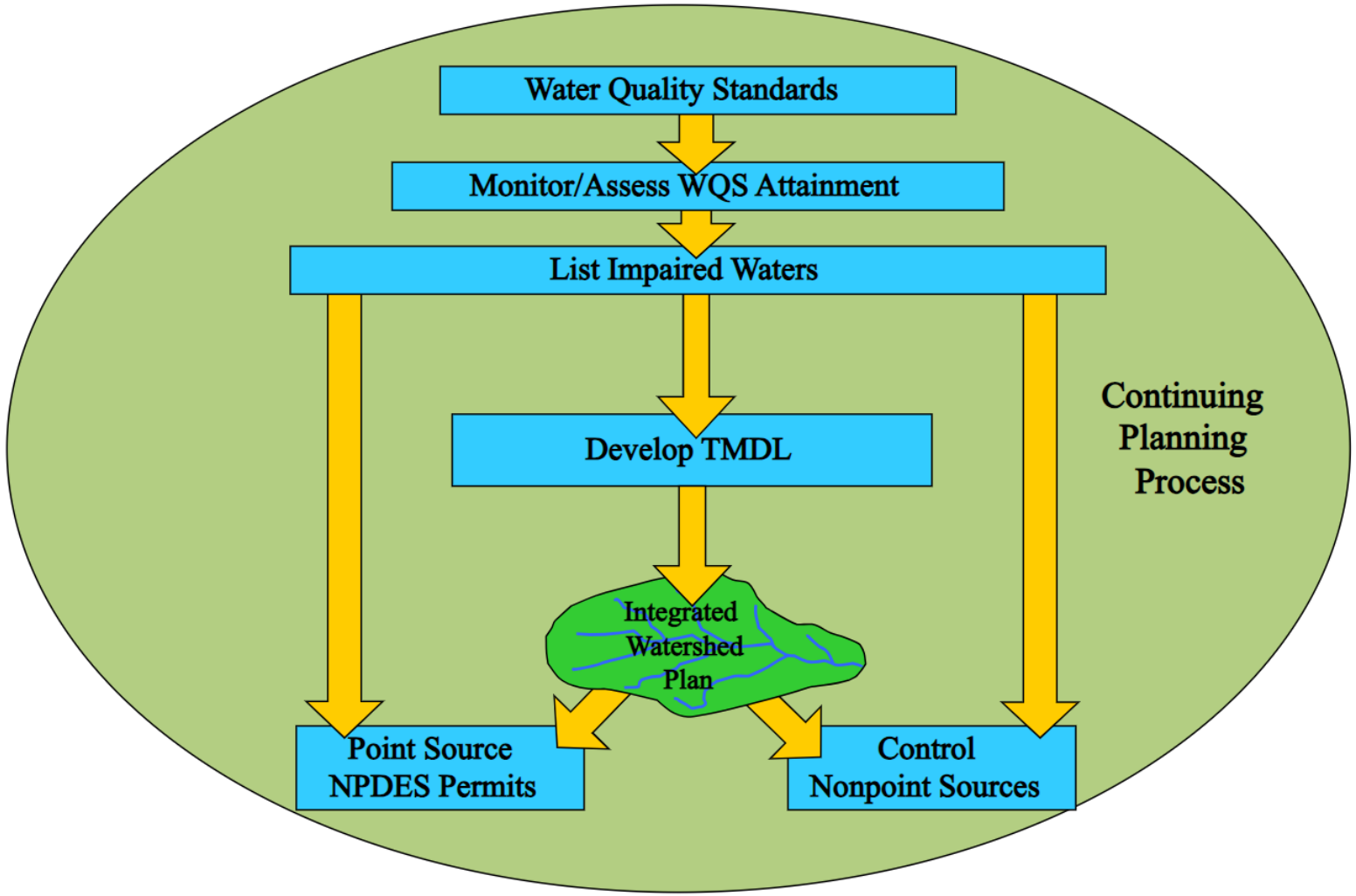
Total Maximum Daily Loads

A TMDL, or clean water plan, is a science-based approach to cleaning up polluted water so that it meets state water quality standards.

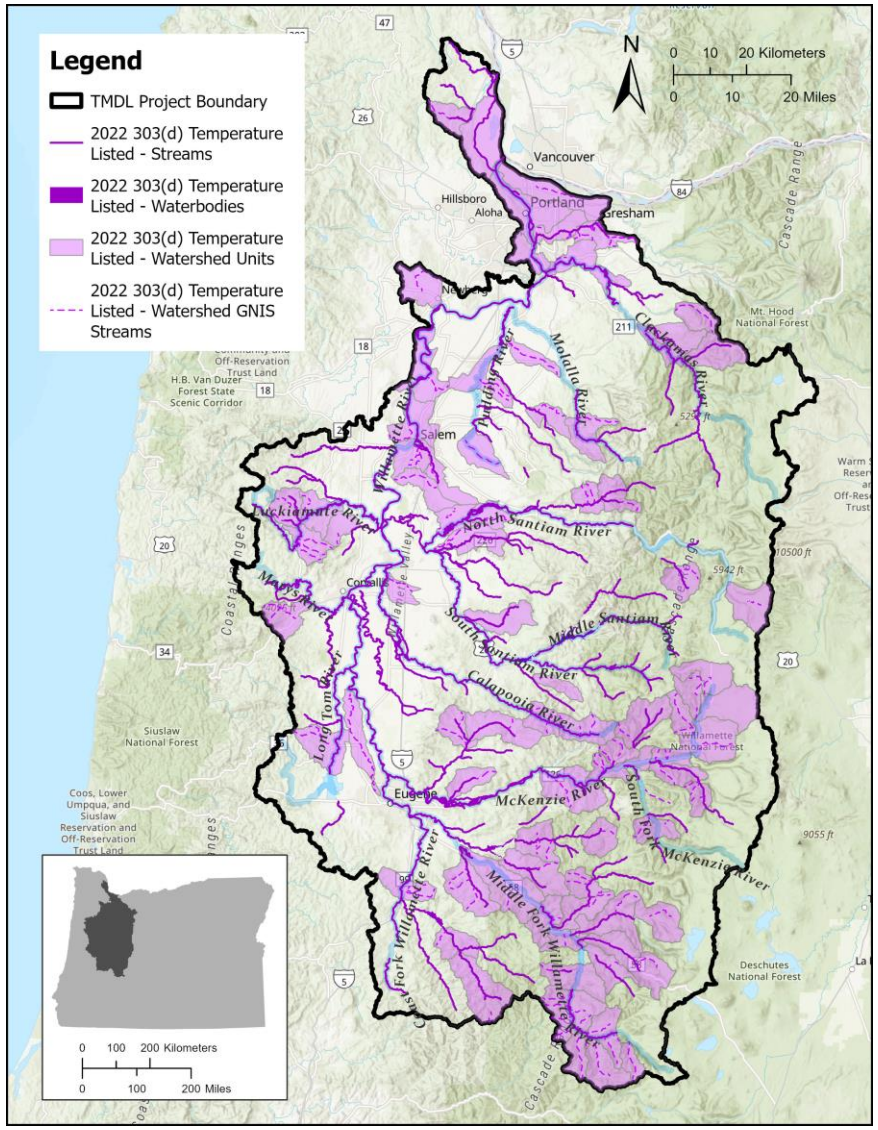
A TMDL is also a numerical value that represents the highest amount of a pollutant a surface water body can receive and still meet the standards. *The numerical value TMDL is also known as a loading capacity.*

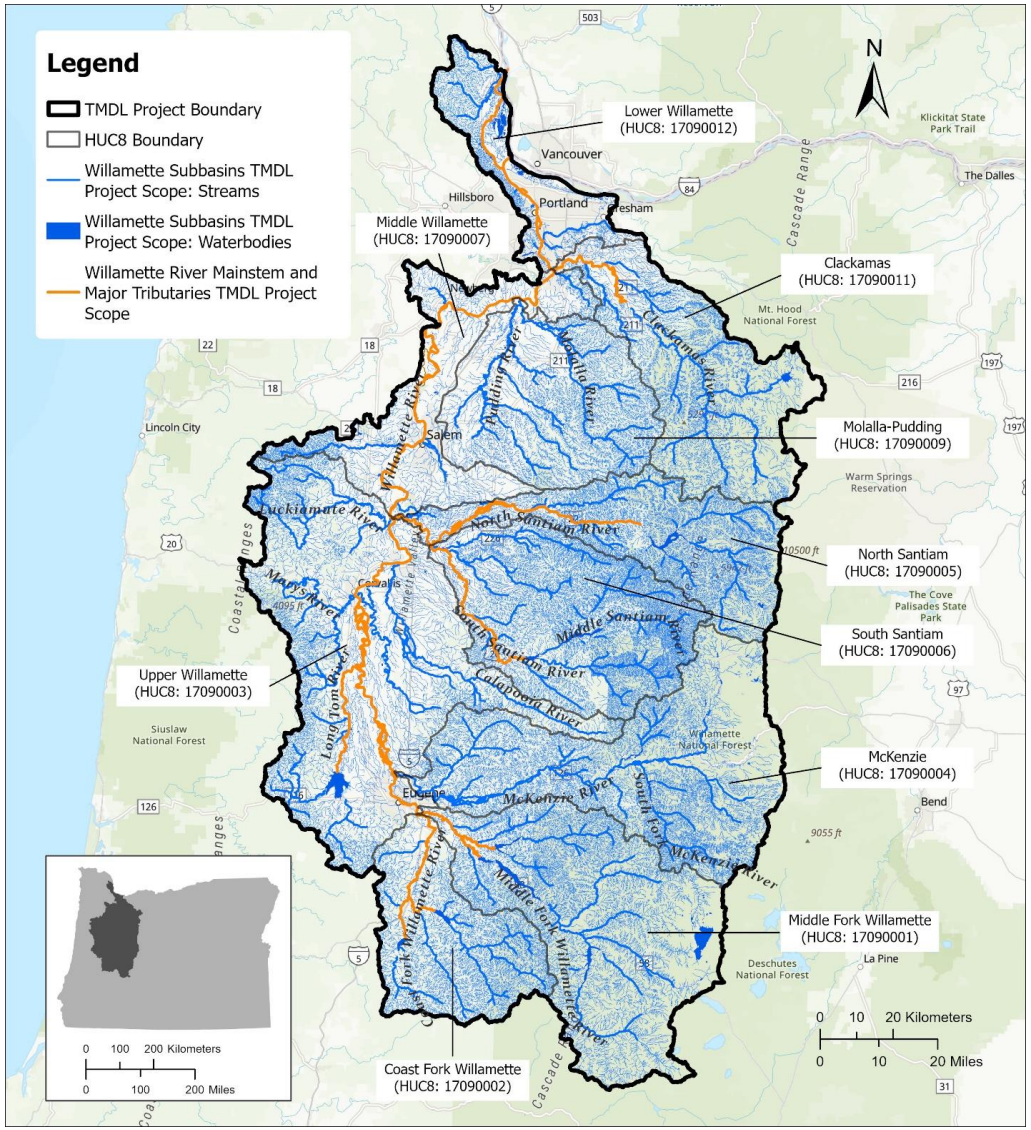
TMDL webpage: https://www.oregon.gov/deq/wq/tmdls/Pages/default.aspx

Clean Water Act framework



Willamette Mainstem Temperature TMDL project area

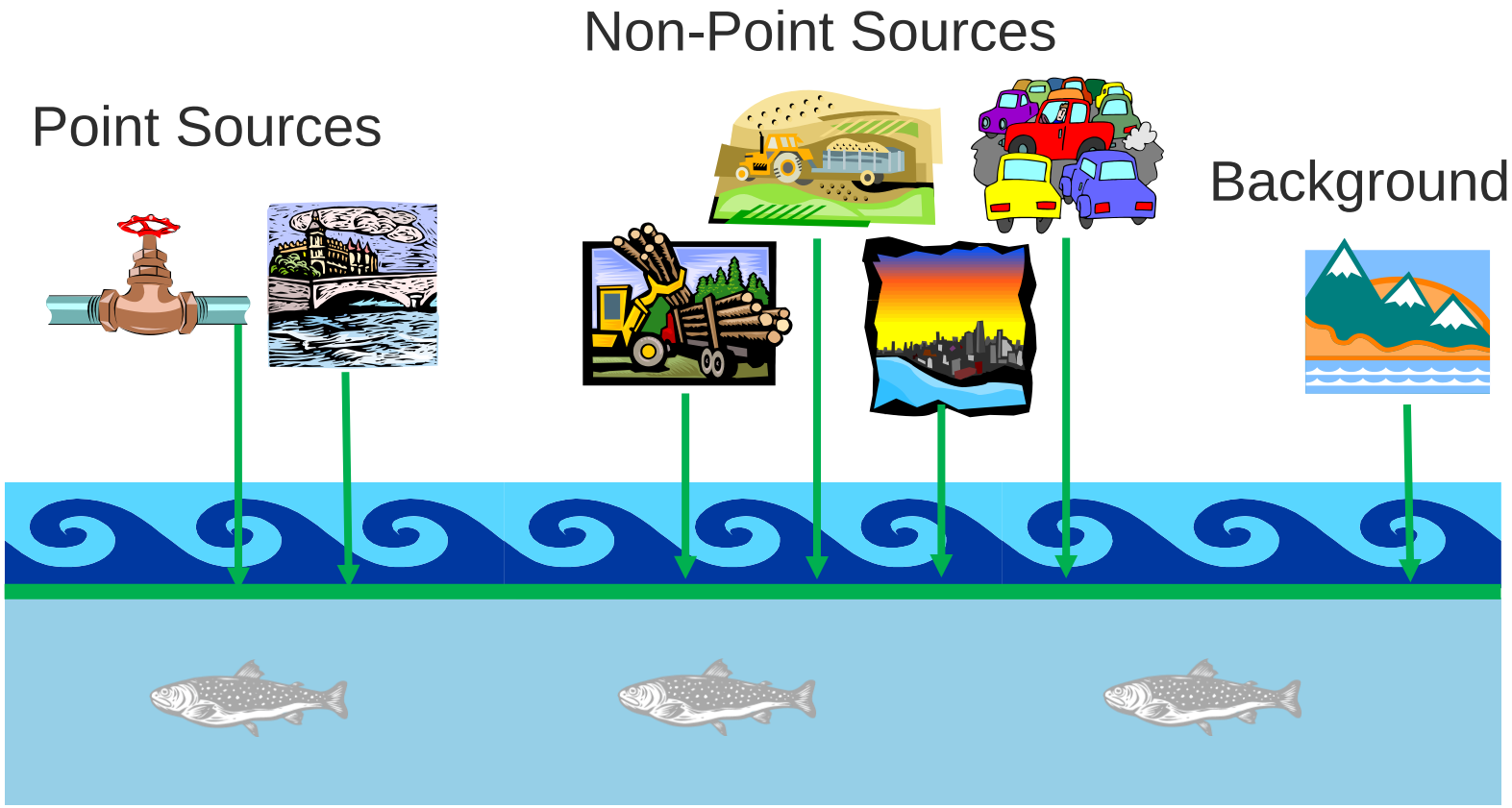




TMDL process

1. Identify water quality concerns
2. Identify pollutant sources
3. Link pollutant sources to water body conditions
4. Calculate the pollutant reduction needed to restore water quality

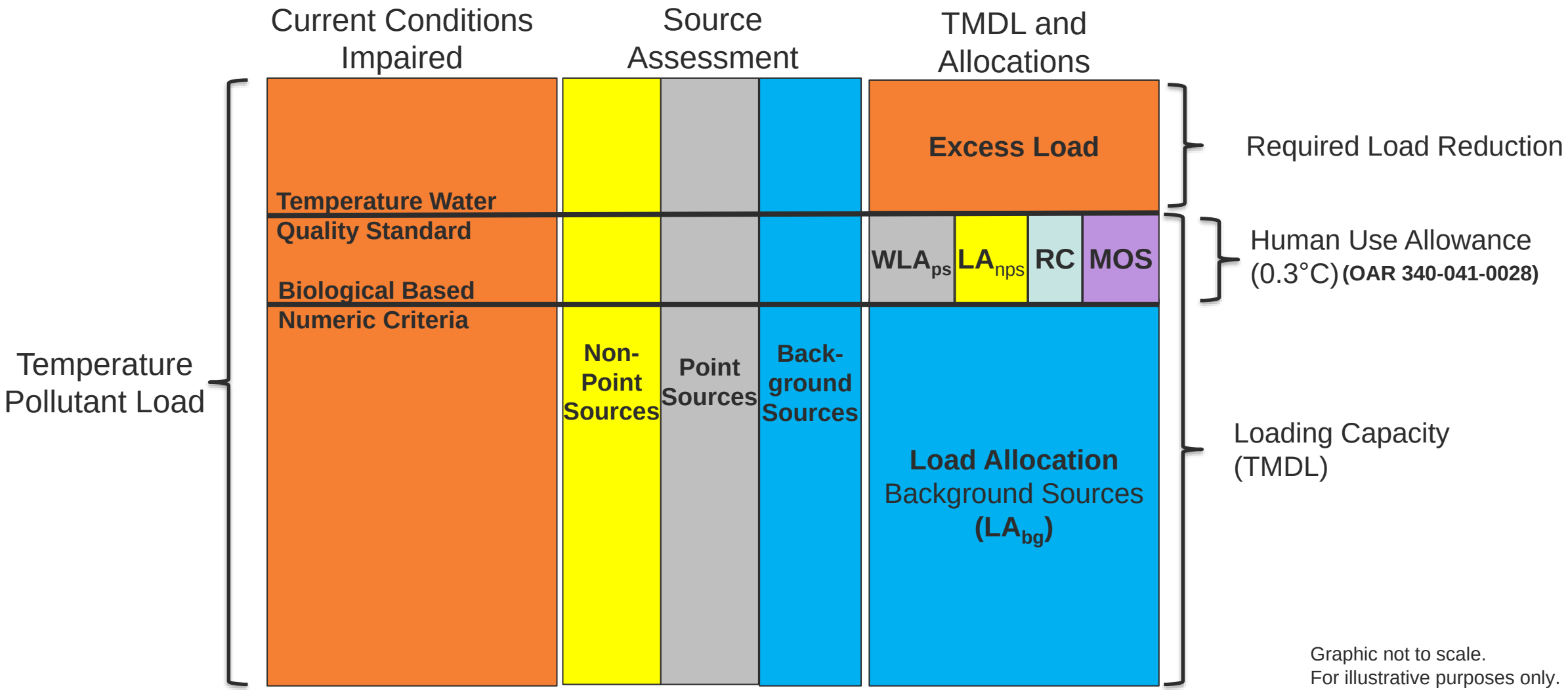
TMDL source assessment and calculation



$$TMDL = WLA_{ps} + LA_{nps} + LA_{bg} + MOS + RC$$

- WLA_{ps}: Waste Load Allocation: point sources
- LA_{nps}: Load Allocation: Non-point Sources
- LA_{bg}: Load Allocation: background sources
- MOS: Margin of Safety
- RC: Reserve Capacity

$TMDL = WLA_{ps} + LA_{nps} + La_{bg} + MOS + RC$



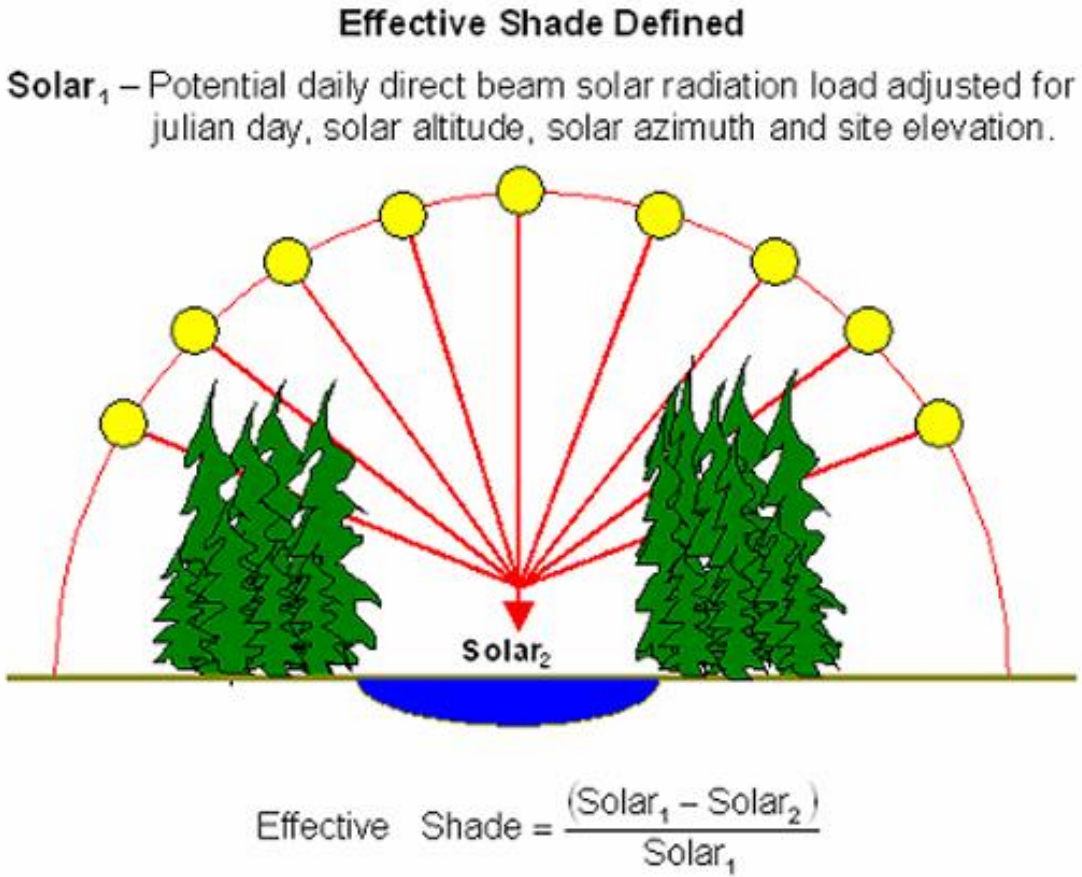
Graphic not to scale.
For illustrative purposes only.

Sources of heat in the Willamette Mainstem

- Point sources
- Nonpoint sources
  - Removal of near stream vegetation
  - Channel modification and widening
  - Dam and reservoir operation
  - Stream flow modification
  - Background sources

TMDL Surrogate Measures

- “Surrogate Measures” are substitute methods or parameters used in a TMDL to represent pollutants.
- Effective shade is the surrogate measured used to represent heat.



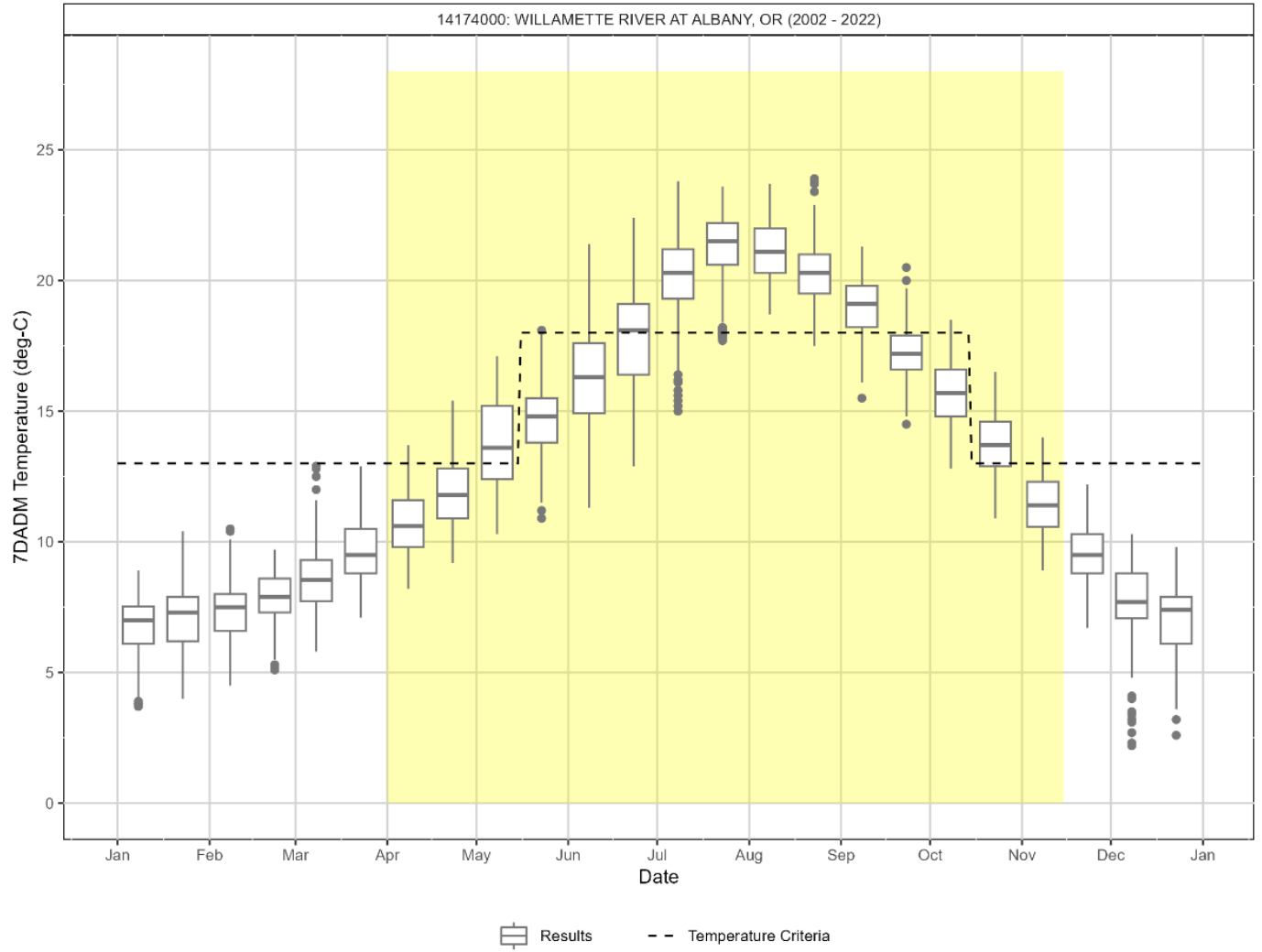
Willamette Mainstem TMDL Allocations

Example: Human Use Allowance allocations for the Willamette River Assessment Unit from Willamette Slough to Chehalem Creek.

Portion of HUA (°C)	Source or source category
0.20	NPDES point sources
0.00	Dam and reservoir operations nonpoint sources
0.04	Water management activities and water withdrawals nonpoint sources
0.01	Solar loading from existing transportation corridors, existing buildings, and existing utility infrastructure nonpoint sources
0.00	Solar loading from other nonpoint source sectors
0.05	Reserve capacity
0.30	**Total**

See meeting materials: “Draft TMDL Human Use Allowance Assignments”
Webpage: https://www.oregon.gov/deq/rulemaking/Pages/tmdlrwillmainstem.aspx

Seasonal variation and critical period



Willamette Mainstem TMDL Surrogate Measures

Table 9-3: Shade surrogate measure targets to meet nonpoint source load allocations

DMA	Assessed current effective shade (%)	TMDL target effective shade (%)	Shade gap (%)	Total stream kilometers assessed
1	18	36	18	283.6
2	13	68	55	5.5
3	16	38	22	33.7
4	25	74	49	1.3
5	28	43	15	2.2

TMDL Section 9.1.4.2 Site specific effective shade surrogate measure

Willamette temperature TMDL format

- Total Maximum Daily Load – adopted, by reference into rule
- Water Quality Management Plan – adopted, by reference into rule
- TMDL Technical Support Document
  - Appendix A: Heat Source Model Report
  - Appendix B: Lower Willamette Shade Model Memo
  - Appendix C: Potential Near Stream Land Cover
  - Appendix D: Assessment Units addressed by Temperature TMDLs for the Willamette Subbasins
  - Appendix E: Southern Willamette Shade Results
  - Appendix F: Lower Willamette Shade Results
  - Appendix G: Climate Change and Stream Temperature in Oregon: A Literature Synthesis
  - Appendix H: Willamette Subbasins Shade Gap Map, interactive map
  - Appendix I: Stream Buffer Width Literature Review
  - Appendix L: Willamette Mainstem and Tributary Model Configuration and Calibration Report
  - Appendix M: Willamette Mainstem and Tributary Model Point Source Updates and Scenario
  - Other Willamette Mainstem and Major Tributaries Technical Appendices

Mainstem rulemaking webpage: https://www.oregon.gov/deq/rulemaking/Pages/tmdlrwillmainstem.aspx
Subbasins rulemaking webpage : https://www.oregon.gov/deq/rulemaking/Pages/willamettetempTMDL.aspx

Long Tom River cool water species narrative standard

OAR 340-041-0028(9)(a) states that "*No increase in temperature is allowed that would reasonably be expected to impair cool water species*."

Process used to select numeric temperature target that implements cool water narrative:

- Identify cool and cold-water species present in the Long Tom (presence and seasonality)
- Literature review of thermal tolerance information
- Identify most temperature sensitive species
- Temperature target based on most temperature sensitive species

Long Tom River reach designated for cool water species (in red).

Long Tom River cool water species temperature target

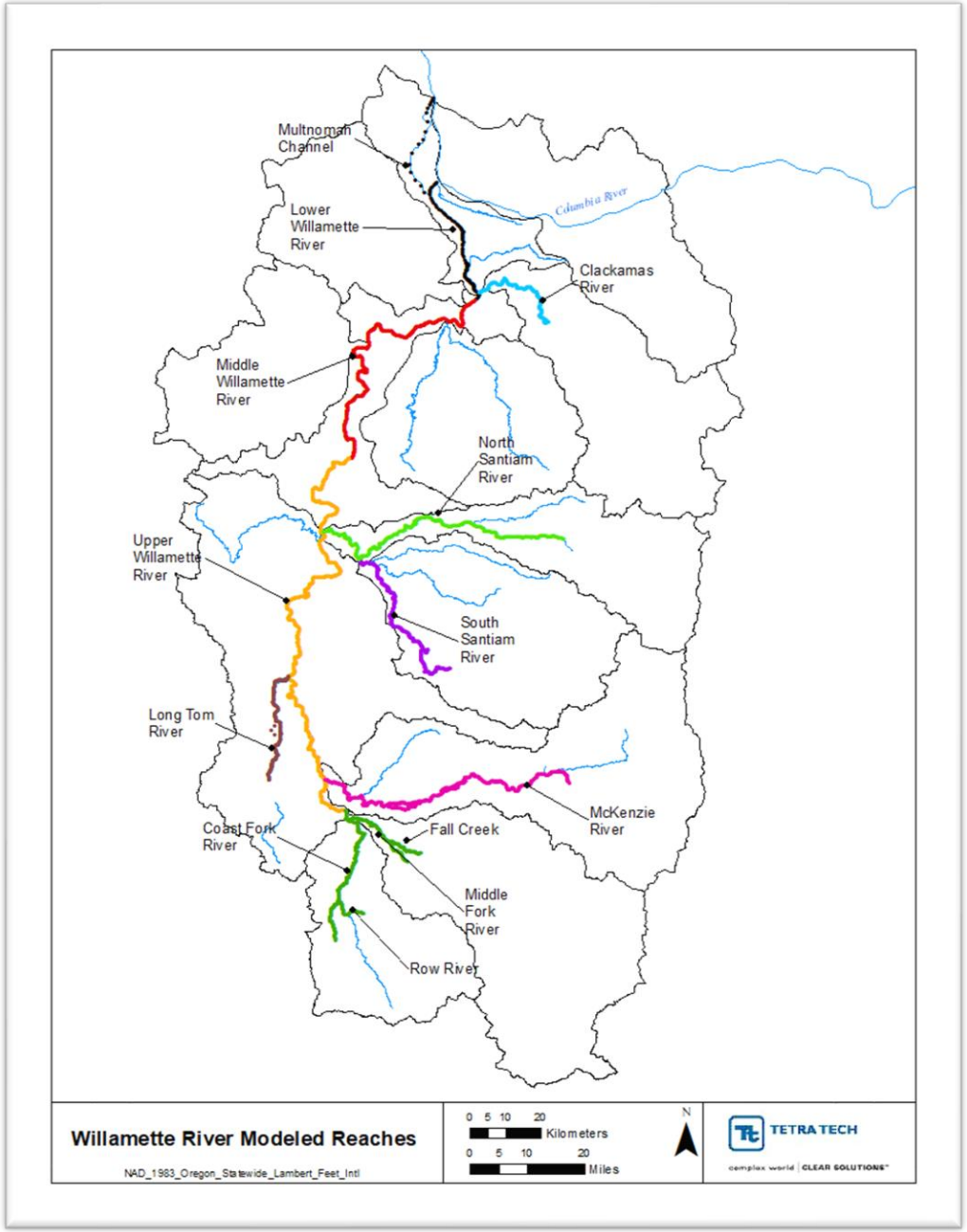
Time period	7DADM Temperature Target (deg-C)	Most Temperature Sensitive Species
June 15 – October 31	24.0 + 0.3 HUA	Redside shiner (Richardsonius balteatus)
November 1 – June 14	18.0 + 0.3 HUA	Chinook Salmon (Oncorhynchus tshawytscha)

Included in meeting materials: “Draft Technical Support Document Cool Water Species Lower Long Tom River” website: https://www.oregon.gov/deq/rulemaking/Pages/tmdlrwillmainstem.aspx

Thermal Wasteload Allocations

WLAs provided by the Willamette Mainstem TMDL for:

- Willamette River
- Major tributaries downstream from dams including:
  - Coast and Middle Fork Willamette Rivers
  - Long Tom River
  - Santiam and N/S Santiam
  - Clackamas River
- 50+ individual NPDES permitted facilities to receive WLAs



Human use allowance provided to point sources

- In general, no more than 0.20^{o}C of the HUA is provided to point sources
- Point sources include those with individual NPDES permits, plus those covered by general NPDES permits, such as:
  - 100-J Industrial Wastewater: NPDES cooling water
  - 200-J Industrial Wastewater: NPDES filter backwash
  - 300-J Industrial Wastewater: NPDES fish hatcheries

Impact that an effluent has on stream temperature

Impact that an effluent has on stream temperature

$$\Delta T_{PS} = \left(\frac{Q_E}{Q_E + Q_R}\right)(T_E - T_R) \quad \text{(Equation 8)}$$

where:

ΔT_{PS} = change in river temperature due to point source

Q_R = river flow rate upstream from point source

Q_E = effluent flow rate

T_R = river temperature upstream from point source

T_E = effluent temperature

In terms of dilution factor, D_F

$$\Delta T_{PS} = \left(\frac{T_E - T_R}{D_F}\right)$$

Where:

$$D_F = \frac{Q_E + Q_R}{Q_E}$$

Derivation of maximum thermal loads for each point source

Impact that an effluent has on temperature at 7Q10 and T criterion

$$\Delta T_{PS} = \left(\frac{Q_E}{Q_E + Q_{R,7Q10}}\right)(T_E - T_C) \quad \text{(Equation 8)}$$

where:

ΔT_{PS} = change in river temperature due to point source

$Q_{R,7Q10}$ = $7Q10$ design low river flow rate upstream from point source

Q_E = effluent flow rate

T_C = applicable temperature criterion

T_E = effluent temperature

- Determine maximum thermal loads from each point source
- Current maximum thermal loads derived by:
  - Processing DMR data
    - 7-day average effluent flow for each day
    - 7DADM effluent temperature for each day
    - ΔT for each day
    - Derive max Spring Spawning, Summer, Fall Spawning ΔT and effluent flow and temperature combination

Wasteload allocation (WLA) equation

6.2.1 Wasteload allocation equation

The following equation was used to calculate the thermal waste load allocations.

Equation 2 $$WLA = (\Delta T) \cdot (Q_E + Q_R) \cdot C_F$$

where,

$WLA =$ Waste load allocation (kilocalories/day).

$\Delta T =$ The maximum temperature increase (ºC) above the applicable temperature criterion using 100% of river flow not to be exceeded by each individual source from all outfalls combined.

$Q_E =$ The daily mean effluent flow (cfs).

When effluent flow is in million gallons per day (MGD) convert to cfs:

$$\frac{1{,}000{,}000\ gallons}{1\ day} \cdot \frac{0.13368 ft^3}{1\ \text{gallon}} \cdot \frac{1\ day}{86{,}400\ sec} = 1.5472\ ft^3/sec$$

$Q_R =$ The daily mean river flow rate, upstream (cfs).

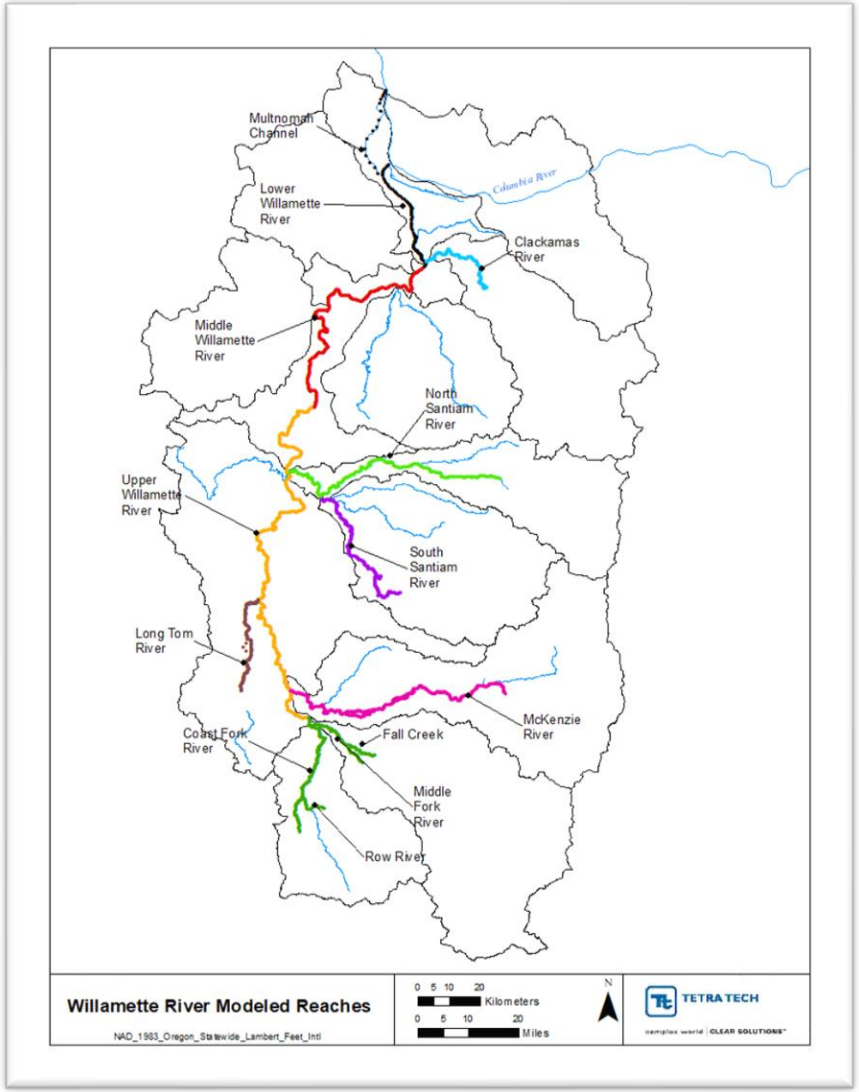
When flow is <= 7Q10, Q_R = 7Q10. When flow is > 7Q10, Q_R equals the daily mean river flow, upstream.

$C_F =$ Conversion factor using flow in cubic feet per second (cfs): 2,446,665

$$\frac{1\ m^3}{35.31\ ft^3} \cdot \frac{1000\ kg}{1\ m^3} \cdot \frac{86400\ sec}{1\ day} \cdot \frac{1\ kcal}{1\ kg\ \cdot 1℃} = 2{,}446{,}665$$

Conversion of Max ΔT_{PS} to thermal wasteload allocation

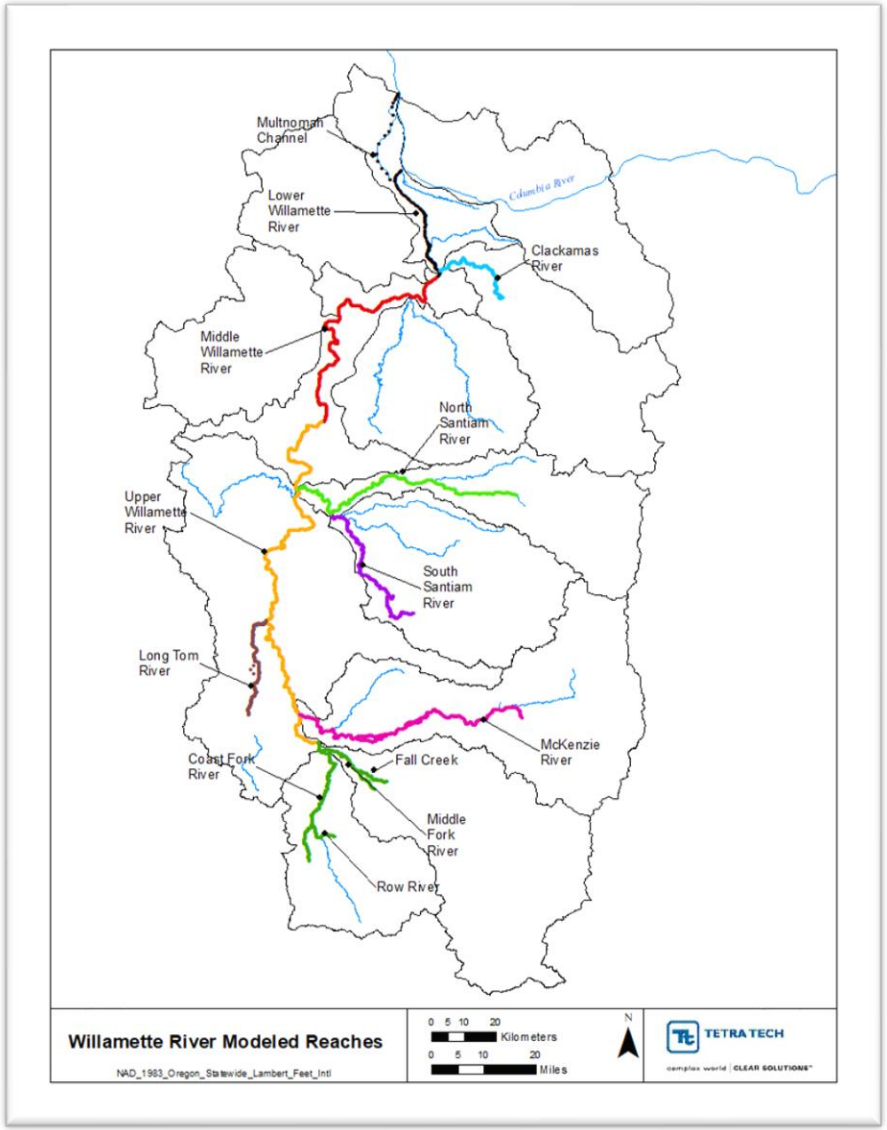
- Round up to 2 or 3 decimal places
- Adjustment factors
  - Increase for small or intermittent sources with sparse data
  - Reduction for large discharges where needed (fall spawning period only)
- Increase to 2006 WLAs in some cases when Max ΔT_{PS} close to 2006 WLA



Cumulative effects analysis

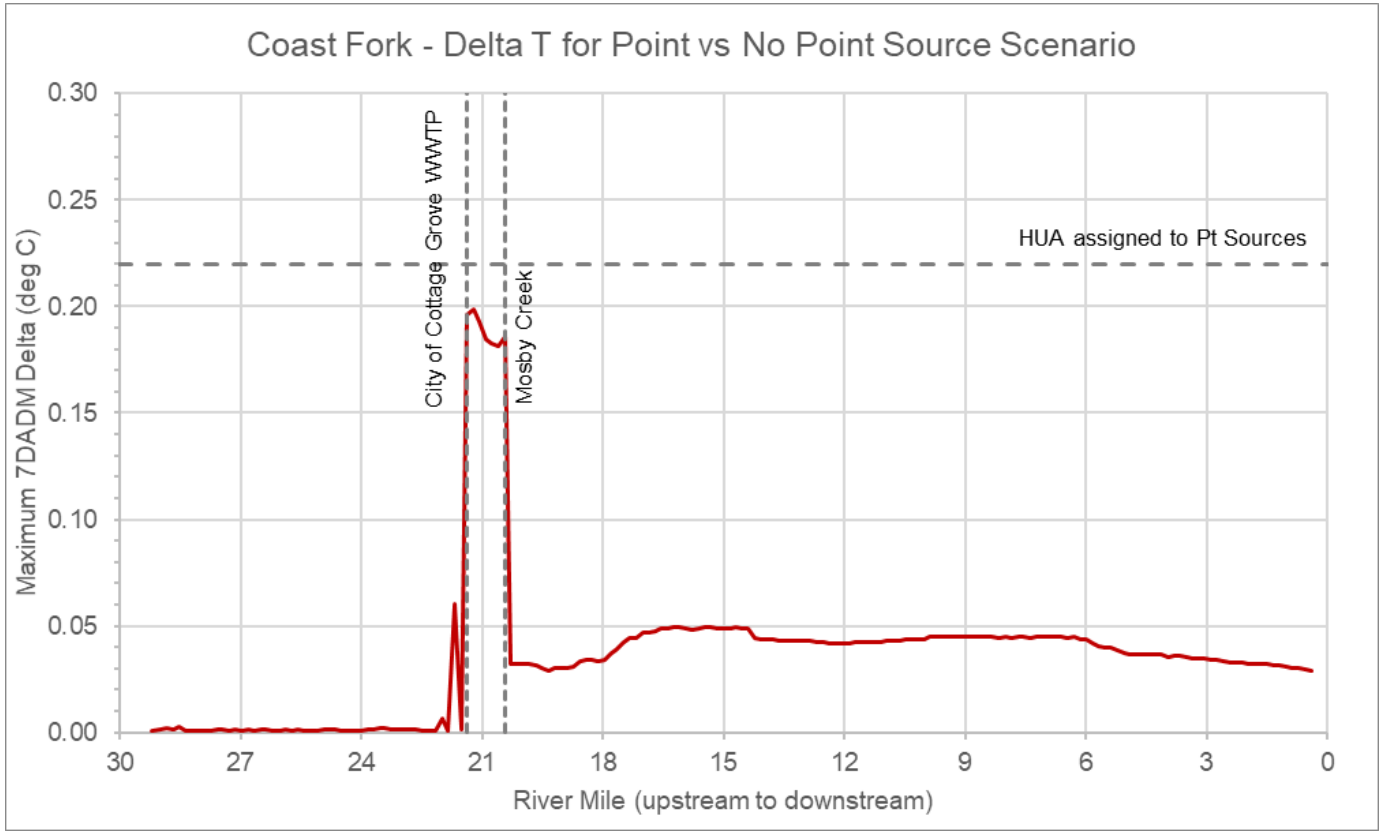
- CE-QUAL-W2 Mainstem Models
- 9 models (v. 3.6)
  - 2001/2002 data
  - Portland State University, USGS, and DEQ
- 6 models updated to v. 4.2 by USGS
  - 2015 critical low flow year
- 3 models updated to 4.2 for 2015

- Funding for models by US Army Corps of Engineers and DEQ
- Data collection from multiple groups



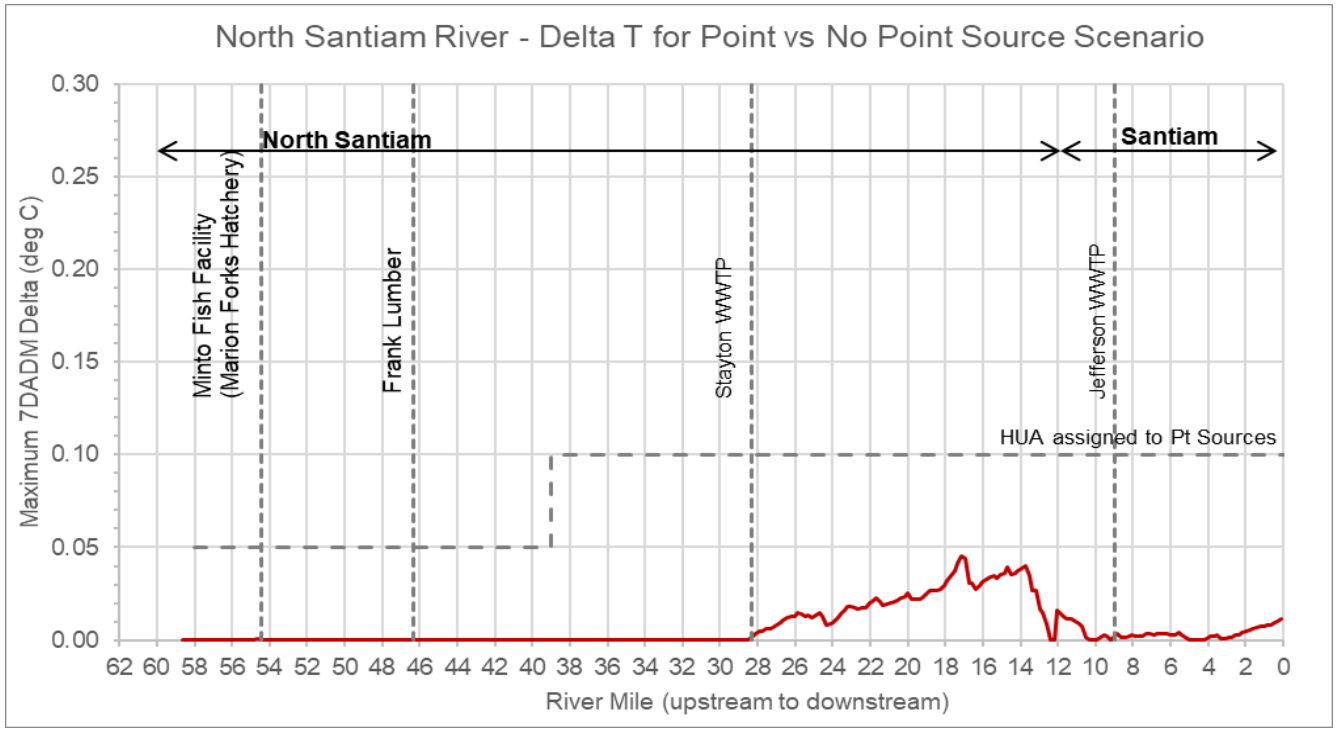
Cumulative effects analysis – impacts of WLAs

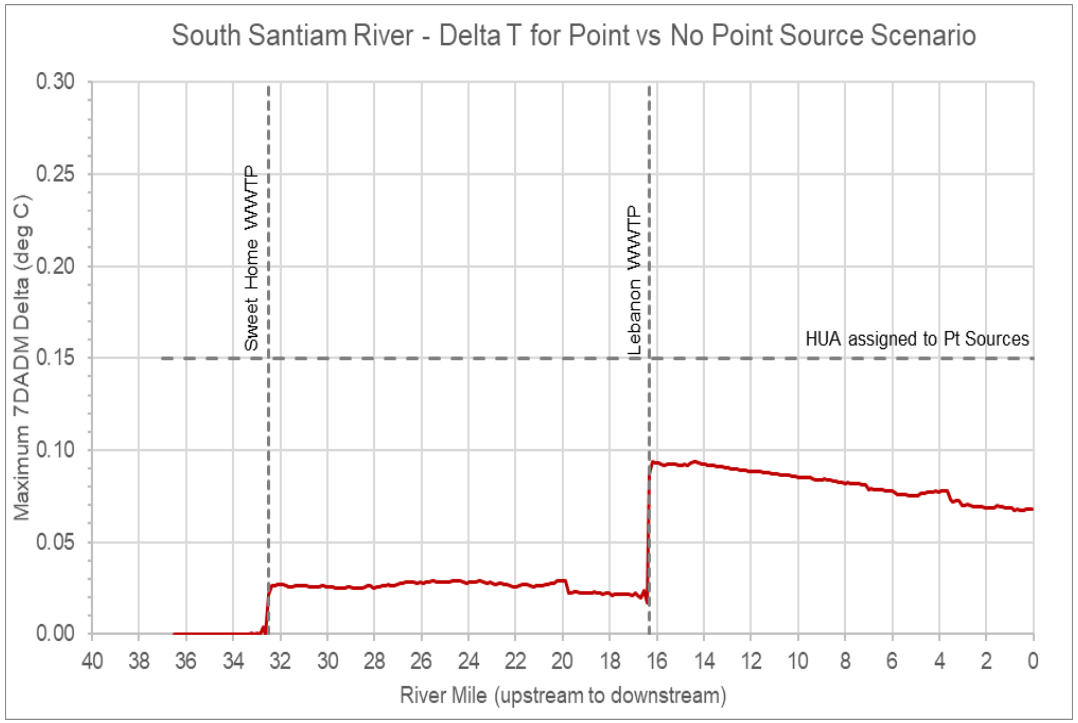
Coast Fork Willamette River



Cumulative effects analysis – impacts of WLAs

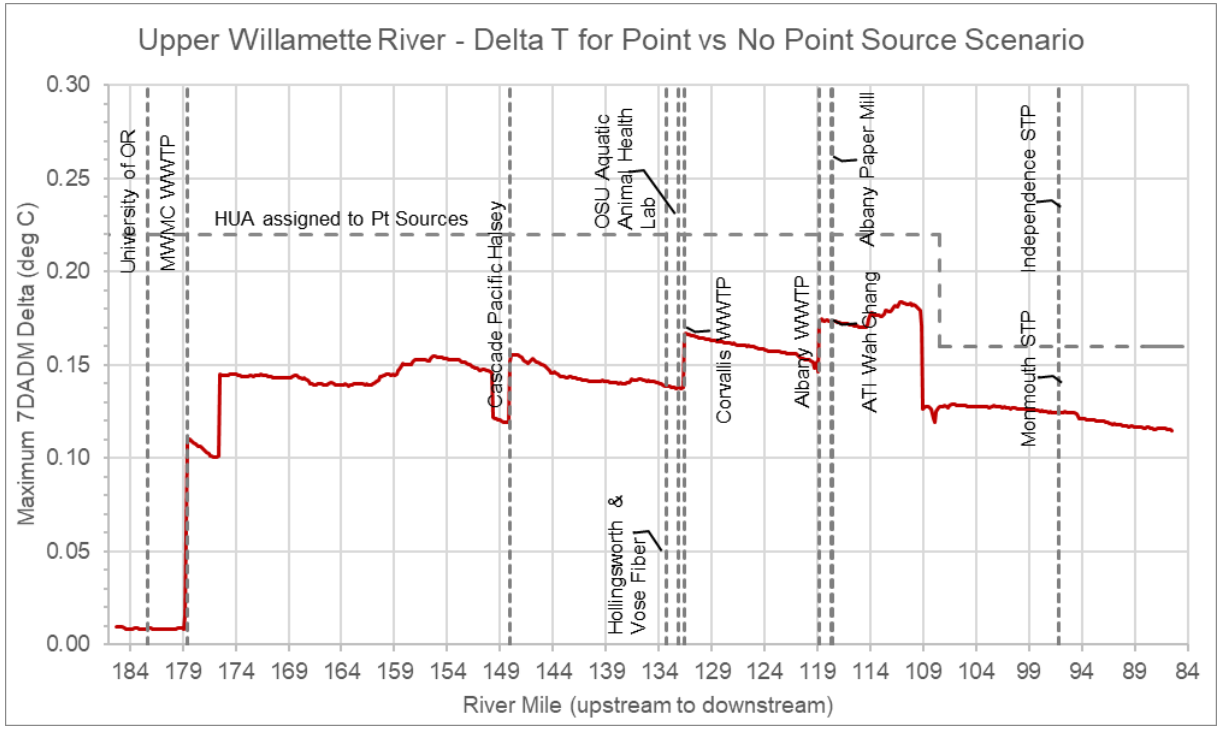
North and South Santiam and Santiam Rivers

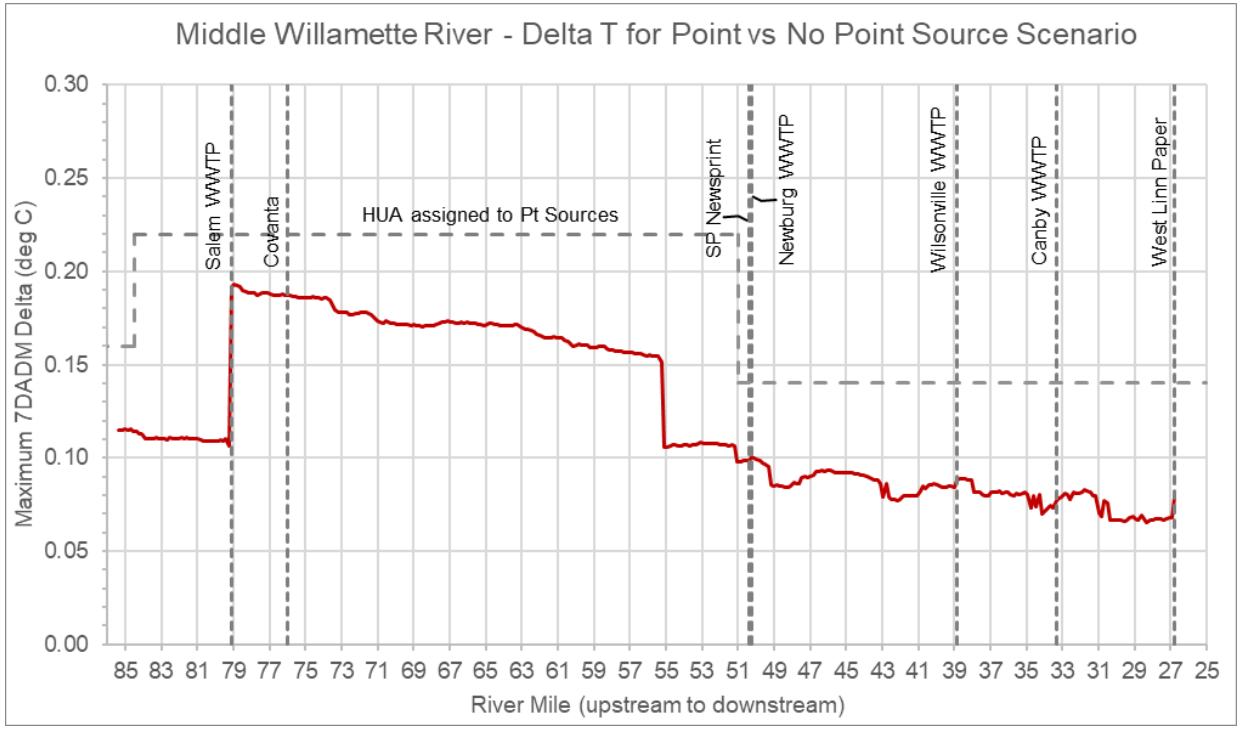




Cumulative effects analysis – impacts of WLAs

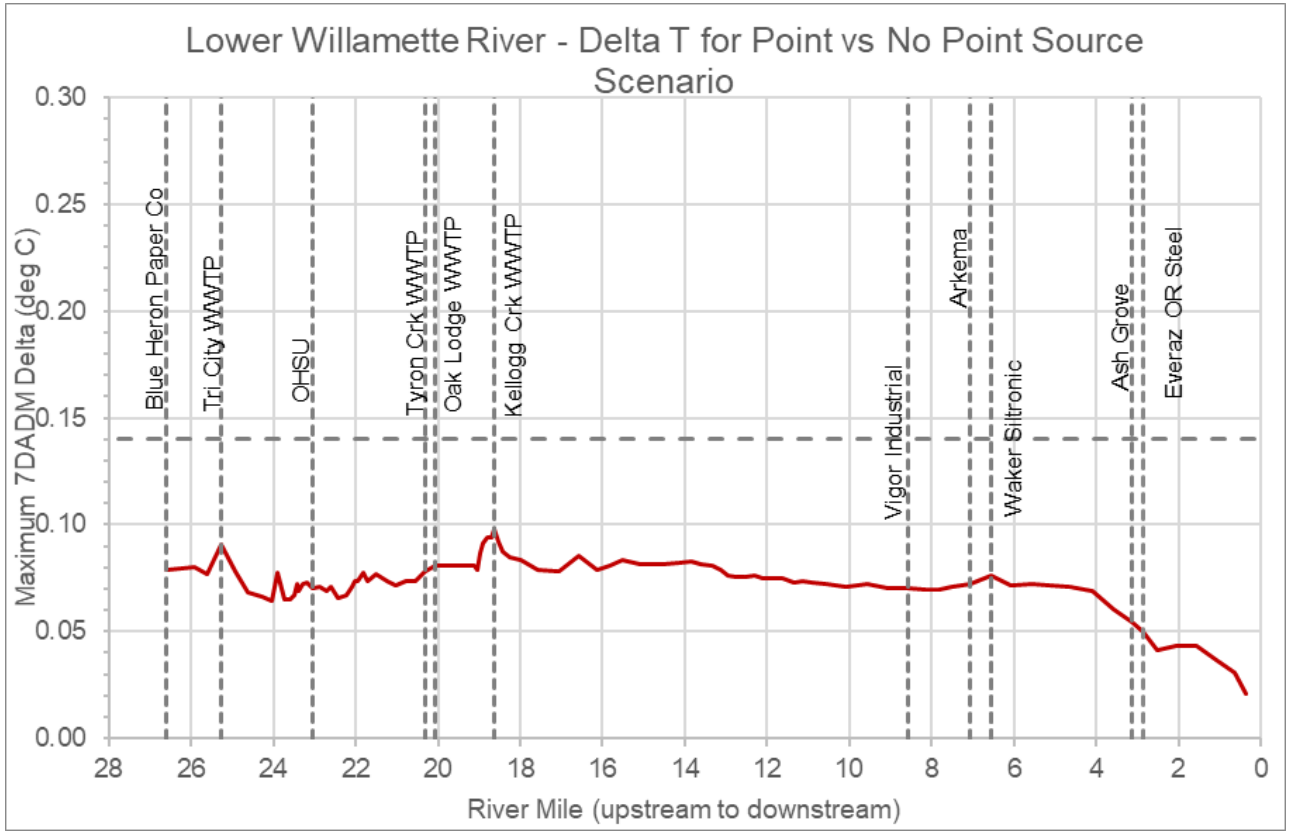
Upper and Middle Willamette River

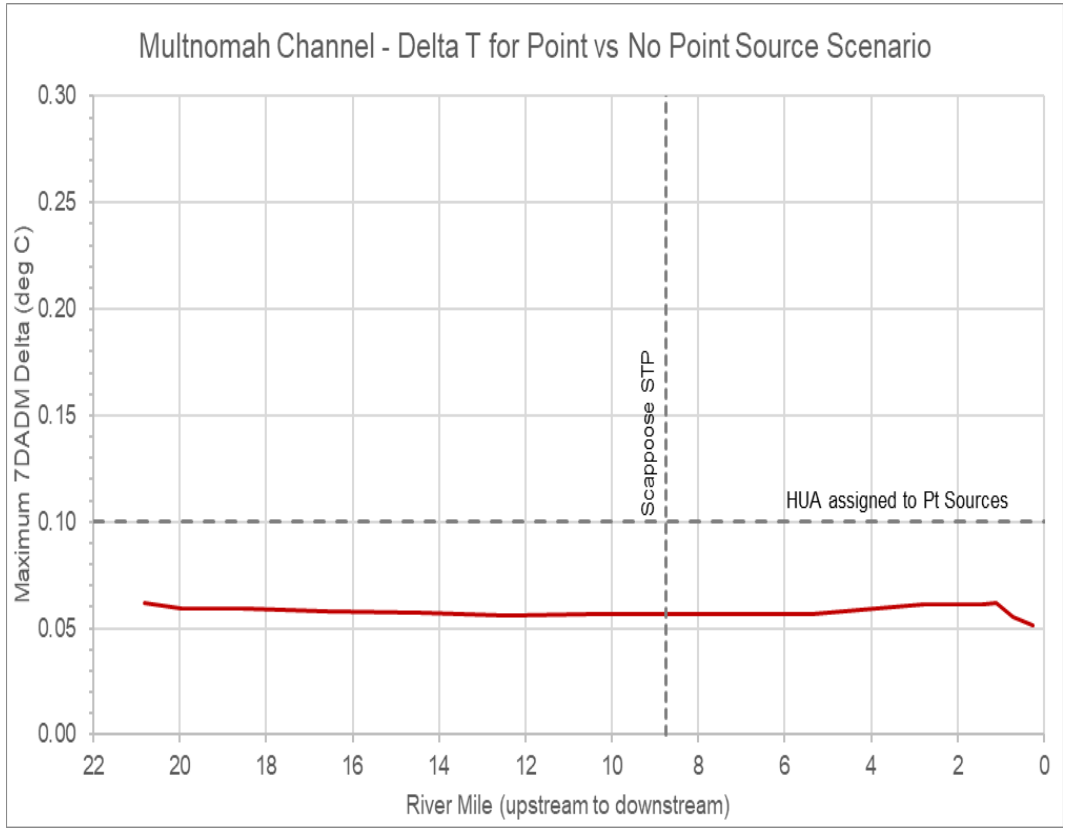




Cumulative effects analysis – impacts of WLAs

Lower Willamette River and Multnomah Channel





Draft wasteload allocation tables

Table 9-11: Thermal WLAs – Upper Willamette River

NPDES Permittee - WQ File Number - EPA Number – Outfall location	Assigned Human Use Allowance ΔT (°C)	WLA period start	WLA period end	Annual 7Q10 River flow (cfs)	Effluent discharge (cfs)	7Q10 WLA (x 10^6 kcals/day)
MWMC - EUGENE/SPRINGFIELD STP - 55999 - 102486 - Willamette River RM 178	0.120	4/1	5/15	1,906	42.6	572.109
	0.107	5/16	10/14	1,466	55.1	398.214
	0.190	10/15	11/15	1,925	86.3	934.986
[1] HARRISBURG LAGOON TREATMENT PLANT - 105415 - 101626 - Willamette River RM 158.4	0.002	4/1	4/30	5,204	1.9	25.474
	0.003	11/1	11/15	3,853	1.9	28.295
CASCADE PACIFIC PULP, LLC - 36335 - 101114 - Willamette River RM 147.7	0.023	4/1	5/15	5,330	16.5	300.865
	0.050	5/16	10/14	3,442	17.3	423.187
	0.022	10/15	11/15	7,281	14.5	392.692
HOLLINGSWORTH & VOSE FIBER CO - CORVALLIS - 28476 - 101331 - Willamette River RM 132.5	0.001	4/15	5/15	5,330	0.1	13.041
	0.001	5/16	10/14	3,442	0.2	8.422
	0.001	10/15	11/15	4,281	0.1	10.474
CORVALLIS STP - 20151 - 101714 - Willamette River RM 130.8	0.016	4/1	5/15	5,330	15.3	209.251
	0.015	5/16	10/14	3,442	9.8	126.681
	0.042	10/15	11/15	4,281	33.3	443.337

Wasteload allocations – opportunity for feedback

Use the following equation to calculate the excess thermal loading (ETL):

$$ETL = (T_E - T_C) \cdot Q_E \cdot C_F$$

Where:

$ETL =$ The daily excess thermal load (kilocalories/day).
$T_C =$ River temperature criterion (°C)
$T_E =$ The daily maximum effluent temperature (°C)
$Q_E =$ The daily mean effluent flow (cfs or MGD)
$C_F =$ Conversion factor for flow in cubic feet per second (cfs): 2,446,665
Conversion factor for flow in millions of gallons per day (MGD): 3,785,411

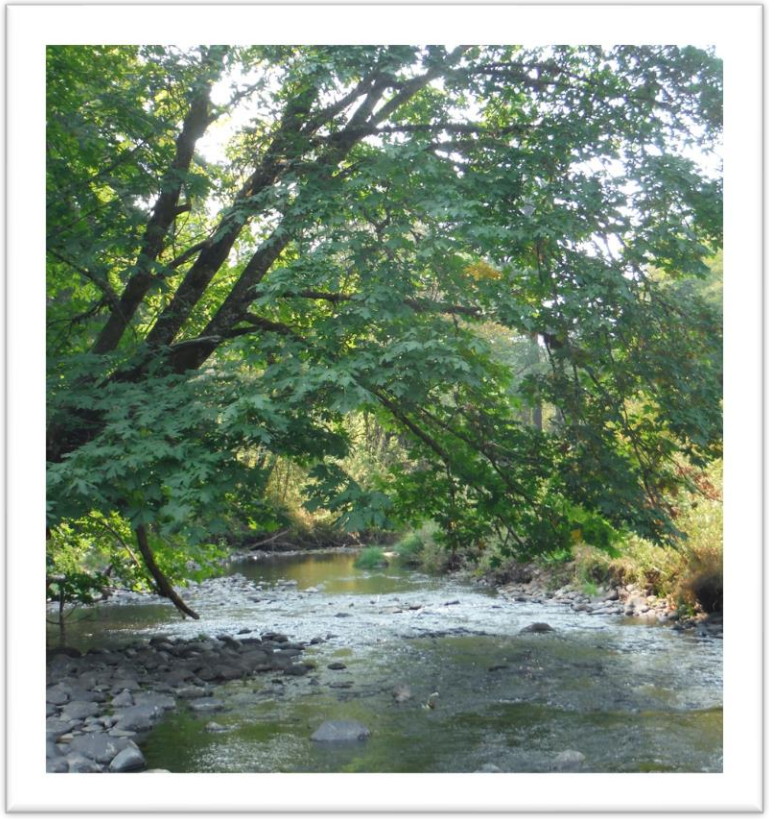
Compare ETL to wasteload allocation (WLA) to assess attainment

Questions?

North Santiam River, Oregon

Water Quality Management Plan: Willamette Mainstem and Major Tributaries

Implementation Plans



WQMP, Section 5: Implementation Responsibilities and Schedule

- Name Responsible Persons, including Designated Management Agencies
- Management strategies that will be used 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)(l)

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 Mainstem project area
  - Majority of list includes existing DMAs from 2006 and 2008 TMDLs

- DEQ is still evaluating which responsible persons, including DMAs need to develop an implementation plan

Management strategies

WQMP, Table 2

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

- Tree and vegetation planting, management and retention, invasive plant control, fencing or other livestock riparian exclusion methods
- Increase site effective shade 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

- 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

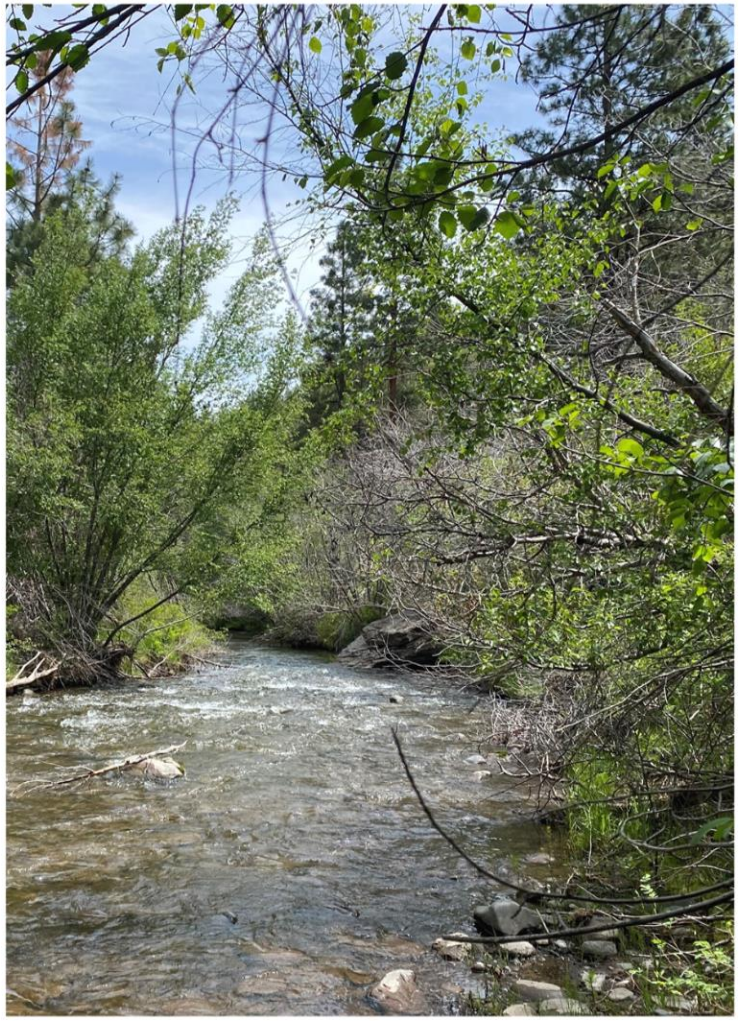
Channel morphology and hydromodification

WQMP, Table 2

- 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

Streamside evaluation: summary of components



WQMP section 5.3.4

- Quantify streamside areas that can be enhanced/protected versus areas with constraints
- Identify opportunities that may exist to address constraints
- Identify areas where there is potential to implement in-stream restoration, flow augmentation, experimental temperature management techniques, enhancement and protection of cold water refuges
- Evaluate information from above to prioritize implementation actions

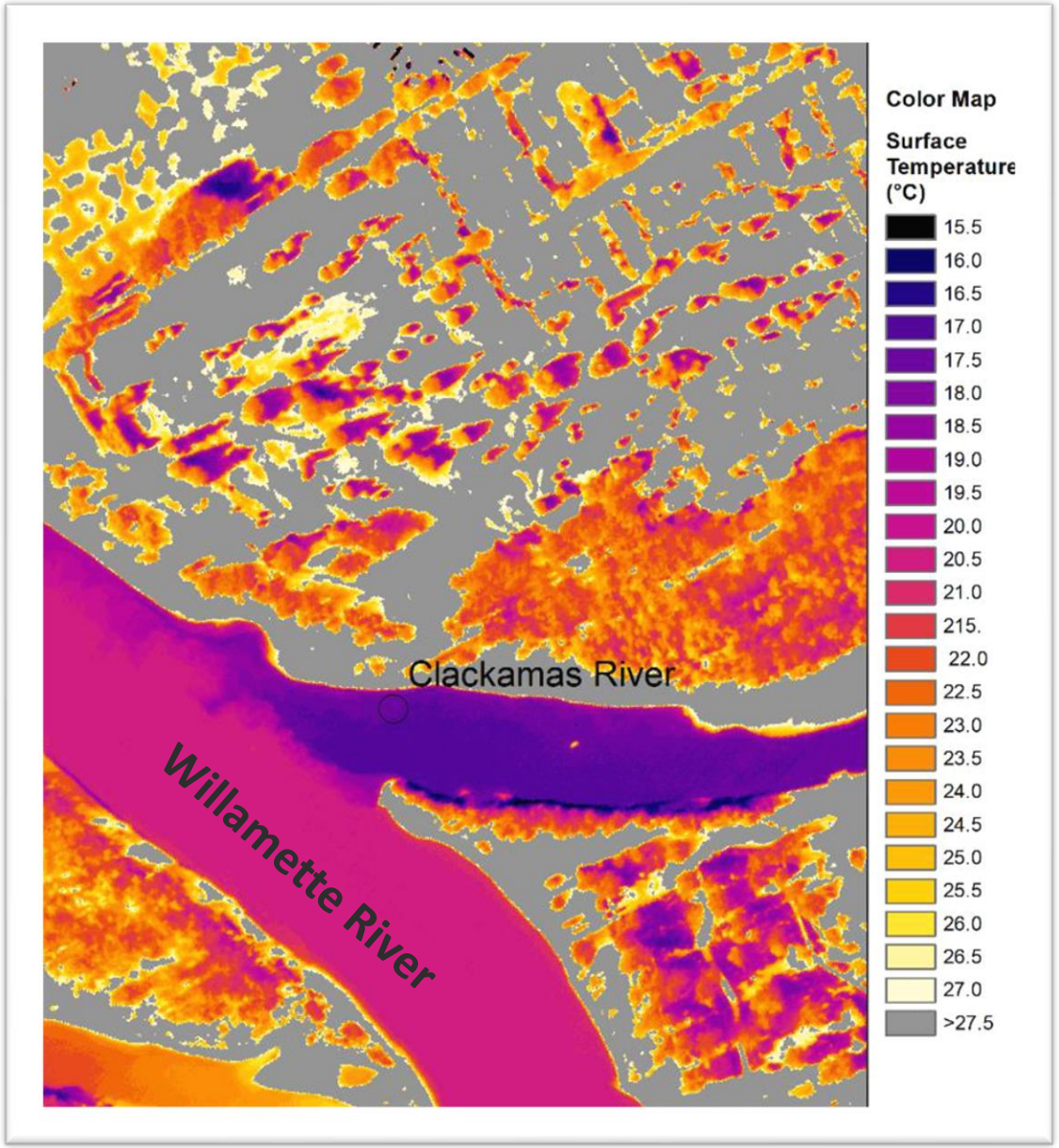
Proposed Streamside Shade Gap Analysis requirement

WQMP section 5.3.4

- ODA, ODF, and BLM must perform assessment to determine whether effective shade allocations are being met for those areas where DEQ did not complete a shade gap analysis
- DMAs that have a DEQ shade gap analysis may choose not to use DEQ's shade assessment and instead:
  - perform their own assessment to determine whether effective shade allocations are being met.
  - confirm and protect or establish overstory, woody vegetation in a 120-foot width buffer zone from the stream bank.

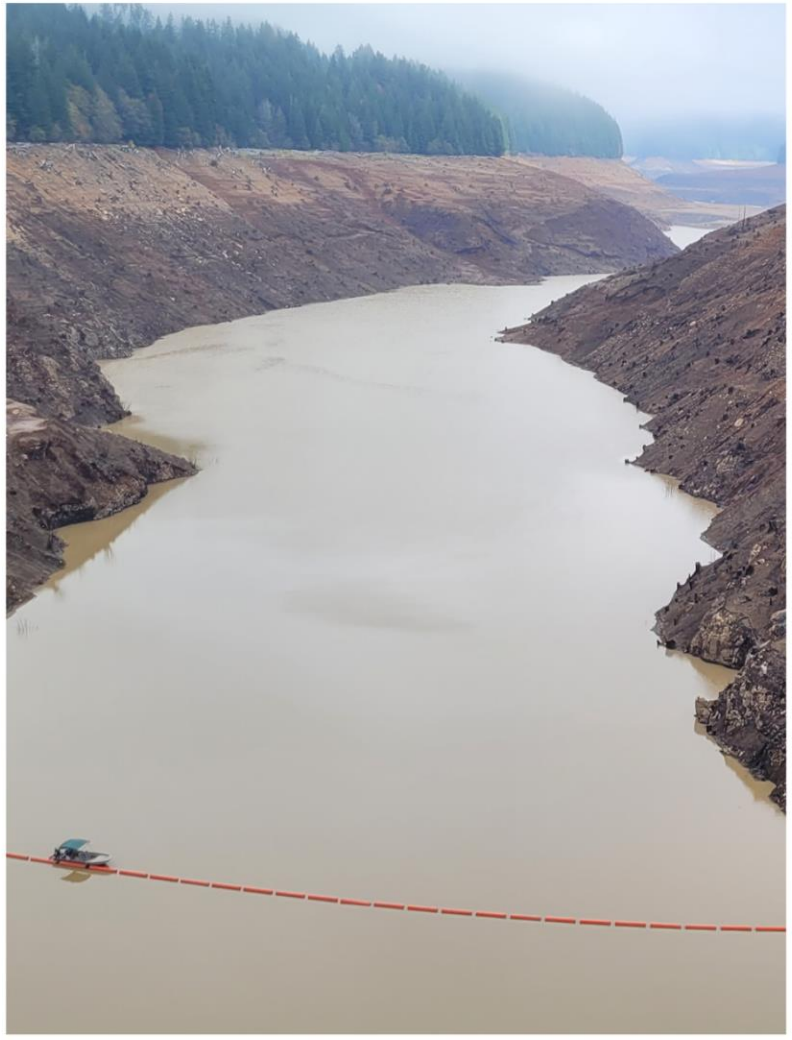
Cold Water Refugia

- Lower 50 river miles of the Willamette River are designated as migration corridor
- Responsible persons and DMAs that have jurisdiction along the corridor must include actions in their TMDL implementation plans to identify, enhance and protect cold water refuges.



Dam owner requirements

- Identified large public reservoir operators will be required to monitor temperature
- Surrogate measure: no additional warming between dam inflow and outflow
- Characterize temperature dynamics
  - Comparisons of inflow and outflow temperatures
  - Stratification timing and extent
  - Water level fluctuations and outflow rates
- Reporting
  - Management Constraints
    - License obligations
    - Operational features
  - Annual Reports
    - Monitoring results
- Adaptive Management
- A TMDL implementation plan may be required



Designated Management Agency required reporting

WQMP, section 5.3

- Upon completion, projects utilizing practices listed in OWEB's OWRI Online List of Treatments must be reported to the OWRI database
- OWRI database will be used to track implementation activities
- Other acceptable databases will be identified when developing implementation plans

Reference: **O**regon **W**atershed **E**nhancement **B**oard
https://www.oregon.gov/oweb/data-reporting/Pages/owri.aspx

Riparian Restoration, Willamette River

Schedule for implementation plan submittal

WQMP, section 5.4

Plans proposed to be due 18 months after EPA-approval of the Willamette Mainstem 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

Designated Management Agency required monitoring

WQMP, section 6

- 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

- ODA, ODF, and BLM 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

Questions?

North Santiam River, Oregon

Draft fiscal impact statement and Oregon Administrative Rule: Willamette Mainstem and Major Tributaries

Division 42
TOTAL MAXIMUM DAILY LOADS (TMDLS)

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.

(d) ~~Willamette Basin – within the USGS subbasins of the of the Willamette Basin, including~~ Temperature TMDLs for the Willamette Subbasins apply to all waters of the state as defined under ORS 468B.005(10), including all perennial and intermittent streams, located in the following USGS subbasins: ~~:~~

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 (HUC 170900).~~

(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

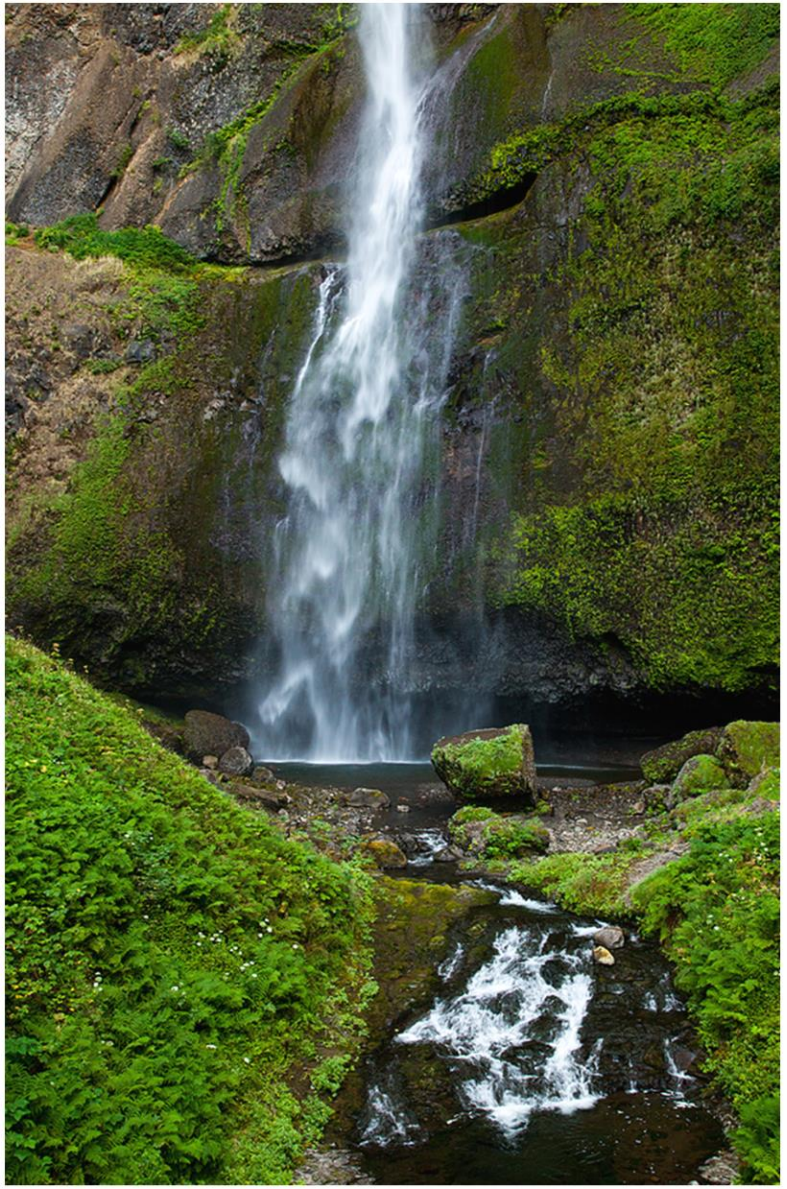
  https://www.oregonlegislature.gov/bills_laws/ors/ors182.html
- Land use compatibility statement

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.MainStem@DEQ.oregon.gov**	Due Friday, March 29, 2024, at 4 p.m.
Rule advisory committee meeting #1 summary online	Friday, March 29, 2024
Meeting #2 meeting materials posted online	Tuesday, April 16, 2024
Rule advisory committee meeting #2	Wednesday, May 1, 2024, at 1 p.m.
Rule advisory committee input - meeting #2 email **Willamette.MainStem@DEQ.oregon.gov**	Due Friday, May 10, 2024, at 4 p.m.
Public notice (45 days)	July – September 2024



Contacts and resources

Steve Mrazik, Water Quality Manager Steve.Mrazik@deq.Oregon.gov
Jim Bloom, Water Quality Analyst James.Bloom@deq.oregon.gov
Michele Martin, Project Manager Michele.Martin@deq.oregon.gov

Basin Coordinators
Evan Haas Evan.haas@deq.oregon.gov
Grace Goldrich-Middaugh, grace.goldrich-middaugh@deq.Oregon.gov
Priscilla Woolverton Priscilla.woolverton@deq.oregon.gov
Brian Creutzburg, Brian.Creutzburg@deq.oregon.gov

Web pages (links to rulemaking pages, Quality Assurance Project Plans, etc.)
Project page:
https://www.oregon.gov/deq/wq/tmdls/Pages/tmdlRwillmainstem.aspx
Rulemaking page:
https://www.oregon.gov/deq/rulemaking/Pages/tmdlrwillmainstem.aspx
Committee input and rulemaking email:
Willamette.MainStem@DEQ.oregon.gov