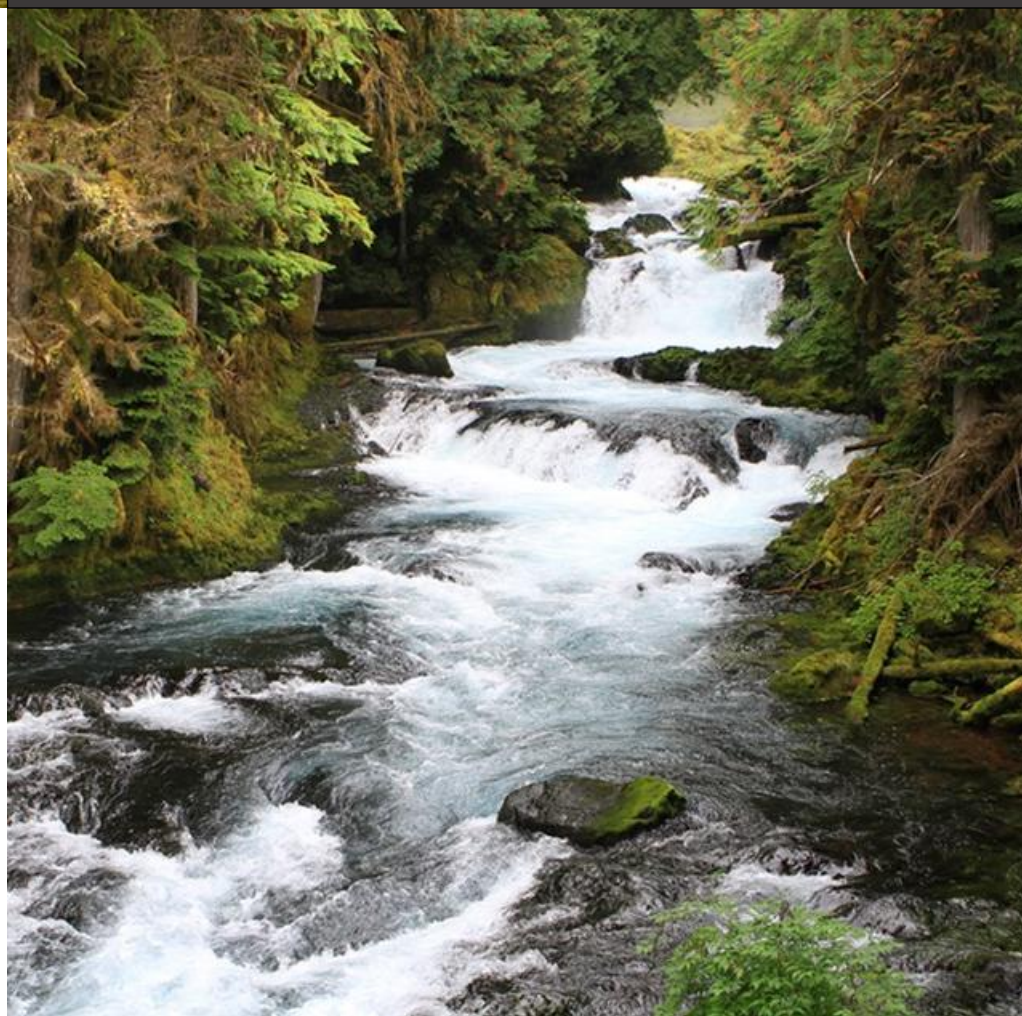
# Total Maximum Daily Loads for the Willamette Subbasins

# Technical Support Document

## Appendix H: Interactive TMDL Map

**Amended, May 2025**



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DEQ Department of Environmental Quality

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The Oregon Department of Environmental Quality prepared a geodatabase containing Geographic Information System layers relevant to the Willamette Subbasins. The GIS layers summarize TMDL project area, various model extents, shade data, data monitoring sites, 303(d) listed waters, and point source discharge locations. The geodatabase will be available to the public and distributed with the TMDL documents. These layers can also be viewed on an interactive map, or may be used in GIS software by adding them from the online feature service.

The fish and spawning use designations included in the geodatabase are intended to be as accurate as possible, however some errors may exist. In addition, the Oregon Environmental Quality Commission has approved and DEQ has submitted to the Environmental Protection Agency updates to the fish and aquatic life use designations. As of April 2025, EPA has not taken action on these updates. If approved, these updates will change the fish use designation and applicable temperature criteria for some AUs. In the case of any discrepancy, the applicable temperature criteria and geographic extent described in rule at OAR-340-041 shall take precedence over the layers in the GIS data. In addition, not all monitoring sites supporting CE-QUAL-W2 models developed by USGS (Stratton Garvin et al 2022) are included. Please refer to the USGS reports for summary of data supporting those models.

The geodatabase contains the following GIS features and location information:

1. TMDL project area boundary.
2. AUs located within the scope of the TMDL project area.
3. AUs impaired for temperature on the 2022 Integrated Report and 303(d) list.
4. The extent of the CE-QUAL-W2 temperature models.
5. The extent of the Heat Source temperature models.
6. The extent of Heat Source shade models.
7. The extent of mapping units used to determine effective shade curve surrogate measure targets.
8. The assessed, target, and effective shade gap associated with each calibrated shade model node.
9. The mean assessed shade, mean site-specific effective shade surrogate measure target, and the shade gap for each of the AUs in the model extents.
10. Effective shade measurement collection locations.
11. The locations of stream flow monitoring sites supporting TMDL model development.
12. The locations of stream temperature monitoring sites supporting TMDL model development.
13. The locations of flow boundary conditions and tributary input sites supporting TMDL model development.
14. The locations of temperature boundary conditions and tributary input sites supporting TMDL model development.
15. The locations of continuous stream temperature monitoring sites supporting TMDL analysis and model development.

16. The locations of meteorological data sources.
17. The locations of domestic and industrial individual NPDES-permitted point source discharges assigned a wasteload allocation in the TMDL.
18. The locations of general NPDES permit registrants assigned a wasteload allocation in the TMDL.
19. The extent of land ownership and jurisdiction of potential designated management agencies (DMAs) and responsible persons (RPs).
20. Eight-digit hydrologic unit boundaries (HUC8 Subbasins).
21. Ten-digit hydrologic unit boundaries (HUC10 Watersheds).
22. Twelve-digit hydrologic unit boundaries (HUC12 Subwatersheds).
23. 2018 city limit boundaries from Oregon GEOHub.

# References

Stratton Garvin, L.E., S.A. Rounds, and N.L. Buccola. 2022. Updates to models of streamflow and water temperature for 2011, 2015, and 2016 in rivers of the Willamette River Basin, Oregon: U.S. Geological Survey Open-File Report 2022–1017, p. 73.