OREGON
WATER RESOURCES DEPARTMENT

Staff Report

TO: Water Resources Commission

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Technical Services Division

DATE: June 11, 2026

SUBJECT: Agenda Item G

THE ROLE OF STREAMFLOW MEASURMENT IN WATER MANAGEMENT

I. Introduction

This agenda item will combine a brief presentation with a field demonstration at Mill Creek to show the resources, tools, and expertise required to collect and apply near-real time, high-quality streamflow information. *This is an informational report*.

II. Integrated Water Resources Strategy Recommended Action

- 1.A - Improve Water Resource Data Collection and Monitoring
- 2.A – Determine Instream Flow Needs (Quality and Quantity)
- 10.F - Provide an Adequate Presence in the Field

III. Background

The Oregon Water Resources Department (OWRD) has a long-standing statutory responsibility to measure and monitor surface water across the state.

High quality, real-time data are essential for effective water rights administration. The Department maintains a long-term network of surface water gages and conducts regulatory measurements that provide the real-time and historical data essential for effective water management, including water availability assessments, equitable distribution and regulation, coordinated surface water operations decision making, and protection of both instream and out-of-stream uses. This network also supplies the foundational hydrologic information needed for modeling, water allocation, surface and groundwater basin investigations, and other complex distribution decisions that support transparent and sustainable water management. See Attachment 1 for a map of the OWRD stream gage network.

To meet these responsibilities, OWRD relies on technical expertise within the Field Services Division and Technical Services Division, specialized equipment, and consistent fieldwork under variable conditions.

IV. Discussion

The Commission session will include the following components:

1. Introductory Presentation and Case Study: Staff will cover why OWRD measures streamflow—touching on regulatory requirements, quantification of water supplies, statutory responsibilities, and the evolution of the state's monitoring network. Staff will discuss procedures and field challenges, resource needs, and examples of real-time gage tools. How accurate measurements support coordinated surface water operations management and ensure water is available for instream and out-of-stream uses will be highlighted. The Tualatin Basin case study will illustrate how these data and processes directly inform active regulation and flow management decisions.
2. Field Demonstration at Mill Creek: Staff demonstrate a method of measurement and equipment as well as the QA/QC protocols used to ensure high-quality, defensible measurements. Staff will also provide an overview of the process for measurement, data collection, and gage record processing.

V. Conclusion

OWRD measures surface water streams and canals, processes hydrographic data, and uses these measurements in water allocation, management, and regulation. This critical work provides a bedrock for managing surface water statewide and requires technical expertise and resources to sustain the monitoring network.

Attachments:

1. Map of gage network

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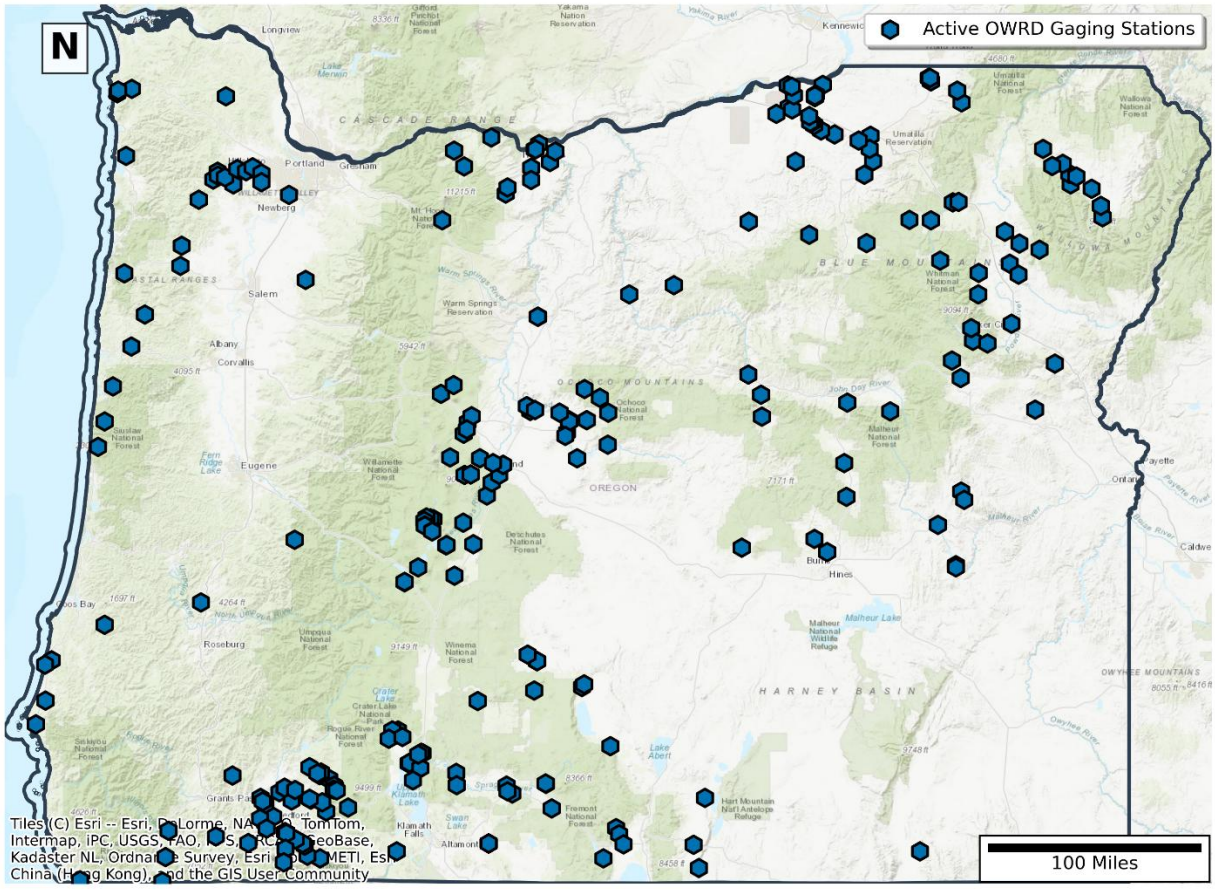
Oregon Water Resources Department
Active Gaging Stations



Author: Kara Morris
Software: Python 3.11.5
Publication Date: 2026-05-06
Coordinate System: WGS 84 / Pseudo-Mercator
Horizontal Datum: WGS 1984 | Units: Meters

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Map 1. Gages state-wide operated by the Oregon Water Resources Department. Note that the USGS operates gages (not shown here), and that there are portions of the state where channel conditions or accessibility preclude effective gaging.