



Oregon

Kate Brown, Governor

Water Resources Department
North Mall Office Building
725 Summer Street NE, Suite A
Salem, OR 97301-1271
503-986-0900
FAX 503-986-0904

MEMORANDUM

TO: Water Resources Commission

FROM: Ivan Gall, Field Services Division Administrator *IG*
Brenda Bateman, Technical Services Division Administrator *BB*
Ken Stahr, Surface Water Hydrology Manager *KSK*

SUBJECT: Agenda Item L, May 12, 2017
Water Resources Commission Meeting

Water Use Measurement and Reporting

I. Introduction

During this informational report to the Commission, staff will outline the Department's most common authorities related to water use measurement and reporting, describe the basic tools and approaches to water use measurement, and how water measurement data are used.

II. Discussion

The Department has different authorities related to water use measurement and water use reporting. These authorities range from allowing the Department to require a water right holder to install a measuring device, measure and record water use, or to measure and report water use. Additional information on the Department's authorities and the status of water use measurement and reporting is provided in Attachment 1.

During the January 2017 Water Resources Commission meeting, staff noted an interest in revisiting the Commission's 2000 Strategic Measurement Plan to better address high-priority water management needs for both surface and groundwater. A description of the plan and progress on its implementation is included in Attachment 1. Reviewing the Department's approach to water use measurement is consistent with recommendations of the Secretary of State's Audit report, which suggested the agency should look at expanding review and analysis of water use in the state, and also assess field staff workloads.

Water use measurement has also been a focus of the 2017 Oregon Legislature. Representative Ken Helm introduced House Bill 2705, which would require statewide water use measurement. The bill is currently in the House Committee on Rules to allow time for further policy discussions. Over the last several months, Department staff have been participating as a non-voting member of Representative Helm's water workgroup, which has been formed to focus on water use measurement.

III. Conclusion

The need for better data and water use measurement is highlighted in the Integrated Water Resources Strategy and the Department's 2016 Monitoring Strategy. Given that the State has had limited resources to invest in collecting and analyzing data, the Department has sought to prioritize its data collection efforts in areas of highest need through targeted approaches. The Department anticipates engaging with the Commission in discussions about water use measurement in the future. This informational report is intended to provide the Commission with background information in anticipation of future work in this area.

Attachment:

1. Background Information on Water Use Measurement

Ivan Gall, Field Services Division Administrator
503-986-0847

Ken Stahr, Surface Water Hydrology Section Manager
503-986-0838

Brenda Bateman, Technical Services Administrator
503-986-0879

Background Information on Water Use Measurement



Overview of Water Law

Under Oregon law, all water belongs to the public. With some exceptions, cities, irrigators, businesses, and other water users must obtain a permit or license from the Water Resources Department to use water from any source - whether it is underground, or from lakes or streams.

Most water rights are obtained in a three-step process. The applicant first must apply to the Department for a permit to use water. Once a permit is granted, the applicant must construct a water system and begin using water. After water is used, the permit holder must submit specific information to the Department detailing how and where water has been applied. If water has been used according to the provisions of the permit, a water right certificate is issued.

Water Use Measurement and Reporting Requirements

The Department may require a water right holder to install a measuring device, measure and record water use, and report water use. Below, the Department has outlined its most common authorities related to water use measurement and reporting; however, there are other instances in which water use measurement and/or reporting may be required that are not outlined below.

Measuring and Reporting Water Use

Water right holders that are required to both measure and report water use include: (1) governmental entities, (2) water rights with permit conditions, and (3) water users in a Serious Water Management Problem area or a Critical Groundwater Area.

Pursuant to ORS 537.099, Oregon requires governmental entities such as irrigation districts, state or federal agencies, and municipal water providers to measure and report water use. Starting in the early 1990's the Department began adding water measurement and/or reporting conditions to new permits, based on the size of the water right. Smaller water rights may have a condition stating that "water measurement may be required," while larger permits may have a condition that "water measurement and reporting is required." Currently, there are more than 14,800 water rights that are required to measure and report water use. This is about 16 percent of the total number of water rights in the state. In 2015, the Department received water use data for approximately 10,260 water rights.

Finally, water users in a Serious Water Management Problem Area (SWMPA) or in a Critical Groundwater Area may be required to measure and report water use. Currently, there are no established SWMPAs, and there are seven Critical Groundwater Areas.

Measuring Water Use

Water Distribution - In instances where water use measurement and reporting are not required as discussed above, the watermaster generally can require water measurement under ORS 540.310 for the purposes of water distribution and management. Under this provision, *there is no authorization to require reporting of water use.*

2000 Strategic Measurement Plan - In 2000, the Water Resources Commission developed a strategic plan for improving surface water measurement statewide. The plan focused on measurement of diversions with the greatest impact on streamflows in areas with the greatest needs for fish. The Department developed a statewide inventory of 2,385 "significant surface water diversions" within 300 high priority watersheds across the state. Significant surface water diversions included: (1) water rights that are required by the Department to measure or report through a water right condition; and (2) rights without a condition that were greater than 5 cubic feet per second, or greater than 10 percent of the lowest monthly 50% exceedance flow and greater than 0.25 cfs. As of December 2016, 1,034 of the significant diversions had measuring devices installed and 658 were abandoned, leaving 693 diversions still needing measuring devices installed.

Use of the Data

Water measurement can help the Department to protect existing water right holders, facilitate planning for future water supplies, maximize the beneficial uses for both instream and out-of-stream users, and prevent time-consuming and costly conflicts over water use.

Water measurement data are used in the following areas:

- **Science:** Water use data can be used in helping to refine the Department's surface water availability model, which is used to evaluate whether new water rights can be issued. Similarly, data are used in basin groundwater studies to assist with characterizing the aquifers and in long-term management of aquifers, including critical groundwater areas.
- **Water Management and Distribution:** Water measurement information can aid watermasters in efficiently distributing and regulating water use for the protection of senior water rights, resolving disputes among water users, and ensuring use is within the limits of the water rights.
- **Review of Water Right Transactions:** Water use measurement data provide evidence of use for water right permit holders to prove up and obtain a water right certificate. Historical water use data can assist in injury determinations for water right transfers, permit amendments, exchanges, and voluntary instream leases. Water use information can support water use efficiency projects and conservation projects.
- **Management by Water Users:** For water users, measurement information can increase awareness of the amount of water they use and provide a basis for self-regulation. Measurement data can also help water users identify system inefficiencies, track stored water, reduce power costs, measure conservation benefits, and develop improvements in their business operations and plan for future needs. In addition, water use data provides evidence for a water right holder to prove up on a water right, rebut allegations of forfeiture for non-use, or demonstrate the validity of water rights to potential buyers. Governmental entities also use this information in developing agricultural and municipal water management and conservation plans.

Measurement Challenges

When analyzing water use measurement data supplied by the water right holder, the Department reviews the quality of the data and utilizes only data that it has a reasonable confidence in its accuracy. Accurate water use data can be beneficial to water managers as well as water users; however, collecting water use data can be challenging as water systems are often unique. To ensure data are accurate, the correct device must be properly installed according to the engineering specifications and some devices must be calibrated. Once installed, the device must be maintained in good working condition, which can be hampered by natural conditions such as sand, ice, debris, or algae. The water user must also read and report the data accurately, including identifying the accurate points of diversion/appropriation, and the associated water rights. The Department frequently works with water users to address these challenges and improve data accuracy.

The cost of measuring devices can also be a challenge for water users, with devices costing several hundred to several thousand dollars. The Legislature's continued capitalization of the Department's cost-share measurement program has allowed the Department to provide funding to assist water users with installing or replacing water measurement devices on surface water diversions, reducing users' concerns about the cost of installing these devices. Unfortunately, this program is limited to surface water; House Bill 3051 would allow the Department to also assist groundwater users in installing measuring devices through this program.

Targeted Water Use Measurement Efforts

Oregon's 2012 Integrated Water Resources Strategy provides a blueprint for meeting Oregon's instream and out-of-stream water needs. The need for better data and water use measurement is highlighted throughout many actions of the Strategy. Given that the State has limited resources to invest in collecting and analyzing data, as discussed in the Department's 2016 Monitoring Strategy, the Department has sought to prioritize its data collection efforts in areas of highest need through targeted approaches. Since 2000, the Department has been working on implementing its 2000 Strategic Measurement Plan. In recent months, the Department has identified a need to revisit this plan to better address high-priority water management and policy needs for both surface and groundwater.

Legislative Contact

Racquel Rancier, Senior Policy Coordinator
racquel.r.rancier@oregon.gov