



Oregon

Tina Kotek, Governor

Water Resources Department

725 Summer St NE, Suite A

Salem, OR 97301

(503) 986-0900

Fax (503) 986-0904

www.Oregon.gov/OWRD

MEMORANDUM

TO: Water Resources Commission

FROM: Annette Liebe, Technical Services Division Administrator
Justin Iverson, Manager, Groundwater Section

SUBJECT: Agenda Item B, September 28, 2023
Water Resources Commission

Groundwater Allocation Rulemaking Update

I. Introduction

This report provides information on the Department's efforts to update rules for allocating new groundwater rights, including an outline of some of the concerns and issues discussed to date. *This is an informational report.*

II. Integrated Water Resources Strategy Recommended Action

- 10.G – Strengthen water quantity and water quality permitting programs
- 11.E – Develop additional groundwater protections

III. Background

Statewide monitoring data indicates that in many parts of the state groundwater levels are declining and surface waters are overallocated. This proposed rulemaking is in response to the Commission's request that staff modernize the criteria for allocating new groundwater rights to better protect existing water right holders and sustainably manage the resource. The Department is engaged in a rulemaking process and is drafting rules designed to fulfill the Department's statutory obligations to preserve the public welfare, safety, and health as per ORS 537.525 and 537.621.

In evaluating an application for a new groundwater permit the Department applies the following four-part test: 1) is the proposed use allowed in the basin, 2) is water available, 3) will other water rights be injured, and 4) does the proposed use meet additional Commission standards and rules (e.g. well construction rules, state scenic water ways requirements, etc). This rulemaking proposes to modify the determination of "water is available."

IV. Rule Advisory Committee and Public Input

The Department has drafted proposed rules and assembled a Rules Advisory Committee (RAC) consisting of 30 members representing a broad range of interests. The Department held six hybrid RAC meetings in 2023, which were open to the public to attend (April 19, May 10, May 31, June 21, August 2, and September 13). Throughout the process, the RAC and members of the public have provided input on the draft rules as well as the draft statements of Need, Racial Equity Impacts, and Fiscal and Economic Impacts. The Department discussed the groundwater allocation rulemaking project at Groundwater Advisory Committee meetings held since March 2022, totaling 7 meetings as of June 2023. Input from both groups has informed and helped the Department to improve the proposed new rule language.

V. Key Issues

The predominant policy proposals in the draft rules are: (A) defining and expecting that reasonably stable (i.e., sustainable) water levels exist when evaluating an application for a new groundwater permit, and (B) expanding protection from the impacts of groundwater withdrawals on hydraulically connected surface water sources that are already over-appropriated. Taken together, the draft rules are likely to result in a finding of “water is not available” more often than occurs under the current rules. This will likely require that some entities, such as municipalities, meet their growing water needs by means other than new groundwater right allocations, such as through water right transfers, conservation, storage, or other programs or projects.

While many RAC members agree that a more sustainable approach is needed and support the Department’s efforts to modernize, others are concerned that opportunities for securing new groundwater rights will be more limited. During the RAC process, two aspects of the proposed rulemaking have been the source of significant questions and comments: (A) the meaning of “sustainable” in the context of the rulemaking, and (B) the threshold of allowable impacts to overallocated surface water arising from issuance of new groundwater rights. Additional RAC member comments and considerations are summarized in Section C below.

A. Meaning of “sustainable” in the context of the rulemaking

For this rulemaking, the Department has relied on the groundwater sustainability definition of Gleeson et al. (2020)¹ as “maintaining long-term, dynamically stable storage and flows of high-quality groundwater using inclusive, equitable, and long-term governance and management.” Gleeson et al. (2020) recommend a process for attaining groundwater sustainability by defining: (1) goals for future groundwater conditions, (2) technical terms, and (3) time scales, and then setting rules for groundwater management supporting achievement of the envisioned future conditions.

¹ Gleeson et al., 2020, [Global Groundwater Sustainability, Resources, and Systems in the Anthropocene](#) (Annual Review of Earth and Planetary Science, 48: 431-463).

1. **Goals:** To define the goals for future groundwater conditions, the Department has looked to the Legislative Policy in ORS 537.525 and the Commission Policy in OAR 690-410, as well as this Commission's request in December 2021 that the Department propose changes to the groundwater allocation process that are more protective of existing users and support a sustainable groundwater resource.
2. **Terms:** The draft rules define the (historically undefined) statutory term "reasonably stable water levels" (ORS 537.525(7)). The proposed definition was developed to accommodate groundwater level fluctuations in response to climate cycles historically observed in Oregon (generally on time scales of 10 years or less), while identifying water level trends indicative of ongoing loss of aquifer storage over time. The proposed definition sets a **rate-based threshold** of half-a-foot per year over a 5- to 20-year averaging period. In instances where declines within the allowable rate persist for long periods (over several decades), the definition further defines a **threshold for total declines**, which includes both a 25-foot decline in water level, or an 8 percent reduction of the saturated aquifer thickness (i.e., distance from the water table to the bottom of the aquifer), whichever is less. If the defined rate or total decline threshold is exceeded, the Department would find water is not available for further allocation.
3. **Timescale:** The statutory requirement for maintaining reasonably stable groundwater levels has no set time limit. Given the Commission's policy that groundwater shall be managed to promote efficient and *sustainable* use for multiple purposes (OAR 690-310-0010(1)), the Department's proposed goal for the time scale of maintaining reasonably stable water levels is "in perpetuity." Where groundwater level records indicate that water levels are not reasonably stable, water would not be available for further allocation.

RAC members differ in views concerning the appropriate timescale to apply when evaluating criteria used to determine groundwater availability for issuing new permits. Some RAC members also note that the concept of groundwater sustainability is not limited to balancing the physical resource itself (i.e., balancing a water budget) but also taking into consideration the economic and social sustainability related to groundwater uses.

B. Determining the threshold for allowable impacts to surface water

1. **Goals:** To define the goals for preventing substantial interference with existing surface water rights, the Department has looked to the Legislative Policy in ORS 537.525 and 537.629, the Commission Policy in OAR 690-410, as well as this Commission's request in December 2021 that the Department propose changes to the groundwater allocation process that are more protective of existing users and support a sustainable groundwater resource.
2. **Terms:** With respect to defining terms, the Department has proposed to define the term "potential for substantial interference," or PSI, in Division 9 and redefine "substantial interference" in Division 8. Currently, PSI is limited to acute groundwater pumping impacts on streams. It is analyzed only for one single groundwater right application under

review, and only for those wells in that application that are within a mile of a stream. Seasonal effects are only considered within a single pumping season. The proposed approach accounts for long-term and cumulative impacts of past and proposed groundwater allocations in the same aquifer system. The proposed rules rely on generally accepted hydrogeologic principals and the best available information, which indicate that wells pumping from aquifers that are hydraulically connected to streams will eventually derive all pumped water from streamflow capture (Barlow and Leake, 2013²). Therefore, the proposed rules define Potential for Substantial Interference to exist whenever a proposed groundwater use is determined to have hydraulic connection with a surface water source and that Substantial Interference occurs whenever a hydraulically connected surface water source is already over-appropriated, subject to watermaster curtailment of existing junior rights, or otherwise withdrawn from further allocation.

3. Timescale: The proposed rules set a timescale for assessing future impacts to surface water from new groundwater right applications as “the full term of the proposed use,” or, for water rights that may be certificated and have no expiration date, essentially forever. Proposed time-limited rights, as may be allowed by law (e.g., limited licenses or emergency drought permits), would be assessed based on the duration of the valid right.

Under the draft Division 9 rules, a new groundwater right application from a hydraulically connected aquifer would be assessed as though the full rate and duty will be derived from streamflow capture, and an assessment of the impacted stream(s) using the Water Availability Reporting System will determine whether hydraulically connected surface water is available to support the proposed groundwater use. Because groundwater pumping impacts to surface water flows are spread over time and distance, the current proposed rules require that surface water flows must be available 12 months of the year to support a proposed groundwater use. Therefore, where hydraulically connected surface water sources are not available for further allocation in the Water Availability Reporting System for the driest month of the year, hydraulically connected groundwater would also not be available for further appropriation during any time of the year. Given the draft rule changes, hydraulically connected aquifers would be closed to further groundwater appropriation in most parts of the state under the proposed rules.

C. Other RAC Comments and Recommendations

Some other RAC comments and recommendations and the Department’s current thinking are summarized in this section:

- ***The definition of “reasonably stable water levels” may be too restrictive in some cases.*** On behalf of Central Oregon Cities Organization (COCO), a RAC member suggested that the Deschutes Basin, and perhaps other relatively thick aquifers, should be managed to allow for depletion of 15% of the saturated thickness of the aquifer, which is approximately 150 feet of decline in the case of the central Deschutes Basin. Other RAC

² Barlow, P.M., and Leake, S.A., 2012, [Streamflow depletion by wells—Understanding and managing the effects of groundwater pumping on streamflow](#) (U.S. Geological Survey Circular 1376).

members have noted that groundwater level declines of even less than one foot can have adverse impacts on systems of unique ecological value such that the definition may not be protective enough.

- Considerations for determining if the definition is not restrictive enough: The definition of reasonably stable water levels was designed to provide relatively consistent findings of water availability given groundwater level equilibrium with climate cycles. The natural variability is termed the “dynamically stable range” by Gleeson et al. (2020)¹, and data demonstrate that it exceeds 20 feet in many wells in Oregon. Limiting total declines to less than 25 feet would cause these wells to oscillate between “reasonably stable” and not “reasonably stable” due to natural changes within this dynamically stable range.
- Considerations for determining if the definition is too restrictive:
 - Allowing for total declines in excess of the dynamically stable range described above is not a sustainable management policy and is instead termed “managed aquifer depletion” by Gleeson et al. (2020)¹. ORS 537.525(7) calls for “reasonably stable groundwater levels [to] be determined and maintained,” and does not provide authorization for managed aquifer depletion strategies.
 - Allowing up to 150 feet of total decline in the Deschutes Basin would likely allow most wells there to go dry. An assessment of water well depths in the central part of the Deschutes Basin, conducted by COCO and presented to Department staff in July, indicated that approximately 55% of water wells would go dry given 75 feet of water level decline (3,619 of 6,557 water wells constructed between 1967 and 2022 in their area of assessment). While this level of water level decline would not be expected to occur uniformly over the full area of assessment given the hydrogeologic setting, this assessment indicates a significant number of existing wells in the area at risk of going dry given a theoretical policy of managed aquifer depletion allowing 75 feet of water level decline. Many more wells could be expected to go dry under a policy allowing 150 feet of decline.
- In both cases, the proposed definition of “reasonably stable water levels” offers the opportunity for a superseding definition to be adopted in basin program rules, so long as that definition does not exceed the water-level-trend limits defined by the Division 8 definitions of “excessively declined” and “declining excessively”.
- ***The definition of “Potential for Substantial Interference” may be overly protective.*** The proposed definition clarifies that new allocation from a groundwater source that is hydraulically connected to an already over-appropriated surface water source will trigger the “potential for substantial inference.” Many RAC members were supportive of the science-based approach recognizing that groundwater and surface water are connected and depletion of one source can impact the other. The draft rules do not define a *de minimis* threshold for allowable impacts, given that any proposed use would be junior to

already unmet rights from hydraulically connected streams. One RAC member suggested specifying a measurable amount of surface water impact acceptable when issuing a new groundwater right from an aquifer system that is hydraulically connected to over-appropriated surface water.

The proposed definition is consistent with the doctrine of prior appropriation and the Commission's directive to be more protective of existing water right holders. To issue new permits for groundwater use that will impact hydraulically connected surface water sources would, to some degree, authorize the most junior users (the applicants for future water rights) to continue to erode the limited amount of surface water flows that are already insufficient to satisfy senior water rights.

- ***The proposed rules may have adverse economic impacts to the agricultural sector.***
The agricultural sector is expected to be the largest beneficiary of a more protective allocation policy over the long-term because the proposed rules prioritize sustainable water availability for existing water rights holders, and water rights for irrigation constitute the largest class of existing water rights. Department staff have encouraged RAC members to submit information concerning economic impacts throughout the RAC process.
- ***Reliance on instream water rights may not be sufficiently protective of all ecological systems, especially groundwater-dependent ecosystems such as springs, seeps, and wetlands.***
Statutory authority exists for instream water rights and other water rights for "wildlife" or related use designations within the prior appropriation system. However, some springs, seeps, and wetlands that do not have an associated water right and are not tributary to other surface water sources that have an existing right, are not protected by the prior appropriation system.
- ***Concerns over how and whether to incorporate climate change.*** Some RAC members are concerned that the proposed rules do not take climate change into account. Other RAC members caution against making assumptions about future groundwater availability with respect to climate change, noting best available science from global climate projections currently results in unclear predictions for changes in groundwater recharge in Oregon.

The draft definition of reasonably stable water levels is not specific to a particular cause of declining water levels; therefore, the draft new groundwater allocation process would, if adopted, limit further appropriation if water level declines occur due to climate-change impacts.

- ***The proposed rule language should be simplified.***
Department staff have worked with the RAC to explore other ways to minimize the number of rule divisions that were edited and to simplify rule language and cross-references. The proposed rule changes have been done surgically, working within

existing division rules and statutory authority, to minimize impacts to other programs that rely on the same set of rules.

VI. Rulemaking Status and Next Steps

The final RAC meeting is scheduled for September 13, 2023. The Department is reviewing all RAC and public input received to date on the draft rules as well as the draft statements of Need, Racial Equity Impacts, and Fiscal and Economic Impacts.

The Department is targeting a November 1 publication of the Notice of Proposed Rulemaking in the Oregon Bulletin to open the public comment period. The Department will provide for a 90-day public comment period, which will include several hybrid public hearings held across the state. The Groundwater Advisory Committee also will be briefed and asked to provide input during the public comment period. During the month of February 2024, the Department will incorporate appropriate public input into the draft rules and intends to present the final proposed rules to the Commission for adoption at their March 2024 meeting.

Justin Iverson
503-302-9728

Annette Liebe
971-375-7322