# Groundwater Allocation Project Outreach Meetings Summary Report

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# Contents

## Executive Summary

The Oregon Water Resources Commission (Commission) directed the Oregon Water Resources Department (OWRD) to update and modernize Oregon's groundwater allocation policy. Modernizing groundwater allocation is a top priority for the Commission. The objective is to update the Department's rules and policies to protect existing surface water and groundwater users and to maintain sustainable groundwater resources.

OWRD is seeking feedback on their approach to assessing groundwater availability and new ideas and suggestions for modernizing the groundwater allocation process in Oregon. From September to October 2022, OWRD held five hybrid outreach meetings and shared with the public, including water rights holders, information, and ideas for updating the agency's groundwater allocation approach. OWRD offered several mechanisms for the public to provide their feedback and input. This report summarizes the outreach activities and public feedback, including new ideas and suggestions for modernizing the groundwater allocation process in Oregon.

# 1. Overview

## 1.1 Report Purpose

This report outlines the outcomes of the Oregon Water Resource's Department (OWRD) engagement with the public in September-October 2022 in gathering feedback, ideas, and suggestions to inform the revision and modernization of Oregon's groundwater allocation process. The report identifies key input and concerns received from the public, including water rights holders. This report was prepared by Kearns & West (KW), a neutral third-party consulting firm contracted by OWRD.

## 1.2 Background

OWRD staff has worked with and presented information to the Water Resources Commission (Commission). The Commission and OWRD met and discussed Oregon's groundwater allocation policy in Winter 2021-2022. During Spring 2022, staff generated initial concepts for a revised groundwater allocation policy. In Summer 2022, the Commission directed OWRD to conduct outreach around the state and gather additional public input and feedback on the department's initial concepts. Public input and feedback will inform OWRD's internal team responsible for drafting the rule updates.

OWRD held a total of five hybrid outreach meetings in September-October 2022. In these meetings, staff reviewed Oregon's current framework for groundwater allocation and shared their initial concepts for revising the groundwater allocation process. The meetings informed key stakeholders and the public, including water rights holders, and provided an opportunity for public input. Meeting participants provided their feedback on the agency's approach to assessing groundwater availability and new ideas and suggestions for modernizing the groundwater allocation process in Oregon.

The change to the groundwater allocation process focuses on updating the assessment of ground and surface water availability for new and future groundwater rights. The change will not affect exempt groundwater use,[1] the regulation of existing water rights, or the water rights transfer process.

## 1.3 Meeting Topics

OWRD followed the same agenda and covered the same meeting topics at each of the hybrid outreach meetings. Meeting topics included:

- Introduction to groundwater hydrology.
- Overview of Oregon's current groundwater allocation process.
- Concepts for modernizing the process.

OWRD presented background information at these meetings to foster a common understanding among the meeting participants of groundwater and the issues with the current allocation

[1] Exempt use: These uses are set aside in statute and are uses in groundwater in which a permit is not needed. The top four exempt groundwater uses include: 15,000 gallons per day (gpd) single or group domestic, 5,000 gpd industrial or commercial, stock water, and irrigation up to one-half acre of lawn or non-commercial garden.

process. Previous presentations and staff reports to the Commission[2] informed these outreach meeting presentations.

### Key Groundwater Concepts

OWRD staff reviewed key groundwater concepts and explained what groundwater is, its role in the hydrologic cycle, and the connection between groundwater and wells.

Groundwater is water held in rock and soil pore space or fractures in rock formations beneath the Earth's surface and is dominantly accessed through wells, as shown in *Figure 1.* That water is part of the hydrologic cycle and actively recharges through the infiltration of precipitation or snowmelt. Water flows through the ground from its source of recharge and discharges elsewhere. On a long-term timescale, the amount of water going into a system balances with water going out of a system. In Oregon, this water often discharges into streams.

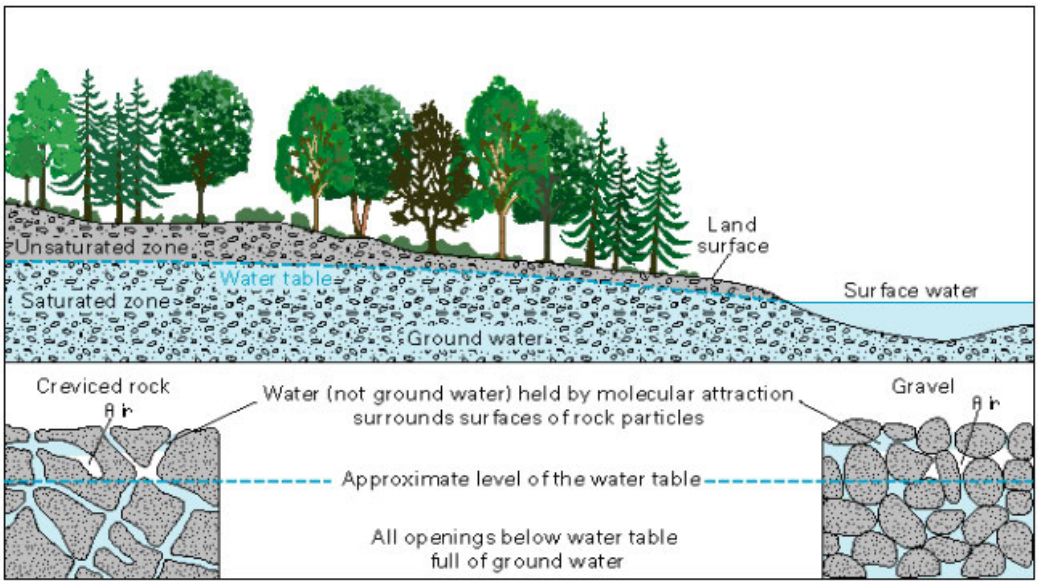


*Figure 1. Visualizing groundwater. USGS(http://water.usgs.gov/edu/earthgwaquifer.html)*

Via recharge, water percolates down to the water table, joins the groundwater system, and flows into a stream as baseflow. Baseflow creates some proportion of surface water and can be additive to stormwater or direct runoff. At times, baseflow can become the more dominant part of the overall flow in a stream.

Baseflow is dominantly groundwater, and groundwater is pumped from wells. A drilled well allows water to be pumped, and this draws the water level down around the well and impacts the water table, termed a cone of depression. This cone of depression induces a flow of water to the well as seen in *Figure 2.*

[2] For more background information and details, visit bit.ly/owrd-gwallocation-timeline for links to several staff reports and video presentations to the Commission.

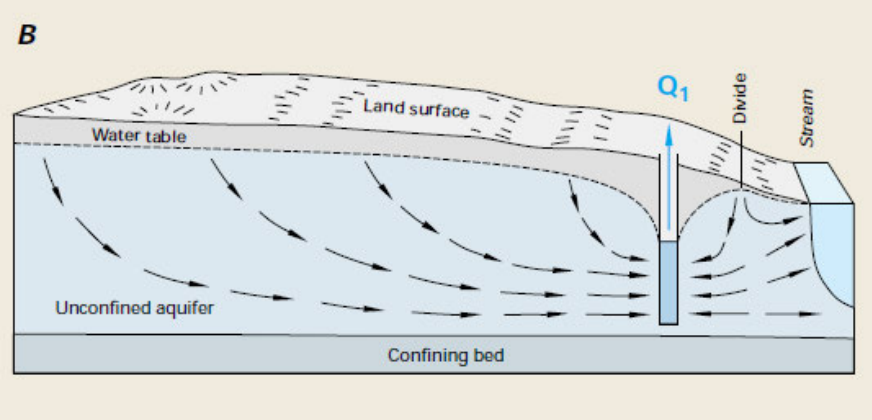


*Figure 2. USGS Circular 1139, Groundwater and Surface Water: A Single Resource*

At early pumping times, water in the pore space flows into the well, drains pore space, and over time the cone of depression expands and drops and can begin to capture flow from a surface water body, such as a stream. Groundwater flows from high to low potential, and with the combination of elevation of the water table and pressure, pumping from a well can lower the water table that drives flow and as that drops below stream level it will start drawing water from the stream, as seen in *Figure 3.*

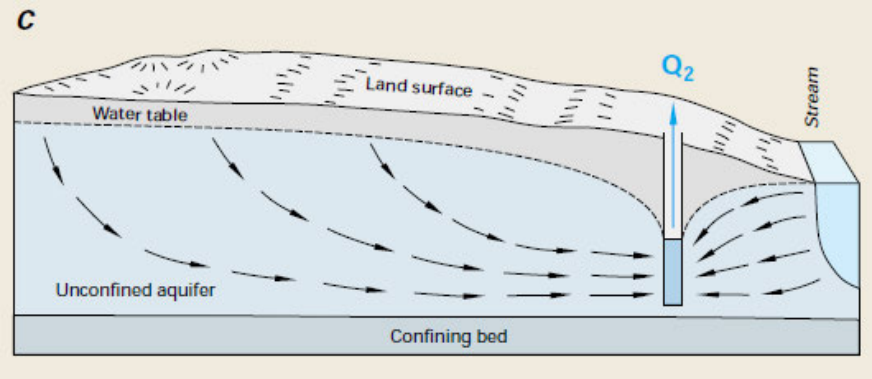


*Figure 3. USGS Circular 1139, Groundwater and Surface Water: A Single Resource*

## Existing groundwater allocation process and issues

OWRD has been allocating groundwater over the past 65 years; in some areas of the state groundwater use has contributed to reduction in surface water baseflow and groundwater level declines.

OWRD acknowledges that the existing allocation process generally protects against short-term acute impacts to surface water, but does not currently address cumulative and long-term impacts to existing users and the groundwater system over time. For example, when an application is reviewed for a new groundwater right, it is reviewed in the context of the immediate surrounding area (generally within a mile) for potential short term (generally within a year) impacts to existing groundwater or surface water users. In the past, where data has not been available to assess whether the resource is overappropriated, OWRD's practice has been to indicate "can not be determined"; notwithstanding a finding of "can not be determined," the department's practice was to issue permits. These permits also generally contain conditions

requiring the permit holder to collect data and provide that to the department. This data is used to monitor aquifer levels to ensure the permit holder reduces or ceases using water in the event of groundwater level declines and, to assist OWRD in better understanding aquifer conditions.

As OWRD looks back at approved applications over the past ten years, it is observing that more than 70% of groundwater applications have resulted in the issuance of a permit. In areas of groundwater concern, approximately 80% of applications have received permits.

### Proposed Solutions

OWRD developed some initial concepts to modernize Oregon's existing groundwater allocation process based on the source of water to wells[3].

*Surface Water Availability*

OWRD proposes the new process focus on surface water availability and the long-term source of water to wells. Over-appropriation is defined in Division 400 rule 690-400-0010(11)(a)[4] as "(A) the quantity of surface water available during a specified period is not sufficient to meet the expected demands from all water rights at least 80 percent of the time during that period, or (B) the appropriation of groundwater resources by all water rights exceeds the average annual recharge to a groundwater source over the period of record or results in the further depletion of already over-appropriated surface waters."

OWRD historically constrained the assessment of "further depletion of…surface waters" by focusing their assessment on the "potential for substantial interference" as defined in Division 9 (OAR 690-009[5]); policy memos further limit analysis to impacts within one mile and one irrigation season. This current approach does not consider long-term impacts on senior users or a sustainable groundwater system.

The development of groundwater in hydraulic connection with surface water will further deplete already over-appropriated surface waters based on the application of generally accepted hydrogeological principals[3], therefore, OWRD recommends assessing proposed new groundwater rights for hydraulic connection with surface water bodies and reviewing the Water Availability Reporting System (WARS) for those surface water bodies to determine whether or not it is already over-appropriated. WARS-modeled availability capabilities include whether instream water rights and State Scenic Waterway flows are met, and whether existing surface water rights exceed 80% exceedance levels of natural flows. OWRD does not want to limit its review to just one application of a well and proposes to look at watersheds or sub-watersheds and determine if a new application for a groundwater right is going to result in drawing water that is hydraulically connected to a surface water body, and if so, to look at whether the surface water body is fully allocated or over-appropriated.

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[3] Theis, C.V., The Source of Water Derived From Wells; Essential Factors Controlling the Response of an Aquifer to Development. First published by the American Society of Civil Engineers in its Civil Engineering magazine (p. 277-280), Available online at *https://water.usgs.gov/ogw/pubs/Theis-1940.pdf*

[4] Water Resources Department Chapter 690, Division 400 State Water Resources Policy https://secure.sos.state.or.us/oard/viewSingleRule.action;JSESSIONID_OARD=XZ4QLHQygy3trHmEZXcn_JqWRXDTJOxQyMaioak1Xat9IWTqa68M!846163716?ruleVrsnRsn=179822

[5] Water Resources Department Chapter 690, Division 9 Groundwater Interference with Surface Water https://secure.sos.state.or.us/oard/displayDivisionRules.action;JSESSIONID_OARD=fP9D8SC-9otFxcWwM0y2h_9BZy_BUCQVF7WHa3ofU0kzg1GdPSZT!3963798?selectedDivision=3134

*Surface Water Regulation History*

Some basins have no modeled availability in any month of the year, while others have some or all months available. With this concept, OWRD wants to consider the surface water regulation history on a more granular scale to fill in missing data in the areas where WARS data is unavailable. OWRD seeks to understand the regulation history as a component of whether a surface water source is over-appropriated. OWRD proposes to look at the degree of regulation in any one basin to understand where there are existing surface water right holders whose rights are not being met in part due to a reduced amount of groundwater discharge to baseflow, and assess whether additional new groundwater uses will exacerbate that condition.

*Reasonably Stable*

The last concept OWRD proposes is to assess stored groundwater resources. In situations where there is weaker hydraulic connection between groundwater and a stream, wells can pump significant volumes of stored groundwater before the pumping cone of depression intersects a stream to capture surface water. In these cases, more water is pumped out of storage for longer periods and the response is a continued lowering of the water table. The current policy states that OWRD shall maintain "reasonably stable" water levels, and at this point, there is no definition of "reasonably stable" in the rules. According to Division 8 rule 690-008-0001(6)[6], OWRD has defined "excessively declining water levels" as an "ongoing lowering of the water level in a groundwater reservoir or part thereof which" the water level has dropped 50 ft from the highest known water level. The department agrees that this is not "reasonably stable" and proposes to define the term as part of the rulemaking process.

## 2. Outreach Meetings and Public Input

OWRD held five outreach meetings across Oregon, open to the public, from the end of September through mid-October 2022 to inform the development of draft rules regarding the modernization of the groundwater allocation process in Oregon. Four of the meetings were held in person, with an option for meeting attendees to participate virtually via Zoom Meeting. These meetings were held in Salem, Bend, La Grande, and Central Point, as shown in *Figure 4*. The last meeting was held virtually through Zoom Meeting. The meeting format included a presentation from OWRD regarding the meeting topics listed above and a discussion with the public. Each meeting had designated time for facilitated public input.

OWRD released an agenda[7] and background information[8] prior to the meetings. OWRD aimed to provide these materials in advance of the meeting to allow for more informed discussion and engagement. To publicize these meetings, OWRD announced these meetings through their listservs and press releases and posted meeting information and materials on OWRD's webpage[9] dedicated to this topic.

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[6] Water Resources Department Chapter 690, Division 8 Statutory Ground Water Terms
https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=3133
[7] OWRD Groundwater Allocation Project Meeting Agenda
https://apps.wrd.state.or.us/apps/misc/wrd_notice_view/?notice_id=72
[8] Background information: bit.ly/owrd-gwallocation-timeline
[9] Oregon Water Resources Department webpage:
https://www.oregon.gov/owrd/programs/GWWL/GW/GWAP/Pages/default.aspx

At each meeting, OWRD staff built in time at the beginning of the meeting agenda for informal conversation with staff and to allow participants time to review background information available in print and online at computer work stations set up at each meeting.

A survey form was provided at each of the meetings for participants to fill out. In addition, meeting participants were able to complete the meeting-specific survey online and respond to a general comments survey form.

The key themes gathered from the discussion and survey responses are provided below. Table 1 identifies each meeting location, date, number of meeting participants, and the approximate number of surveys received.

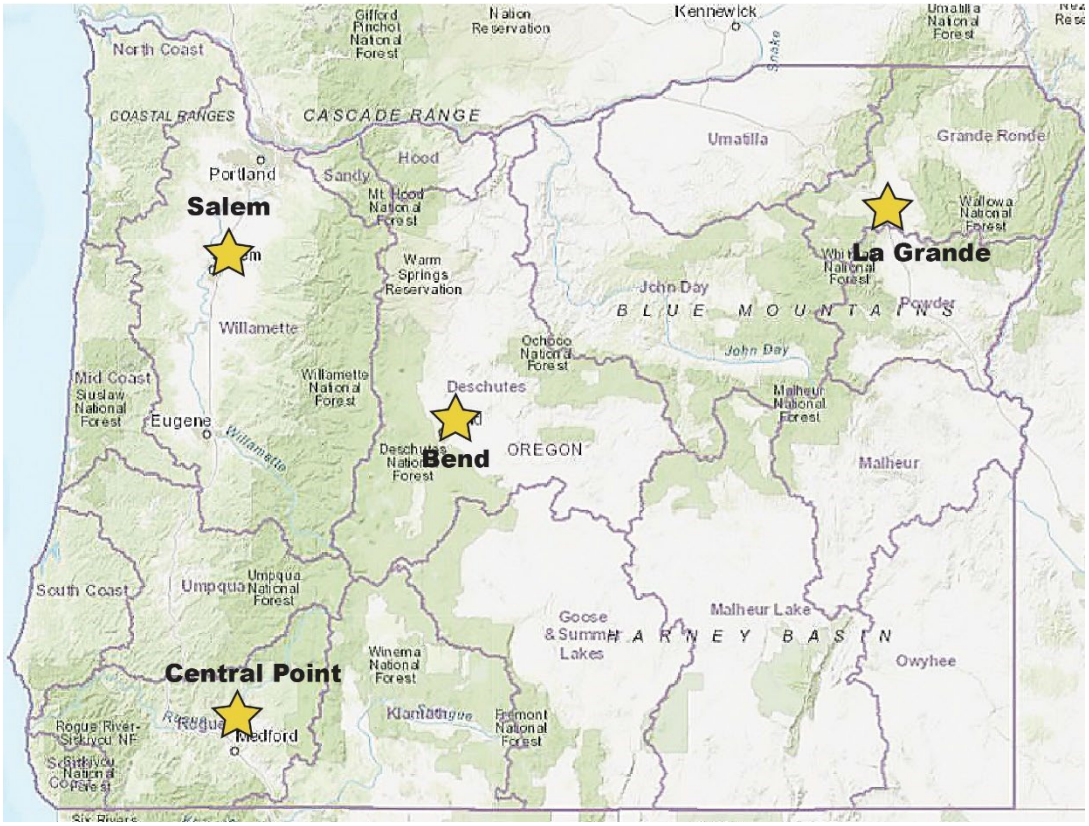


*Figure 4. Map of Oregon depicting administrative water basins and cities where outreach meetings occurred.*

| Groundwater Allocation Meeting Location | Date/time | Approximate number of online/in-person participants | Approximate number of surveys received |
|---|---|---|---|
| Salem | Sept. 22, 2022 5:30 p.m. to 8:00 p.m. | 80 | 13 |
| Bend | Sept. 28, 2022 5:30 p.m. to 8:00 p.m. | 91 | 13 |
| La Grande | Sept. 29, 2022 5:30 p.m. to 8:00 p.m. | 43 | 6 |
| Central Point | Oct. 5, 2022 5:30 p.m. to 8:00 p.m. | 70 | 5 |
| Virtual | Oct. 10, 2022 2:00 p.m. to 4:00 p.m. | 131 | 87 |

*Table 1. Meeting location, date, number of meeting participants, and approximate number of surveys received.*

### 2.1 High-level summary of feedback and input

The public provided their feedback on the agency's approach to assessing groundwater availability and offered new ideas and suggestions for modernizing the groundwater allocation process. There was a public input session at each meeting where all meeting attendees had an opportunity to ask clarifying questions and provide input. OWRD asked the public for their ideas on:

- How the department can evaluate applications for new groundwater rights that are both protective of existing senior water rights holders and the water resource itself.
- The criteria regarding how to protect senior water rights holders.
- What timescale is sustainable for managing groundwater resources.

Meeting participants shared their feedback and input verbally at the meetings, through the written survey (if in-person), and via the online survey form option. Overall, the public offered varied support and concern regarding OWRD's approach. Below is a summary of feedback received from the outreach meetings, separated into the following high-level theme categories: hopes; concerns; data, modeling, and monitoring; current and future applications; local and basin-specific approach; protection for users; and water conservation.

**Hopes**

Below are hopes expressed by the public regarding the upcoming revisions to the groundwater allocation process. The public hopes OWRD will:

- Ensure a transparent process where people can assess and understand the impacts of new and existing groundwater allocations.
- Consider public impact/statewide interests of the people of Oregon.
- Consider equity and vulnerable/rural communities.

- Be judicious with how the State grants water permits.
- Offer protection to fish, wildlife, and the overall groundwater-dependent ecosystems.
- Provides increased definition around how the presented concepts work in practice via a factsheet or one-pager.
- Consider local conditions in decision making.
- Ensure diversity of interests and geography on the future rulemaking advisory committee (RAC).

**Concerns**

Below are concerns expressed from the public about this process. Participants expressed concern about:

- The department's decision to no longer issue new permits where overappropriation "can not be determined.".
- Impacts to current permits applications that remain in an undetermined status as OWRD works on the new protocol and gathers data to address overallocation issues.
- Potentially arbitrarily denying the opportunity to expand a farm to meet food supply chain needs due to lack of data.
- The prior appropriation system is outdated and the need for legislative reform of water rights laws.
- The mitigation program is not serving the Deschutes basin as intended.
- The expedited nature of the rulemaking process, and consequential limited effective engagement.
- Potential impacts on drought permits or the new rules' interaction with current mitigation rules.
- New developers receiving water rights over local farmers, especially in the Deschutes basin.
- The long-term sustainability of water resources and areas/users that depend on the resource.
- Addressing cumulative impacts.
- Maintaining senior water rights.
- How to balance domestic and farm uses.
- Unreasonable water use not addressed or eliminated.
- Communities/municipal providers not having permits for a backup emergency source of water.

**Data, Modeling, and Monitoring**

Participants provided feedback regarding data and modeling. They suggested OWRD:

- Seek localized data and consider localized impacts.
- Determine how many areas in the State are lacking hydrologic information to make a water right determination.
- Construct more observation wells in undetermined areas. There is a need for higher frequency water level reporting through the summer/fall.
- To gather more data by allowing a limited number of permits in an area that may be tolerable.

- Set modeling back to pre-canal surface water diversion times.
- Look to other states who have modeled for groundwater allocation where data was unavailable.
- Use surface water availability as a means of regulating groundwater.
- Consider climate change in modeling and use it to predict variables such as future temperature conditions or evapotranspiration rates from the landscape.
- Produce maps of areas with insufficient information (such as lack of history or data), maps showing groundwater areas of concern and where groundwater rights are no longer being issued, and interactive maps with well density and geology information for the purpose of data sharing and providing a sense of existing development and types of aquifers.
- Ensure continuous monitoring, in perpetuity, to guarantee groundwater pumping is not injuring surface water.
- Utilize monitoring as a tangible and visual way to explain if groundwater is available.
- Allow for the voluntary installation of monitors on domestic wells to collect aquifer data.

**Current and future permit applications**

Participants offered comments regarding current and future permit applications. They suggested OWRD to:

- Follow up with the number of applications currently with unclear outcomes.
- To protect senior water rights holders by limiting or eliminating the issuance of new water right holder permits.
- Provide the public with more specifics on how a permit is reviewed.
- Consider water quality in permits.
- Consider more time-limited permits in areas where groundwater limitation is documented.
- To encourage more mitigation options for applicants.

**Local and Basin specific approach**

Participants encouraged OWRD to take a more local and basin-specific approach in this process. They noted:

- Every basin is different and has a unique set of groundwater conditions and surface water interactions, therefore avoid a one-size approach.
- OWRD to consider geographic proximity on the distance criteria of permits because the rate and magnitude of cone depression vary depending on the ground surface area.
- Use data and peer-reviewed science that is aquifer specific.

**Protection to users**

Several participants offered ideas or support for protection to users. They suggested OWRD:

- Consider who will be impacted, and what level of impact is acceptable.
- Consider the impacts on springs used by wildlife.
- Consider in-stream users as they are of beneficial use and need to be included in the process.
- Protect agricultural users.

- To address and protect groundwater-dependent ecosystems.

**Water Conservation**

Participants had ideas to conserve and replenish groundwater resources. They suggested OWRD:

- Focus on recharge and recovery at the watershed level.
- Create more allocation and water conservation programs.
- Consider farm expansion as a priority and incentivize agricultural users to utilize less water through efficient development/use of water (i.e. drip)

## 2.2 Survey Responses

In addition to the public input session at the outreach meetings, OWRD offered a printed and online survey for the public to provide their ideas and suggestions for modernizing the state's allocation process. Below are the survey questions and a summary of responses for each question. Written detailed responses can be found in Appendix 4.1 and online meeting-specific survey questions can be found in Appendix 4.2.

1. **What criteria do you think the Department should consider when evaluating applications for new groundwater rights?**
    - Surface water availability (where there is a connection between ground and surface water)
    - Surface water regulation history (Watermasters across the state every summer shut off junior surface water right holders for senior water right holders. How should this information be connected to future groundwater allocation?)
    - Trends in groundwater levels (either decline or no decline)
    - Other

A total of 110 people responded to this question. The results are depicted in Figure 5 below.

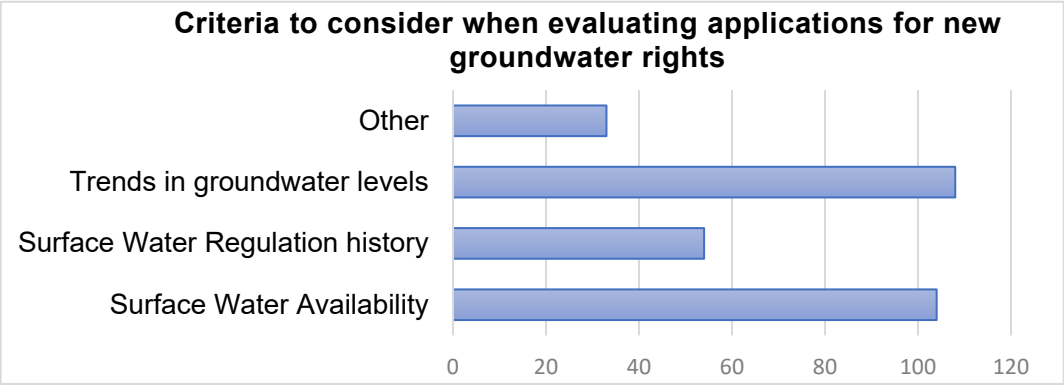


*Figure 5. Criteria the Department should consider when evaluating applications for new groundwater rights survey question results.*

Survey respondents provided additional comments and criteria OWRD should consider:

- How new groundwater rights will affect private water well supplies
- Potential well-to-well interference
- Anticipated climate impacts and their effect on long-term availability:
    - Temperature and drought trends
    - Annual rain/snow fall levels
    - Model future water shortage
- Impacts to domestic and municipal drinking water
- Impacts to current groundwater rights holders
- Intended beneficial use, including:
    - Depth of proposed well
    - Type and volume of aquifer
    - Length of water right duration
    - Projected withdrawal amount
- If an applicant has access to water from other sources.
- Opportunities to mitigate the impact of the proposed use of groundwater, including through the use of sustainable agriculture practices
- Opportunities to modify the proposed application
- Needs of fish species in groundwater-sustained cold water refugia, springs, and of groundwater-dependent ecosystems
- Equity
- New development and associated costs
- Areas of concern

2. **What is the appropriate time frame for evaluating the impacts of additional groundwater allocation on surface water (streams, springs, rivers, lakes) in the short (1-5 years), medium (5-20 years), or long term (20-50+ years)?**

A total of 111 people responded to the question above. The results are depicted in Figure 6 below.

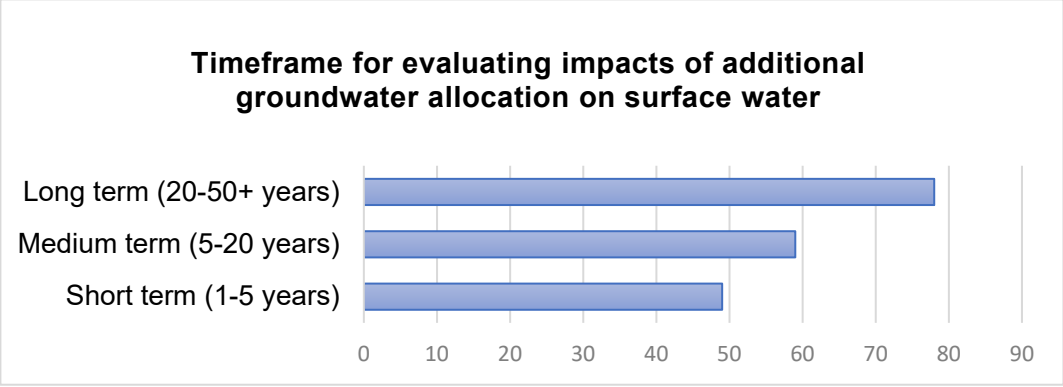


*Figure 6. Timeframe for evaluating impacts of additional groundwater allocation on surface water survey question results.*

3. **Should the Department be considering drought and long-term climate conditions in the evaluation of applications for new rights? If so, how?**

- The majority of survey respondents responded yes. Some ideas they offered are:
    - Climate modeling to determine potential balance in future years
        - To monitor the rate of wells drying up and enact a reporting system for the public.
        - Consider both drought and long-term climate conditions
        - Use a predictive model based on current and recent historical trends
        - Use the best available hydroclimate models.
    - Ensure groundwater extraction does not exceed long-term sustainable yield, therefore use a sensible period to define sustainability and incorporate realistic assumptions about aquifer recharge.
        - Work with concepts like safe, perennial, or sustainable yield to assist with groundwater permit determinations
    - Prioritize humans, fish, and wildlife, not cattle or water-intensive uses.
    - Consider historic precipitation patterns and modify them based on recent history and use current modeling to forecast expected changes the over next 10-20 years.
    - Look at short- and long-term evaluations.
    - Consider in the evaluations of water transfers, including in cases of new development.
    - During drought years, suspend permits, especially in the Deschutes watershed.
    - Encourage water conservation by existing senior water right holders through conservation incentive programs and for agricultural users through more efficient irrigation.
    - Designate critical groundwater area designations based on declining static well water levels and discontinue additional groundwater permit applications.
    - Include a clause that puts a small cap on the amount of water that can be drawn in the cases where groundwater tables are severely lowering.
    - Define essential and non-essential uses of water; challenge and remove water rights that do not fall within essential categories.
    - Update the Water Availability Reporting System to understand the extent of surface water allocation with a more current period of record.
    - Consider cumulative impacts of each new groundwater use.
    - Use the OWRD 2015 Statewide Long-Term Water Demand Forecast as a basis for understanding where water demand is likely to increase under different climate scenarios.
    - Consider the health of aquifers and connected surface water sources in permit assessments.
- Others noted the data is not available for decision making and OWRD should therefore:
    - Take time to build the database.
    - Do what can be done to maintain an adequate water supply in domestic and wild waters in sustainable way.
    - Utilize climate models with temporal projections and use in evaluating availability of water.
    - Use realistic projection of impacts from climate change in each watershed,
- Some respondents noted no change is needed and:

- The future is unknown and to continue to use the built-in monitoring as a guide (i.e. yearly static level monitoring).
- Continue to depend on regulation to ensure permits and certificates are properly conditioned.
- Drought should be addressed as it occurs by regulation of water rights.
- There is concern this change can result in overly conservative denials of new water rights, transfers, and other options for facilitating the use of water.

**4. What should the Department do when there is insufficient information on an application?**

- Many survey respondents answered to decline the application including:
  - Unless or until sufficient information is available and do not "start the clock" on the application until the application is complete
  - Decline applications in high-risk locations or areas of concern.
  - Use precautionary principle and take preventative action in the face of uncertainty
- If insufficient data is available or provided:
  - Notify the applicant about the lack of sufficient information. Provide a timeline by which the insufficiencies must be addressed and hold application until sufficient information is provided and then begin the review.
  - Require the condition of water use reporting for a probationary period of 5-10 years. Every 10 years or so, re-evaluate the output of the aquifer.
  - Prioritize well monitoring and river measurements in the area.
  - Assist the applicant with a professional who can help complete an application.
  - When returning an application provide guidance and specific instructions on how to give adequate information for their application. Suggest possible sources of technical information.
  - Make applications online with required information fields.
  - Extend the application process and/or provide grants or additional funding to help the organization collect the data missing.
  - If applicant is historically underrepresented, provide funds or support.
- Other comments:
  - Any applications submitted during the period of modernizing the groundwater allocation rules must be grandfathered into the old rules.
  - When giving out rights, consider the use of water and how will it be used.
  - It is the responsibility of OWRD to have or seek out the necessary information.

**5. Provide any additional ideas or thoughts**

Survey respondents offered the following additional ideas or thoughts:

**Data Collection**

- To collect data about the aquifer, consider a volunteer system to put in well monitors on domestic wells.
- Look to other states and see how they are monitoring groundwater data. For example, reference the Texas Water Development Board and its role in this issue and allocation process.

**Exempt Use**

- Exempt uses should be measured and integrated into the overall management system.
- Critical and currently exempt uses should be prioritized – e.g. domestic and municipal drinking water wells and firefighting uses.
- Streamline applications for small uses and prioritize processing according to size, purpose of use, and place of use. Allow for group applications by basin to assure equitable treatment of each basin user.
- Instream flows should be prioritized over every other use except drinking water and subsistence-level agricultural and livestock watering use.

**Long-term Sustainability**

- Prioritize stabilizing the water table to reduce inefficient competitive drilling of deeper wells.
- Apply precautionary principle for new groundwater applications.
- Restore and sustain groundwater reserves (reasonably stable water levels) on a local/regional/aquifer level.
- Consider the cumulative effects of wells and focus on long-term sustainability.
- Incentivize efficient systems to save water. Help pay for conserving water by using new technology.
- In groundwater basins that are “closed” OWRD could consider developing or expanding innovative management tools and practices as a way to create flexibility for water users and adaptability to changing weather and climate patterns.
- Encourage additional aquifer storage and recovery projects with funding incentives.

**Current Prior Appropriation System and Water Transfers**

- Some advocated to eliminate the prior appropriation system, while others encouraged its continued use. Others noted the “use it or lose it” be eliminated.
- Improve the transferability of existing water rights.
- Surface and groundwater rights should not be allowed to be “transferred” without adequate studies of the impacts of such transfers.
- Limit transfers and well drilling to current users.

**Permits**

- Do not provide new permits in concern, significant concern, or low yield well areas without robust data to support the additional groundwater implication. Recommend permit conditions and regulatory compliance be managed to a higher level.
- Standardize interpretation of “beneficial use”.
- Create a definition for a "reasonably stable" groundwater aquifer that is specific to the hydrology of the area.
- Permitting should reflect
    - the true availability of water projected out to the longest possible time horizon,
    - the true cost of groundwater usage/loss to the community and ecosystems, and
    - considerations of environmental justice for tribes, subsistence water users, and marginalized communities.

Members of the public also provided separate comments to OWRD staff via email. These comments can be found in Appendix 4.3 and 4.4.

## 3. Next Steps

OWRD thanks the public for their time, feedback, and for their participation during the outreach meetings which concluded in October 2022. All meeting recordings and the presentation slideshow can be found on this website:
https://www.oregon.gov/owrd/programs/GWWL/GW/GWAP/Pages/default.aspx

All public input, comments, and suggestions will assist and inform OWRD's internal team responsible for modifying the existing rules.

# 4. Appendices

## Appendix 4.1 In-person written survey forms

OREGON WATER RESOURCES DEPARTMENT

## Groundwater Allocation Survey

The Oregon Water Resources Department (OWRD) is working on updating the criteria for issuing new groundwater rights*. We are seeking your ideas for how to protect our water resources while making sure that new groundwater rights do not affect senior surface water rights.

This survey will help us consider your ideas and suggestions for modernizing our groundwater allocation process.

**Permit "exempt" uses (domestic, stock watering, etc.) are not affected by this effort.*

- Name (required): David Wiegel
- Email (required): [redacted]
- Phone: [redacted]
- Organization: private homeowner
- Multiple Choice: Did you attend, or do you plan to attend one of the five public engagement meetings? If so, which one?
  - ☐ Sept. 22, 2022 (Salem)
  - ☒ Sept. 28, 2022 (Bend)
  - ☐ Sept. 29, 2022 (La Grande)
  - ☐ Oct. 5, 2022 (Central Point)
  - ☒ Oct. 10, 2022 (Virtual)
- Are you interested in serving on the rules advisory committee for groundwater allocation?
  - ☐ Yes
  - ☑ No
  - ☐ Maybe

- What criteria do you think we should consider when evaluating applications for new groundwater rights? Check all that apply.
  - ☐ Surface water availability (a connection between groundwater and surface water)
  - ☐ Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders)
  - ☑ Trends in groundwater levels
  - ☐ Other (Please explain below)

- What is the appropriate timeframe for evaluating the impacts of additional groundwater allocation's effects on surface water sources (streams, springs, rivers, lakes) in the short (1-5 years), medium (5-20 years), or long term (20-50+ years)?

ALL

- Should we consider drought and long-term climate conditions when evaluating applications for new water rights? If so, how? of course

GROUND WATER Recharge RATES ARE Declining Rapidly w/ climate change.

Farmers ALL need to water smarter WITH Less WATER / no more flooding FIELDS

Plan for the FUTURE 50-100 YEARS

- What should OWRD do when given insufficient information on an application?

Deny outright AS IN any Incomplete Application

- Please provide any additional ideas or thoughts on this topic.

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1. Name (required): Bill Lehman
2. Email (required): [redacted]
3. Phone: [redacted]
4. Organization: Klamath Watershed Partnership
5. Multiple Choice: Did you attend, or do you plan to attend one of the five public engagement meetings? If so, which one?
   - ☐ Sept. 22, 2022 (Salem)
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   - ☐ Sept. 29, 2022 (La Grande)
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   - ☐ Oct. 10, 2022 (Virtual)
6. Are you interested in serving on the rules advisory committee for groundwater allocation?
   - ☐ Yes
   - ☐ No
   - ☒ Maybe

7. What criteria do you think we should consider when evaluating applications for new groundwater rights? Check all that apply.

- [x] Surface water availability (a connection between groundwater and surface water)
- [x] Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders)
- [x] Trends in groundwater levels
- [ ] Other (Please explain below)

8. What is the appropriate timeframe for evaluating the impacts of additional groundwater allocation's effects on surface water sources (streams, springs, rivers, lakes) in the short (1-5 years), medium (5-20 years), or long term (20-50+ years)?

In conjunction with drought conditions it should be a consideration in the short-term (Klamath domestic well failure examples)

Long-term trends lead to increased dependence on groundwater, exacerbating strain and negative effects related to the connected surface/groundwater and should be a consideration for regulation.

9. Should we co... applications for ...

downward tr... determine ... reducti...

9. Should we consider drought and long-term climate conditions when evaluating applications for new water rights? If so, how?

There should be a well-established downward trend that can be referenced to determine some long-term percentage in reduction. Drought and seasonal conditions should not be included, but documented downward trends over 50-100 years should be a realistic consideration in limitations and additional regulation.

10. What should OWRD do when given insufficient information on an application?

There should be a period of time that updates/corrections can be addressed, OWRD responsible for informing applicants of discrepancies and a reasonable timeframe for response. seems to be an issue for folks if the application is confusing, I don't know what it looks like or the problems from the OWRD perspective. I'm guessing OWRD sees many poor applications, but strict (and long) deadlines are reasonable to uphold.

11. Please provide any additional ideas or thoughts on this topic.

- Standardized interpretation of "beneficial use" as it relates to wetlands and water quality treatment options.

- Standardized interpretation of "storage" as it relates to wetlands, Beaver Dam Analogues (BDA's, PAWS).

There seem to be regional differences as well as state agency differences in valuation of legal interpretations, OWEB funding planning efforts and implementation of wetlands and Beaver Dam Analogues could potentially contradict OWRD interpretations. This needs to be addressed.

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1. Name (required):
   Dana Hamel
2. Email (required):
   [redacted]
3. Phone:
4. Organization: Farmer - Klamath Irrigation District Board (Vice pres.)
5. Multiple Choice: Did you attend, or do you plan to attend one of the five public engagement meetings? If so, which one?
   - ☐ Sept. 22, 2022 (Salem)
   - ☐ Sept. 28, 2022 (Bend)
   - ☐ Sept. 29, 2022 (La Grande)
   - ☒ Oct. 5, 2022 (Central Point)
   - ☐ Oct. 10, 2022 (Virtual)
6. Are you interested in serving on the rules advisory committee for groundwater allocation?
   - ☐ Yes
   - ☐ No
   - ☒ Maybe

7. What criteria do you think we should consider when evaluating applications for new groundwater rights? Check all that apply.

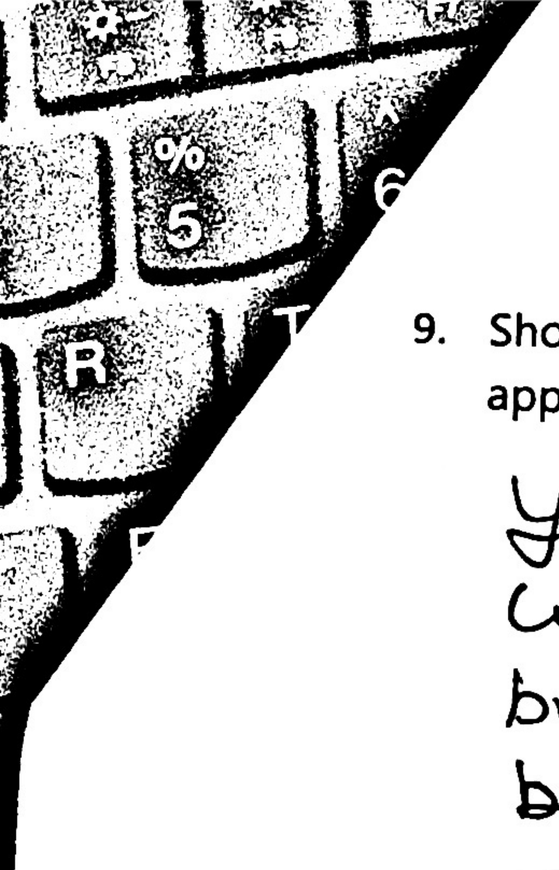
- [x] Surface water availability (a connection between groundwater and surface water)
- [ ] Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders)
- [ ] Trends in groundwater levels
- [ ] Other (Please explain below)

Does the applicant have access to water from other sources. If their surface water has been shut off from Klamath lake. The applicant needs to have an opportunity to still be able to make their land payments on support their family and community. They should be allowed to drill a well to irrigate. If they are willing to invest the money into a well.

8. What is the appropriate timeframe for evaluating the impacts of additional groundwater allocation's effects on surface water sources (streams, springs, rivers, lakes) in the short (1-5 years), medium (5-20 years), or long term (20-50+ years)?

I feel we need to look long term. drought & wet cycles of the weather pattern last very long times. I do it feel we can make smp judgments in just a short. 20 yr. period.

As in Klamath Basin from 2001 the Augusta had not been touch ever before. and since 2001 we've been in a dry cycle and haven't had a good winter or several in a Row to Recharge the ground or Surface water.



9. Should we consider drought and long-term climate conditions when evaluating applications for new water rights? If so, how?

Yes. but need to keep in mind if the current source of water has been taken by the fed or ESA unlawfull water been run down the River without a water Right. Oregon needs to stand for our Statewater Rights and stop the feds and Caifornia stealing our natural Reasources and Sending it to the ocean. And after 20 yrs of doing the the fish have suffered in Klamath lake and the salmon Runs have not gotten better and only have just made everything much worse. The flows in the Klamath river are unnaturaly high during a daught. When the Klamath Runs @ 80 - 90% of normal flows during a drought is not helping. It creats a invironment in the River where the polytect worms can flourig and keep killing the salmon. with disease.

10. What should OWRD do when given insufficient information on an application?

11. Please provide any additional ideas or thoughts on this topic.

~~If [illegible] would stand for our State water Right's trades State right. our~~

To solve the ground water problem the State of Oregon just needs to follow the law and don't allow the feds to steal our water without a water Right and send it down the river. Then we could reduce the amount of water pumped in the Klamath Basin.

Irrigation efficiences. we can cut our water use by 30% just by making upgrades to our irrigation system by- modernizing the to the lepa irrigations sprinklers. If the State of ORegon would start a program of updating ~~with~~ irrigation equipment by a funding program.

~~[redacted]~~

wheelines are 60-75% water efficient
pivots with MesA sprinklers are 80-90%
pivots with lepa sprinklers ar 90-97%
* These facts are available from USDA - Peters study.

We definetly need local input for different areas of the State. can not be one size fits all.

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1. Name (required):
   Dave Wildman
2. Email (required):
   [redacted]
3. Phone: [redacted]
4. Organization: Anderson Perry & Associates (Engineering)
5. Multiple Choice: Did you attend, or do you plan to attend one of the five public engagement meetings? If so, which one?
   - ☐ Sept. 22, 2022 (Salem)
   - ☐ Sept. 28, 2022 (Bend)
   - ☒ Sept. 29, 2022 (La Grande)
   - ☐ Oct. 5, 2022 (Central Point)
   - ☐ Oct. 10, 2022 (Virtual)
6. Are you interested in serving on the rules advisory committee for groundwater allocation?
   - ☒ Yes
   - ☐ No
   - ☐ Maybe

7. What criteria do you think we should consider when evaluating applications for new groundwater rights? Check all that apply.

- ☐ Surface water availability (a connection between groundwater and surface water)
- ☐ Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders)
- ☒ Trends in groundwater levels
- ☒ Other (Please explain below)

Intended beneficial use. Municipal water rights serving thousands of users versus one agricultural application can have the same impact on the aquifer, yet thousands can benefit over one user.

8. What is the appropriate timeframe for evaluating the impacts of additional groundwater allocation's effects on surface water sources (streams, springs, rivers, lakes) in the short (1-5 years), medium (5-20 years), or long term (20-50+ years)?

Short and medium term seem most appropriate. Modeling of potential long term impacts can be very subjective and difficult to predict. Regulating based on subjective modeling seems like a difficult basis for regulating. Deep basalt aquifers may be found to have minimal impacts on surface water resources.

9. Should we consider drought and long-term climate conditions when evaluating applications for new water rights? If so, how?

Yes. Critical groundwater area designations based on declining static well water levels seem like a good basis for restricting use (where possible) and not considering additional Groundwater Permit applications. Areas of Concern also appear to be a good place to start looking at/implementing restrictions to avoid critical groundwater area designations.
Encouraging water conservation by existing senior water right holders through conservation incentive programs seems like it will be an important aspect of the process.

10. What should OWRD do when given insufficient information on an application?

Request the additional needed information.

11. Please provide any additional ideas or thoughts on this topic.

Encouraging additional Aquifer Storage & Recovery projects with funding incentives as well as opening up Permitting pathways to encourage non-utilized surface water rights to be beneficially used for ASR.

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1. Name (required): GENE SOUZA
2. Email (required): [redacted]
3. Phone: [redacted]
4. Organization: KLAMATH IRRIGATION DISTRICT
   KLAMATH WATER USERS ASSOCIATION
   SMALL HOBBY FARM OWNER.
5. Multiple Choice: Did you attend, or do you plan to attend one of the five public engagement meetings? If so, which one?
   - ☐ Sept. 22, 2022 (Salem)
   - ☐ Sept. 28, 2022 (Bend)
   - ☐ Sept. 29, 2022 (La Grande)
   - ☒ Oct. 5, 2022 (Central Point)
   - ☐ Oct. 10, 2022 (Virtual)
6. Are you interested in serving on the rules advisory committee for groundwater allocation?
   - ☒ Yes - IN KLAMATH BASIN / LOST RIVER BASIN. SPECIFIC.
   - ☐ No
   - ☐ Maybe

- QUALIFICATIONS? ✓
- # ON COMMITEE
- STAKEHOLDER BALANCE. WHAT.
- ACCESS to DATA FOR INDEPENDANT ANALYSIS By COMMITEE members?

SPRING of 2023 is almost 1 YEAR AGRESSIVE

7. What criteria do you think we should consider when evaluating applications for new groundwater rights? Check all that apply.

- [x] Surface water availability (a connection between groundwater and surface water)
- [ ] Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders)
- [ ] Trends in groundwater levels
- [x] Other (Please explain below)

OWRD ENFORCING SURFACE WATER RIGHTS
OWRD KLAMATH ADJUDICATION ENFORCEMENT.
INDIVIDUAL WELL ASSESSMENTS VS AREA WIDE BLANKET POLICY
DROUGHT CONDITIONS EVALUATION.
- TIME OF REST. - 3/1
- WATERSHED SPECIFIC. NOT ALL WATERSHED HUC 10-12 ARE THE SAME. ↳ SMALLEST HUC EVALUATION OR HUC 8 EFFECT.

BASIN APPROACH VS STATE
LOCAL LEVEL GOVERNANCE. WITH COUNTY OR STATE OVERSIGHT.
EACH WELL IS DIFFENT GEOLOGICALLY - GEOMORPHOLOGY
LAYERS IN THE CASCADES SEPARATE WATER SOURCES.
- CONFINING bed SEPARATION FROM STREAM - / SURFACE WATER.

8. What is the appropriate timeframe for evaluating the impacts of additional groundwater allocation's effects on surface water sources (streams, springs, rivers, lakes) in the short (1-5 years), medium (5-20 years), or long term (20-50+ years)?

3 year ANALYSIS BY WATER YEAR TYPE DRY / AV / WET
10 year ASSESSMENT OF PLAN EFFECTS. - ARE POLICIES MEASURING USEABLE INFORMATION.
30 year PROGRAM EVALUATION - NEW, SUSTAIN, OR END PROGRAM.

9. Should we consider drought and long-term climate conditions when evaluating applications for new water rights? If so, how?

YES. DROUGHT CONDITIONS CREATE A NEED FOR INCREASED ACCESS to GROUND WATER. WET YEARS REDUCE DEMAND.

YES. CLIMATE CYCLE UNDERSTANDING HELPS PLAN FOR WORST CASE ISSUES.

YES. SUPPLEMENTAL to SURFACE WATER AVAILABILITY.
- MAINTAIN a FOCUS ON SURFACE WATER returns to HISTORIC AREAS - FORMER LAKES/ MARSHES - REDUCE OR REPLENTISH GROUND WATER.

10. What should OWRD do when given insufficient information on an application?

BE A PUBLIC SERVANT! CONTACT THE APPLICANT, INFORM THEM OF THE SHORTCOMING, AND GIVE THEM A REASONABLE TIMELINE TO PROVIDE THE NECESSARY INFORMATION.

IF NO FURTHER INFORMATION IS PROVIDED IN THE REASONABLE TIME, THEN PAUSE PROCESSING FOR 12 MONTHS.

11. Please provide any additional ideas or thoughts on this topic.

Address Surface water Application positive effects to Ground water observations.

- When & where surface water creates conditions to improve ground water Availability

- Ground water storage?

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- Name (required): JOHN WARINNER
- Email (required): [redacted]
- Phone: [redacted]
- Organization: WATERSOLVING, LLC

- Multiple Choice: Did you attend, or do you plan to attend one of the five public engagement meetings? If so, which one?
  - ☐ Sept. 22, 2022 (Salem)
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  - ☐ Sept. 29, 2022 (La Grande)
  - ☐ Oct. 5, 2022 (Central Point)
  - ☐ Oct. 10, 2022 (Virtual)
- Are you interested in serving on the rules advisory committee for groundwater allocation?
  - ☐ Yes
  - ☐ No
  - ☒ Maybe (depends on the time commitment... but open to considering it)

- What criteria do you think we should consider when evaluating applications for new groundwater rights? Check all that apply.
  - [x] Surface water availability (a connection between groundwater and surface water)
  - [x] Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders)
  - [x] Trends in groundwater levels
  - [x] Other (Please explain below)

OPPORTUNITIES TO MITIGATE THE IMPACT OF THE PROPOSED USE OF GROUNDWATER

OPPORTUNITIES TO MODIFY THE PROPOSED APPLICATION (INCLUDING THE AQUIFER BEING DEVELOPED)

- What is the appropriate timeframe for evaluating the impacts of additional groundwater allocation's effects on surface water sources (streams, springs, rivers, lakes) in the short (1-5 years), medium (5-20 years), or long term (20-50+ years)?

SEVEN GENERATIONS ☺

(I WOULD ACTUALLY PROPOSE INFINITE/INDEFINITE...

BUT I PRESUME THAT THERE IS SOME NUMBER OF YEARS WHERE IT BECOMES APPARENT THAT THE RESOURCE IS ON THE PATH EITHER ~~BEING~~ ~~DEPLETED~~ TO LONG-TERM DEPLETION OR NOT).

- Should we consider drought and long-term climate conditions when evaluating applications for new water rights? If so, how?

NO. I RECOMMEND AVOIDING RAMPANT SPECULATION ABOUT FUTURE CLIMATE VARIABILITY

(BUT INSTEAD FOCUS ON ~~FORMS OF~~ INSTALLING APPROPRIATE FORMS OF GOVERNANCE TO ENSURE REASONABLY STABLE WATER LEVELS IN ALL AQUIFERS)

- What should OWRD do when given insufficient information on an application?

(1) OUNCE OF PREVENTION...

- MAKE IT SUPER CLEAR WHAT INFO IS REQUIRED AND REASONABLE

(2) POUND OF CURE...

- POINT OUT DEFICIENCIES
  - GROSS DEFICIENCIES → REJECT/RETURN APP
  - MINOR DEFICIENCIES → ADMIN HOLD REQUEST SUPPLEMENTAL INFO FROM APPLICANT/AGENT

- Please provide any additional ideas or thoughts on this topic.

ALREADY SAID IT, BUT TO REITERATE MY PERSPECTIVE,
I BELIEVE WE NEED TO TAKE RESPONSIBILITY TO
RESTORE AND SUSTAIN GROUNDWATER ~~DEEP~~ RESERVES
REASONABLY STABLE
(STATIC WATER LEVELS) ON A LOCAL/REGIONAL/AQUIFER
LEVEL. ~~IF & [illegible]~~ WE NEED ORGANIZATIONS
INSTALLED TO ASSUME GOVERNANCE OWNERSHIP OF THIS RESPONSIBILITY
FOR EVERY AQUIFER IN THE STATE.

(ORGS = GROUNDWATER MANAGEMENT DISTRICTS OR AN EQUIVALENT
~~ORG~~ GROUNDWATER

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- Name (required): Karen Trachsel
- Email (required): [redacted]
- Phone: [redacted]
- Organization: private homeowner
- Multiple Choice: Did you attend, or do you plan to attend one of the five public engagement meetings? If so, which one?
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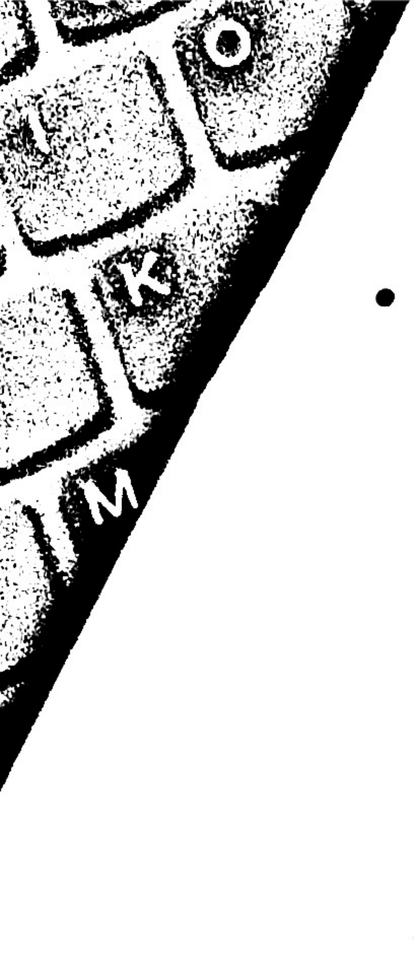
  - ☒ Sept. 28, 2022 (Bend)
  - ☐ Sept. 29, 2022 (La Grande)
  - ☐ Oct. 5, 2022 (Central Point)
  - ☒ Oct. 10, 2022 (Virtual)
- Are you interested in serving on the rules advisory committee for groundwater allocation?
  - ☐ Yes
  - ☐ No
  - ☒ Maybe

- What criteria do you think we should consider when evaluating applications for new groundwater rights? Check all that apply.
  - ☐ Surface water availability (a connection between groundwater and surface water)
  - ☐ Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders)
  - ☒ Trends in groundwater levels
  - ☐ Other (Please explain below)

How will new groundwater rights affect private water well supplies? Groundwater levels are decreasing while groundwater recharge is also decreasing.

- What is the appropriate timeframe for evaluating the impacts of additional groundwater allocation's effects on surface water sources (streams, springs, rivers, lakes) in the short (1-5 years), medium (5-20 years), or long term (20-50+ years)?

All of the above



- Should we consider drought and long-term climate conditions when evaluating applications for new water rights? If so, how?

Certainly. Recharge rates for groundwater will no doubt EVER return to pre-drought conditions.

Farmers need to decrease their water consumption! Penalties need to be stiff for people irrigating as "gentleman farmers"

Please address the transfer of water rights i.e. from surface to groundwater rights.

- What should OWRD do when given insufficient information on an application?

Deny it.

- Please provide any additional ideas or thoughts on this topic.

Groundwater allocation should not be based on development needs or those entities that can pay for it. Surface water rights and groundwater rights should not be allowed to be "transfered" without adequate studies of the impacts of such transfers. The whole idea of senior and junior water rights needs to be updated!

How do you know about long-term water level declines? How many wells are monitored?

Who reviews transfer of surface to Groundwater rights?

Why are you not considering revising the water rights allocations? Sr vs JR

Can senior water rights be sold to OWRD or conservation groups to re-allocate H2O?



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1. Name (required):
   Preston Winn
2. Email (required):
   [redacted]
3. Phone:
   [redacted]
4. Organization:
5. Multiple Choice: Did you attend, or do you plan to attend one of the five public engagement meetings? If so, which one?
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   - ☐ Sept. 28, 2022 (Bend)
   - ☒ Sept. 29, 2022 (La Grande)
   - ☐ Oct. 5, 2022 (Central Point)
   - ☐ Oct. 10, 2022 (Virtual)
6. Are you interested in serving on the rules advisory committee for groundwater allocation?
   - ☐ Yes
   - ☐ No
   - ☒ Maybe

7. What criteria do you think we should consider when evaluating applications for new groundwater rights? Check all that apply.

- ☑ Surface water availability (a connection between groundwater and surface water)
- ☑ Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders)
- ☑ Trends in groundwater levels
- ☐ Other (Please explain below)

New water rights should only be allocated if there are new sources of water available. Must protect senior water rights owners.

8. What is the appropriate timeframe for evaluating the impacts of additional groundwater allocation's effects on surface water sources (streams, springs, rivers, lakes) in the short (1-5 years), medium (5-20 years), or long term (20-50+ years)?

All water allocations should use a long term approach.

9. Should we consider drought and long-term climate conditions when evaluating applications for new water rights? If so, how?

10. What should OWRD do when given insufficient information on an application?

Initially deny the application until sufficient information is supplied.

11. Please provide any additional ideas or thoughts on this topic.

Help pay for conserving water by using new technologies. Drip vs. flood, Drip vs. Center Pivot, micro vs. sprinkler.

Thank You!

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- Name (required): Roger Ruckert
- Email (required): [redacted]
- Phone: [redacted]
- Organization: Farm owner
- Multiple Choice: Did you attend, or do you plan to attend one of the five public engagement meetings? If so, which one?
  - ☑ Sept. 22, 2022 (Salem)
  - ☐ Sept. 28, 2022 (Bend)
  - ☐ Sept. 29, 2022 (La Grande)
  - ☐ Oct. 5, 2022 (Central Point)
  - ☐ Oct. 10, 2022 (Virtual)
- Are you interested in serving on the rules advisory committee for groundwater allocation?
  - ☐ Yes
  - ☑ No
  - ☐ Maybe

- What criteria do you think we should consider when evaluating applications for new groundwater rights? Check all that apply.
  - ☐ Surface water availability (a connection between groundwater and surface water)
  - ☑ Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders)
  - ☑ Trends in groundwater levels
  - ☐ Other (Please explain below)

- What is the appropriate timeframe for evaluating the impacts of additional groundwater allocation's effects on surface water sources (streams, springs, rivers, lakes) in the short (1-5 years), medium (5-20 years), or long term (20-50+ years)?

- Should we consider drought and long-term climate conditions when evaluating applications for new water rights? If so, how?

No. (Western Oregon) We don't know the future. We have built in monitoring to guide us — ie yearly static level monitoring.

- What should OWRD do when given insufficient information on an application?

Communicate with applicant as to what you need to know.

- Please provide any additional ideas or thoughts on this topic.

This form can also be filled out online at: https://bit.ly/owrd-groundwater_allocation

If you wish to provide a physical copy of your answers, please mail this no later than **October 19, 2022,** to the following address:

*Oregon Water Resources Department*
*725 Summer Street NE, Suite A*
*Salem, OR 97301*

OREGON WATER RESOURCES DEPARTMENT

## Groundwater Allocation Survey

The Oregon Water Resources Department (OWRD) is working on updating the criteria for issuing new groundwater rights*. We are seeking your ideas for how to protect our water resources while making sure that new groundwater rights do not affect senior surface water rights.

This survey will help us consider your ideas and suggestions for modernizing our groundwater allocation process.

**Permit "exempt" uses (domestic, stock watering, etc.) are not affected by this effort.*

1. Name (required):

   Tim Seymour

2. Email (required):

   [redacted]

3. Phone:

   [redacted]

4. Organization:

5. Multiple Choice: Did you attend, or do you plan to attend one of the five public engagement meetings? If so, which one?
   - ☐ Sept. 22, 2022 (Salem)
   - ☐ Sept. 28, 2022 (Bend)
   - ☒ Sept. 29, 2022 (La Grande)
   - ☐ Oct. 5, 2022 (Central Point)
   - ☐ Oct. 10, 2022 (Virtual)

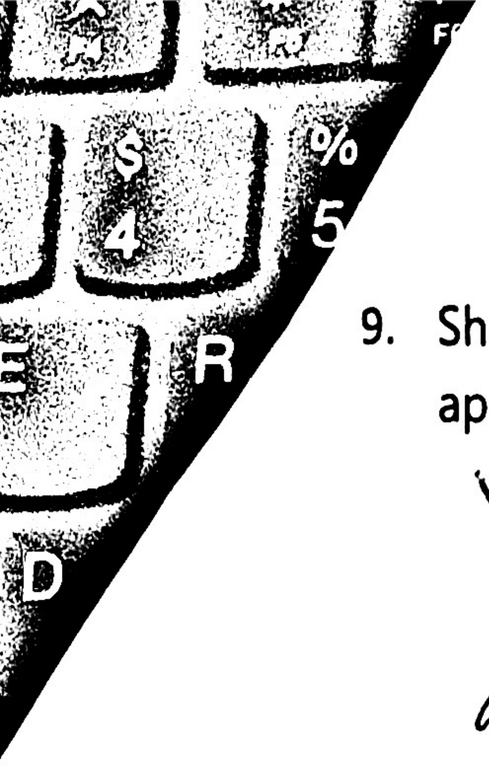
6. Are you interested in serving on the rules advisory committee for groundwater allocation?
   - ☐ Yes
   - ☒ No
   - ☐ Maybe

7. What criteria do you think we should consider when evaluating applications for new groundwater rights? Check all that apply.

- ☒ Surface water availability (a connection between groundwater and surface water)
- ☒ Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders)
- ☒ Trends in groundwater levels
- ☒ Other (Please explain below)

- Anticipated climate impacts and their affect on availability.
- Domestic + municipal drinking water impacts
- Other groundwater rights holders

8. What is the appropriate timeframe for evaluating the impacts of additional groundwater allocation's effects on surface water sources (streams, springs, rivers, lakes) in the short (1-5 years), medium (5-20 years), or long term (20-50+ years)?




9. Should we consider drought and long-term climate conditions when evaluating applications for new water rights? If so, how?

Yes. Anticipated future snow pack & precipitation. quantities and their impact on ground water availability and surface water.

10. What should OWRD do when given insufficient information on an application?

Delay permitting or provide temporary permitting with additional data gathering performed before any permanent rights issued

11. Please provide any additional ideas or thoughts on this topic.

- Is method of application for agricultural use ever considered? For instance precision irrigation (targeted drip) is much more efficient than sprinklers. Or is it simply total quantity used that matters?

This form can also be filled out online at: https://bit.ly/owrd-groundwater_allocation

If you wish to provide a physical copy of your answers, please mail this no later than **October 19, 2022,** to the following address:

*Oregon Water Resources Department*
*725 Summer Street NE, Suite A*
*Salem, OR 97301*

OREGON WATER RESOURCES DEPARTMENT

## Groundwater Allocation Survey

The Oregon Water Resources Department (OWRD) is working on updating the criteria for issuing new groundwater rights*. We are seeking your ideas for how to protect our water resources while making sure that new groundwater rights do not affect senior surface water rights.

This survey will help us consider your ideas and suggestions for modernizing our groundwater allocation process.

**Permit "exempt" uses (domestic, stock watering, etc.) are not affected by this effort.*

1. Name (required): John Short
2. Email (required): [redacted]
3. Phone: [redacted]
4. Organization: Water Right Services, LLC
5. Multiple Choice: Did you attend, or do you plan to attend one of the five public engagement meetings? If so, which one?
   - ☐ Sept. 22, 2022 (Salem)
   - ☒ Sept. 28, 2022 (Bend)
   - ☐ Sept. 29, 2022 (La Grande)
   - ☒ Oct. 5, 2022 (Central Point)
   - ☒ Oct. 10, 2022 (Virtual)

   No #6
6. Are you interested in serving on the rules advisory committee for groundwater allocation?
   - ☒ Yes
   - ☐ No
   - ☐ Maybe

7. What criteria do you think we should consider when evaluating applications for new groundwater rights? Check all that apply.
   - [x] Surface water availability (a connection between groundwater and surface water)
   - [x] Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders)
   - [x] Trends in groundwater levels
   - [x] Other (Please explain below)

   Historic gw levels, i.e. prior to development

8. What is the appropriate timeframe for evaluating the impacts of additional groundwater allocation's effects on surface water sources (streams, springs, rivers, lakes) in the short (1-5 years), medium (5-20 years), or long term (20-50+ years)?

9. Should we consider drought and long-term climate conditions when evaluating applications for new water rights? If so, how?

Yes, best available science / data

10. What should OWRD do when given insufficient information on an application?

It depends.

In aquifer where no ~~dome~~ previous well has been drilled ~~a~~ and tested: Approve ~~with~~ 1st one with drawdown and injury to environment conditions so data can be collected i.e. Ap G-19116 Bakhsh

~~or permit G~~ Also include rock samples condition.

With some data - I dunno - need to brainstorm that.

11. Please provide any additional ideas or thoughts on this topic.

~~Deschutes Basin~~ Do not reference triggers & levels to groundwater levels artificially increased by canal leakage etc or decreased by past pumping.

In Deschutes Basin, only count csf of actual mitigation provided when calculating 200 cfs cap, not the huge incremental mitigation portions not yet mitigated for by ~~[illegible]~~ quasi & munis.

This form can also be filled out online at: https://bit.ly/owrd-groundwater_allocation

If you wish to provide a physical copy of your answers, please mail this no later than **October 19, 2022,** to the following address:

*Oregon Water Resources Department*
*725 Summer Street NE, Suite A*
*Salem, OR 97301*

Appendix 4.2 Online meeting-specific survey form responses

| Oregon Groundwater Allocation Survey Results- Salem (9/22/22) | | | | | | | |
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| **Name** | **Organization** | **Did you attend, or do you plan to attend one of the five public engagement meetings? If so, which one?** | **What criteria do you think we should consider when evaluating applications for new groundwater rights? Check all that apply.** | **What is the appropriate timeframe for evaluating the impacts of additional groundwater allocation's effects on surface water sources (streams, springs, rivers, lakes)?** | **Should we consider drought and long-term climate conditions when evaluating applications for new water rights? If so, how?** | **What should OWRD do when given insufficient information on an application?** | **Please provide any additional ideas or thoughts on this topic.** |
| Dante Luongo | OWRD | Sept. 22, 2022 (Salem) ;Oct. 10, 2022 (Virtual) ; | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Medium term (5-20 years);Long term (20-50+ years); | Yes. One way could be to start monitoring how many wells go dry and have a reporting system for the public, that way we can find long term trends in rural areas like Harney, or Malheur Counties. | Notify applicant that not enough information is currently available, and put them on a probationary period of say 5-10 years or so with the condition of water use reporting for that aquifer. Like the limited license process for limited groundwater areas, but more stream-lined. Every 10 or so years, re-evaluate the output of the aquifer. | One last thought would be to use a volunteer system to put well monitors on domestic wells, much like how Las Vegas provided an incentive system to remove lawns in the early 2000's. With the amount of money the state spends on drilling new, targeted wells, in an area, the money could be put to install flow measurement devices on volunteers' domestic wells in order to get more information on the aquifer they are connected to. Monitoring flow rates on domestic wells in areas of interest could provide another layer of information about the decline of some aquifers. |
| Shannon Bush | Benton County Community Development Dept. | Sept. 22, 2022 (Salem) ; | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Short term (1-5 years);Medium term (5-20 years);Long term (20-50+ years); | | | Hi! I wanted to share a link about data based decision making concerning groundwater and the Texas model, something that recently came up in conversation. https://wellntel.com/customer-testimonial-larry-hull/ This is a Texas testimonial about the same well monitors that are used in some places in the Willamette Valley (a few property owners in Monroe, specifically) but it also includes a link to the Texas Water Development Board and its role in this issue and allocation process. |

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| John T Dillard | None | | Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ; | Long term (20-50+ years); | The data is too scarce at this time to make that decision. It takes time to build a database and we do not have the years of observation. Any actions tend to be based on best estimates which may or not be wrong. | Return it as incomplete. | |
| Professor Susan Lea Smith | Willamette University | Oct. 10, 2022 (Virtual) ; | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;Prioritize domestic and municipal drinking water wells.; | Long term (20-50+ years); | Yes. We need to assure that groundwater extraction does not exceed long-term sustainable yield -- use a sensible period to define sustainability (non- declining yield over a 50 year period) a rolling average . We should incorporate realistic assumptions about aquifer recharge. For example, we should adjust our recharge estimates given changes in precipitation patterns (more intense, immediate runoff with less recharge), vegetation patterns (wildfires remove vegetation reducing recharge), runoff patterns (intense snow and ice melts with less recharge), and storage patterns (lower storage retention reducing recharge).<br>We should also anticipate higher demands/extraction during drought conditions - - which need to be accommodated by planning to use more groundwater during those conditions and less groundwater during normal or good conditions. This requires creating drought reserves - - and not allocating every drop of sustainable yield every year. | Email applicant specifying necessary information and suggesting possible sources of technical information. Hold application until sufficient information received and then begin review. | Just off the top of my head:<br>*All uses -- surface or ground -- should be measured.<br>*Do not overallocate -- false promise. Unless permit allocation can be met at least one year in 5 or 10 years (need to think about period), no permit should be issued.<br>*Exempt uses should be measured and integrated into the overall management system. *Don't exempt uses, streamline applications for small uses and prioritize processing according to size, purpose of use, and place of use. Group applications by basin to assure equitable treatment of each basin user.<br>*Groundwater extraction should not be allowed to reduce water tables in the short, medium, or long term. We need to immediately prioritize stabilizing water tables to reduce inefficient competitive drilling of deeper wells. This is a justice issue -- only the rich can afford long straws.<br>*Instream flows should be prioritized over every other use except drinking water and subsistence level agricultural and livestock watering use. No interference with instream rights should be allowed -- and instream rights should be established for every fish-bearing stream.<br>*Critical, currently exempt uses should be prioritized: e.g. domestic and municipal drinking water wells & firefighting uses.<br>*Permits for municipal drinking water wells should be conditioned on approved plans and proof of plan implementation/enforcement.<br>*Municipal drinking water should not be used for industrial bottled water operations - 1/2 liter to 50+ liter bottles. While we're at it, public |

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| | | | | | | | water resources should not be used for that purpose other than in quantities required for emergency management (quantity required demonstrated by existing government contracts).<br>*Livestock watering and irrigation should not be exempt uses. Small, subsistence amounts should be subject to streamlined application. However, but limited quantity, short-term emergency permits should be granted when drought conditions prevent livestock watering or irrigation from surface water. An essential relief valve that should not be overused.<br>*Streamlined applications could include permits by notice (10-30 days prior to effective date) with standard conditions, including limits on quantities, uses, POU, required metering, non-interference with surrounding groundwater and surface water users, and non-interference with environmental flows. This sort of general permit could be subjected to public notice and comment -- just like general NPDES permits -- without burdening individual permits with public participation periods, etc. Possibly streamline judicial review also: eliminate contests to individual notices and provide for immediate judicial review after notice becomes effective. |
| Ryan Houston | Oregon Natural Desert Association | | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ; | Short term (1-5 years);Medium term (5-20 years);Long term (20-50+ years); | Yes. Allocations should be made within the context of projected future conditions. | Decline the application unless/until sufficient information is available. | |

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| Nancy Orr | | Oct. 10, 2022 (Virtual) ; | Trends in groundwater levels ;Surface water availability (a connection between groundwater and surface water) ; | Long term (20-50+ years); | Yes. Long term drought and global warming are not ending in the foreseeable future.<br>OWRD has been too profligate with permitting projects that drain underground water reserves. | If there is insufficient data to support the sustainability of a water resource permit, OWRD should deny the permit. | OWRD must proactively work to cut water resource permits that support individual business profits at the expense of long term human life needs. Water is life. My grandchildren should not have to rely on buying bottled water from Nestle because OWRD wasted irreplaceable water reserves on dairies and raising alfalfa in the high desert plateau. |
| Kent Pressman | none | Oct. 10, 2022 (Virtual) ; | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Short term (1-5 years);Medium term (5-20 years);Long term (20-50+ years); | we are in unprecedented drought. we do not know if it will get better or worse in the short or long term. we should do what we can to maintain adequate water in domestic and wild waters in a sustainable way. continuing to drain aquifers more rapidly than they can be replenished is foolhardy. | not give it another thought---a poor application should be given a good hearing or review. | |
| David Thomas | McKenzie Flyfishers of Eugene Oregon | Sept. 22, 2022 (Salem) | Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ;The adequacy of resources necessary to manage water use in Oregon; | Medium term (5-20 years); | Climate models with temporal projections are available and must be used in evaluating the availablity of water for additional allocations | Default to non-approval and indicate the needed information. | Oregon's water rights laws, based on 19th Century concepts of how to attract develop the American West are badly out of date for the issues of the 21st Century. This should be addressed by the legislature. |

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| Thomas Berridge | Self | | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;Impact of climate change on surface and groundwater; | Long term (20-50+ years); | Yes. Prioritize humans, fish, and wildlife, not cattle and not water- intensive uses. Also doing a realistic projection of the impact of climate change in each watershed. | Send it back. | |
| Wayne& Caroly n Stewart | NA | | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;Changes to Springs and seeps; | Short term (1-5 years);Medium term (5-20 years);Long term (20-50+ years); | Absolutely. Consider historic precipitation patterns, modify based on recent history (last 10 years), and use current modeling to forecast expected changes over the next 10-20 years. Applications that will likely lead to a decline in groundwater levels over the next 20 years should be denied. | Return the application to the applicant for required information. Do not accept the application until sufficient information is provided. Do not “start the clock” on the application until the application Is complete. | The surfacing of groundwater (Springs, seeps, wetland, streams and lakes) is very important to protection of habitat for fish and wildlife. Equal consideration needs to be given to maintaining a healthy ecosystem as consideration is given to the requests of applicants. Allowing a further decline in environmental conditions, as measured by the lowering of the groundwater table, is not acceptable. |

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| Grant McGill | Will McGill Surveying, LLC | Sept. 22, 2022 (Salem) ; | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Short term (1-5 years);Long term (20-50+ years); | Yes, but by conditioning to deal with future conditions in the future.<br>Applying "what could happen" to existing conditions is not fair to applicants. If trends are seen of declining groundwater, by all means, it needs to be dealt with; however, it is not correct to assume areas without data are trending that way. Both short and long term evaluations are necessary to see the whole picture. Groundwater is impacted by immediate and continuing conditions. | Request additional information from the applicant. | If we are assuming all the allocated groundwater is being used, then we should get rid of the non-use consequence so that it can be. Improve the transferability of existing water rights. This will<br>reduce the number of new applications needed.<br>Incentivize efficient systems to save water.<br>Installation of drip irrigation should be incentivized even when additional coverage is not needed (allocation of conserved water).<br>Remove the forfeit 25% rule from the ACW program to<br>encourage more applicants.<br>Request additional static water level measurements outside of March to assess the connection between stream flow and well levels.<br>Allow voluntary observation wells on existing wells to gather data on less budget than drilling<br>more state wells.<br>Define the areas with limited data so consultants can start studying these areas and helping gather info at no cost to the state.<br>Applications submitted with extensive groundwater data can help fill<br>gaps. Provide a map of lacking areas.<br>Don't apply the rule to submitted applications. Use these as an opportunity to gather data and avoid drawing attention to the statutes that are clearly broken by retroactively applying the rule. This just forces applicants into protest situations and more<br>cost to all parties. |

| Oregon Groundwater Allocation Survey Results- Bend (9/28/22) | | | | | | | |
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| **Name** | **Organization** | **Did you attend, or do you plan to attend one of the five public engagement meetings? If so, which one?** | **What criteria do you think we should consider when evaluating applications for new groundwater rights? Check all that apply.** | **What is the appropriate timeframe for evaluating the impacts of additional groundwater allocation's effects on surface water sources (streams, springs, rivers, lakes)?** | **Should we consider drought and long-term climate conditions when evaluating applications for new water rights? If so, how?** | **What should OWRD do when given insufficient information on an application?** | **Please provide any additional ideas or thoughts on this topic.** |
| Jacalyn Kreitzer | Education | Sept. 28, 2022 (Bend) ; | Surface water availability (a connection between groundwater and surface water) ;Surface water | Medium term (5-20 years); | Yes. Monitor drought to determine permit allocation and senior water rights use. | REFUSE PERMIT | Senior water rights need to be addressed they are no longer valid in drought conditions. And refuse permits in areas where reduction of ground water is very evident. |
| Christine Larson | | Sept. 28, 2022 (Bend) ; | Farmers and citizens using irrigation and wells should have priority over new users, such as resorts. hould be considered before building water uses such as Destination Resorts. Bend is in a drought and current regulatus; | Medium term (5-20 years); | Yes, and in transfers. Currently, Deschutes County is in extreme drought. We as farmers have our irrigation strictly limited, and area wells are going dry. Less than three miles away from our farm is a planned destination Resort, Thornburgh, that includes three golf courses, a private lake, pools, and a resort hotel as well as resort homes. It is difficult to understand how any water rights can be transferred, and more wells to that will take water from the aquifer. Kyle Gorman has stated the aquifer is robust, yet our wells are going dry. He stated there is plenty of water in Bend, yet Roats restricted watering in several sub-divisions. Drought and long-term | Return to applicant to complete information, or assist them to find someone that help. | We must limit transfers and well drilling to current users, and not allow the building of resorts and heavy users requesting use. |

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| | | | | | climate conditions tell us | | |
| Candice Biever | private citizen | Sept. 28, 2022 (Bend) ; | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ; | Short term (1-5 years); | I think that large amount of development is happening in the Central Oregon area, it way too much. I feel it's not long before there is going to be a big shortage of water because of this development. I think that well approval should be stopped until this ground water amount is determine. | Either get more information or deny the application. | We live in rural Bend and have a well. Several wells have gone dry in our area. We are fearful that our well will go dry. |
| Barry Larson | | Sept. 28, 2022 (Bend) ; | Make sure current users have enough water; | Medium term (5-20 years); | Yes. New applications should be suspended for Resorts and New Development until drought conditions are improved. Allowing destination resorts in a drought period in an area where wells are already going dry, as well as irrigation districts shutting down or limiting water to farmers. Our livelihoods should be considered over resort homes in the desert. | Return it to the applicant with specfic instructions how to give adequate information for their application. | We need to be shepards of our water for wildlife, farmers, and grandchildren as well as future generations. |
| Allegra Briggs | I'm a member of a small environmental group of river advocates called 'River in Bend' | Sept. 28, 2022 (Bend) ; | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ;Environmental | Long term (20-50+ years); | Yes. And also consider climate change projections. | Deny the request for a permit. Don't give it. | Consider cumulative effects of wells and focus on long-term sustainability. |

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| | | | impact on fish and aquatic organisms; | | | | |
| John Butler | | Sept. 28, 2022 (Bend) ; | Trends in groundwater levels ; | Long term (20-50+ years); | Water allocations mistakes made 100 years ago plague management today. OWRD's long term (<50 yrs) is near sighted. The proper time frame is 100 years. The impacts climate change are evident in Hurricane Ian, the Colorado River and here in Oregon. This is not a climate cycle. See this | Decline applications in high risk locations. Data presented in meeting clearly indicate that no new groundwater wells should be permitted in Deschutes basin east of the Sisters fault zone. | Central Oregon suffers from water allocations made 100 years ago. Application of first in time, first in line was compromised from parcel to parcel to irrigation district to district. Senior irrigation districts claim rights to water allocations made at the time origin, while new rights are granted within the district as old rights are abandoned. Groundwater permits should comply with surface regulations, water should only be permitted if the permit benefits all Oregonians. |
| Christine | | Sept. 28, 2022 (Bend) ; | Not allowing new large developments; | Medium term (5-20 years); | Yes, suspend permits in place from developers that creates massive water usage. | Return to applicant and allow them to hire a professional to complete the needed information. The application should not get a spot in line. | I am very disappointed that Deschutes County is allowing developments in the rural area that allows new developments to use water, while farmers and existing patrons are suffering shortages. |
| Kyle Collins | Deschutes County | Sept. 28, 2022 (Bend) ; | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Long term (20-50+ years);Medium term (5-20 years); | Yes. If climatic conditions illustrate a new threshold level for how much groundwater is available, that data should inform if new applicants can be issued groundwater rights. | Request additional information before issuing any groundwater right. If information is not provided in an identified timeline, deny the proposed application. | |

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| Zach Freed | The Nature Conservancy | Sept. 28, 2022 (Bend) ; | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;Best available science related to groundwater budgets; | Short term (1-5 years);Medium term (5-20 years);Long term (20-50+ years); | Yes. Drought or long-term climate conditions that affect current (i.e., present day) conditions will be reflected in groundwater level trends after an appropriate time lag, so I will only comment on future projected conditions. The question to answer is: If and only if groundwater is currently found to be available under present-day conditions, does the best available science indicate that it will likely be available in 30 or 80 years? Climate model ensembles generally show precipitation to be more- or-less stable (albeit shifted in type, which may affect recharge in some areas), but throughout the state increased temperatures will increase evapotranspiration by<br>To be clear, there are certainly scenarios where groundwater can still be allocated, even when incorporating future projected climate conditions. We're in an unusually-dry climate cycle now, which is arguably the best time to evaluate resources and determine where availability exists and is likely climate-resilient. I'm simply advocating for climate-informed caution. Garcia et al. 2021. Projected Future Climate Anomalies for Precipitation, Air Temperature, Snow-Water Equivalent, Runoff, Soil Moisture, and Evapotranspiration During 2040–2069 and<br>2070–2099 Relative to the Historical 1971–2000 Mean from Climate Toolbox | Do not allocate water. This is a well- established precedent in environmental science by Kriebel et al. (2001) as the precautionary principle. Take preventive action in the face of uncertainty. The burden of proof is on taking an action, so if there is not proof-positive information that water is available, do not take the action of permitting new water use. | It would be useful to develop a decision tree or conceptual flowchart for decision-making with methods, metrics, and criteria to provide consistency in application decision-making (while allowing a certain degree of flexibility for best professional judgement). This will ultimately create more transparency and certainty for future water right applications. The Nature Conservancy is happy to be a collaborator and thought partner in that effort or other approaches that WRD pursues. |

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| | | | | | (Intermediate- and High-Emissions Scenarios, RCP 4.5 and 8.5, Respectively). USGS Data Release, https://doi.org/10.5066/P901GNIX.<br>Yes. During drought years, suspend permits in The Deschutes water shed. | | |
| Jacalyn B Kreitzer | | Sept. 28, 2022 (Bend) ; | Trends in groundwater levels ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Surface water availability (a connection between groundwater and surface water) ; | Medium term (5-20 years); | Yes. During drought years, suspend permits in The Deschutes water shed. | Deny permit | It is extremely obvious permits should withheld for an indeterminate period of time, especially to large corporations and resorts. |

**Oregon Groundwater Allocation Survey Results- La Grande (9/29/22)**

| Name | Organization | Did you attend, or do you plan to attend one of the five public engagement meetings? If so, which one? | What criteria do you think we should consider when evaluating applications for new groundwater rights? Check all that apply. | What is the appropriate timeframe for evaluating the impacts of additional groundwater allocation's effects on surface water sources (streams, springs, rivers, lakes)? | Should we consider drought and long-term climate conditions when evaluating applications for new water rights? If so, how? | What should OWRD do when given insufficient information on an application? | Please provide any additional ideas or thoughts on this topic. |
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| Margaret Durner | Powder Basin Watershed Council | Sept. 29, 2022 (La Grande) ; | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ;The Rights of Nature and climate change; | Medium term (5-20 years);Long term (20-50+ years); | Absolutely consideration of climate change conditions should be considered for the good of the entire state's water availability for the future. You can't permit something if you don't have it. We don't know if we can turn the climate disaster around or not. It doesn't appear to be a concern with the general public at all. We all know ignorance is bliss. | Postpone evaluation until there is enough information, whether it is in the application or more data is needed. You cannot make a "good" intelligent decision without sufficient information. | Water belongs to all life. Nothing survives without it. The "commons" and the rights of nature need to considered in all phases of permitting, first.<br>Generally speaking, the days of junior and senior rights are over as we know it. If anyone has senior rights, it is Nature and Indigenoius communities. We need to take care of the only home we have, the earth and each other ... everyone. Thank you<br>for the presentation and the opportunity to comment. |
| jim kreider | Member of Environmental Justice Council observing process | | Need data to establish an adequate baseline range of volume of ground water for a healthy and sustainable aquifer. What are the proper annual recharge and discharge levels to maintain a healthy baseline range for the aquifer. Once determined that should indicate if more permits can be issued or if permits need to be revoked to reach and maintain sustainable levels. If we have to inject water into the aquifer so be it. However, the water users should pay for that based on volume used. Eliminate some of the exemptions as just two were listed with an etc. so do not know what all | Short term (1-5 years); | Yes! Using the method outlined above. If extra permits bring usage above minimum sustainable levels it is not approved. Irrigation districts need to put all water distribution into pipes to reduce losses. They should also consider in line hydro as they lay the pipes. | How is the application presented? Could be in check list form based on standards derived from the OAR's and ORS's making up this process. If a standard is not met application returned with explanation of how to properly complete that standard. Offer staff help to clarify what is missing. | No water no life. Look at climate change driven migration occurring around the world now due to lack of water. We're on that road and need to make the difficult decisions now or mother nature will make them for us culling the human herd to a "new" sustainable level. Our extraction mentally for short term gain while kicking the can down the road for our children to deal with is irresponsible. Good luck you have a difficult job ahead of you. |

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| | | | the exemptions are. | | | | |
| Karen Riener | Powder Basin Watershed Council, Exe. Board Member | Sept. 29, 2022 (La Grande) ; | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Long term (20-50+ years); | Absolutely! Cite that the water source is already taxed. Given that most water sources are already over allocated, (including ground water) in this decade it doesn't make sense to permit new water rights. This will impact density development as well, which is important to restrain. Maybe the problem of over population will get through when density development, and high water requirement crops is stopped for lack of water. | Help the applicant in obtaining the needed information. OWRD is not only a regulator, it is also a service. | Human need should no longer be the primary consideration for water management, because humans, whether they know it or not, are totally dependent on Earth's ecological processes for survival. Humans are in the midst of an Earth change. For now we can observe and tweak, but let's let go of the concept that we can control because we don't know how the climate and Earth's processes will evolve. Conservatism is useful when managing for lack. |

| Oregon Groundwater Allocation Survey Results - Central Point (10/5/22) | | | | | | | |
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| **Name** | **Organization** | **Did you attend, or do you plan to attend one of the five public engagement meetings? If so, which one?** | **What criteria do you think we should consider when evaluating applications for new groundwater rights? Check all that apply.** | **What is the appropriate timeframe for evaluating the impacts of additional groundwater allocation's effects on surface water sources (streams, springs, rivers, lakes)?** | **Should we consider drought and long-term climate conditions when evaluating applications for new water rights? If so, how?** | **What should OWRD do when given insufficient information on an application?** | **Please provide any additional ideas or thoughts on this topic.** |
| Karen Rasmussen | None | Oct.10, 2022 (Virtual) | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;Use Data. New Commercial or irrigation permits should not be addressed in "Significant Concern" rated areas when there is a drought!; | Short term (1-5 years); | Yes, utilize all data that is available, or that can be developed. Legislators must be informed of resource needs, particulary if monies can result in efficient/immediate data development.<br><br>If an area is regarded as unsuitable for commercial wells, maps and data should be easily accessible to farmers, buyers and investors. Currently, OWRD has a website that is not easy to navigate (or perhaps mapping resources are not available yet)? | Reject the Permit and provide data support (as much data should be made available prior to application). ACT ONLY WHEN DATA SUPPORTS GW allocation for all entities.<br><br>Utilize Median reports (and additional carved out data) with caution; a full 360 scope and review is necessary. A commercial GW system for 76 gpm within yards of 3 domestic wells yielding less than 2.0gpm makes me question the OWRD Permit Review process. Median data of domestic wells generating 15 gpm is great information, yet as important is the | We applaud OWRD use of data and modernization to effect a sustainable Oregon. Please do not provide new Permits in Concern, Significant concern or Low Yield well areas without robust DATA to support the additional (& probably additive) GW implication. Recommend Permit conditions & regulatory compliance be managed to a higher level (perhaps IT resources being improved now will support this). There are many local farmers who are utilizing domestic wells to fill tanks to water crops (without an EUA from OWRD). There seems to be a full circle lack of regulatory compliance. Seems local Water Resource folks look the other way to avoid a difficult conversation. I strongly recommend more literature in local ag communities, followed with improved communication. Perhaps this is a resource issue--yet, there were monies allocated to southern OR. |

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| | | | | | | data that half 'n' are yielding less than 15 gpm.<br><br>When there have been multiple years of drought, data is even more imperative. At the same time, Watermasters should receive training & communication skills to convey difficult information--in to their technical expertise. | |
| Caleb | APWC | Oct. 5, 2022 (Central Point) ; | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ; | Medium term (5-20 years); | yes, don't give out new water rights | get more information or decline the permit | If there is already stress on a watershed than no new permits should be permitted and existing water users monitored as current conditions are unsustainable. |

| Oregon Groundwater Allocation Survey Results – Virtual (10/10/22) | | | | | | | |
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| **Name** | **Organization** | **Did you attend, or do you plan to attend one of the five public engagement meetings? If so, which one?** | **What criteria do you think we should consider when evaluating applications for new groundwater rights? Check all that apply.** | **What is the appropriate timeframe for evaluating the impacts of additional groundwater allocation's effects on surface water sources (streams, springs, rivers, lakes)?** | **Should we consider drought and long-term climate conditions when evaluating applications for new water rights? If so, how?** | **What should OWRD do when given insufficient information on an application?** | **Please provide any additional ideas or thoughts on this topic.** |
| Jessica Dorsey | City of Hillsboro | Oct. 10, 2022 (Virtual) ; | Trends in groundwater levels ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Surface water availability (a connection between groundwater and surface water) ; | Medium term (5-20 years);Short term (1-5 years); | | | |
| Molly Collins | Collins Agricultural Consultatns | | | Short term (1-5 years) | I believe that agriculture is one of the first industries to be feeling the effects of long-term drought and climate conditions. So I really do not think this board takes into account the stress on farms, family's and trying to stay in business during climate change. If we've applied for water rights, we have to wait and make do through years of | reach out with the information that they do need and know that people need some time on their end.<br><br>I think that applications that were submitted during the committee rethinking the process should be grandfathered in to old rules. A lot of people are being left in this middle | when my husband and I bought a farm in Clackamas county for agricultural research. It was in the hopes of growing a third generation research farm. we needed more land and an amazing opportunity came to forition when a nearby neighbor offered his land for purchase. we knew that we needed to apply for water rights. but after talking to a water rights specialist that we've hired help us with her application and a well Witcher they seem fairly confident. after purchase of the land in 2020 right around the pandemic. It was shortly after we submitted our application that the state changed the process/put a hold on applications. here we are over two years later being told that we most likely won't be getting water rights and if so it |

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| | | | | | climate change without the state expediting the process so that small farms don't go out of business. I believe there needs to be an in term process while the state does a thoughtful medium term at study of water. Meanwhile, you cannot backlog working farms whole taking time to study and recalibrate the states process. I have yet to meet a farmer who is not a good steward of the land. | while trying to keep their businesses alive. | will not be by the summer of 2023 when it's going to be very hot, and all of our established crops could die. we have been watering with a water truck for the past summer. that is way too time intensive and we've only been able to plant about half the field. if the process continues as search for getting water rides we will have to rethink our entire business plan. going through the wettest spring and the driest summer and now fall. We need water to keep research crops thriving. to even establish low water crops like a grapes, apples or peaches. we need water for the first few years to get them established and then on the days where it's a heatwave or 116 keep them alive. that's the only way agricultural research could work. I just feel like farmers are being punished for the states lack of foresight. it is my feeling that the state of Oregon has a rural community and big city divide. It is not a very agricultural friendly state. The process for getting water rights is so expensive and now we have a lot bureaucracy and not a lot of clarity and compromise.<br>Thank you, Molly Collins |
| Kyler Freilinger | Oregon Water Resource Department | Oct. 10, 2022 (Virtual) ; | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Long term (20-50+ years);Short term (1-5 years);Medium term (5-20 years); | Absolutely. If the availability of water is proven to change than it should be addressed. | | Definitions should be clearly defined. |

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| Caylin Barter | Wild Salmon Center | Oct. 10, 2022 (Virtual) ; | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Needs of STE fish species for groundwater-sustained coldwater refugia, and of groundwater-dependent ecosystems as part of public welfare review.; | Long term (20-50+ years); | Yes, to the extent possible, based on best available downscaled climate models. | Request additional information from applicant; if not received or not sufficient, deny application. | Apply precautionary principle for new groundwater applications. A finding that "water is available" should mean something in the context of a permanent water right. If there is concern that groundwater level is declining, the answer is no. If it is unknown whether water is available to support a new groundwater use, the answer is no. |
| Ronald "Craig" Kohanek | OWRD | Oct. 10, 2022 (Virtual) ; | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ; | Medium term (5-20 years); | I think that's dicey at best and a litigation black-hole. I think regulation will take care of this if the permits/certificates are properly conditioned. I think that static water level measurements benefit new users when compared to the senior user neighbor who has the same static water level measurement requirement that has an earlier higher static water level. If the answer is to drill until the aquifer rock formation is fully penetrated that seems like a race to | Return it with clarifying questions. Make applications completely online with require information fields. | |

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| Nathan Rau | | Oct. 10, 2022 (Virtual) ; | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;Establishing a "sustainable yield" for each basin and/or sub-basin as the primary test for new allocations.; | Medium term (5-20 years);Long term (20-50+ years); | Yes, but cautiously. Ideally there would be a known quantity of water available at any given time in a basin and new applications could be granted against that balance. OWRD could use climate modeling to determine the potential balance in future years, but I think OWRD needs to rely on the seniority of rights and junior users need to understand that they may get shut off. Prior appropriation isn't perfect, but it is fair. | Request additional information from the applicant and provide some guidance on where to find answers for their deficiencies. | I think new allocations should be granted based on historical water availability, but the doctrine of prior appropriation should apply. New water right applicants need to understand that they are junior users and will be curtailed in a time of shortage. I think California's SGMA provides a decent, science-based framework to approach basin-level management. There are many deficiencies in their approach, but it is a good place to start. |
| Rick Smith | Falcon Cove Beach Water District | Oct 10. 2022 (Virtual) | Trends in groundwater levels ;Surface water availability (a connection between groundwater and surface water) ; | Medium term (5-20 years); | Include some type of clause that puts a smaller cap on the amount of water that can be drawn in the cases where it's obvious that the groundwater tables are shrinking. | extend the application process and/or provide grants or additional funding to help the organization collect the data that is missing. | This training was useful, as we are using groundwater as our source. Please continue to provide updates. Thanks. |

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| Wendy Provins | Warren Water Association | Oct. 10, 2022 (Virtual) | Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Surface water availability (a connection between groundwater and surface water) ; | Medium term (5-20 years);Long term (20-50+ years); | This should be consided although I think would partly be the cause for new water right application. I think the water application use would need to be looked at more so and quanity of water needed for the water rights applicaiton. | Work with the applicant to ensure all information needed is provided to make the best possible decission for both the applicant and OWRD. Water rights have become very costly and confusing to naviate unless you hire a firm to complete the process for you which leaves out the average water applicant. | I am currently working on a water rights extension and am fining the process very frustrating with little help from outside sources. Many good resources are retiring and other are charring large sums of money to help complete the process.<br><br>OWRD has a huge balance act to meet everyone's demands as I heard in the meeting. Not sure I have any advice about that. I would say monitoring well could be good but that is only one sliver to see what might be happening with depletion and charge rates in one particular aquafer.<br><br>Over 17 years with Warren Water Association I have seen many changes and in the last five year I see changes in water usage by our customers/members. We push conservation and tiered rates structures but many of these new home owners don't care how much water they use... or the cost.<br><br>I'm looking at trying to keep my CFS's for the extension but unable to have a crystal ball to see what the future holds especially with the ADU housing OAR's. I am finding this process to be very frustrating and I hope that the new water rights rules may be less frustrating with a better direction. This process should not take a masers degree. |

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| Erin Lamb | Speaking for myself | Oct. 10, 2022 (Virtual) ; | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ;Change in precipitation regimes and how that impacts long-term availability – assume the current trajectory, plus a sensitivity analysis of 2 std deviations worse. Equity (Tribes, non-white people - who could access water rights in past, who could not) Depth of proposed well – businesses that can afford to drill deeper wells should not be allowed to dry out community home wells. Limit well depth so that sustainable practices are followed – if the groundwater table drops – all applications are required to work together for recharge. Projected withdrawal amount – limit withdrawal rates, determined by size and type of aquifer. Limit length of water right duration (could use 10 year periods with automatic renewal for a typical duration | Long term (20-50+ years); | Yes. Define essential and non-essential uses of water. If we find ourselves in severe drought in 5-10 years, what measures would we want in place now to improve our odds? Which water rights would be cut first in severe drought? Challenge and remove water rights that do not fall within essential categories. Except for lawyers, a state in severe drought is a lot less business friendly than a state with existing water resources. For new water rights approvals, use at least 100 years projections of current trends – 150 would be better. If current use results in declining availability 100 years from now, it is not approved. Apply a sensitivity analysis that uses changes in precipitation regimes and how that impacts long-term availability. For the baseline analysis, apply the current trajectory based on the most optimistic calculations from empirical data. For a more conservative | It depends on the type of applicant. If they are historically underrepresented, then there could be funded support allotted to help them with the process. If it's a person or business with the resources available to complete the application, reject the application and send them to the back of the line. | Aggressively preserve and conserve existing water resources. Water is an essential public resource and must be stewarded as such. If you walked into a kindergarten classroom and saw snacks getting distributed the way water rights work, you would immediately know the existing system is deeply flawed. It cannot be fixed and needs to be completely re-written. As a kindergarten teacher might gently explain but simultaneously enforce more reasonable behavior, so must our water rights laws change. Get rid of seniority in water rights. It's a system based on who got here first, where the starting line was defined by white men – mostly rich white men – for individual benefit. The existing system has nothing to do with the public good, except that it reduces potential violence about water access by using public funds that all taxpayers contribute to enforce water rights that only a few have access to. If it's a legitimate system, then we should be able to start from scratch and let everyone follow the same rules, and the outcomes would be similar. The system is not legitimate; water rights holders are afraid of losing generational wealth based on theft, sexism, and racism. |

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| | | | if precipitation and GW levels are maintained, thus maintaining the public interest through contingent renewals) Type and volume of aquifer Proposed use of water – limit applications in water limited areas to uses that make sense for the whole community ; | | analysis, apply a trajectory that is 2 std deviations worse. At the most generous, apply the optimistic data-based trajectory. Consider using the conservative analysis for any non-essential applications. | | |
| David Cole | Oregon Department of Environmental Quality | Oct. 10, 2022 (Virtual) ; | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;Climatic trends in temperature and precipitation.; | Short term (1-5 years);Medium term (5-20 years);Long term (20-50+ years); | Yes. Compile climatic trends (temperature and precipitation) to see if there are correlations between those trends and trends in surface water flows and groundwater levels. | Err on the side of caution and deny it until technical staff think enough data is available to perform a robust and scientifically defensible analysis. | Confirm EPA and USGS staff are aware of this effort and have the opportunity to comment. |
| Harmony Burright | Self / na | Sept. 22, 2022 (Salem) ; | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;Long-term | Long term (20-50+ years); | Yes. As our state's groundwater experts you know that all groundwater comes from somewhere and that the only difference between surface water and groundwater is time. All you need to do is look at water problems throughout the world and in the Western US to know that our water | The Department must make a positive determination that water is available in order to issue a new permit. If the Department cannot make a positive determination and there is insufficient information, then the Department may want to consider putting | Additional comments sent to Ivan Gall via email (dated 10/13/2022). |

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| | | | sustainability, impacts to domestic water users, impacts to springs; | | situation is not getting better. We know how this will play out. At this point the Department does not have a up-to-date accounting of "water availability." The Department should focus on updating the Water Availability Reporting System to understand the extent of surface water allocation with a more current period of record. Where surface water is fully/over-allocated no additional groundwater development should be allowed unless it can be demonstrated that the additional development will not further deplete fully/over-allocated surface water resources or unless a determination is made that there is a compelling public interest to continue to develop groundwater resources and the tradeoffs and impacts are acceptable (as captured through basin program rules). The Department should also focus on resolving backlogs, protests, unadjudicated | those permits into a cue UNTIL there is sufficient information. This could help build public demand to invest in groundwater data collection and studies. | |

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| | | | | | registrations/claims, etc. Even before determining long-term climate conditions, we need to understand the current status of our accounts at a basin-scale and resolve all past and current claims. | | |
| Theodore Ressler | Summit Water Resources, LLC | Sept. 22, 2022 (Salem) ;Oct. 10, 2022 (Virtual) ; | Trends in groundwater levels ;Surface water availability (a connection between groundwater and surface water) ; | Medium term (5-20 years); | Drought should be a limited duration event, so it seems reasonable to manage drought effects similarly on a limited duration basis through regulation of use based on water level decline conditions placed on the water rights with junior users regulated first. Periods of drought should not be lasting, and so while there may be regulation of groundwater use for some years, drought should end and so should regulation/restriction on use.<br><br>The effect of climate change, on the other hand, are long-term, and so it seems reasonable to consider climate change projections in the context of new applications since these impacts would | For these areas where insufficient information is available, it seems like a balanced approach is needed for new requests for groundwater use. I understand that the past practice of the Department was to issue new permits if the Department determined that was insufficient information to determine if groundwater was available. I further understand that one reason for allowing these applications to be approved was that the permit holder would be required to complete annual water level monitoring – thus providing a set of data the Department could use in the future for evaluating additional | GROUNDWATER DATA COLLECTION. The Department indicated in the 9/22 outreach meetings that the Department has funding available for installation of dedicated observation wells to improve the data available to the Department regarding groundwater in the state. However, the Department noted the caveat that the installation of dedicated observation wells is expensive and the well installations will likely be focuses in areas of the state that are particularly concerning to the Department, which may or not be in areas where limited data in available as opposed to areas of the state where there are existing groundwater concerns.<br><br>As an alternative, could the Department utilize a portion of the funding available for observation well installations for increased monitoring of existing exempt wells that are available in areas identified by the Department as having limited data is available? From past experience searching for wells with water level data available (using OWRD web-based utilities), in areas where there are few state observation wells or water right authorized wells with water level reporting conditions, I routinely find a handful (or sometime more) exempt wells. These exempt wells could provide a means for the Department to gather additional information on aquifer water levels in the |

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| | | | | | have potentially lasting effects on the groundwater resource and on the reliability/useability of the water use requested by a new application for the applicant's intended project. One of the challenges for implementation (of many) will be how to quantify the potential changes to be expected in temperature and precipitation given the variability in the various climate models. I understand that there are some models that develop aggregate projections based on multiple models. Climate modeling might be an option, but that raises the question of whether the Department will have adequate resources to implement such a modeling program or whether there may be a programmatic approach that could be used instead. For example, perhaps issuance of limited duration permits in areas identified as having limited groundwater supply available. I think this | applications.<br><br>The Department recently changed its position and currently will not issue new permits if the Department determines that insufficient information is available to determine if groundwater is available.<br><br>I am restating a suggestion made during the 9/22 meeting that the Department consider establishing an allocation of groundwater use for areas of the state where there is limited data available for the Department to make an assessment of groundwater availability. This would allow the Department to issue a certain number of new permits with the objective of using the wells associated with the new permits as a data collection tool for the Department. Once the allowed allocation of groundwater is fully requested by | near-term in areas that are not a priority for dedicated observation well installations. |

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| | | | | | is one topic (of several) where focused thought will need to be given on methodology and application. | new applications, then the Department could review the sustainability of the resource and decide whether the resource can accommodate an additional allocation of groundwater. | |
| Elizabeth Rice | | | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ; | Long term (20-50+ years); | Yes | Require more information/evidence based research be given | |
| Emily Tacheny | | | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ; | Long term (20-50+ years); | Yes, by evaluating prior year droughts and how they affected irrigation rights for farmers and if it would impact their livelihoods. Checking neighboring wells to see how impacted they are b | Deny it until sufficient information is provided | Create regulations on average water usage for new construction so lawns, house sizes, community water features so water is not being wasted |

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| Hana Sant | | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Long term (20-50+ years); | | | |
| Jesse Rosenzweig | Central Oregon Landwatch | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Short term (1-5 years);Medium term (5-20 years); | Yes obviously. Need to look at surface and ground water trends over the past 10-20 years and apply a multiplier to the water right as well as keeping shorter assessments of the rights. This is fair in case of things trend up or down in the future. | Deny until there is enough information. | Use it or lose it clauses should be modified to allow transfers of the rights to other users as is a pause on the usage requirement for up to x years. |
| Peter Geiser | Board Member, The Environmental Center, Bend, OR | | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ; | Short term (1-5 years);Medium term (5-20 years);Long term (20-50+ years); | Yes, consider both drought and long-term climate conditions. Don't issue new groundwater permits until overall water availability is determined. | Don't issue the permit | A modernized groundwater permitting system is needed that takes into account the cumulative impacts of each new groundwater use. It should include the number of wells already located in the area and how they are impacting the aquifer and surface water, declining water levels, and assessment of how climate change and drought will impact the area over the long term. Also include exempt wells in its new permit issuance rules and re-establish a monitoring program for these wells. |

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| Kathleen S. Roche | not applicable | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ;Potential contamination of groundwater; | Short term (1-5 years);Medium term (5-20 years);Long term (20-50+ years); | Yes. Use the best climate models available. Do not over allocate. | Reject the application. | Groundwater is precious. It is not proven to be renewable. It may be thousands of years old. Treat it with respect. |
| Karen Trachsel | | Sept. 28, 2022 (Bend) ;Oct. 10, 2022 (Virtual) ; | Trends in groundwater levels ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Surface water availability (a connection between groundwater and surface water) ;If for new development and how much money might be involved to get approval ; | Short term (1-5 years);Medium term (5-20 years);Long term (20-50+ years); | Yes. Drought will be a constant no doubt in the Deschutes Basin. | Deny. Do more research. Ask for more data. | The groundwater allocation process needs to be transparent and provided to the residents of Deschutes County in a regular fashion. I also wish these meetings were advertised more widely and maybe covered by the local news channel. |
| Joette Storm | non affiliated | Sept. 28, 2022 (Bend) ; | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;Look at what has hpperned in other | Short term (1-5 years); | Of course. The history of Earth is written in river beds, sediment, ocean creatures. Artificial lakes and dams have disrupted natural hydrology. We must look to the natural landscape and its abililty to store water. A farmer in the Siskiyou has created ponds and terraces off a stream to | Deny the application if it isn't complete. | We have not been wise stewards of the water. It is time to recognize how disruptive man made facilities are to the hydrologic cycle. |

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| | | | states when ground water is misused. ; | | spread water naturally. | | |
| Jacqueline Newbold | Artist | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Medium term (5-20 years); | Yes of course! Conduct research on nearby well water levels to see if water is in decline. Use modeling to assess how climate change and drought will impact the area over the long term. Use available data to show the new user's impact on prior uses and surface water over the long term | Require sufficient information | Include exempt wells in new permit issuance rules and re-establish a monitoring program for these wells. |
| Jeff boyer | Self | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Long term (20-50+ years); | Use hydrologic modeling | Deny application | Be extra conservative, climate change is far worse than predicted in the past. Regulate on the side of caution. |

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| Karen Lillebo | | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ;use modeling to assess long-term impacts of climate change and drought ; | Long term (20-50+ years); | use modeling to assess how climate change and drought will impact the area over the long term | If OWRD does not have the data to determine if an aquifer can support a new groundwater use, the application should be denied | Use available data to show the new user's impact on prior uses and surface water over the long term. Create a definition for a "reasonably stable" groundwater aquifer that is specific to the hydrology of the area. |
| Patti Calande | | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Short term (1-5 years);Medium term (5-20 years);Long term (20-50+ years); | Yes. | Send it back for more info or reject it. | Farmers should get first rights for water. Extraneous uses such as golf courses or excessive landscaping should be curtailed or declined. Please do away with the use it or lose it law. It's a shame to see people watering huge swaths of lawn just so they won't lose their rights. |
| Ian Beihl | | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Short term (1-5 years); | Yes definitely, since our climate is changing we need to change how we handle water rights or else we are going to run out of water. We should consider things like, the number of wells already located in the area, and how they are impacting the aquifer and surface water. Conduct research on nearby well water levels to see if water is in decline. Use modeling to assess how climate change and drought will impact the area over | deny the application or request that they provide more information. | We need to preserve our water or else we will run out. |

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| | | | | | the long term. Use available data to show the new user's impact on prior uses and surface water over the long term | | |
| Henry McDonnell | Self | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Short term (1-5 years); | Absolutely ! ! | Disqualify. | Reconsideration given toThornburgh's request of using groundwater for golf course and new community development on High Desert. |
| Paul Lipscomb | | | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ; | Short term (1-5 years); | Absolutely! Past practices have gotten us where we are now. | Deny the application. | Domestic wells should be monitored, and both old ones and new ones. If we don't measure it we can't control it. |

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| Becky Powell | League of Women Voters of Deschutes County | Sept. 28, 2022 (Bend) ; | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;Global warming and cold water inputs. The mitigation credit program. etc.; | Medium term (5-20 years);Long term (20-50+ years);Short term (1-5 years); | Yes. Precipitation only water inputs into DRB and that makes us vulnerable to weather events. Historic drought a possibility complicated by global warming and effects on agriculture, severe weather, population dislocation, food scarcity, decline in river habitats and water quality. No proof of long term drought, but no guarantees, either. | Remove the default to approve when there is insufficient data. Define standards for determining "reasonably stable" levels of surface and groundwater. If normal precipitation schedule exists and there is no evidence of decline in surrounding wells and in the streams feeding or being fed by the groundwater hydrology, and the high quality cold water recharge to the streams is operant then approval would be appropriate. If there is evidence of impacts from well water withdrawals on surrounding wells and hydrologically connected streams then the application should be denied. Projections of future declines should be considered because of our complex geology-hydrology and the certainty of impacts from a warming climate. | Will be sending a letter to OWRD from the League of Women Voters of Deschutes County that is more detailed and includes some concerns they are not currently considering. |

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| Terry Solini | None | | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ; | Medium term (5-20 years); | Studies that are done by developers (Thornburgh) for water mitigation should be updated and rely on a 2008 study which does not include 14 years of continuous drought. | Deny permit until information provided. | |
| Doug Hancock | | | Trends in groundwater levels ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Surface water availability (a connection between groundwater and surface water) ; | Short term (1-5 years);Medium term (5-20 years);Long term (20-50+ years); | Such consideration cannot be avoided. Rules going forward must take into account diminishing water resources as a result of both drought and climate change. | Reject it. The information required for a complete application is abundantly available. The burden for a complete application is the applicant's. | |
| Katie Sheldon | | | Trends in groundwater levels ;Surface water availability (a connection between groundwater and surface water) ; | Long term (20-50+ years); | Absolutely. This would have to be a predictive model based on current and recent historical trends, but absolutely possible to build a reasonable predictive model with the data on hand. However, if climate conditions are changing in ways we have never seen before, we need to focus the data on more recent trends...this builds a more volatile and unpredictable model | Return the application to the applicant requesting sufficient information. No application should be processed with insufficient information. | Groundwater is one of the toughest water bodies to model. Surface water directly impacts groundwater levels and should not be discounted as a predictive tool. It should be treated as a limited resource because of the length of time it takes to naturally recharge. Great care should be taken when allocating groundwater rights. And no rights should be grandfathered or kept in perpetuity...this is a major issue with Oregon's water allocation and water rights in general. These allocations should be re-evaluated on an annual basis with updated climate data. |

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| | | | | | that would need to be constantly re-evaluated on an annual basis. No application should be evaluated based on a single year of data (we as humans should have learned our lesson with the Colorado River allocations?). | | |
| Rachel Alex | | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Long term (20-50+ years); | Yes. I strongly support a modernized groundwater permitting system that takes into account the cumulative impacts of each new groundwater use. We ask that OWRD look at the following information to assess cumulative impacts: The number of wells already located in the area, and how they are impacting the aquifer and surface water. Conduct research on nearby well water levels to see if water is in decline. Use modeling to assess how climate change and drought will impact the area over the long term. Use available data to show the new user's impact on prior uses and surface water over the long term | Deny the request. | We support OWRD in its decision to not issue new groundwater permits until overall water availability is determined; If OWRD does not have the data to determine if an aquifer can support a new groundwater use, the application should be denied. I ask that OWRD create a definition for a “reasonably stable” groundwater aquifer that is specific to the hydrology of the area. I ask that OWRD include exempt wells in its new permit issuance rules and re-establish a monitoring program for these wells. |

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| Mimi Jones | None | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ;Sustainable agriculture practices; | Long term (20-50+ years); | Assessment of current aquifer status : usage plan by applicant : planned development and the usage inferred by history of similar developments | Decline approval | Water is finite and we live in a desert whose community seems hell-bent on using development and construction as the primary economy. Not a sustainable model. |
| Jennifer Stegemann | Self | | Surface water availability (a connection between groundwater and surface water) ; | Medium term (5-20 years); | Yes, I don't believe I have expertise in this area. | Reject it | Central Oregon can not continue ur to grow at this pace and support both home and resort development. |
| Michele McKay | | | Trends in groundwater levels ;Surface water availability (a connection between groundwater and surface water) ; | Short term (1-5 years);Medium term (5-20 years);Long term (20-50+ years); | Yes. We are no longer in just a drought, but in a change of climate. Models of this climate change should be used. | Deny the application. | Do not issue new groundwater permits until overall water availability is determined. If the data to determine if an aquifer can support a new groundwater use, the application should be denied. The groundwater permitting system should be modernized to take into account the cumulative impacts of each new groundwater use. Assess cumulative impacts by compiling information on the following: - The number of wells already located in the area, and how they are impacting the aquifer and surface water. - Research on nearby well water levels to see if water is declining. - Models to assess how climate change and drought will impact the area over the long term. - Available data to show the new user's impact on prior uses and surface water over the long term. OWRD should create a definition for a "reasonably stable" groundwater aquifer that is specific to the hydrology of the area. OWRD |

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| | | | | | | | should include exempt wells in its new permit issuance rules and re-establish a monitoring program for these wells. |
| Sarah Deumling | Zena Forest LLC | Sept. 22, 2022 (Salem) ; | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Long term (20-50+ years); | Yes! Climate change is progressing much faster than the experts had predicted and it seems that trend will probably continue. We MUST leave future generations the options we had in a livable state with abundant water. Please ere on the side of allocating less now in the hope that there will be abundant water - or at least water - for future generations. Emphasize ways to use less water - conservation. We must all share in the pain as we have squandered our precious resources for so many decades. Include exempt wells in addition irrigation wells in new regulations. 15,000 gallons/day for McMansions is unnecessary luxury. | Not sure about this. I imagine you would send it back for the missing information. | Thank you for embarking on this important process. |

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| | | | | | Irrigation water, used carefully, is not luxury but life giving for everyone. | | |
| Sue Martin | citizen | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ;population, environment needs; | Long term (20-50+ years);Medium term (5-20 years);Short term (1-5 years); | Yes | Require additional information | Balance the drought, community growth, agriculture needs to make future decisions regarding water allocation. |
| Kristin Campbell | | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Long term (20-50+ years); | Yes! We need to conserve water. I don't know what the measuring tools are that forecast population growth, and the impacts of climate on all life in our area, but if the application takes large amounts of water from our water table in unsustainable ways amd irreplaceable ways, and is also not a need we have….business golf course, resort, even brewery….we have to begin saying no. Drought is too big a risk for us now, and a | Try to be clear about the information that's needed, and if the project required a large use of water, it seems like it should be denied. We can't keep dipping deeper into the well, or have no idea what usage will look like. We have to manage and conserve this needed resource, at the cost of other privileges. | |

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| | | | | | far bigger risk in the future. | | |
| Ben Deumling | | | Trends in groundwater levels ;Surface water availability (a connection between groundwater and surface water) ; | Long term (20-50+ years); | Yes. Using best available science, it is critical to model the long term performance of any new allocation. | Disqualify until sufficient information is provided | |
| Toby Bayard | Central Oregon LandWatch volunteer and supporter | Sept. 28, 2022 (Bend) ; | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;We have Swalley Irrigation water rights. While we don't feed animals, they love our land. It's leafy and full of browse. That said, we understand the importance of | Short term (1-5 years); | Absolutely. For instance the 710 acres of Lower Bridge EFU land that Deschutes County Commissioners Tony DeBone and Patti Adair approved for subdivision into 71 10-acre RR10-zoned lots--why should those who purchase these lots be approved for water rights. Those who buy these lots will not be hurting for money. They'll have to drill wells. Who is going to ensure that they will not use groundwater to build mini golf courses, | Deny it or else require that the applicant document everything, regardless of the cost and effort required to obtain factual information. | We are facing a future where water will be worth its weight in gold. We have to start electing environmentally aware County Commissioners. Selling out in exchange for campaign donations ... it's gotta stop, and soon. |

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| | | | agriculture. It's really too bad that we're all so worried about losing our irrigation water rights, needed in order for our well to provide household water. We personally take great pains to conserve water. And, we grow our own fruits and veggies.; | | mini-lakes, heavily chlorinated "fresh-water" swimming pools, water features, etc.? The developer should not be approved for water rights as Oregon state laws were broken when 710 acres of EFU land was subdivided in violation of Oregon's land use Goals and guidelines. | | |
| Derrick deGroot | Klamath County Commissioner | | .; | | | | I cannot give feedback as I was not permitted access to attend a meeting. Coordination with Counties has been non-existent. I cannot support any rule making without that taking place. The fact that I am apparently listed as a participant in the meetings I was not permitted access to further demonstrates the lack of interest is actual coordination with local elected officials. |
| Hannah Croxton | | | Surface water availability (a connection between groundwater and surface water) ; | Short term (1-5 years); | Yes. By doing regular field checks and looking at data to estimate how the water flow is looking. Check to see if usage continues with the current trend, what will happen? What will happen if usage increases, decreases? And how that relates to climate change models. | They should notify the applicant and give them a set amount of time to correct it. | Please discontinue use it or lose it practices. Use education techniques to inform all users, public, private, personal, corporation, on lowering water usage. Educate on lowering reliance on sprinklers, learn xeriscaping and similar techniques. We live in a desert! Help farmers/Ag update techniques to lessen water consumption and keep yields high. There are ways. |

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| Jeanne Brooks | | | Surface water availability (a connection between groundwater and surface water) ; | Long term (20-50+ years); | The West and Central Oregon have been in deep draught conditions exacerbated by summer wild fires and high temperatures. Common sense dictates a moratorium on any new large developments such as destination resorts, golf courses, etc. Farmers and ranchers should not have to suffer or homeowners experiencing dry wells. | Refue it | Water and food are our most important commodities and need to take priority over amusement facilities, more restaurants a d box stores. Local farmers and ranchers are so absolutely necessary to our communities and must be preserved. |
| Thomas Pope | n/a | | Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Long term (20-50+ years); | by historical statistical trends | HOLD processing and return to applicant to provide sufficient information. | I have an issue with the ability for an applicant to be able to transfer water rights from one geographic area to another without consideration or study. |
| David Arnold | Retired | Sept. 28, 2022 (Bend) ; | Trends in groundwater levels ; | Medium term (5-20 years); | Yes. We should also be evaluating the use of existing surface and ground water rights. It irrtates me to see people and orginazations profiting from state water. | Send the application back. | Be conservative when issing water rights permits in the Deschutes basin. |

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| Charla Ranch | | | | | | | I am in no way an expert on water issues and don't feel qualified to answer these survey questions. My knowledge comes from news articles and weather reports. The extreme drought coupled with climate change has been very concerning. Yet, I see a huge increase in building and other developments requiring huge amounts of water and wonder will there be enough water and is water even a consideration in the permitting process? Thank you for sending me this survey and for your work. |
| Rick Parsons | ParsonsWater Consulting LLC | Oct. 5, 2022 (Central Point) ; | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;potential well-to-well interference; consideration of ACTUAL rather than permitted/certificated use of water by other vested water right holders; | | No. Drought should be addressed as it occurs by regulation of water rights. Understanding the complexities of and lack of accuracy of future forecasts will presumably result in overly-conservative denials of new water rights, transfers and other options for facilitating use of water | Is this not addressed in the Completeness Checklist and Applicant is notified if it is not sufficient? If not, OWRD should first and foremost define the necessary information required for an application; particularly if this goes beyond what is specifically established in statute and rules. Irrespective of the necessary information, OWRD should 1) notify Applicant of why the application is not sufficient; 2) give a timeline by which the insufficiencies must be addressed; and, most importantly, 3) put the application back into the review queue so that it does not have to | Regarding Question 8 - OWRD should establish a protocol and put it out for review by applicants and general public along with outlining the protocol in the applications or associated documentation that is clear on how to access. Doing this would help ensure that sufficient information is included in applications. In addition, surface water administration, required recording of pumping and more frequent submittal of pumping records and other aspects of ground water operations should be identified in permits and followed by watermasters. This is only part of the discussion but hopefully provides some basis to my position that OWRD is overly conservative in issuing permits and loath to regulate the river so that summer use permits are only issued if a claimed right is available over every month of the summer. |

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| | | | | | | go back into the line. If 2) does not adequately address 1), the application should be rejected, the Applicant notified of why it has been rejected and advised they may re-apply and if they do the rew application goes to the back of the line for review. | |
| Molly | | | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ; | Long term (20-50+ years); | Yes using trends in regional data for surface water | Deny until complete | |
| Cindy Luzier | | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ; | Long term (20-50+ years); | Yes both of these issues directly and in directly affect the amount of ground water. When ground water levels are falling and projected to continue to fall in the future new water rights should NOT be granted. It doesn't make sense to deplete he amount of water by adding more burden to the system. | Deny the application until it's completed. | When there isn't adequate ground water to support the current wells and the levels in the wells are falling why would you continue to grant water rights for either wells or river irrigation water? We see a lot of waste with irrigation water. People dumping water on big fields that aren't growing crops or running animals simply to have big green fields. This needs to be regulated as well. Central oregon is a high desert. Don't try to turn it into something that isn't natural. It destroys the natural ecosystems. |

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| JoAnn Berardo | None | | | | | | During a drought or predicted drought, a moratorium on all new building permits (requiring water) needs to be implemented including actual start of a building that may have already been approved. |
| Christine Wamsley | | | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;Evaluate annual rain/snow fall levels in order to estimate estimated additions if any to ground water; how can we better utilize the waters from the Deschutes River or other rivers that ends up going into the Columbia and then to ocean ultimately unused.; | Long term (20-50+ years); | Absolutely!! I will have to think about this | Turn it down!!! Require information related to number 9 above as well as other. Water is irreplaceable -- EIS should be extremely detailed so an informed decision can be made | |

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| Jeanne Poulsen | | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Short term (1-5 years); | Yes. Look at long term changes over the past 10 years. | Not permit | |
| D. Harrison | Timberfarm | | Trends in groundwater levels ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Surface water availability (a connection between groundwater and surface water) ; | Medium term (5-20 years); | yes. The future is here, and we must adjust water usage and restrictions according to the climate changes | deny the application | |
| Caroline Stratton | None | | Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;Surface water availability (a connection between groundwater and surface water) ; | Long term (20-50+ years); | Yes- climate change is affecting water availability now so why wait until it is critical as we see it has become in other parts of the western US. | Sufficient information on the application is a must. Too often business don't care about long term affects but only their immediate investments and the dollar. We cannot afford to deplete our ground water and aquifer! | Bend is growing so fast and not enough consideration has been given to the fact that water is no longer a guaranteed unlimited resource. It depends on snow in the mountains and water seeping back into the ground which is rapidly changing due to climate change. I have lived here since the early seventies. We can and must make the choices need to protect and preserve this area for all the reasons we came here in the first place. Unfortunately so many people moving here are not aware or don't care and have come from areas or lifestyles that have not stressed these considerations. Yes, there are things we will have to give up - life is all about choices. |

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| kent pressman | none | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Long term (20-50+ years);Medium term (5-20 years);Short term (1-5 years); | | not consider the application | |
| Ned Austin | | | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;Impacts of Climate Change, Cascade Snowpack Trend; | Long term (20-50+ years);Medium term (5-20 years);Short term (1-5 years); | Yes and use worst case scenarios from highly reputable sources e.g. NOAA, California | The application should be denied if there is insufficient information to grant the application. | The implications of climate change are real and serious. State and Federal government policies need to be proactive and consistent with this fact. Postponing hard decisions only makes life more difficult for future generations. |
| Quinn Keever | | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Medium term (5-20 years); | Yes. By surveying water levels before granting a permit, including re-establishing monitoring for exempt wells. Determine a definition for “reasonably stable” for each aquifer. Evaluate cumulative effects before granting permits. | Withhold the applicant’s permit. Just like in local government, a “completeness check” is required to proceed. | Thank you for your willingness to revamp your permitting process to acknowledge our changing (depleting) water supply. |

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| Judy meredith | N/A | | Trends in groundwater levels ; | Medium term (5-20 years); | Trend is important. Trend toward drought means history of 50 years ago is not pertinent today. Look at both but weighted for recent 5 years. | Consider use of water, how will it be used, what purpose. We all see sprinklers going all day in the hot sun and are sickened by what feels like waste. My neighborhood has 2 wells and one failed in January. We are on half rations still. Driving by water being wasted is disturbing. | The seniority priority for water is just wrong. Make rules based on science and crops, fire hydrants, modest domestic use. |
| Dodi Redden | Colw | | Surface water availability (a connection between groundwater and surface water) ; | Medium term (5-20 years); | Yes | Give the application a time frame to appeal and what is needed | When an application is submitted neighbors of the application should be notified and given a chance to appeal |
| Parker Vaughan | Jackson's Corner | | Trends in groundwater levels ;Surface water availability (a connection between groundwater and surface water) ; | Medium term (5-20 years); | Yes! I think we should take more consideration for our local ecosystem and supply chains. With conditions in both war and climate change rapidly effecting the entire globe there is no better time to look at the resiliency of having an abundance of agriculture surrounding our cities in Oregon and more specifically the tri-county area so | Investigate more! Ask more questions! Think of our future not just capital gain | Specifically for Deschutes county it seems as though we don't put enough emphasis on regulating and or taxing beverage companies and other high water usage industries. The beverage industry that is so large here in Bend (ie breweries) are basically exporting water that we don't have. What should we do about that in times of dire need for water so that we don't shoot ourselves in the foot later on |

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| | | | | | that we are not dependent on a global supply chain | | |
| James Fraser | Trout Unlimited | Sept. 22, 2022 (Salem) ; | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;Areas of concern database, records showing surface rights that don't get water they're entitled to; | Long term (20-50+ years); | Yes. WRD should consider how drought and long-term climate conditions are likely to affect the criteria referenced above in Question #7. For example, if groundwater in an area is stable under current demand and use, but drought and climate change are likely to result in ground water declines after accounting for current use and demand, then WRD should probably deny new permits in that area. | WRD should require strict compliance with application requirements. Applicants are responsible for submitting complete applications; if an application is incomplete or insufficient, then the appropriate result is for WRD to deny the application or require re-submission. | TU is interested in serving on the RAC for groundwater allocation, but we'd need to figure out which staff member could serve in that role (hence, my "maybe" response above). Thank you! |
| Geoff Reynolds | | | Trends in groundwater levels ; | Medium term (5-20 years); | Of course. Water use should be limited to what is sustainable for the historic and projected timeframes. New applications should be denied when there is a projected shortfall and all existing rights should be re-allocated. | Request the missing information within a timeframe and deny the application if the information is not then supplied. | Surface and ground water are inextricably tied together, the surface resupplies the ground and it all winds up in Lake Billy Chinook. Use of both sources needs to prioritize based on "most beneficial use". Surface water is already over-allocated, this cannot be allowed to happen to the ground water. |

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| Lorie Hancock | | | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ; | Medium term (5-20 years);Long term (20-50+ years); | Yes. I'm pretty sure that there are forecasts for the impacts of drought and climate change that could be considered. | Send it back. The applicant has the burden to submit a complete application. | A new house is built to last at least 30 years so you need to be comfortable when you issue a new permit that there is enough water for that new allocation for that period of time without drawing water from existing |
| Cole Hendrickson | DEQ | Oct. 10, 2022 (Virtual) ; | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ;Areas of Concern; | Medium term (5-20 years); | Yes - utilize modeling of historic and current drought conditions to estimate impacts in the future. | Ask the applicant to redo the application | |
| Rachel O'Conner | Environmental Defense Fund | Sept. 22, 2022 (Salem) ;Sept. 28, 2022 (Bend) ; | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;Impacts to domestic wells; threats to the public interest ; | Short term (1-5 years);Medium term (5-20 years);Long term (20-50+ years); | The impacts of climate change are uncertain, with changes to the timing and amount of precipitation varying across the state. A revised groundwater allocation process should consider future climate conditions. Specifically, the process should consider how changes in climate, including increased and/or decreased water availability, might impact aquifer levels and connected | The Department should not issue a groundwater permit when they are given insufficient information nor when the Department does not sufficient information to determine the availability of groundwater. | Over-appropriation and subsequent overdraft of aquifers threatens the long-term viability of agricultural production, the health of groundwater-dependent ecosystems, the right to clean drinking water for domestic well users, and can be a burden to taxpayers. For these reasons, the Department should err on the side of caution when issuing groundwater permits. In groundwater basins that are "closed" OWRD could consider developing or expanding innovative management tools and practices as a way to create flexibility for water users and adaptability to changing weather and climate patterns. Examples of such tools and practices used in Oregon and/or in other western states include groundwater mitigation or offset programs, water trading, incentivizing best management practices to increase water conservation, and |

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| | | | | | surface water sources. There are several important long-term climatic factors that may impact water availability in the future. For example, warming temperatures can reduce soil moisture and increase evapotranspiration which may impact infiltration into the aquifer, or infiltration may decrease in places where precipitation patterns change to more rain and less snow. Though not directly related to climate, several other states in the western U.S. use concepts like safe, perennial, or sustainable yield to assist with groundwater permit determinations. Including the health of aquifers and connected surface water sources should be a critical step in permit assessments. Oregon should consider how to integrate concepts like sustainable yield into the long-term management of the state's groundwater resources. | | aquifer storage. |

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| Mark | none | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ; | Medium term (5-20 years);Short term (1-5 years); | yes, base the evaluation on precipitation and recharge of the aquifers | Deny the application. | make the applicant prove hat there are sufficient groundwater resources for their proposed use without any decrease in groundwater levels.<br>Require monitoring wells for new groundwater withdrawal proposals. Collect water level information prior to approval of the use and continuously if approved. If there is any impact to water levels withdraw the right to pump water. |
| Rima Givot | | Sept. 28, 2022 (Bend) ; | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;Real time data regarding current well levels; | Long term (20-50+ years); | YES! Drought and long- term climate conditions are critical to consider when evaluating applications for new water rights because these impact the water levels.<br>You should use current, peer-reviewed modeling and data to determine whether water is ACTUALLY available, and act accordingly, regardless of what people want. We have to be realistic about how much water there actually is and not try to allocate more than there is. Wells are already going dry. | Deny the application. | Put a moratorium on any new wells in high desert areas. In Central Oregon we are already past the point of current wells being impacted by new drilling. Current families are already having to deepen and redrill wells that are 20-30 years old. No new wells should be allowed as long as the aquifer is decreasing, and current data should be monitored and used with transparency. Absolutely no water rights should be given for any golf courses or non-food commercial reasons in high desert regions. Take into account the LONG TERM (200 year) impacts of wells on surface and groundwater and plan accordingly. Take native species needs into consideration and allocate historical pre-settler levels of water for native ecosystems. Consider incentives for use of native plants in landscaping. Assume water is a limited resource in the high desert regions. Incentivize using graywater for irrigation. Include well deepening in data and use the data you have with current test wells. Incentivize NOT using water rights instead of HAVING to use the water to keep the rights. I urge you to have the courage to be real about the fact that Central Oregon's water levels are decreasing and |

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| Gregory E. Kupillas, R.G., C.W.R.E. | Pacific Hydro-Geology Inc. | Sept. 22, 2022 (Salem) ; | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ;See additional narrative in Number 11, below; | Short term (1-5 years); | No. No one has so far been able to reliably predict future climate conditions. | Not sure what this is getting at here. If an application is incomplete, it should be returned to the applicant with a list of deficiencies. If this question means the application has not provided sufficient information for the Department to determine groundwater availability, then this implies this is the responsibility of the applicant, which has never before been a requirement in an application. | Suggestions for evaluating groundwater availability:<br>• Rely primarily on available water level data (see Draft Oregon Water Resources Department Ground Water Review Guidance Document, Section B1a).<br>• Rely on a reasonable amount of information to make a decision. The standard of proof should be a preponderance of evidence. One or two wells in the immediate area showing little or no water level declines in the target aquifer over several years, considered together with other confounding factors (see next two bullets) should be sufficient to make a determination.<br>• When reviewing water level data, account for precipitation trends.<br>• When reviewing water level data, account for commingling wells in the area.<br>• There must be areas in the State where it is now known that groundwater is available (i.e. not over- appropriated). A map showing these regions of known groundwater availability should be developed for use by both the Department and applicants.<br>• Be open to mitigation options proposed by the applicant. |

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| | | | | | | | Some suggestions on what not to do:<br>Don't require a comprehensive and thorough understanding of the available recharge to, and existing groundwater withdrawals from, an aquifer system in order to make a decision. You will likely never have this level of information. For just a couple of examples, see the groundwater reviews for Applications G-18737 and G-19072.<br>• Do not rely too heavily on the notion that pumping groundwater from a well will ultimately result in withdrawal of 100% of the well pumping rate from the nearby surface water system. This a valid theory, but only fully applicable under fairly specific, well defined conditions that are not representative of conditions everywhere in the State or consistently and continuously through time.<br>Other Thoughts:<br>Consider using this process as a stimulus to examine and develop possible mitigation options; for example, the Department should bring back the option to cancel valid surface water rights to mitigate for new groundwater uses. Valid surface water rights represent real wet water that will go back into the stream system in the summer when water is most needed for aquatic habitat.<br><br>• Work on defining some balance between protection of senior water right holders and allowing further development, which in many cases will be by the same senior water right holders.<br>• Consider using this process as a stimulus for developing incentives for senior water right holders to conserve water.<br>• Consider using this process as a stimulus for examining ways to create more groundwater storage throughout the state. Consider management by basin area and establishment of large |

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| Malia Kupillas, R.G., C.W.R.E, | Pacific Hydro-Geology Inc. | Sept. 22, 2022 (Salem)<br>; | Surface water availability (a connection between groundwater and surface water)<br>;Trends in groundwater levels<br>;Look for potential commingling wells. ; | Short term (1-5 years); | Climate over time is always changing. There will always be droughts that may last from one year to seven years. Conversely, there may be very wet years that offset the drought years and allow the aquifers to recover. Therefore, you should plot water level and precipitation data together to evaluate water level trends. The water level data needs to be measured at the same time of year. For example, water levels measured in March and October for the same year shows the seasonal fluctuation and cannot be interpreted as an over drafted aquifer. However, a series of March water levels over time that show a | If an application has insufficient information then the application should be returned to the applicant and the deficiencies addressed. | One of the biggest impacts to groundwater in this state has been the loss of recharge through county ditches, drain tiles, straightening stream channels and building dikes for flood control, impervious surfaces and wells that allow the commingling of water between aquifers. These all contribute to a waste of water and limit the amount of water available for authorized uses like agriculture, commercial, industrial, thermal, recreational, wildlife, and other uses. These negative impacts can be addressed by repairing commingling wells that impact the shallow aquifers, use Artificial Recharge to recharge the shallow aquifers and Aquifer Storage and Recovery to recharge the deeper aquifers. |

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| Winnie Givot | | Sept. 28, 2022 (Bend) ; | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;Whether new applications will benefit or be detrimental to an area in terms of the | Long term (20-50+ years); | Yes. I don't know how. | Ask for more | We humans are generally short sighted and greedy. Money and the bottom line counts more than the environment, the lives of others and balance. Our impact on the earth is great. We are all too powerful. How to find a balance between the need for housing, say, and the environment as well as the basic, but unrecognized need for simplicity and beauty should be part of OWRD's task, difficult though it is. Thank you very much for taking this on. It is needed. |

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| | | | environment, wildlife habitat and natural beauty and balance of life.; | | | | |
| Karen Lewotsky | Oregon Environmental Council | | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ;"in-ground" rights similar to "in-stream" rights for surface water should be established and considered; | Medium term (5-20 years);Long term (20-50+ years);Short term (1-5 years); | Yes. Current models show trends and patterns in changes to precip timing, amount and intensity for various geographic regions. These models will continue to evolve and improve, and should be consulted when setting limitations for water permits. If groundwater supplies cannot be shown to be both available and rechargable, no further rights should be issued. | Reject the application, send it back for further clarification. People should not be able to use a incomplete/inaccurat e application to secure a priority date for their application. | 1. Establish "in-ground" water rights similar to "in-stream" water rights to preserve the resource.<br>2. Accurate groundwater mapping is essential, as Oregon's geology creates many complex geohydrologic relationships.<br>3. f ongoing data collection and mapping efforts reveal any reason for curtailing pumping, including water quality concerns, a means for considering 1) complete cessation of permiting, 2) changes to county land use regulations (no domestic wells sunk into known water-limited aquifers.<br>4. Collect data on location and volume extracted for exempt wells. The impacts of exempt wells currently cannot be accurately estimated. That information is essential for good water management of groundwater resources, particularly in the face of changing climate conditions and increases in population. |

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| Gabriel Chladek | None | Sept. 28, 2022 (Bend) ; | Trends in groundwater levels ;Surface water availability (a connection between groundwater and surface water) ; | Short term (1-5 years); | Yes. This is absolutely critical. We are seeing groundwater levels dropping rapidly now with many local residents losing money to drill Wells deeper or move their pumps. | Reject the application. | |
| Sarah Liljefelt | | Oct. 5, 2022 (Central Point) ; | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Medium term (5-20 years);Long term (20-50+ years);Short term (1-5 years); | Only if trends are clear and backed with scientifically sound data to affect the finding about whether water is available. | OWRD is the agency in charge of making water allocation decisions, and it is the agency's role to have or seek out the necessary information. OWRD should stop using lack of information as an excuse to either approve or disapprove of applications. Otherwise, OWRD should operate more like DOE in Washington where applicants are required to provide the necessary information, and the agency trusts and relies on the information. However, this would result in increased costs for applicants, | |

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| JANA NOVOT NY | | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Short term (1-5 years);Medium term (5-20 years);Long term (20-50+ years); | Drought is obvious tendency of our region. Water conservancy and good management is the key | Get all info needed. | Please treat our ground water and all the water sources as a key to a survival of life on the planet. Think of future for our children. They'll need water to drink, not more luxurious developments. |
| Julia Howland | Private citizen - Bend | | Trends in groundwater levels ; | Short term (1-5 years);Medium term (5-20 years);Long term (20-50+ years); | Absolutely! Use modelling to assess how climate change and drought will impact groundwater levels both short and long-term and plan according to the models. I support making decisions more on the conservative side to be sure that we are not depleting groundwater supplies overtime. | | I support OWRD's decision to modernize the groundwater permit system and not to issue new groundwater permits UNTIL overall water availability is determined. I encourage OWRD to deny permits if there is any concern that the groundwater request will negatively impact groundwater levels.<br>I would like to see the modernized permit system include cumulative impacts such as: the number of wells in the area, research as to the number of wells that are in decline, and climate change and drought long-term projections.<br>I believe that senior water rights holders should not be exempt from having their permits adjusted as the system is modernized, overall water availability information is determined and as climate change and drought impact us going forward. OWRD should include exempt wells in the new permit issuance rules. |
| Jennifer Engels | Oregon Sea Grant | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ;the most accurate available science; | Long term (20-50+ years); | Yes! Permits should be allocated with the long- term sustainability of water resources in mind, taking into consideration all factors (climate change, urbanization, social justice, etc.) | Request more information | Anecdotal and scientific evidence from Central Oregon make clear that we are overutilizing our limited water resources at an unsustainable rate. Permitting should reflect 1) the true availability of water projected out to the longest possible time horizon, 2) the true cost of groundwater usage/loss to the community and ecosystems, and<br>3) considerations of environmental justice for tribes, subsistence water users, and marginalized communities, rather than resorts and real estate developers. |

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| Eva Eagle | | Oct. 10, 2022 (Virtual) ; | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Long term (20-50+ years); | Yes. Not sure best way to do | Ask for the rest and deny if info not forthcoming | We need to get a handle on this problem |
| Jessica Dorsey | Oregon Water Utilities Council | Oct. 10, 2022 (Virtual) ; | Trends in groundwater levels ; | Medium term (5-20 years);Long term (20-50+ years); | Any changes to Oregon's groundwater allocation policies should be based on data and science. Policy changes need to be well- informed and based on local recharge mechanisms and on the characteristics of the subject aquifer. | | We also understand that OWRD intends to have new groundwater allocation policy rules adopted by spring of 2023. While we recognize the urgency of this matter, this schedule seems unnecessarily fast given the complexity and importance of the topic and the intervening 2023 legislative session. We urge the Department and Commission to not rush the rulemaking effort so that municipal and other stakeholders can meaningfully participate. |
| Jamie McMillin | None | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ; | Medium term (5-20 years);Long term (20-50+ years); | I know that computer models are not perfect, but historical and current trends combined with the latest science from NOAA's climate office should be considered when forecasting our future water supply. Obviously, we should try to maintain a steady (or increasing!) supply. If new applications will continue to decrease overall water resources, then other water rights should be reduced (with input from affected stakeholders). | If OWRD doesn't have enough information in a new application to determine how much water will be used, then any approval or disapproval is just a best guess (or a gamble). I am uninformed on this subject, but it seems to me that OWRD should hold out for sufficient information on an application before making a decision. | I understand this is a terribly contentious subject and have read some history of the long-standing struggle over water rights in Central/Eastern Oregon. What is different now is climate change and accelerating population growth. What we have done in the past is not going to continue to work. I think it's important to use the best data we have (and continue to collect more) to inform the public and try to include all local stakeholders in crafting new policies/agreements. Also, educating the public on where our water comes from, how it is distributed and how to conserve it will be helpful. I hate seeing big green properties with all their sprinklers going at noon on a hot sunny day. It would be great if conserving water became a matter of civic pride rather than a trigger for defensive anger. |

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| Bob Haas | | | Trends in groundwater levels ; | Short term (1-5 years); | Yes. Old practices should no longer be applied. We need to look at ways the property owner should mitigate their use of water in ways that offset the water they seek to utilize. What conservation actions are taking place on site and what contributions to off-site water conservation actions are being made. | Deny the approval of the application. | We need to make a concerted effort to deal with the present situation and to avoid being in a crisis situation. |
| Kristen Sabo | Central Oregon LandWatch | Sept. 28, 2022 (Bend) ;Sept. 22, 2022 (Salem) ; | Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ;proposed use, favoring productive agriculture/ municipal water (w/in UGB); | Long term (20-50+ years);Medium term (5-20 years);Short term (1-5 years); | Absolutely. As OWRD's presentation explained, extraction over long periods of time and the resulting cone of depression and surface water capture, in addition to less dramatic groundwater and surface water connections, impact the water table level, drying out existing wells, and further impacting instream water already failing to meet ecologic flows for fish and wildlife and already failing to fulfill | If there is insufficient information on an application to show there would be no injury to senior water right holders and there would be no injury to the character and quality of the aquifer, OWRD should deny the application. All applications should have data to support issuance that shows the water resource is available, and to avoid over- | -Prioritize domestic uses in UGBs: Continue allowing new domestic wells inside UGB (or outside UGBs that serve UGBs), while disallowing new domestic/commercial wells outside UGBs -Only allow new groundwater uses for land uses outright permitted in land use regulations in resource zones (Goals 3 and 4) --> Eg, don't allow new wells to serve non-farm uses in EFU zones, or other conditionally allowed uses in EFU zones like commercial activities -->Don't allow new wells in exception areas (rural residential, etc) --> Include exception for productive farm uses in exception areas, eg a commercial vegetable farm on exception/rural residential zoned land, like a 5-acre organic farm in the MUA-10 zone |

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| Kate Moore | The Freshwater Trust | Oct. 10, 2022 (Virtual) ; | Trends in groundwater levels ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Surface water availability (a connection between groundwater and surface water) ; | Long term (20-50+ years); | Drought and long-term climate conditions should be considered when evaluating new water rights. The current climate models indicate future droughts are likely and recharge will decrease. If these factors are not taken into consideration in issuing new groundwater rights, increasing groundwater declines, worsening impacts to surface water, and additional disputes between water right holders are likely. Climate and drought models should be evaluated in determining whether adequate groundwater supply exists now and for the foreseeable future. A permit for a new withdrawal should only be issued if it will not (considering cumulative effects): result in a decrease in year-to-year groundwater levels, impact surface waters, or interfere with existing rights. Given that not all groundwater users are required to report use, and that we have only limited data indicating current | Provide the applicant an opportunity to provide additional information, and if unable to do so in a certain timeframe, deny the application (allowing them to resubmit at a future point). | The three factors the Department identified – hydraulic connection with surface water, history of regulation, and reasonably stable groundwater levels – should all be considered in evaluating whether to issue new groundwater permits. Of these, TFT would place priority on considerations of impacts to surface water and whether there is a truly stable groundwater supply. While the historical regulation of existing water rights may provide insight into the availability of the surface and groundwater resources in an area, and whether injury might occur, it should be considered in the context of hydraulic connection and the stability of groundwater supplies rather than a stand-alone consideration. A historical lack of regulation should also not lead to a presumption that a new permit should be granted as that factor only addresses the question of injury. Considering these factors will help ensure that new groundwater rights are only issued where such use would be sustainable to allow future resources for the environment, agriculture, and our communities. In evaluating the hydraulic connection, and potential impacts, to surface water, looking at factors that extend beyond a specific, arguably arbitrary, distance from surface water and initial year of potential impact, will provide a more meaningful analysis. For example, the existing number of wells and quantity of withdrawals within the vicinity of the surface water should be considered in determining the potential impacts from a new groundwater right. These cumulative effects can have a dramatic effect on surface water levels where a single well considered in isolation is unlikely to capture the true impacts of groundwater withdrawals on surface water. The Department should also consider a |

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| | | | | | groundwater levels, it is important to avoid issuance of new permits unless it is clear that adverse impacts will not result. Any groundwater rights that are granted should also be conditioned to facilitate oversight necessary to prevent or mitigate unanticipated adverse impacts. | | more meaningful definition of reasonably stable groundwater levels. A determination that groundwater levels are stable where they are not excessively declining leaves no room for managing a sustainable groundwater supply. This analysis should take into consideration the current trends in basin-specific groundwater levels and the ability of the aquifer to recharge, as well as a projection of how levels may be affected by climate change and future droughts based on modeling. Any consistent decline in groundwater levels should be a sign that new withdrawals should not be permitted. Looking at the ability, and rate, of recharge of the aquifer compared to the current groundwater withdrawals from that aquifer should help determine if additional withdrawals will contribute to a decline in groundwater levels over time. Whether or not basin-specific rules are in place, basin-specific factors should be taken into consideration in the evaluation of new groundwater applications. |

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| Trish Carroll, Oregon Lake Association, Lake Abert Committee Chair | Oregon Lakes Association | Oct. 10, 2022 (Virtual) ; | Trends in groundwater levels ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Surface water availability (a connection between groundwater and surface water) ;impacts to the environment and society, and climate change; | Short term (1-5 years);Medium term (5-20 years);Long term (20-50+ years); | Yes. Addressing these conditions with the best available science in assessments and providing a margin of uncertainty when allocating water | Deny the application until more information is obtained | The Oregon Lakes Association (OLA) strongly supports Oregon Water Resources Department (WRD) in development of a sustainable groundwater allocation project to modernize the antiquated groundwater system. OLA also applauds WRD's process to obtain public input throughout the development.<br>OLA believes It is critical to know how much water is available and how much is being used by existing water rights and uses, including water for ecosystem needs. Management of groundwater and surface water as a single resource is essential to protect groundwater and surface water use for human and ecosystems (e.g., lakes, wetlands, marshes, springs, fens).<br>Criteria we suggest that are important for protection of senior water rights include: 1) metering and measuring water use; 2) providing conservation incentives and assistance for water rights holders to conserve water use while preserving their rights to use water; 3) denying issuance of a new or revised permits if data is lacking to demonstrate the groundwater system can support a new groundwater use.<br>To address sustainability over time OLA recommends basin and/or finer scale assessments of water availability be completed. Basin and finer scale assessments should include data, analysis, criteria, monitoring and adaptive management components. Beneficial uses, including instream uses, and cumulative effects of over pumping should be included in the assessments. Assessments should provide assurance that development of groundwater resources have minimal and mitigable impacts to the environment, society, and water users. Climate change and variability are important factors to include in assessments.<br>Multiple timeframes are beneficial to |

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| | | | | | | | address sustainability over time. OLA supports looking at existing data on water use (e.g., well logs, observation wells, water master records, LiDAR) as well as data on the relationships to beneficial uses. Identifying data gaps to reduce uncertainty would<br>also be beneficial.<br>Many lakes and marshes in Oregon are supported by groundwater. Lakes, marshes, springs, and fens are prevalent across Oregon. These and other groundwater dependent ecosystems are key areas for biodiversity and ecological refuge. These areas become critical habitat as our climate becomes more variable. Groundwater dependent ecosystems should be evaluated and incorporated into long-term sustainability assessments.<br>OLA recommends that WRD coordinates with universities, research, and other organizations that have knowledge and expertise with groundwater dependent ecosystems. OLA has extensive expertise and data on lake ecosystems in Oregon. We would be happy to assist WRD with evaluating<br>lakes as part of assessments<br>Thank you for the opportunity to comment on WRDs process to modernize groundwater management. OLA looks forward to further<br>participation on this topic. |

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| Joshua Alex | n/a | | Surface water availability (a connection between groundwater and surface water) ;Surface water regulation history (watermasters prioritizing senior water right holders over junior water right holders) ;Trends in groundwater levels ; | Long term (20-50+ years); | Yes, by using modeling to assess how climate change and drought will impact the area over the long term | We support OWRD in its decision to not issue new groundwater permits until overall water availability is determined; If OWRD does not have the data to determine if an aquifer can support a new groundwater use, the application should be denied. | |
| Michelle | | Oct. 10, 2022 (Virtual) ; | Trends in groundwater levels ;Surface water availability (a connection between groundwater and surface water) ; | Long term (20-50+ years); | Yes! If there is modeling of future conditions based on current usage, couldn't the impact of new rights be modeled as well, with granting criteria based on an agreed total withdrawal? | Deny it. Not sure why this is a question? | |
| Susanna DeFazio | | | Surface water availability (a connection between groundwater and surface water) ;Trends in groundwater levels ;future water shortage based on climate trends; | Long term (20-50+ years); | Yes. No new golf developments, decorative lakes or ponds, lawns. All developments should use xeriscape landscaping. | Deny application until all info is available | Get rid of politicians & policy makers who have ties to developers |
| melissa robertson | | | Trends in groundwater levels ;Surface water availability (a connection between groundwater and surface water) ; | Short term (1-5 years); | Yes. Not sure how. | | |

**Rick Parsons, ParsonsWater Consulting LLC. Received via email 10-7-22**

I will provide some more comments regarding the ongoing rules modification regarding GW allocation before October 19. They will mostly relate to the other side of the GW-SW connectivity since I think it important that the GW team and OWRD provide a more full answer to the question "if I can't get a well right, than how can I get access to water for instream or out-of-stream uses?". That might be POA to POA transfers (permanent or temporary), Permit Amendments, POD to POA transfers, ACW, possibly exchanges and other recommendations - ad hoc mitigation and possibly more rigorous replacement / augmentation plans. OWRD is certainly confined by statute on how to address most of these options and it would require political will in the legislature to further facilitate maximization of the beneficial use of waters of the state without injury to vested water rights. Given that political will is in short supply, I am hopeful that through policies and guidelines OWRD might provide more flexibility to water users that either have or don't have water rights to have access to the use of water throughout the state. Stepping off that soapbox for now, I wanted to offer two observations regarding the presentation the other night. I think they would be helpful with whatever audience you have, day or night. This came to mind, in part, from discussions with general public attendees at and after the meeting. Consider the state of mind (notably the attention span) that most of the people attending have worked all day and probably drove a half an hour or more to attend; not to mention they are probably hungry - or maybe that was just me.

1. Drive home (harder) the prior appropriation system at the top of the meeting - Water rights don't provide you water but, rather, the expectation of water; first in time, first in right; SW users have first dibs for water - out-of-stream and, more recently, instream; GW users have more junior rights, before and after ISWRs but these rights are junior to most SW rights; the fact is SW and GW is connected, well pumping takes water from the stream so GW users impact senior SW rights (and that is what you are here tonight to discuss) and OWRD needs to address that GW-SW connectivity in the allocation process, certainly in light of the fact that GW levels are diminishing in many parts of the state.

2. Dumb down / simplify the hydraulic connection discussion. The water table is basically the water level in the river as it extends out towards the hills. You might include use of the sponge or underground bathtub metaphor; that some sponges are tighter than others, etc. I have heard your presentation a number of times, mostly through reviewing videos of WRC meetings. My guess is you lose many people's attention with Figure 9 from USGS Circular 1376.

This is difficult to follow - even for college graduates. You might think about sticking with Figure 7 from the same report. You can then have less math-focused pictures to show that throughout the lifetime of pumping (and with post-pumping depletions but you probably shouldn't go there ;-) pumping water out of the ground takes water out of the river. I took Figure 7 and rearranged it in a way that makes sense to me. Using something like this would keep people focused on one slide, and allow you to go back and forth between the different figures to show that, irrespective of how far out you are from when pumping began, GW users take water out of the bathtub and the hole that was created is either filled with subsurface water going to the river or water already in the river that was going downstream. Either way, well pumping takes water away from SW users and impacts the streamflow conditions to which SW users have been entitled since they first appropriated water. Take this advice for what it is worth. And I hope you and your team can develop something workable and hopefully valid for the entire state while also being able to fashion a process that is adaptable to basin specifics since, for example, the Harney basin and the Rogue / Umpqua basin are different. I can go on an on and already have but thanks for reading. Lastly, please 1) provide me the reference to what I believe Ivan indicated was the OAR that establish the approach to development and modification of OAR; 2) consider me as interested in being part of the RAC for the GW Allocation rules; and 3) tell Ivan I am looking forward to his response to my July 22 email to Ivan/Shavon/Justin/Jake regarding Shared Water Shortages.

**Susan Strauss, 10-11-22**

Thank you for engaging public comment in deciding the future of our water.  I am sure that it is a difficult task to ensure the OWRD's mission in these times.

I am not a scientist but I have been reading as much as I can on the water problems of our area and the West.  Most of my friends, both in Central Oregon and across the West, are similarly educating themselves.  In short, our family believes that groundwater allocation should be viewed like a bank account.  You can't write checks for what you don't have in the bank.  The bank analogy seems useful until we are humbled by the fact that we can find a way to live without money, but we can't live without water.  OWRD needs to guard our water as a precious substance, sustaining it for every future generation and the health of our ecosystems.  If this is not done, our economy will collapse — so actually, sustaining a healthy economy is dependent on a sustainably managed resource — protecting these two, the ecosystem and  the economy, are not contradictory in purpose.  The highest use of the water should be to keep our rivers and streams healthy — as defined, the 1987 in-stream levels should be fully allocated before extracting more from the ground. We expect OWRD to manage this resource conservatively for the population that lives and votes in Oregon at present and not for some fantasy, future population that destination resort developers and real estate professional view as the source of their economic prosperity.

Again, I am not a scientist, but I also know that science can be manipulated.  I understand that your agency's data only goes up to 2008.  This is real trouble  when trying to evaluate the bank account.  Between 2008 and 2022 a lot has changed. I have observed that the summer temperatures in Central Oregon have broken their previous year's record every year for the past 8 years. Perhaps for even longer.  Two of the three glaciers in the Three Sisters are gone and the third is going.  Where is the recharge of our aquifer coming from in the future?  All this has occurred within the 33 years I have lived here.  Your agency is just 68 years old and you proposed the question, "Should the agency manage the water for the future?"  I found this question extremely provocative. This question would not exist in Native American cultures where everything is considered in terms of the future generation's health.  In our current, dominant culture, we cut everything up into

segmented pieces — ODFW is in charge of the fish, but someone else is in charge of the water. We ship water here and there until nobody knows where the water is. People become exhausted trying to figure out who owns what share of water right until, as if by magic, it all ends up being owned by someone like DeLashmutt, who offers it to farmers like some benevolent tzar. All the while NASA's science tells us that because of climate change, the water is all going away — some parts of the globe have storms of too much water and many places will be starved for water. John Short, the water broker, asked if we could add years in the past to evaluate the current situation. If John wants to add years from the past, he will discover the unhappy history of W.A. Laidlaw who was shot for promising farmers irrigation -- never delivered.

One doesn't have to be a scientist to see that Central Oregon is a desert. DeLashmutt's Thornburgh development desiring to eat 6 million gallons of water a day for golf courses, artificial lakes, rich people's "nature villas" (probably second or third homes) is an obscene use of desert water. Studying the political tricks of this man and his lawyers echos a bleak history. It is clearly evident in both the science and common people's complaints of wells drying up — the water table is on a death dive.

With thousands of unmonitored and unmeasured spring flows and personal wells, in combination with the shortcomings of the mitigation rules that do not mitigate for the dropping aquifer, we begin to see that we are not that different from what is happening in California — and just because people leave California for this Central Oregon paradise, doesn't mean that the drought and water scarcity issues are not right here today. OWRD needs vastly improved basin-specific science to protect our water — currently, not a renewable resource. You can't manage anything you don't measure or monitor. Like General Wesley Clark says, "Hope is not a military method for planning." Likewise, hoping for a snowy winter is not a plan for our water problems and will not bring back our glaciers. We need to protect our ecosytems and economy by planning in the face of drought. No further groundwater right applications should be accepted in the Deschutes Basin until OWRD can assure the long term sustainability of our water ecosystems.

Our family has already been put on irrigation rationing while we pay more for this water and watch people in Bend water their lawns. All of the disparate elements of water use have to be put together in one puzzle — one picture — from which fairness and transparency can be evaluated and appealed by an unhappy public, unrepresented by the purchased political elements. No new applications for groundwater rights for the Deschutes Basin should be considered until this complete picture is created and justified.

If our aquifer is dropping, it is not sustainable or renewable. I hope my thoughts will inspire your agency to steward this non-renewable resource for all Oregonians of all generations.

**Rynda Clark. Central Oregon Bitterbrush Broads, 10-4-22**

The Great Old Broads ("Broads") is a nationwide organization with multiple chapters in Oregon that have deep roots and concerns about our natural resources. We are a national grassroots organization, led by women, that engages and inspires activism to preserve and protect our public resources including lands and waters.

The Bitterbrush Broads strongly support revising Oregon's issuance of new groundwater permits to improve protection and sustainability of groundwater-dependent ecosystems (e.g. springs, wetlands, and connectivity with streams) as well as those, especially in rural Oregon, that rely on groundwater.

OWRD must halt issuing new and excessive groundwater permits and develop a long term sustainable approach that provides stable water tables and groundwater supplies into the future. OWRD must meet the 1955 law that requires maintenance of groundwater levels. In many parts of the state, water tables are dropping due to over appropriation and in some cases illegal use. Surface waters are already way over appropriated and the connections to groundwater supplies have been well established in several basins.

It's time for OWRD to take a strong position and deny issuance of groundwater water rights in the face of climate change and drought. Large corporations even from other states have been exploiting our precious water supplies to the detriment of Oregonians that rely on domestic wells, and causing wetlands, springs and streams to become further depleted that are critically important for our endemic fish and wildlife species.

Climate change is reducing our snowpack, altering precipitation patterns and drying up streams that support many species of native fish and wildlife that are declining and some even face extinction. We need better management of Oregon's groundwater to sustain groundwater-dependent ecosystems as well as existing water users. We urge OWRD to conduct monitoring, compliance and enforcement on overuse and illegal use of existing groundwater.

Existing data shows that in many areas of Oregon, aquifer declines coincide with excess groundwater permitted by OWRD. Warmer rivers with low to nonexistent flows, dry wetlands, dry rural residential wells, water conflicts and declining aquifers now occur in many parts of Oregon. OWRD has an obligation to make sustainable groundwater allocation and management decisions for streams, wetlands, people, and communities.

OWRD sometimes lacks the data to determine whether the groundwater aquifer can support any new uses of groundwater. OWRD must chart a new course and deny any new permits and stop any illegal uses until timely hydrologic data shows that water tables will not be impaired. In areas of Oregon that are over appropriated and have declining water tables, no new groundwater rights should

be allowed. OWRD must close these areas to new permits and any further allocations. It's time for OWRD to encourage conservation and take away existing water rights where there are obvious signs of waste and misuse. We have numerous places in central Oregon where water is used for ponds, ski lakes, and large rolling lawns that are clearly not a "beneficial use". Thornburgh is a heinous example of groundwater permits issued for golf courses and lakes for another unnecessary destination resort.

OWRD must use current hydrological data to close designated parts of Oregon to any new groundwater applications where groundwater is insufficient and declining. In addition, where there is no data, no permits should be issued until there is data that shows sufficient water supplies are available and then carefully monitored and enforced.

OWRD must take steps to monitor, measure compliance and enforce over use and illegal use and stop any new permits in areas that have declining water tables and loss of water supplies. This will establish a warning to future applicants, protect the public resource, and create a much more efficient and cost-effective system for OWRD.

**Nunzie Gould, 10-11-22**

I think the assumption that we have an unlimited groundwater aquifer in the Deschutes Basin is without science. The stored groundwater is dropping and we need to stop putting straws in our ground as there is a direct relationship between our stored aquifer water and our rivers and springs. (USGS hyrdrologic connectivity) Similarly we are in a HUGE drought and we cannot assume that recharge will occur at the levels of past history.

Here are a couple of my ideas that I hope you incorporate:

1) An incomplete groundwater application is just that - incomplete. Thus an incomplete groundwater application should not be given any first in time - first in right standing. Only a complete groundwater application should be placed in the first in time - first in right queue.
2) There is much work that OWRD needs to do to provide science to meet it's mission to sustain our environment and to protect our public waters. It is clear that OWRD needs more funding to meet the objectives it identified in it's June 2022 Work Plan even after OWRD is staffing up since it was allocated monies by the Oregon legislature. I would encourage OWRD to apply for federal funds thru for instance NOAA's marine fisheries programs and/or thru federal ARPA funds to provide the monies needed so OWRD and it's USGS partner can provide science to back up it's groundwater policies. Science is needed in Oregon. We have smart people; let's get the needed important science data in hand to support policy changes.
3) Today is October 11, 2022: it is 75 degrees at 4:30pm in Deschutes County, Central Oregon. We are experiencing record high daytime temperatures, record nighttime temperatures and we are in Severe Drought.
<https://nam02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fdroughtmonitor.unl.edu%2FCurrentMap%2FStateDroughtMonitor.aspx%3FOR&data=05%7C01%7Cbvaldez%40kearnswest.com%7C3c7b93c340cb4227d0f408daabe50d10%7C51344e6568804bdc9b0ccb48e39ca3b5%7C1%7C0%7C638011297520681864%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=AkI4Xrq7iFPNu18a5GRyHzyzmfAFNhiUTKWPydc5G50%3D&reserved=0>
It's imperative that Drought and even more extreme Drought are the basis for stewarding our water resources.
4) Just because someone applies for groundwater does not mean that the resource is there to extract without injuring our ecosystem. The centuries ago ice ages are long gone; yet those times created the aquifer we are relying upon. Sustainability should be a priority; meaning recharging of our aquifer is insufficient if the aquifer is dropping. Sustainabilty would mean that the recharge of our aquifer does not allow for the aquifer to drop. This is where science comes in:
Is there even amounts of water filling our aquifer as amounts are pumped out? How much water is actually being pumped out? All wells should be measured for their extraction - assuming that someone doesn't extract beyond what a rule might allow is just that... an assumption.
These days we need science to substantiate our water withdrawl wells with water rights AND for wells that are exempt of water rights.
5) If you've ever read a Water Management Conservation Plan(WMCP) you'll know they are updated only every 10 years. A lot of water technology happens in 10 years. We need better conservation of our public water before we allocate any new groundwater rights. We need better practices in WMCP such that newest water saving methods, and water conservation methods are prioritized. Education on water conservation is not actually conserving water - it's just education. OWRD needs to ensure that water is only allocated where best water delivery and water use practices are in place.
6) When a County declares a drought; all cities in that County shall declare a drought. (All the cities in Deschutes County never declared a drought when Deschutes County declared a drought... this is unfortunate because the WMCP is triggered when drought is declared - so convenient for cities that they don't have to conserve water or ration water when the city doesn't declare a drought. This policy should be changed - especially as it appears that several cities in Deschutes County are looking for more groundwater rights under a new ground water allocation.
7) Before any new groundwater right is issued in Central Oregon, all springs in the Deschutes basin should be measured and quantified for flow. Those little squiggle springs images that are on the USGS maps need OWRD scrutiny. It's simple science. But today OWRD does not have this science collected and it needs to do this simple work.
8) Assuring that our springs and surface waters are not adversely impacted by new groundwater rights is the most important thing in the face of Drought. But this will only happen if OWRD has the science data in hand. Today OWRD does not have measurements for springs in the Deschutes Basin. Today OWRD should not be issuing any new groundwater right or allocate any new groundwater right until it can measure spring flows (not spring river flows, but desert spring flows) and assure that those desert springs are not adversely impacted.
9) OWRD should implement a new policy that if there is a contested case; OWRD shall not accept a new application for similar groundwater right until such time as the contested case is resolved.

10) I am not an indigenous person; however I strongly support indigenous peoples to serve on any RAC created for groundwater allocation. White people here in the West and in particular white men are of the extracting nature. Those who are stewards differ.
In an effort to give the environment a voice in your groundwater allocation RAC, I strongly encourage Women to be at the table and I also strongly suggest that Indigenous peoples who have a different time horizon and who steward natural resources such as clean water plan for future generations be at the RAC table.

Hope these suggestions help.
I do appreciate that your public comment team came to present in Central Oregon.

Please include this comment into the public record regarding Groundwater Right Allocation policies:

A) I support keeping the 200 cfs cap and believe with conservation there is no justification for more groundwater extraction from our finite water resource.
It's time for all water users to capture the low hanging water thru conservation and to steward this public resource and the natural environment from whence it comes.
Our economy will be better served when we recognize and praise our public waters instead of going to the well to extract more.

B) It is imperative that there is representation from the fish community on your advisory committee.

C) Please keep me informed of the process and timeline that OWRD will be undertaking including if/when any steering committee is formed; or any rules advisory committee is formed; and especially when meeting dates are determined.

**Jim Powell, 10-20-22**
I realize the time for public comment just closed; but I just learned last night at a county planning open house of another twist in the seemingly ever-unfolding proceedings about the Thornburgh Resort in Deschutes County. Allegedly the developer purchased for a undisclosed amount another development company's groundwater permit. I do not know the details currently but it prompted another consideration not specifically included in my submitted survey comments.

So if you are interested here is the thought relative to the Deschutes Basin:

- Transfer of a proven groundwater permit from one location to another, especially if it involves new wells, a new zone of impact or and increase in current extraction volumes, should be subjected to the same OWRD evaluation requirements as a new application in regard to the ability of the aquifer stability at the new site to meet the additional demands while preserving current extractions and permits (even for longstanding "exempt" wells). Perhaps this will require a new application with a new priority date - something that will be controversial but would discourage monetization of water permits and movement without critical review. An alternative might include different considerations if extraction amounts and zone of aquifer impact (hydrology) were similar to the original permit location.

Another thing I learned for Deschutes County is that there are now more land use applications for conversion of tracts of "marginal" EFU lands to rural residential parcels with "exempt wells". I already submitted thoughts about that issue with the Eden Properties proposal at Twin Bridges in Central Oregon, but did not know of additional applications already in the pipeline. More urgency for OWRD and DLCD integration on water issues.

**Juliana Cartwright, 9-19-22**

I am interested in the Water Resources Commission's intent to modernize groundwater allocation policy and rules.

1. Am I correct in thinking the following: Currently, applications for new groundwater are recommended for approval in areas with reasonably stable water levels even when evidence is not available or cannot be determined that there is sufficient water available for additional consumptive use in the locale of the application?

    - Does this approach stem from OAR 690-310-0130 **690-310-0130**

      **Public Interest Presumption; Groundwater**

      (1) The Department **shall presume** that a proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525 if: ....

I am trying to understand the rationale for approving applications even when evidence for (1) does not exist.

2. When protection of senior rights holders is discussed, where does the **ecology (flora and fauna, fish, etc.)** of our rivers and other water resources fit? I realize that the rivers' water rights were assigned in 1987 (?) putting instream water low on the list of senior rights holders. How are river needs ranked in these discussions?

3. Where do wells rank in the list of senior rights holders?

**Harmony Burright, 10-13-22**

These comments are meant to go along with the feedback I already submitted via the survey (my comments didn't fit in the box). Please let me know if I need to direct them to someone else.

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I urge the Department to look at and consider all of the statutes pertaining to appropriation of water and water resources administration more generally.

"All water within the state from all sources of water supply belongs to the public." (ORS 537.110)

"The right to reasonable control of all water within the state from all sources of water supply belongs to the public." (ORS 537.525)

The Department has an overarching responsibility to "insure the preservation of the public welfare, safety and health." (ORS 537.525)

Existing laws and policies do not encourage unfettered development of water resources, they advocate for a measured, balanced, sustainable approach that is protective of existing users, considers the public interest, guards against exploitative single interests, and considers the basin-wide context.

"Beneficial use without waste, within the capacity of available resources" is meant to be the "basis, measure, and extent of the right to appropriate groundwater." (ORS 537.525(f3)) The Department should determine "the capacity of available resources" before allowing for additional development. This should not be determined "after the fact" (i.e., after over-allocation has already occurred) and the information should be made publicly available.

The policies state that "adequate and safe supplies of groundwater for human consumption be assured, while conserving maximum supplies of groundwater for agricultural, commercial, industrial, thermal, recreational, and other beneficial uses." (ORS 537.525(5)) Current allocation policies are not protective of groundwater supplies for human consumption. Impacts to domestic wells should be taken into consideration in future allocation decisions especially if the public will be expected to continue to pay to deepen wells affected by declining groundwater levels.

The Department is responsible for determining and maintaining "reasonably stable groundwater levels." (ORS 537.525 (7)). Until reasonably stable groundwater levels are determined and set forth at a basin scale via basin plans and basin program rules, then additional development should not be allowed.

"Depletion of ground water supplies below economic levels [...should...] be prevented or controlled within practicable limits." (ORS 537.525(8)) This definition should be modified to take a more expansive perspective on what an "economic level" is. Perhaps this level should also be determined and set forth via a basin plan and basin program rules.

When there is "impairment of or interference with existing rights to appropriate surface water," "declining groundwater levels," "interference among wells," "overdrawing of groundwater supplies" or alteration of the quality or character of the groundwater resources, the Department is compelled to act (ORS 537.525(9)). I also believe that the Department is compelled to prevent these things, to the extent practical.

In reviewing groundwater applications the Department must "determine whether the proposed use will ensure the preservation of the public welfare, safety and health" consistent with ORS 537.525. The Department can presume this "if the proposed use is allowed in the applicable basin program, IF WATER IS AVAILABLE (emphasis added), if the proposed use will not injure other water rights and if the proposed use complies with rules of the Water Resources Commission." (ORS 537.621(2)) Basin plans and program rules have not been updated for most basins since the 1970s and 1980s, meaning they do not reflect current information and they may not reflect current public values. If the Department cannot make an affirmative finding that water is available, then by law it cannot presume that the development will preserve public welfare, safety and health. The Department's current assessment of injury is too narrow, both spatially and temporally. The Department should update its definition of and methodology used to determine injury so that it is more protective of senior surface water users as well as domestic well users. The rules of the Commission encourage an over reliance on “site specific standards” as opposed to a more comprehensive or holistic understanding of the water system, the cumulative impacts of existing allocations, and the potential future impacts of future decisions over space and time.

The question of whether groundwater is "available" is misleading. What does "available" mean in a groundwater context? There is no decision that is free from consequence. Water availability is ultimately a euphemism that overlooks the fact that all decisions have consequences. I am of the mind that these discussions should be taken to the public through a comprehensive basin planning process where the Department shares its current understanding of the water situation in each basin along with recommendations regarding future development. Where the Department believes that there is not water available (where it is fully or over-appropriated and additional development would likely have unacceptable impacts), the Department should clearly communicate this information.

Where water is still available (or where additional development might have acceptable impacts), then additional groundwater allocation decisions should not be made without a basin planning process to determine the highest and most beneficial use of those groundwater resources. Where there is insufficient information there should be investments made to understand the capacity of the resource and other characteristics of the groundwater system before additional groundwater is allocated. ORS 536.340 states that the Department may "classify and reclassify […] the underground reservoirs or other sources of water supply in this state as to the highest and best use and quantities of use thereof for the future in aid of an integrated and balanced program for the benefit of the state as a whole."

I like the idea shared at the Salem meeting that a map be developed showing where/when applications for new appropriations are being accepted. I also think that the Department needs to advocate for resources to update basin plans and basin program rules to ensure that classifications of water reflect best available information and current public values.

Thank you for considering my comments.

**Robyn Cook, GSI Water Solutions, Inc., 9-29-22**

Consider issuing permits for relatively small use/duty that is equal to or less than that allowed for exempt use wells

**Grant McGill, Will McGill Surveying LLC, 10-24-22**

As you can imagine, we have clients that are asking for answers following the groundwater allocation public meetings. We would like to center our conversation with you around the process of changing the rules and see if you can provide any answers to the questions that we are getting from our clients. Here are a few of the more general questions to get us started:

- How can OWRD apply the proposed rules to an application that was accepted as complete under the existing rules?
- Since the decision to proceed past the withdrawal deadline was based on the same groundwater review being used to deny applications and OWRD is consistently missing statutory timelines, will there be any extension of the withdrawal deadlines (and potential for refund)?
- Why were CWREs and consultants not notified of the pending rule change until now?
- Going forward, can agents and applicants be notified of the groundwater review issuance instead of waiting for the IR?
- Will any CWREs or consultants be appointed to the advisory committee?

**Christina Higby, Oregon Department of Agriculture, 10-7-22**

I recommend sending out a Consultation Letter from your WRD Director to Tribal leaders discussing the project and inviting them to participate in the process. The LCIS Teams has a consultation excel spreadsheet with the appropriate contacts but it is not always up-to-date. You may want to verify who should be getting the letter and how it should be delivered (e.g. mail, email or both). Let me know if you need help with identifying the NRWG Tribal contacts. LCIS Director, Patrick Flanagan is also a good resource to discuss best approach.

**Erin Lamb, Portland State University, 10-11-22**

Can well depth be limited such that parties that can afford to drill deeper wells have to contribute to maintaining GW levels in order to have continued access to water? Can ecosystems and wildlife apply for water rights in the current legal framework?

## Appendix 4.4 Attachments provided via email

CENTRAL OREGON CITIES ORGANIZATION

Bend, Culver, La Pine, Madras, Maupin
Metolius, Prineville, Redmond, Sisters

Ivan Gall
725 Summer Street NE, Suite A
Salem, OR 97301

October 17, 2022

Re: Comments on Groundwater Allocation Project

Dear Mr. Gall:

The Central Oregon Cities Organization (COCO), which includes the Cities of Bend, Culver, La Pine, Madras, Maupin, Metolius, Prineville, Redmond, and Sisters previously provided input on September 27, 2022, to the Department's Groundwater Allocation Project. The input was in the form of a detailed white paper (*Understanding Upper Deschutes Basin Groundwater Levels)* available here.

These cities primarily obtain their water supply from groundwater from the Upper Deschutes Basin and, accordingly, have a strong interest in this water source and take pride in being responsible stewards of the resource. COCO submits the following additional comments on behalf of its nine member cities.

The Oregon Water Resources (OWRD) has indicated that it is updating its groundwater allocation policy. In particular OWRD is re-evaluating how it determines impacts of proposed new uses of groundwater on existing surface water rights, and whether groundwater is available for a proposed use. When developing new groundwater policies and rules for the State of Oregon, OWRD needs to ensure that these policies and rules are relevant and applicable to all areas of the state, including the Upper Deschutes Basin. Policy changes need to be well-informed and based on local recharge mechanisms and on the characteristics of the subject aquifer. Accordingly, there are a number of factors related to the Upper Deschutes Basin that OWRD must consider when updating its groundwater allocation policy.

Regarding impacts to surface water, OWRD has promulgated the Deschutes Basin Groundwater Mitigation Rules, which apply to the appropriation of groundwater within the Deschutes Groundwater Study Area. These rules provide that if a groundwater permit applicant satisfies their mitigation obligation, then the proposed use of groundwater does not have the potential for substantial interference with surface water. Accordingly, impacts to surface water from proposed new uses of groundwater within the Deschutes Groundwater Study Area are addressed through the mitigation program, and any new rules and policies related to such impacts should not be applicable within the Deschutes Groundwater Study Area. The Deschutes Basin has a successful and well established program to mitigate impacts to surface water.

Additionally, when developing a definition of "reasonably stable" groundwater levels, OWRD should recognize that groundwater levels decline for a variety of reasons such as: declining recharge due to less precipitation, overdraft due to excessive pumping, and depressurizing aquifers due to commingling in confined aquifers – most notably in Columbia River Basalt aquifers. In the Upper Deschutes Basin, water level declines are due to less precipitation. For example, groundwater use is less than 2 percent of the average annual recharge according to the U. S. Geological Survey

Chair Richard Ladeby
Central Oregon Cities Organization
Email: rladeby@ci.madras.or.us

Doug Riggs, Lobbyist
NW Grassroots & Communications
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(USGS) (Gannett et al., 2017). Even near relatively large pumping areas in the central part of the basin, a USGS groundwater flow model simulation shows 75 percent of the groundwater level decline is due to less precipitation (Gannett and Lite, 2013). Groundwater level declines in the Deschutes aquifer in the Upper Deschutes Basin are driven by short-term and long-term climate variability and are not due to over appropriation.

The amount of groundwater level decline relative to the total aquifer thickness is another important factor and is currently used to judge the severity of the decline in the Department's Division 8 rules. In the Upper Deschutes Basin the maximum amount of groundwater level decline is less than 4 percent of the total aquifer thickness of approximately 1,000 feet (see COCO White Paper), in sharp contrast to the 15 percent standard set in the rules. Regardless, there is no science to support that even a reduction of 15 percent of the Deschutes aquifer thickness would significantly impair the function or character of the aquifer. For that reason setting an arbitrary value for reasonably stable groundwater levels is problematic.

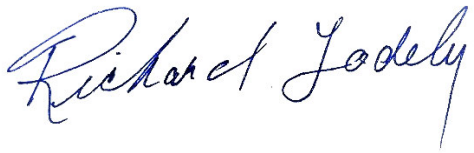
Providing assistance for users of domestic water supply wells that penetrate only a small amount into the saturated zone of the Deschutes aquifer has and should continue to be a priority for regional and state officials. However, groundwater users with wells that penetrate only the uppermost portion of the saturated thickness of the Deschutes aquifer should not force the closure of the resource to future groundwater appropriation. Conditions within the aquifer such as the percent of aquifer depletion would be more consistent with other science-based water management approaches.

Finally, COCO understands that OWRD will be working with a rules advisory committee (RAC) as part of its development of new rules to implement the agency's new groundwater allocation policies. A representative of COCO needs to be included in the RAC to ensure that the interests of the basin's municipal water providers are represented during this effort. COCO's nine member cities have a combined population of over 150,000, and securing a long-term, sustainable supply of water for these basin residents is imperative.

We also understand that OWRD intends to have new groundwater allocation policy rules adopted by spring of 2023. While we recognize the urgency of this matter, this schedule seems unnecessarily fast given the complexity and importance of the topic and the intervening 2023 legislative session. We urge the Department and Commission to not rush the rulemaking effort so that COCO and other stakeholders can meaningfully participate.

Please contact COCO's water resources consultant Adam Sussman at asussman@gsiws.com or 541-602-5188 regarding participation on the RAC.

Sincerely,



Richard Ladeby, Chair, Central Oregon Cities Organization

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www.Oregon.gov/OWRD

Greetings,

The Oregon Water Resources Department (OWRD) is holding five upcoming facilitated outreach meetings to share information and ideas about updating the OWRD groundwater allocation policy. Modernizing groundwater allocation is important to protect senior surface water and groundwater users across the state and to maintain sustainable groundwater resources; this is a top priority for the Water Resources Commission. The meetings will provide a review of Oregon's current framework for groundwater allocation, and initial ideas of revisions to the groundwater allocation process.
These meetings will:

- Inform key stakeholders and the public, including water right holders, about ideas for revising Oregon's groundwater allocation process.
- Provide an opportunity for public input including:
  - Asking for feedback on the agency's approach to assessing groundwater availability.
  - Discussing new ideas and suggestions for modernizing the groundwater allocation process in Oregon.

Please find the details for each meeting below. All meetings will cover the same topic and will provide an opportunity for meeting participants to ask questions and provide feedback either verbally or in writing. All members of the public are welcome to attend any or all the meetings.

**Registration Details**

To attend the virtual meeting, please register in advance at the link below. Upon registering, a confirmation email will be sent with the meeting link and audio line for the meeting. If you are attending in-person, please send an email RVSP with your name, the meeting(s) you plan to attend, email address, and any questions you may have to bvaldez@kearnswest.com.

Additional meeting materials, including an agenda, are available on OWRD's website at https://www.oregon.gov/owrd/programs/GWWL/GW/GWAP/Pages/default.aspx

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| **Date: Thursday, September 22, 2022**<br>**Time: 5:30 p.m. – 8:00 p.m. PT**<br>**Location:** Oregon Water Resources Department<br>725 Summer St. NE, Room 124<br>Salem, OR 97301<br><br>**To attend virtually, use link below:**<br>https://kearnswest.zoom.us/j/88228427707?pwd=Q2FPQjZqYXIyenY5Q1FTRkFwcFF0Zz09<br>**Meeting ID:** 882 2842 7707<br>**Passcode:** 045919<br>**Dial-in:** +1 253 215 8782 US | **Date: Wednesday, September 28, 2022**<br>**Time: 5:30 p.m. – 8:00 p.m. PT**<br>**Location:** OSU-Cascades Graduate Research Center<br>Room 209<br>650 SW Columbia St, Room 209<br>Bend, OR 97702<br><br>**To attend virtually, use link below:**<br>https://kearnswest.zoom.us/j/84828183327?pwd=ZEUwdDVxeStMTEhjaGM2bGV5U3ZEZz09<br>**Meeting ID:** 848 2818 3327<br>**Passcode:** 624621<br>**Dial-in:** +1 253 215 8782 US |

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|---|---|
| **Date: Thursday, September 29, 2022**<br>**Time: 5:30 p.m. – 8:00 p.m. PT**<br>**Location:** Eastern Oregon University<br>David E. Gilbert Event Center<br>1 University Blvd.<br>La Grande, OR 97850<br><br>**To attend virtually, use link below:**<br>https://kearnswest.zoom.us/j/86222756964?pwd=bDNyWnJpSzB2UDRkdEhoNWF5Z2FQdz09<br>**Meeting ID:** 862 2275 6964<br>**Passcode:** 036121<br>**Dial-in:** +1 253 215 8782 US | **Date: Wednesday, October 5, 2022**<br>**Time: 5:30 p.m. – 8:00 p.m. PT**<br>**Location:** Jackson County Auditorium<br>7520 Table Rock Rd.<br>Central Point, OR 97502<br><br>**To attend virtually, use link below:**<br>https://kearnswest.zoom.us/j/85608739340?pwd=SDlJakJDY3QzaWwzVFdiYW1LQk0rUT09<br>**Meeting ID:** 856 0873 9340<br>**Passcode:** 244844<br>**Dial-in:** +1 253 215 8782 US |
| **Date: Monday, October 10, 2022**<br>**Time: 2:00 p.m.-4:00 p.m. PT**<br>**Location:** Virtual<br><br>**To attend virtually, use link below:**<br>https://kearnswest.zoom.us/j/81591179855?pwd=aW5EdllqZWtoWnNtMmxVVGQvRWpSUT09<br>**Meeting ID:** 815 9117 9855<br>**Passcode:** 742311<br>**Dial-in:** +1 253 215 8782 | |

**Alternate formats**
All documents and materials are available in an alternate format or in a language other than English upon request. As OWRD plans for these upcoming meetings, please let them know of any accessibility or interpretation needs or requests. Please email Ivan.K.Gall@water.oregon.gov for any requests or questions.

**Formatos alternativos**
OWRD (por sus siglas inglés) en puede proporcionar documentos en una formato alternativo o en un idioma que no sea inglés si se solicita. Mientras OWRD planea estas próximas reuniones, infórmeles sobre cualquier necesidad o solicitud de accesibilidad o interpretación. Por favor envíe un correo electrónico a Ivan.K.Gall@water.oregon.gov para cualquier solicitud o pregunta.

**Oregon COVID-19 guidelines**
The health and safety of OWRD staff and the public continue to be the Department's highest priority. While staff and members of the public are not required to wear face coverings or practice physical distancing inside state-owned facilities, those wishing to continue with COVID-19 precautions are welcome to do so. OWRD will continue to help maintain the safest environment possible for staff and the public.

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Bend Field Office
63095 Deschutes Market Road
Bend, Oregon 97701
Phone: (541) 383-7146 FAX: (541) 383-7638

File Number: 2023-TA-0001
File Name: Oregon State Groundwater Rulemaking
TS Number: 23-0021
Doc Type: Letter

Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1271

Oct 18th, 2022

Dear Ivan Gall,

Thank you for the opportunity to provide input related to Oregon Water Resources Department (OWRD) groundwater allocation policy. This policy is of key concern to the U.S. Fish and Wildlife Service (Service) because groundwater is essential to creating quality habitat for a multitude of species. Groundwater sustains ecosystems in more than a third of Oregon watersheds; one hundred and forty-one species of conservation concern are groundwater dependent, including over a third of the invertebrate species of conservation concern (Brown et al. 2011). Federally listed species (e.g., Oregon Spotted Frog, Bull Trout, Lahontan Cutthroat Trout) as well as other species of conservation concern (e.g., Greater Sage-grouse) rely on groundwater dependent ecosystems and stream corridors during baseflows. Species are confronting unprecedented challenges due to climate change and ongoing drought. We commend OWRD's efforts to update State groundwater allocation rules to manage groundwater resources more sustainably for water users, fish, and wildlife into the future.

The Service is concerned that current State rules do not require adequate baseline data and assessment of the temporal, spatial, and cumulative impacts of groundwater use when evaluating new permit applications, particularly considering climate change. The Service recommends that OWRD:

- Estimate the impacts of groundwater use at a spatial and temporal scale commensurate with permit terms. For example, permits that allow water use in perpetuity should estimate impacts at the 100-year time scale, in lieu of the current 1-year impact assessment. Impacts should also be assessed at a much larger spatial scale than the

current 1-mile radius, proportional to the hydrological connectivity of the groundwater and surface water system.

- Consider the cumulative effects of multiple users drawing from the same aquifer.

- Incorporate drought and climate change projections into assessments to consider changes to recharge and protect from overuse. For example, current rules allow OWRD to permit additional groundwater use during drought conditions to compensate for reduced surface water availability. This increased groundwater use during periods of drought further exacerbates periods of reduced recharge and long-term impacts to groundwater availability.

- Allow for adaptive management of groundwater permits to address changing conditions. This could be achieved through trigger-based thresholds or expanded utilization of time-limited permits and would give OWRD the tools to address over-appropriated groundwater and allow for groundwater recharge as climate conditions change. Although this would create some uncertainty for permittees, it may provide more flexibility working with junior users that could otherwise be curtailed.

- Issue new groundwater permits only when baseline data are available to adequately estimate the net impacts of the proposed water use.

- Incorporate explicit assessment of impacts to springs and groundwater dependent ecosystems for the benefit of fish and wildlife. Although these are surface water features, they are dependent on adequate groundwater resources and do not always flow directly into a stream where in-stream water rights could be obtained to protect their unique ecological function. A focus on assessing and protecting these ecosystems is imperative as many species have adapted to these unique environments, particularly in arid environments where springs, seeps, as well as intermittent and perennial streams are vitally important and geographical limited; these protections would be akin to in-stream water rights obtained for the benefit of fish and wildlife.

We would like to reiterate our appreciation for the opportunity to provide input on OWRD's groundwater allocation policy. If you have any questions regarding these comments, please contact Leah Tai at leah_tai@fws.gov.

Sincerely,

Bridget Moran
Field Supervisor

cc: Marisa Meyer, Brendan White, Jen OReilly, Jackie Cupples, Dawn Davis, US FWS

References

Brown, J., Bach, L., Aldous, A., Wyers, A. and DeGagné, J. (2011), Groundwater-dependent ecosystems in Oregon: an assessment of their distribution and associated threats. Frontiers in Ecology and the Environment, 9: 97-102. https://doi.org/10.1890/090108

October 25, 2022

OWRD
Sent via: Submission to OWRD's on-line public comment form; and
Email to: Ivan Gall: GALL Ivan K WRD <Ivan.K.GALL@water.oregon.gov>
Justin Iverson: Justin.T.IVERSON@water.oregon.gov
bvaldez@kearnswest.com

Dear OWRD:

Thank you for your work on the critically important Groundwater Allocation Project. It is imperative to ensure that the requirements of Oregon's forward-looking Ground Water Act of 1955 (ORS 537.505 *et seq*.) are met and that Oregon is allocating groundwater in a manner that protects groundwater dependent ecosystems, instream values and existing water users including people who rely upon domestic wells.

WaterWatch has worked on Oregon groundwater issues for many years, attended two of the Project meetings, and offers the following comments:

1. "Default to No" is required by law. "Default to No," meaning denying a groundwater permit application where OWRD lacks the data to say whether the groundwater is over-appropriated, is required because to establish the presumption that a proposed use will "ensure the preservation of the public welfare, safety and health," OWRD must find that "water is available" for the use. ORS 537.621(2); ORS 537.525. In turn, "water is available" means that "[t]he requested source is *not over-appropriated* ***." OAR 690-300-057 (emphasis added). Therefore, when OWRD cannot determine whether or not the source is over-appropriated, it cannot make the finding that "water is available." "Not over-appropriated" and "water is available" are synonymous in OWRD's rules.

   OWRD's rules further state that ""[o]ver-Appropriated" means a condition of water allocation in which: *** (B) The appropriation of groundwater resources by all water rights exceeds the average annual recharge to a groundwater source over the period of record or results in the further depletion of already over-appropriated surface waters." OAR 690-400-0010(11)(a)(B). Therefore, where OWRD cannot determine that pumping under existing groundwater rights is within the average annual recharge, it must deny any new groundwater permit application.

2. OWRD's practice of "Default to Yes" is unlawful and has created extremely difficult situations across Oregon where unsustainable groundwater pumping has resulted in significant declines in groundwater levels, including declines of more than 100 feet in parts of the Harney Basin. These declines have serious consequences for domestic well users and for the environment. We urge OWRD to ensure that the lawfully required "Default to No" approach is a key provision in the new groundwater allocation policy.

3. The law requires evaluation of the full impacts of pumping to surface water rights and streamflows. When evaluating a groundwater permit application, the full impacts of pumping, over the life of the permit, on surface water rights and streamflows must be evaluated. The current approach of only evaluating impacts at the one-year mark is unlawful because it results in issuing groundwater permits that result in injury to surface water rights, including instream water rights. It also does not meet many of the requirements discussed above.

4. In areas where surface water is unavailable at any time of the year, OWRD should close the area to filing of groundwater permit applications. OWRD should not issue groundwater applications where surface water is not available. Because of the varying and complex timelines for effecting the impacts of groundwater pumping to surface water, if surface water is unavailable at any time of the year, OWRD should not accept a groundwater permit application.

5. OWRD should incorporate protection of groundwater dependent ecosystems into its Groundwater Allocation Policy. ORS 537.525(3) states that "[b]eneficial use without waste, within the capacity of available sources, be the basis, measure and extent of the right to appropriate ground water." Additionally, Oregon rule also demands that water be allocated within the capacity of the resource. OAR 690-410-0070(1). Because one of the criteria for establishing the presumption is that OWRD must find that "the proposed use complies with rules of the Water Resources Commission" ORS 537.621(2), this rule applies to evaluation of new groundwater permit applications.

   By rule, "Capacity of the Resource" means "the ability of a surface water or groundwater resource to sustain a balance of public and private uses without causing over-appropriation *or otherwise significantly impairing the function or character of the resource*." OAR 690-400-0010(4) (emphasis added). The "function of the resource" for groundwater includes maintaining critically important groundwater dependent ecosystems across Oregon, such as springs, wetlands, lakes and cold water inputs to streams and rivers that are key to sustaining Oregon's salmon and steelhead runs and other important aquatic species and habitats. These groundwater functions need to be protected in any groundwater allocation policy. Further, where OWRD lacks data about the function of the groundwater, the presumption cannot be met and OWRD must deny any new groundwater permit application.

6. If reasonably stable is defined, it must prohibit any year-to-year declines. If OWRD defines "reasonably stable" groundwater levels, the definition must preclude year-to-year declines. A declining groundwater level is not reasonably stable. We further advocate that where water allocation has resulted in a failure to maintain reasonably stable groundwater levels, that a recovery standard be incorporated.

7. Projected impacts of climate change on the groundwater resource should be anticipated and incorporated. Climate change is and will continue to have impacts on the groundwater resource and the way that people use groundwater. OWRD should adopt a precautionary approach to groundwater allocation that best protects existing water rights holders, domestic well owners, and the environment in light of climate change impacts.

8. Address exempt wells in the Groundwater Allocation Policy. The OWRD should include exempt well reform in its modernized groundwater allocation policy. Throughout the state, new exempt wells are being utilized as a loophole to the OWRD's regular permitting processes where surface water or groundwater is not available, or other public interest factors would make getting a permit difficult. This is harming senior rights and existing groundwater users, aquifers and instream values across the state. OWRD should include specific provisions to limit the impacts of exempt wells.

Thank you again for undertaking this important project and for considering WaterWatch's comments.

Sincerely,

Kimberley Priestley
Senior Policy Analyst
kjp@waterwatch.org

Lisa Brown
Staff Attorney
lisa@waterwatch.org

# Understanding Upper Deschutes Basin Groundwater Levels

September 2022

Prepared for:

CENTRAL OREGON CITIES ORGANIZATION

Bend, Culver, La Pine, Madras, Maupin
Metolius, Prineville, Redmond, Sisters

Prepared by:

GSI Water Solutions, Inc.

1600 SW Western Boulevard, Suite 240, Corvallis, OR 97333

Kenneth E. Lite, Jr., Owen McMurtrey, and Adam Sussman

# Introduction

Groundwater from the Upper Deschutes Basin is a main water supply for the member cities of the Central Oregon Cities Organization (COCO), established in 2002. The current cities that belong to COCO (Bend, Culver, La Pine, Madras, Maupin, Metolius, Prineville, Redmond, and Sisters) have a strong interest in this water source and take pride in being responsible stewards of the resource.

The nine member cities have a combined population of over 150,000 people. COCO's purpose is to effectively and efficiently promote common interests of the cities in Central Oregon, including issues related to water. COCO is committed to finding basin-wide solutions and is an active member of the Deschutes Basin Water Collaborative. This commitment can be observed in the member cities' conservation efforts:

- The City of Prineville has won two Excellence in Communications Awards from the Pacific Northwest Section of the American Water Works Association for publications related to conservation.
- The City of Bend tied for first place for the Oregon Water Resources Department's (OWRD's) 2018 Stewardship and Conservation Award.
- The City of Bend was the first city in the country to be reviewed and receive a Silver rating from the Alliance for Water Efficiency for compliance with American Water Works Association standards for water conservation programs.
- The City of Redmond has rigorous water conservation programs to reduce outdoor water use through incentives, as described in its water management and conservation plans.

Some areas of the Upper Deschutes Basin are currently experiencing varying rates of groundwater level declines. This, in turn, has caused increased scrutiny of new groundwater permit applications in the basin. In November 2021, OWRD's Groundwater Section completed a review that concluded that groundwater is not available within the capacity of the groundwater resource for a new proposed use in the basin. This review and other public communication from OWRD indicate the possibility that the agency will terminate issuance of new groundwater permits within the Upper Deschutes Basin due to concerns that additional appropriations would cause over-appropriation or significantly impair the function or character of the resource.

COCO respects OWRD's efforts to manage and protect the groundwater resource in the Upper Deschutes Basin; however, OWRD's recent actions do not adequately consider the hydrogeologic framework of the basin. COCO presents this white paper to provide context for historically and current groundwater declines in the Deschutes groundwater flow system (Deschutes aquifer) by describing the hydrogeologic framework, historical changes to the system, aquifer stressors, and magnitudes of groundwater recharge and withdrawals.

# Key Issues

There are five key issues about the Upper Deschutes Basin that provide background information for understanding groundwater levels in this area:

- **Precipitation drives the groundwater flow system in the Upper Deschutes Basin.** Groundwater levels in wells near the Cascades closely reflect variability in annual precipitation. In wells more distant from the Cascades, the response of groundwater levels to precipitation is attenuated. Recent groundwater level trends seen at these wells reflect a long-term precipitation deficit.
- **Groundwater level declines in the Upper Deschutes Basin are being driven by climate variability.** Recent groundwater declines are primarily the result of long-term drought and are not without historical precedent. Precipitation data shows similar periods of long-term drought occurred during the dust-bowl era, with similar effects on the groundwater system. In contrast, climate change models generally predict equal or slightly greater precipitation in the Central Oregon Cascades. While models predict a decline in snowpack that will affect the timing of surface water flows, whether precipitation falls as rain or snow is not expected to influence groundwater levels in the larger regional aquifer.
- **The Deschutes aquifer is very thick in the Upper Deschutes Basin.** The Deschutes aquifer has a saturated thickness of approximately 1,000 feet within a single geologic formation. Even assuming that groundwater levels would continue to decline at recent rates (which is not supported by the evidence), the declines would be less than 15 percent of the total saturated thickness of the aquifer after 100 years.
- **Groundwater allocation decisions should not be made based on wells that only penetrate the uppermost saturated zone of the aquifer.** Concerns have been raised about the need for some groundwater users in the Deschutes aquifer to deepen their wells or groundwater users losing their ability to access the resource entirely. Providing assistance for users of domestic water supply wells that penetrate only a small amount into the saturated zone of the Deschutes aquifer has and should continue to be a priority for regional and state officials. However, identifying such concerns as a basis for negative groundwater findings is inconsistent with basic principles of prior appropriation. Groundwater users with shallow wells that penetrate only the uppermost portion of the saturated thickness of the Deschutes aquifer should not force the closure of the resource to future groundwater appropriation. Typically, these well users would be required to deepen their wells to more fully penetrate the aquifer. Wells in the Upper Deschutes Basin that are drilled into localized alluvial aquifers can be impacted by various factors; the causes of those impacts are not addressed here.
- **The groundwater flow system is not over-appropriated in the Upper Deschutes Basin.** The Upper Deschutes Basin receives over 4,000 cubic feet per second (cfs) of annual recharge. Groundwater pumping is equivalent to approximately 2 percent of the annual groundwater recharge (Gannett et al., 2017).

# Understanding the Upper Deschutes Basin Groundwater Flow System

As defined by the U.S. Geological Survey (USGS) in Gannett et al. (2001), the Upper Deschutes Basin groundwater flow system encompasses about 4,500 square miles.[1] Groundwater in the upper Deschutes system originates as precipitation, primarily in the Cascade Range. Precipitation rapidly infiltrates the relatively young and highly permeable volcanic rocks and is termed recharge. Groundwater flows generally to the east towards the basin interior, discharging to springs near the base of the Cascade Range (including the Metolius River) and to springs in the Deschutes and Crooked River canyons. Most groundwater in the Upper Deschutes Basin flows through volcanic deposits of the Cascade Range, and through the Deschutes Formation. The groundwater flow system is bounded by low permeability, hydrothermally altered rocks at depth beneath the Cascade Range and pre-Deschutes Formation rocks of the John Day Formation elsewhere in the basin (Gannett et al., 2001). The low permeability deposits are not a significant source of groundwater supplies, and inhibit groundwater flow beneath the Deschutes Formation, as well as on the northern and eastern boundaries of the basin.

[1] This definition is consistent with the boundaries of the Upper Deschutes Basin study area, which includes the Upper Deschutes Basin from the crest of the Cascades, to Prineville Reservoir and Ochoco Reservoir to the east. The Crooked River Basin above these two storage reservoirs is not included in the study area.

## Precipitation and Recharge

Precipitation is the main driver of the groundwater flow system in the Upper Deschutes Basin. Gannett et al. (2017) estimated a total recharge rate of 4,436 cfs for the Upper Deschutes Basin based on data from 1980 through 2013. Of this amount, 3,031 cfs is estimated to come from direct in-basin precipitation, 994 cfs from interbasin flow (mostly into the Metolius subbasin), and 411 cfs from canal leakage. However, the amount of precipitation and recharge is not constant. Variations in precipitation (and recharge) over time in the Cascade Range are evidenced from records of precipitation at Crater Lake, which provides the longest consistently available precipitation record for the Cascade Range. Figure 1 shows Crater Lake precipitation trends from 1921 through 2021.

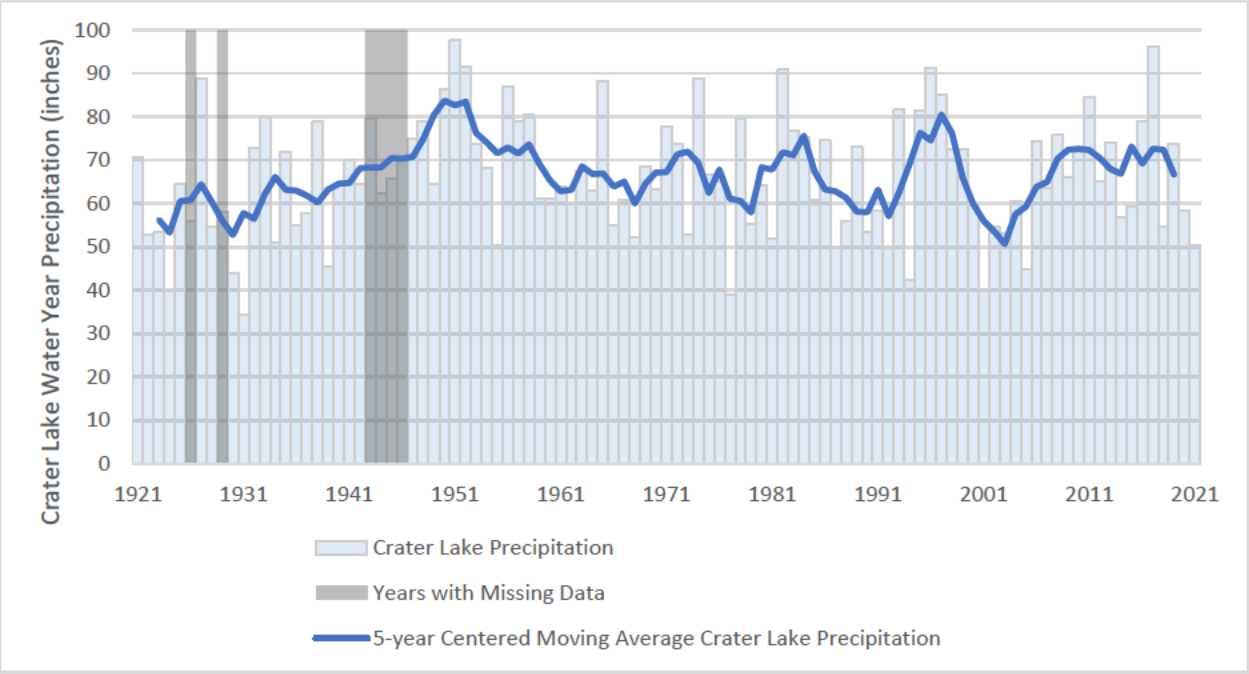


**Figure 1.** Annual water year precipitation at Crater Lake National Park, Oregon, and 5-year rolling average precipitation from 1921 through 2021. Years with missing data indicate years when over 50 percent of daily precipitation totals for the Crater Lake weather station were missing. Throughout the 1921 through 2021 time period, missing daily totals for Crater Lake were estimated based on monthly correlations with Klamath Falls weather station following a similar approach to that employed by Gannett et al. (2007).

These precipitation records are reflected in flow measurements in spring-fed streams such as Fall River. Figure 2 shows the relationship between Crater Lake precipitation and mean monthly Fall River discharge, as measured at USGS gage 14057500, located approximately 5 miles downstream of the Fall River headwater springs. The gage was installed in July 1938. The chart also shows miscellaneous measurements made by water resources staff prior to the installation of the gage. The hydrograph for Fall River illustrates that discharge rates fluctuate on a decadal scale due to changes in precipitation, but also shows the current discharge to be similar to the late 1930s, demonstrating the relationship between long-term, cyclic precipitation patterns and groundwater recharge near the Cascade crest.

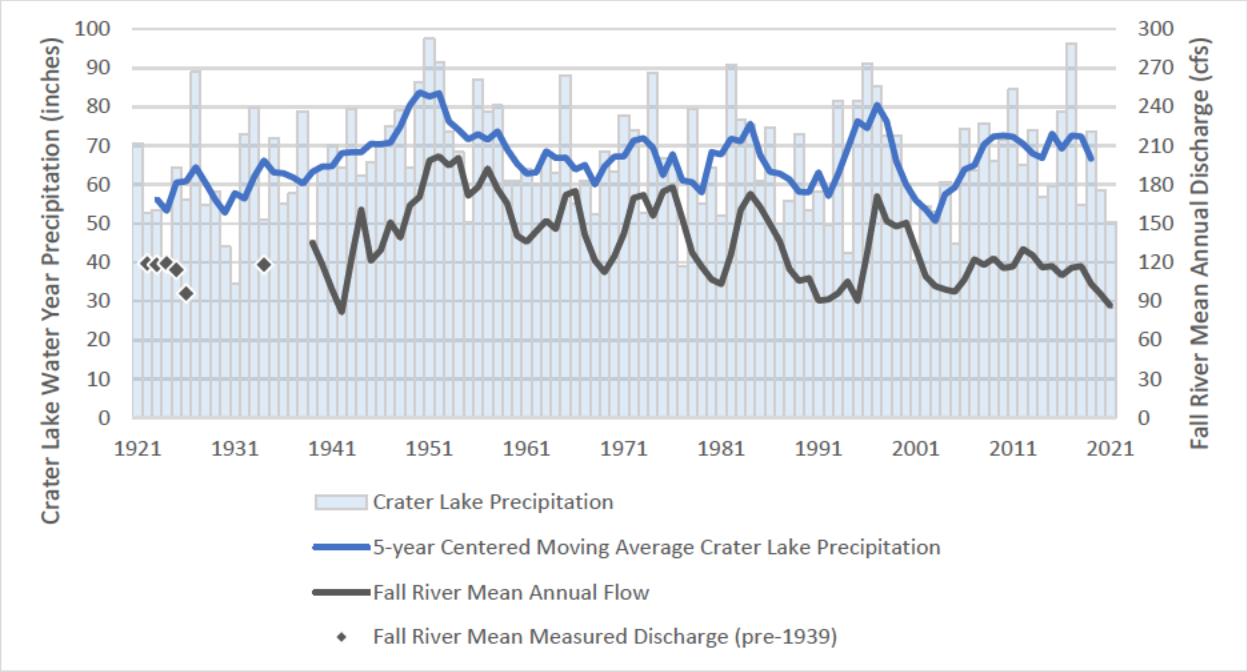


**Figure 2.** Annual water year precipitation at Crater Lake National Park, Oregon, 5-year rolling average precipitation from 1921 through 2021, and Fall River mean annual discharge measured at USGS gage 14057500 (1939 through 2021 water year). Also included are averages of a small number of field measurements made by the Oregon State Engineer's office from 1922 through 1926 and 1934.

The short-term precipitation pattern is also reflected in the hydrograph for DESC 3016, a well located in Sisters (about 13 miles away from the crest of the Cascades). The hydrograph for DESC 3016 shows a remarkably similar trend to the discharge trend for Fall River, which originates in headwater springs located a similar distance (17 miles) from the Cascade crest. Figure 3 shows Crater Lake precipitation, Fall River discharge, and the hydrograph for DESC 3016.

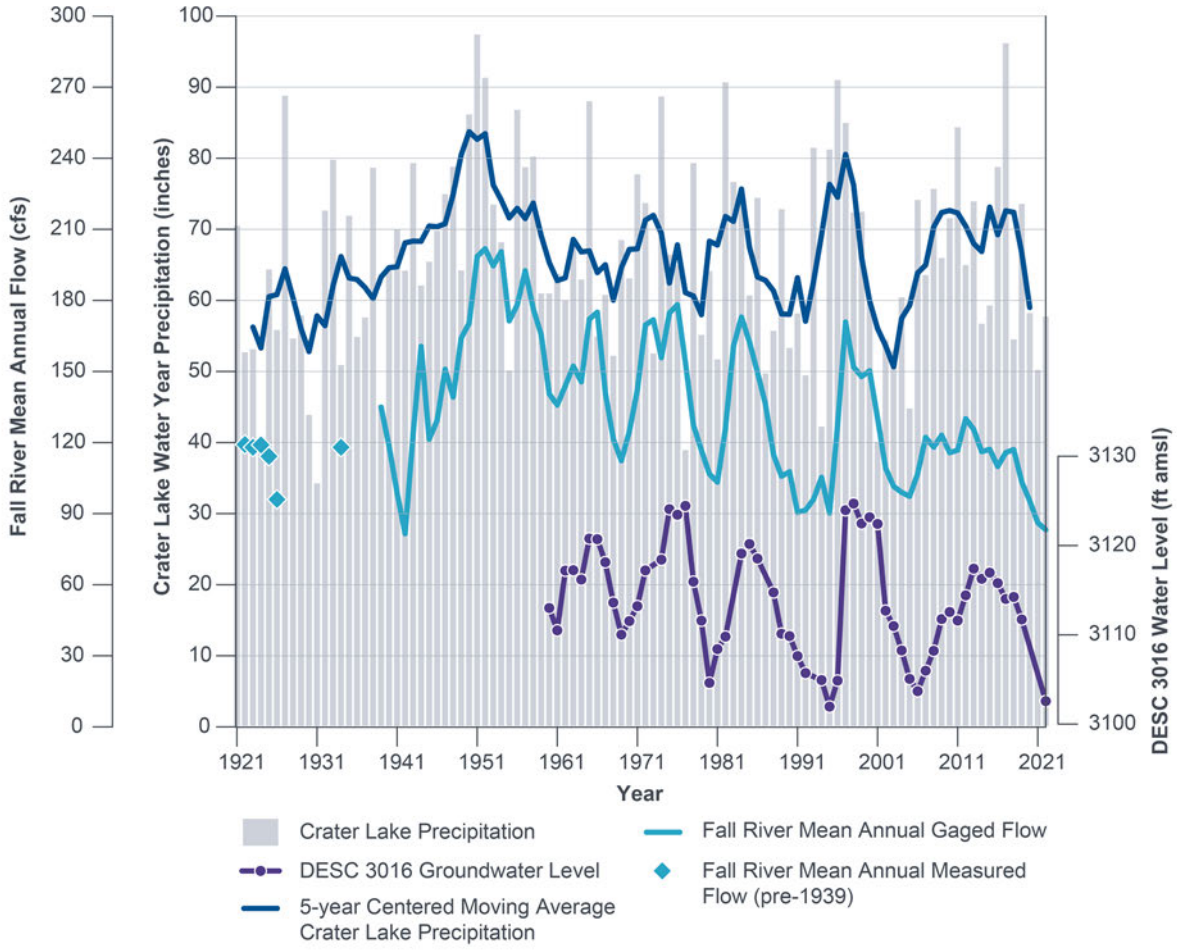


**Figure 3.** Annual water year precipitation at Crater Lake National Park, Oregon, 5-year rolling average precipitation from 1921 through 2021, Fall River mean annual discharge measured at USGS gage 14057500 (1939–2021 water year), and DESC 3016 groundwater levels (1960 through 2021).

The long-term precipitation trend is reflected in the hydrograph trend for a well (DESC 3903) near Redmond (located approximately 30 miles from the Cascade crest). DESC 3903 shows a delayed and muted response to relatively large recharge events in the Cascade Range. Figure 4 shows the hydrograph for DESC 3903 along with Crater Lake precipitation and Fall River discharge.

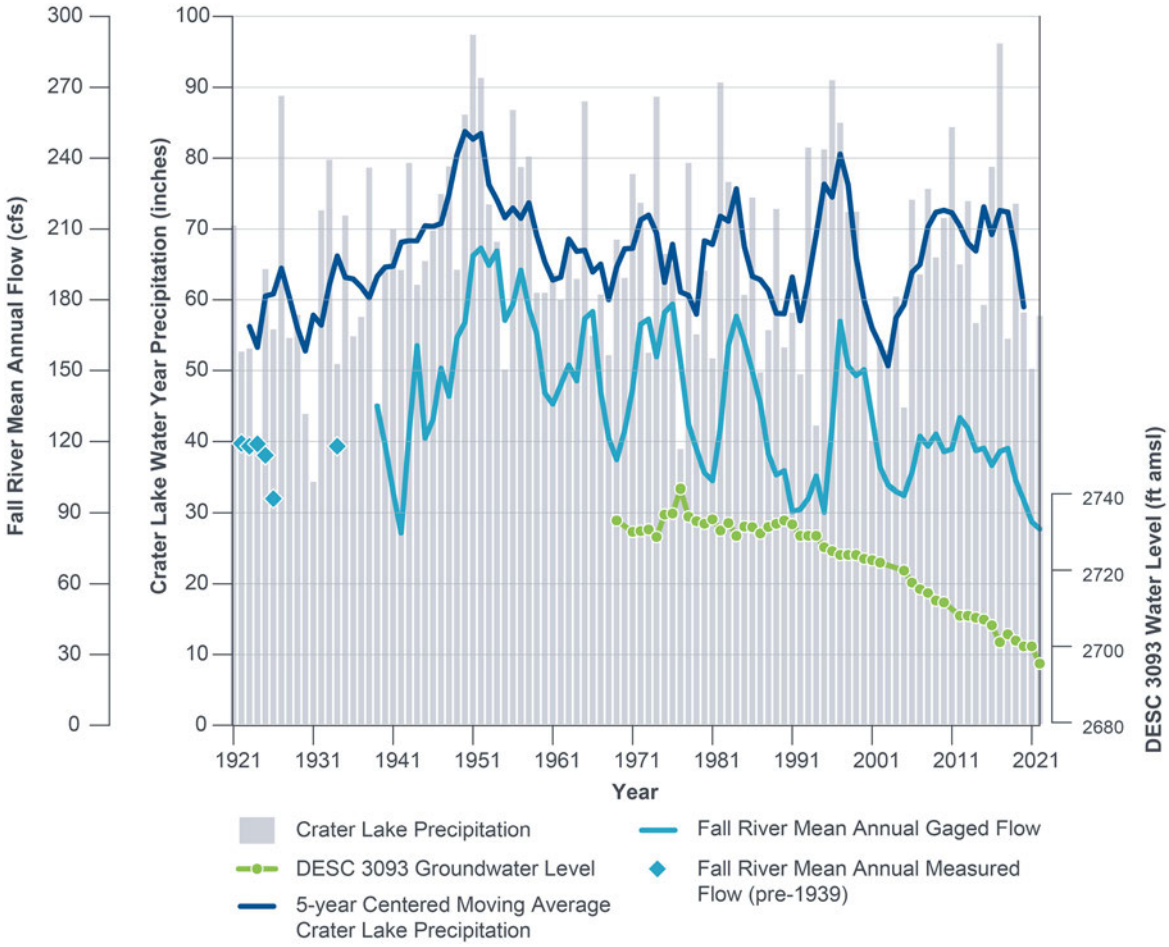


**Figure 4.** Annual water year precipitation at Crater Lake National Park, Oregon, 5-year rolling average precipitation from 1921 through 2021, Fall River mean annual discharge measured at USGS gage 14057500 (1939–2021 water year), and DESC 3093 groundwater levels (1969 through 2021).

The long-term precipitation trend is also reflected in water-level data from a well (LAKE 113) just east of the Deschutes basin, in the northwest quadrant of the Fort Rock basin, located approximately 52 miles from the crest of the Cascade Range. This well provides a much longer period of record than DESC 3093 for evaluating the response of the aquifer to precipitation. The hydrograph for LAKE 113, shown in Figure 5, illustrates the impacts of low precipitation during the 1930s, followed by higher precipitation amounts in the late 1940s and 1950s. The amount of annual precipitation (recharge) is important in determining how far the pressure response in the groundwater flow system travels away from the principle recharge area in the Cascade Range. As shown in the hydrograph for LAKE 113, the long-term decline in water levels is interspersed with short-term increases during multi-year periods of high precipitation (e.g., water levels increased from 1996 through 1999). However, the prevailing declining trend from the 1970s through the present is reflective of the declining precipitation trend during the same period.

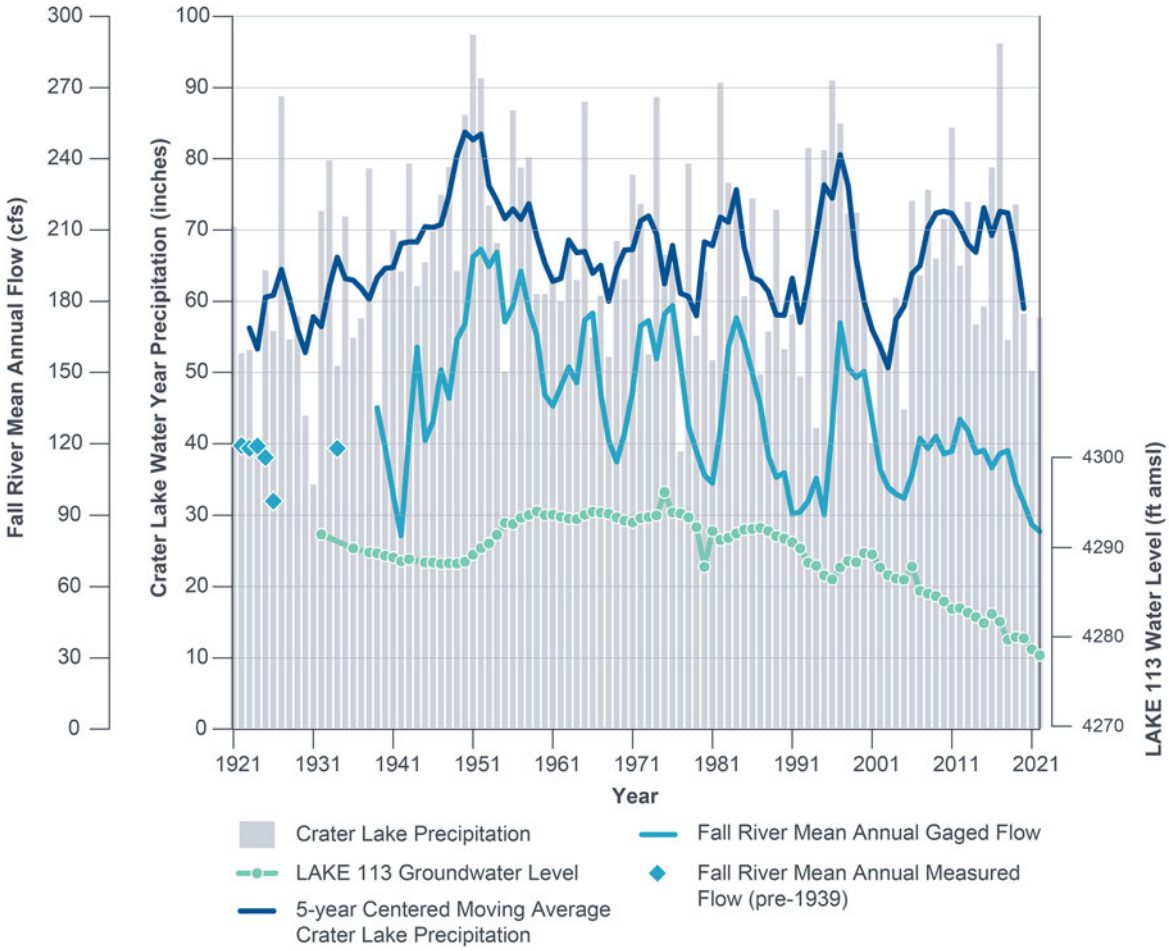


**Figure 5.** Annual water year precipitation at Crater Lake National Park, Oregon, 5-year rolling average precipitation from 1921 through 2021, Fall River mean annual discharge measured at USGS gage 14057500 (1939–2021 water year), and LAKE 113 groundwater levels (1932 through 2021).

As described by Gannett and Lite (2013), and illustrated in the preceding figures, distance from the principal recharge areas is the main influence on groundwater response to cyclic variability in recharge. Figure 6 reproduces hydrographs from Gannett and Lite (2013), further demonstrating this relationship in the Deschutes basin.[2]

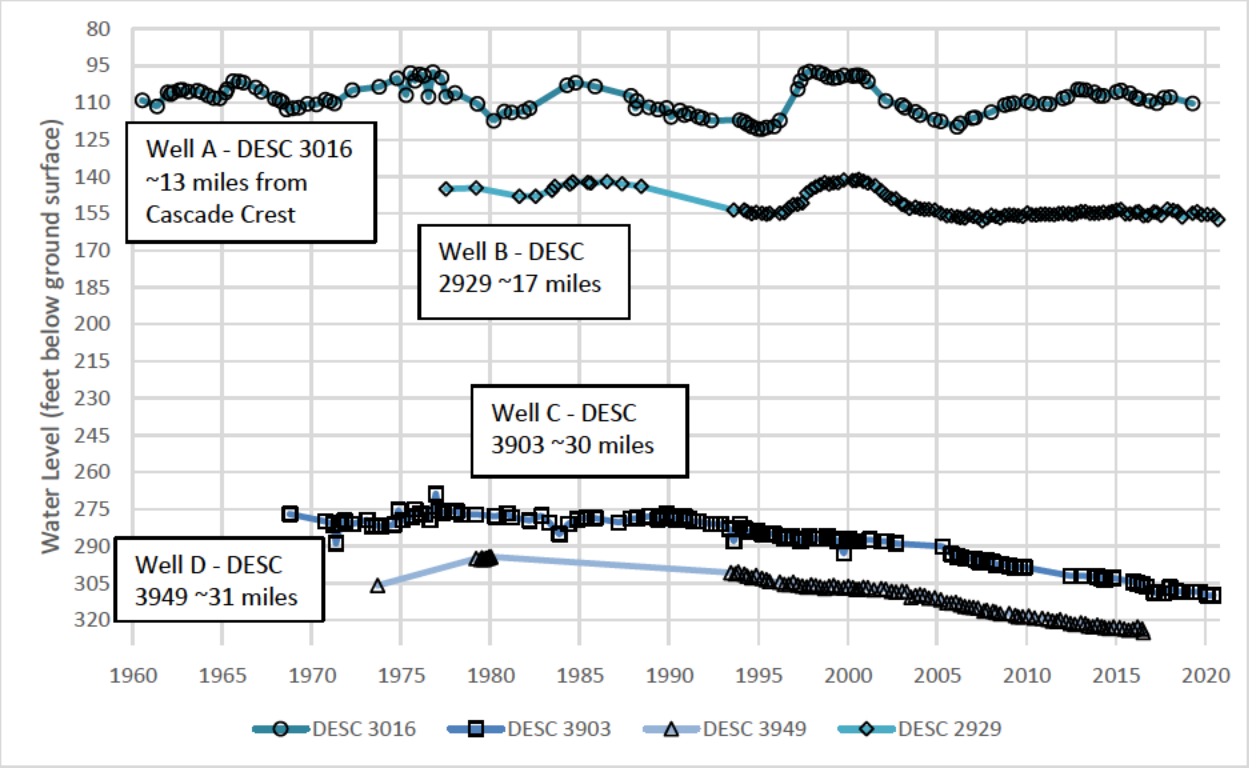


**Figure 6.** Water level trends from observation wells selected by Gannett and Lite (2013) contrasting water level trends in wells nearer to the Cascade crest (Wells A and B) with water level trends in wells further from the Cascade crest (Wells C and D).

[2] Also see Figures 5 (A), (B), and (C) in Gannett and Lite (2013).

## Recharge Rate, Canal Leakage, and Groundwater Use

Gannett et al. (2017) estimated a total recharge rate of 4,436 cfs for the Upper Deschutes Basin based on data from 1980 through 2013. Of this amount, 3,031 cfs is estimated to come from direct in-basin precipitation, 994 cfs from interbasin flow (mostly into the Metolius subbasin), and 411 cfs from canal leakage. Interbasin flow is mostly recharge from precipitation derived from outside the geographic boundary of the basin, as discussed in Gannett and Lite (2004). Based on the canal losses reported in Gannett et al. (2017), canal leakage contributes 9 percent of recharge to the entire Deschutes aquifer. By comparison, groundwater pumping (76 cfs) was estimated to be equivalent to less than 2 percent of total annual recharge.

It is important to note that surface water diversion and groundwater pumping are generally concentrated outside of the Metolius subbasin. Gannett et al. (2001) estimated about 500 cfs was recharged directly into the Metolius subbasin. When interbasin flow (994 cfs) and recharge directly into the Metolius subbasin (500 cfs) are subtracted from the total recharge (4,436 cfs), the total recharge to the basin outside of the Metolius subbasin is about 2,942 cfs. Therefore, excluding the Metolius, the estimated contribution of canal leakage is about 14 percent of the total annual recharge and groundwater pumping would be about 2.6 percent of the total annual recharge.

Irrigation districts in the Upper Deschutes Basin have received state and federal funding commitments to pipe main canals and large sub laterals within their distribution systems. COCO supports these efforts. Canal piping will reduce leakage, improve distribution efficiency, and provide needed instream flow benefits. However, with an estimated reduction in canal leakage of approximately 200 cfs over the coming decades, canal piping will result in a reduction in recharge and have associated impacts to groundwater levels.

## Aquifer Thickness and Groundwater Decline Trends

As described above, the groundwater flow system is contained within permeable deposits of the Deschutes Formation throughout much of the Upper Deschutes Basin as described in Lite and Gannett (2002). The greatest measured thickness of the Deschutes Formation is at Green Ridge, where it is approximately 3,000 feet thick (Conrey, 1985).

Hydrologic data from seepage measurements along the Deschutes and Crooked Rivers reported in Gannett et al. (2001) show the saturated thickness of the Deschutes aquifer system is approximately 1,000 feet. As discussed and diagrammatically illustrated in Gannett et al. (2001) and shown here in Figure 7, the Deschutes aquifer discharges to the Deschutes River between elevation 2,600 feet near Lower Bridge and elevation 1,600 feet near Pelton Dam, providing further support for an estimated aquifer thickness of approximately 1,000 feet.

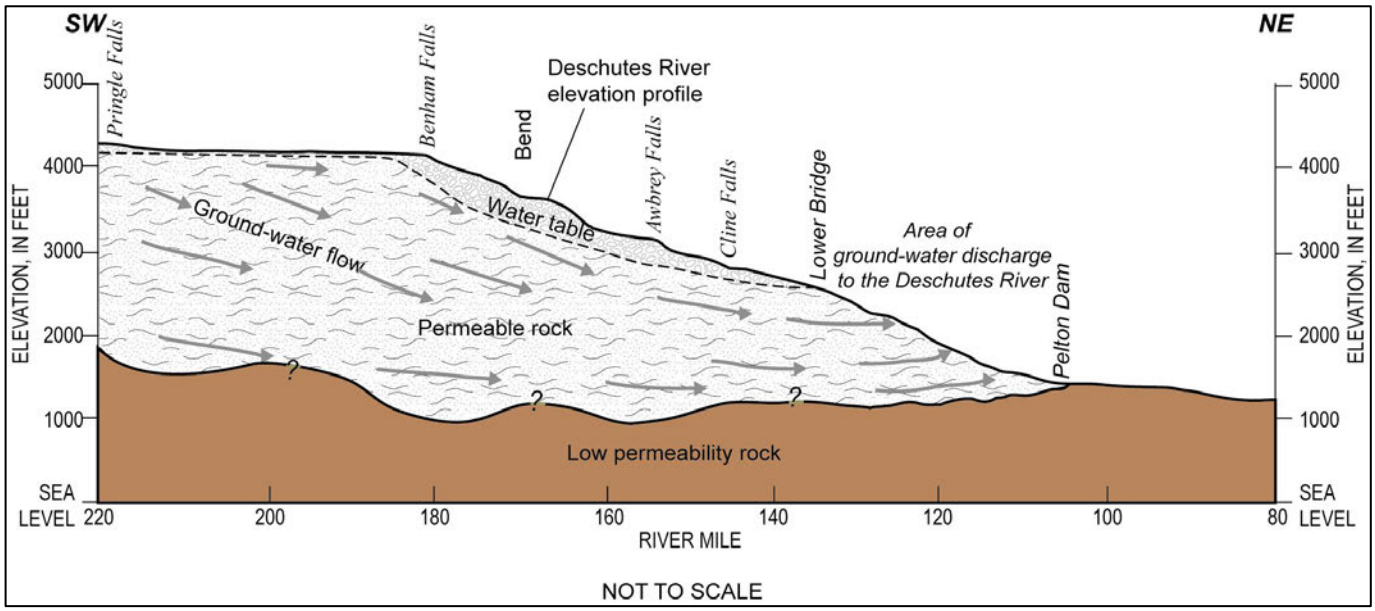


**Figure 7.** Diagrammatic profile along the Deschutes River showing geologic control on groundwater discharge.

Geological cross-sections depicting estimated thicknesses of the Deschutes Formation throughout the basin are also shown in Lite and Gannett (2002) and Sherrod et al. (2004). Figure 8 shows segments of two of the geological cross-sections drawn through the Redmond area. The Redmond area is in the vicinity of the "bend in section" and "Highway 97" on the Lite and Gannett (2002) and Sherrod et al. (2004) cross-sections, respectively.

Figure 8 also shows the estimated saturated thickness of the aquifer in the Redmond area. Based on the elevation of the bottom of the Deschutes Formation (the top of the John Day Formation) in Lite and Gannett (2002) and Sherrod et al. (2004) and the water-level elevation at well DESC 3903 in March 2022, the saturated thickness of the aquifer in 2022 is between about 870 and 1,219 feet thick.

Data from wells that fully penetrate the Deschutes Formation are sparse, typically occurring near the eastern and northern boundaries of the Upper Deschutes Basin. However, two relatively deep wells located at Opal Springs (JEFF 50263) and Redmond (DESC 51647) that do not fully penetrate the Deschutes Formation have chemically distinct Deschutes Formation rocks at elevations of 1,210 feet above mean sea level (amsl) and 2,212 feet amsl, respectively (see Table 2 in Lite and Gannett, 2002). Those data further support the conclusion that the Deschutes Formation is very thick in the central part of the Upper Deschutes Basin.

As discussed above, groundwater level trends vary with distance from the primary recharge area as well as proximity to discharge areas, local groundwater pumping, and local recharge sources such as irrigation canals. In areas where groundwater level declines are ongoing, it is important to understand to what extent the aquifer is being impacted regardless of the causes. For example, the hydrograph for DESC 3903 shows a mostly downward trend since 1990 (see Figure 3). The groundwater elevation in DESC 3903 was 2,729 feet amsl when measured in March 1971, as compared to 2,695 feet amsl in March 2022—a total decline of 34 feet, as shown in Figure 5.

Precipitation accounts for most of the groundwater-level decline in the vicinity of DESC 3903, but water use, and lining and piping of canals are also contributing factors. A groundwater flow model simulation for the period from 1997 to 2008 reported in Gannett and Lite (2013) calculates 20 to 25 percent of groundwater-level decline between Cline Butte and Redmond is attributed to groundwater pumping. While 5 to 10 percent of the decline was calculated for canal lining and piping during the same 1997 to 2008 time period. As much as 75 percent (an overwhelming majority) of groundwater decline was, and continues to be, caused by an extended period of lower precipitation that began in the early 1990s. Regardless, the data do not indicate that these declines would significantly impair the function or character of the resource or preclude the perpetual use of the aquifer as declines in DESC 3903 amount to less than 4 percent of the saturated thickness of the aquifer.

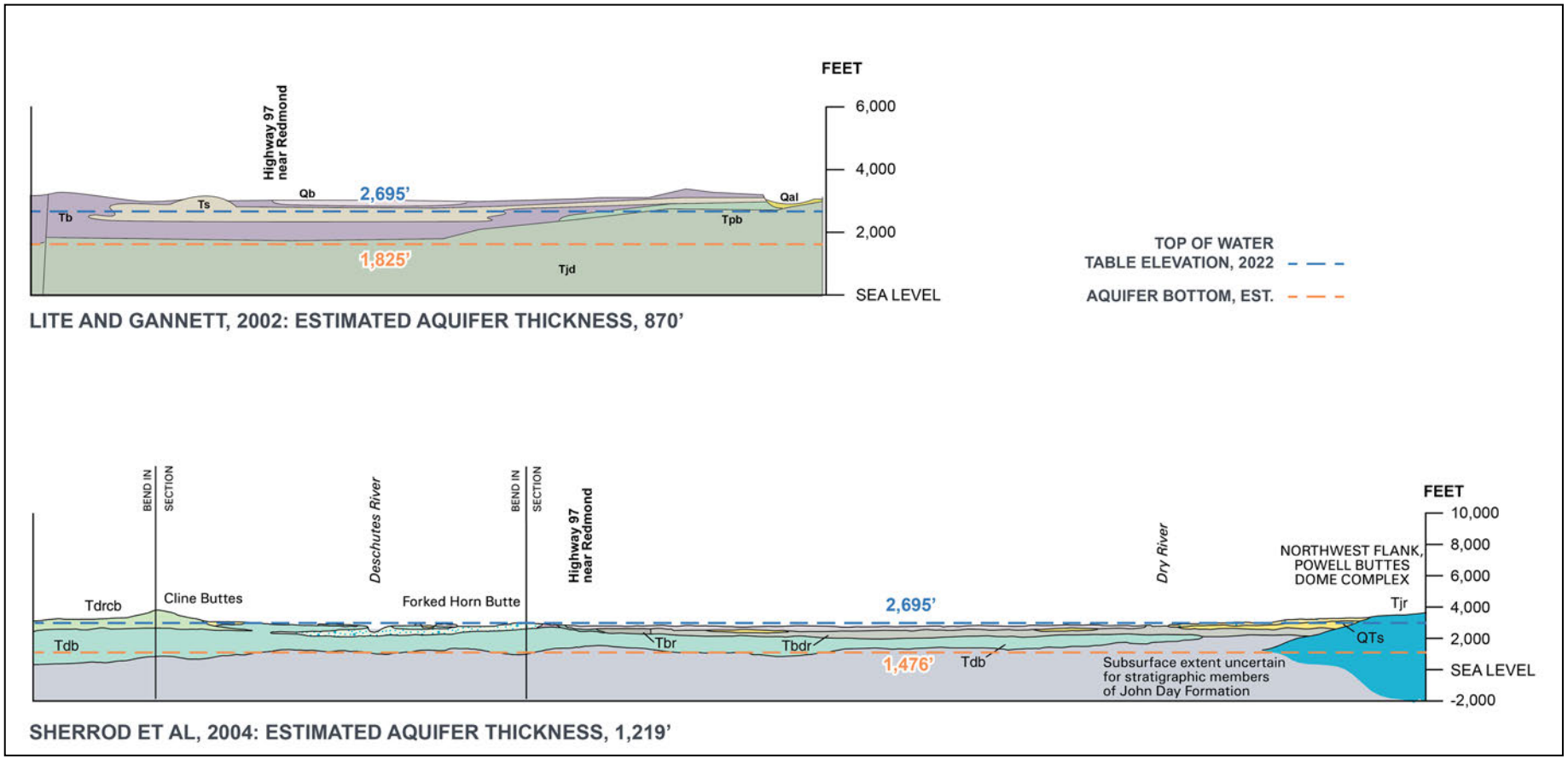


**Figure 8.** Geologic cross-sections of the Deschutes Formation and John Day Formation through the Redmond Area. Sections have been cropped from Lite and Gannet (2002) and Sherrod et al. (2004).

## Climate Change

With the Upper Deschutes Basin experiencing a prolonged period of lower than average precipitation, it is easy to attribute the cause of long-term precipitation declines in the Cascade Range to anthropogenic climate change, leading to the assumption that things will only get worse in the coming decades. However, evidence shows that the Upper Deschutes Basin experiences cyclical droughts. Although climate models do predict warmer temperatures, the models generally do not predict that precipitation will decrease due to climate change.

The Bureau of Reclamation conducted a review of regional climate models for inclusion in hydrologic modeling for the 2019 Upper Deschutes River Basin Study (Bureau of Reclamation et al., 2018; Bureau of Reclamation et al., 2019). The Basin Study evaluated climate conditions approximately 10 to 50 years in the future. Models used in the study project that average basin-wide temperatures will increase by an estimated range of 1.4 degrees Celsius (°C) to 3.4°C. However, future annual precipitation is projected to increase by 5 percent for median projections, with a potential range from a 3 percent decrease to an 11 percent increase.

Waibel et al. (2013) simulated changes in groundwater recharge and spring discharge from a base period of 1970 through 1999 to 2010 through 2099 using an ensemble mean of eight global climate models. The climate models identified no systematic trends in annual mean precipitation averaged over the basin. In combination with groundwater models, the authors found no significant change in average recharge over the basin. The simulation projected seasonal impacts to discharge of headwater springs attributable to the changing timing and form of precipitation, but projected minimal changes in discharge from springs fed by the Deschutes aquifer in the lower Crooked River, lower Whychus Creek, and middle Deschutes River as a result of climate change.

In summary, in the Upper Deschutes Basin, climate models project that climate change will shift precipitation peaks to earlier in the year and will cause more precipitation to fall as rain and less precipitation to fall as snow. As a result, the timing of runoff and groundwater recharge is expected to change but basin-wide recharge is not expected to change significantly as a result of climate change. For the regional aquifer where the greatest groundwater declines have been observed, groundwater level responses are attenuated over many years. Consequently, whether precipitation falls as rain or snow will have minimal impact on groundwater levels in the Deschutes aquifer.

In a memo dated August 30, 2021, OWRD incorrectly stated that “observed changes in precipitation and snowpack due to climate change have already been shown to impact groundwater levels in the region,” (Thoma et al., 2021) citing Gannett and Lite (2013). However, Gannett and Lite (2013) makes no such attribution. Historical precipitation data and climate models both support the contention that climatic variability, not anthropogenic climate change, is the primary driver of recently observed groundwater declines.

# Summary

COCO supports efforts to manage the groundwater resource in a way that balances beneficial groundwater uses and protection of the resource. However, recent agency decisions, and statements made by agency staff and members of the public that ignore the unique hydrogeologic framework of the Upper Deschutes Basin are concerning to COCO's member cities. When making groundwater allocation decisions for the Upper Deschutes Basin, water policy makers and technical staff should consider the information described in this paper. Taken together, the information provided here demonstrates that:

1. Groundwater level declines in the Deschutes aquifer in the Upper Deschutes Basin are driven by short-term and long-term climate variability—precipitation drives the groundwater flow system in the Upper Deschutes Basin.
2. Short-term and long-term climatic variability is different than climate change—models used in the Upper Deschutes Basin indicate that future annual precipitation is projected to increase by 5 percent for median projections, with a potential range from a 3 percent decrease to an 11 percent increase.
3. The saturated thickness of the Deschutes aquifer (approximately 1,000 feet thick) in the Upper Deschutes Basin is sufficient to ensure that even during cyclical periods of groundwater declines the aquifer has more than sufficient capacity to allow perpetual use—the groundwater flow system is very thick.
4. The Upper Deschutes Basin receives over 4,000 cfs of annual recharge. Groundwater pumping is equivalent to approximately 2 percent of the annual groundwater recharge—the groundwater flow system is not over-appropriated and OWRD should consider the total saturated thickness of the aquifer when assessing impacts.
5. Water levels in the Deschutes aquifer peaked in the 1970s and 1980s following several years of increased precipitation and recharge from irrigation canals, based on the period of record of groundwater measurements. Unfortunately, many domestic use wells constructed during this period may have only penetrated the uppermost saturated zone of the Deschutes aquifer—state officials should continue to provide resources to assist well owners, but not manage the groundwater resource based on well depths that do not sufficiently penetrate the aquifer. Wells in the Upper Deschutes Basin that are drilled into localized alluvial aquifers can be impacted by various factors; the causes of those impacts are not addressed here.

Any changes to Oregon's groundwater allocation policies related to the Upper Deschutes Basin groundwater flow system should be based on data, science, and an understanding of this basin. Policy changes need to be well-informed and based on local recharge mechanisms and on the characteristics of the subject aquifer.

COCO and its member cities look forward to working with OWRD and other stakeholders in the basin to identify a sensible pathway forward that protects the groundwater resource and ensures the security of groundwater supplies for water users in the future.

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**Kelley Minty, County Commissioner**

October 31, 2022

Oregon Water Resources Department
Doug Woodcock, Interim Director
Douglas.E.WOODCOCK@water.oregon.gov

Dear Mr. Woodcock,

In response to OWRD's recent public outreach to inform the public about a Rules Advisory Committee on implementing new rules for Groundwater administration I offer the following.

Oregon is a diverse geographic area, with each region of the state having formed through unique conditions. The Klamath Basin watershed is one of those very unique locations where numerous years of detailed study of the geomorphic conditions is required to have a basic understanding of how the water in the Klamath Basin is interconnected. The basic 101 level explanations utilized in the recent public education campaign do not fit with the geography of the Klamath Basin.

Local experts and local people are likely to have a better understanding of a very specific location; an understanding that cannot be reached by people working models several hundred miles away without first having years of experience on the ground at the very specific location.

The formation of Lake Modoc, the subsequent filling of the lake with volcanic ash creating an impervious layer of hardpan/chalk rock, and various layers of basalt lava flows in locations between these layers creates complexity. Water which falls within a quarter mile of the Klamath River does not naturally flow into the Klamath River, it flows away from the river and into the Lost River basin as clearly shown in the HUC 8 and HUC 10 level watershed analysis. Similarly, ground water is separated by these layers. Artesian wells, with water naturally flowing out of them with no pump, well above the agricultural wells appear to be on a different layer. Shallow wells are clearly affected by surface water and flood irrigation techniques.

I ask for the Rules Advisory Committee to:

1. Ensure the rules allow for local governance of local resources with our local experts.



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2. The RAC should not be so large as to be ineffective…but primarily representative of those who will be impacted by the rules. Rural Oregonians, farmers, municipalities, irrigation districts, and others are often heavily impacted by these rules, while those that do not have to operate under the rules are the often times in the majority during rule making efforts.

3. If rules need to be enforceable, actions such as Richard Whitman undermining the Klamath Adjudication with an MOU with a Tribe undermines good order and discipline, eliminates trust in government, and creates division in our local communities.

Sincerely,

Kelley Minty
Chair, Board of County Commissioners



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