NORTHEAST OREGON WATER ASSOCIATION

Via Electronic Submission to Senate Committee on Natural Resources

Senator Jeff Golden, Chair
Senator Fred Girod, Vice-Chair
Senate Committee on Natural Resources
State Capital
Salem, OR 97301

RE: Support of Development of a Recharge Testing Program in Oregon (SB 455)

Dear Chair Golden, Vice-Chair Girod and Members of the Committee:

The Northeast Oregon Water Association (NOWA) would like to thank the Senate Committee on Natural Resources leadership and members for hearing SB 455. NOWA is fully supportive of SB 455 and the two programs it creates. We recognize that recharge may not work in all aquifers and in all areas of the state. In regions where we can utilize recharge to recover and sustain groundwater levels, SB 455 is necessary to aid in getting recharge off the ground and the data & trust generated to ensure long-term success.

About NOWA

The Northeast Oregon Water Association (NOWA) is a result based non-profit support organization to the natural resource-based economy of the Mid-Columbia region of Northeast Oregon. We represent solutions not special interests or industries for the benefit of all needs in our region. Our organization includes landowners of over 350,000 acres of the most highly productive, irrigated food producing farmland in the world, as well as the counties, cities, ports, special districts, and private businesses that generate and support our value-added agricultural output that now contributes over $2 billion annually to the region and State of Oregon. A sustainable, drought and climate-change resilient, conjunctively managed water supply program is critical to sustainability of our region and the quality of life of all our current and future generations.

NOWA formed in 2013, shortly after memorialization of the Columbia River-Umatilla Solutions Task Force (CRUST) Declaration of Cooperation was signed by all 21 members representing diverse interests in the Mid-Columbia region. NOWA's primary goal was to establish and maintain the local institutional capacity needed to ensure that the short and long-term recommendations of the CRUST were not forgotten and that the Umatilla Basin would finally begin to move forward on long-term water sustainability. NOWA is focused on 4 key milestones to achieve water sustainability:

1) Development of a short and long-term mitigation program on the Columbia River that does no harm to Columbia River and promotes net gain, through mitigation projects, to meet 150,000 acre-feet of Columbia River demand.

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2) Development of three Columbia River pipelines sized to both maintain irrigation in the high-value irrigated region and relieve irrigation pumping pressure on the 4 Critical Groundwater Areas.
3) Continued testing and implementation of aquifer recharge where feasible.
4) Development of a groundwater savings and banking program to ensure stable and recovering groundwater levels for current and future generations.

The opportunity at hand:

1) Over $8 Billion in federal funding for water resiliency and storage in the west is authorized by the federal infrastructure package.
2) Specific direction has been provided to the Department of interior to develop rules for a funding program to advance AR/ASR technologies in the western United States.
3) Oregon has a chance to influence Interior rules for the program and AR/ASR is ready in multiple areas of the state, but we have issues with getting these technologies off the ground and state programs do not enable basins of Oregon to be able to take advantage of this opportunity.

Differences between surface and groundwater storage investment and why groundwater storage will not succeed without a program such as SB 455:

1) Surface Storage
    a. Up Front feasibility costs include seismic, cultural, volumetric storage calcs and cap ex. feasibility on dam construction costs, etc.
    b. Once feasibility is complete then a storage permit secured from OWRD (note: this is a storage permit and is permanent if the project is completed)
    c. Once a and b are finalized the capital expenditure is financed (usually by a public/private mix of funding) and mother nature fills the reservoir
    d. Once the reservoir is completed the water right (b) is certificated and there is financial certainty that the asset can be utilized, and cash flowed for the life of the loan and reservoir. Users of the reservoir then begin paying O&M charges and finance charges to cash flow the storage investment.

2) Groundwater Storage
    a. The State of Oregon only grants a "Limited License" for "testing" at the beginning of the effort and that limited license is only valid for 5 years (no guarantee of long-term certainty)
    b. Once the limited license is granted, the capital expenditure must come <u>up front</u> (e.g., pumpstation, treatment, infiltration basin, injection wells and monitoring wells) to prove the concept and capability of the aquifer to be utilized for recharge/winter storage. This expense is problematic as there is no guarantees since the state has only granted a 5-year limited license and we have not validated the storage capabilities of the targeted aquifer.
    c. Significant sunk costs are necessary up front over the 5-year testing period[1]. These costs may include:
        i. AR
            1. Pumping costs to convey water to the alluvial infiltration gallery for five years.
            2. Source water and groundwater sampling over 5 years to prove anti-degradation (soil and major water samples based upon whatever analyte list DEQ recommends to OWRD
            3. Groundwater modelling and monitoring costs to prove both extent of aquifer storage capability and groundwater movement/connectivity. This is often called establishing "control" over the stored water for secondary recovery and permitting and is very expensive and data driven (note: control establishes one's ability to apply for a secondary use permit to recover stored water and prove that what they are recovering

[1] See average cost table attached.

or using for other beneficial uses was actually the water they put into the ground and is not water coming from somewhere else)

ii. ASR
    1. Same as the three above but there is also the added cost of treatment to potable standards and injection.
    2. Monitoring wells and processes with ASR are usually much more expensive as the monitoring wells must be drilled much deeper and usually through basaltic rock or other very dense confining layers.

d. Only after the five-year testing can an entity then look at permitting (i.e. long term water right certainty and cash flow of annual O&M through customers of the source water)

3) Generalized Summary
    a. Surface water storage flow from cradle to grave: Feasibility study and volume study leads to permit then leads to certainty for investment then leads to investment.

    b. Groundwater recharge project flow from cradle to grave: Investment and O&M costs lead to feasibility study then leads to volume study then leads to permit and long-term certainty.

4) The investment needs are completely in reverse for recharge which makes it almost impossible to complete the capital cost and five-year test using private or municipal/rate base funds as no entity will commit that level of sunk cost into a test.

Oregon Specific Funding Program Constraints:

1) Pursuant to messaging from OWRD, it appears that there are no programs in place to both cover the upfront capital cost of building recharge systems and testing the systems for the five years necessary to get through the state required limited license.
2) While the water supply grant and loan fund (SB 839 in 2013) is supposed to be eligible for funding AR/ASR projects we have been told that the fund will only pay the hard costs of the infrastructure and will not cover the key expenditures of monitoring well installation, ground and source water sampling required by DEQ and/or pumping and injection costs of the 5-year tests.
    a. This leaves projects unfunded as few cities, districts or private landowners can commit that level of investment into a test to prove the concept.

How SB 455 remedies the funding gap that limits recharge testing

Public entities in regions that have committed to monitoring & measurement and have enough scientifically defensible groundwater study data documenting that they are a candidate for recharge testing can apply for a grant to complete all necessary due diligence associated with applying of a limited license to commence recharge testing.

The bill further enables public entities of projects that have received a limited license to apply for a five-year operating loan to complete the 5 years of necessary testing of the limited license. These public funds result in recharge water going to waters of the state (i.e. public) and the data generated from recharge testing helps the state better ground truth its aquifer models promoting more in-depth understanding of the aquifer properties within a basin or region.

SB 455 gets a region through the test phase with the resulting data benefitting all parties (state, local, and interest groups/residents) in their understanding of aquifer properties and the long-term likelihood of recharge benefit(s).

Planning Efforts and Data in the Mid-Columbia Region of Oregon

The Mid-Columbia region of Oregon is one of the most heavily studied and heavily regulated water-use regions in Oregon. Attached to this testimony are various bibliographies and studies to document the amount of data available to our public entities to meet conditions included in SB 455. These studies, combined with years of water use measurement & monitoring, provide a baseline to better enable our region to track the localized benefits of recharge.

In addition to studies, the Mid-Columbia region and Umatilla Basin have completed numerous plans, spanning the last three decades, relating to short and long-term sustainability. All these plans were completed prior to the state-initiated process of "Place-Based Planning." The Umatilla Basin planning efforts were instrumental in highlighting the need for regionalized planning in Oregon to aid in Oregon water policy reform. Three key planning/coordination efforts in the region that continue to guide strategies, projects and progress include:

1) 1986 Umatilla Basin Groundwater Task Force Report to the Governor
2) 2008 Umatilla Sub-Basin 2050 Water Management Plan
3) 2013 Columbia River-Umatilla Solutions Task Force (CRUST) Declaration of Cooperation

The three planning processes were time, data, and resource heavy. The efforts were collaborative and included a significant number of individuals representing a variety of interests. All three efforts highlighted the need to conjunctively manage surface and groundwater resources in a manner to ensure solutions to legacy groundwater quality and quantity declines as well as long-term water sustainability. All three plans have led to the 4 goals of NOWA and also highlight the need to incorporate aquifer recharge and aquifer storage and recovery, where feasible, into our long-term water security portfolio.

Recharge Testing in the Mid-C

Members of NOWA are involved in numerous successful aquifer recharge campaigns and/or have been involved in a number of aquifer recharge tests over the years. These projects include:

AR/ASR Project	Type	Aquifer	Status
County Line Water Improvement District	Alluvial Aquifer Recharge Project (1st in US history)	Ordnance Alluvial Critical Groundwater Area	Operational since the early 1970's
Madison AR/ASR Project	Aquifer Recharge (filtration) to Aquifer Storage and Recovery (basalt storage) for supplmental agricultural needs	Butter Creek Basalt Critical Groundwater Area	Testing and operations since the early 2000's
McCarty AR/ASR	Aquifer Recharge (filtration) to Aquifer Storage and Recovery (basalt storage) for supplmental agricultural needs	Butter Creek Basalt Critical Groundwater Area	Testing and Operations since early 2000's
City of Pendleton ASR	Aquifer Storage and Recovery	Basalt Aquifer underlying City of Pendleton	Operational and serving City of Pendleton municipal needs
Echo Meadows AR	Umatilla River floodplain alluvial recharge for return flow benefit to Umatilla River	Umatilla River Alluvial fan	On-Hold, testing showed positive results to Umatilla River but little storage benefit to consumptive use
HB 3369 Recharge Project	Ordnance Alluvial recharge using Columbia River water	Ordnance Critical Groundwater Area	Abandoned but studies and testing funded under HB 3369 (2009) are being used to direct development of

			the Ordnance Regional Water Supply and Aquifer Restoration Project located in a different location within the same aquifer
Westland A-Line Canal Recharge	Shallow aquifer recharge testing for Umatilla River return flow benefit and supplemental storage for Westland Irrigation District	Ordnance Alluvial Critical Groundwater Area	Initial testing completed, visioning and funding process to begin next phase of recharge testing

All these projects have struggled with funding to complete necessary testing and coordination. As an example, the HB 3369 Recharge Project was abandoned due to a lack of funds, not due to negative results. If this program were available to the Basin in 2009 the HB 3369 recharge testing could have continued and would most likely be a self-sustaining aquifer recharge project in 2023.

Experiences and knowledge gained from this recharge testing and the resource limitations of recharge testing have lead to the development of support of SB 455 to fill funding gaps that have lead to either incomplete testing or lack of full build out of recharge operations. The Mid-Columbia Region of Oregon has extensive experience with recharge testing and in testing recharge applications to meet various needs (water quantity, groundwater quality improvement and environmental benefit). Should SB 455 receive approval and funding, the public entities of the Mid-C region are prepared to apply for testing funding to continue to recover the Ordnance Alluvial Critical Groundwater area and continue testing recharge projects for municipal water security and environmental improvements including groundwater quality remediation in the Lower Umatilla Basin Groundwater Management Area.

Responses to OWRD Testimony Submitted by Bryn Hudson (02/01/2023)

NOWA appreciates the comments of the Oregon Water Resources Department (OWRD) relating to SB 455. We generally concur with the statements made by OWRD. The OWRD overview of the limited license process and the effort it takes to get from testing to operations underscores the need for this funding program.

We also agree with OWRD that a clarifying amendment to Section 1(4)(a) and Section 3(4)(a) to replace “classified under ORS 536.340” with… “where groundwater uses are restrictively classified under ORS 536.340.” would better reflect the intent of this bill. As this is a pilot project NOWA believes that it is best to focused on restrictively classified areas as those areas have the most need. Additionally, restrictively classified areas already have sufficient data to establish a baseline for testing (i.e. if OWRD had enough data to restrictively classify the area or deem the area Critical than sufficient data exists to establish a baseline to recharge testing if the other conditions of the bill are met). We hope this pilot program is successful and can be expanded to other areas of the state with candidate aquifers for recharge testing in the future but with limited resources we recommend starting this program in specific areas of need and existing data that warrants testing.

Lastly, other than the normal Limited License permit processing and monitoring program development we do not intend to place additional review burden on OWRD. The intention is for the burden to be on the applicant to prove that the necessary studies meeting the bill language are in place and that monitoring and measurement of water use from the target aquifer has been in place for 5 years or longer prior to application. OWRD should not have to incur additional staffing burden to prove this as it is the applicants responsibility to submit this documentation as part of their application.

Conclusion

The Mid-C region of Oregon is a documented region where recharge can result in positive long-term water sustainability and security. Additional testing is necessary to ensure a transparent and controlled process where scenarios and data can be vetted amongst all interested parties involved in groundwater use and/or groundwater & surface water interaction. NOWA is fully supportive of the development of the recharge testing program and believe it to be an important tool for many of the aquifers in the State of Oregon.

Sincerely,

J.R. Cook

Director

Attachments: CRUST Declaration of Cooperation
1986 Umatilla Basin Groundwater Task Force Report to the Governor
Umatilla Sub-Basin 2050 Water Management Plan
Umatilla Basin Data Synthesis and Summary
Water Resources Status, A Study of Water Resources Availability and Demand
2009 Oregon Water Supply and Conservation Initiative, Inventory of Below Ground Storage Sites