Voluntary Agreements Analysis

A Review of Oregon's Voluntary Agreements Statute for the Harney Community-Based Water Planning Collaborative

Authors

Jennifer Diffley
Culp & Kelly, LLP

Rachel O'Connor
Environmental Defense Fund
roconnor@edf.org

September 2022

About Environmental Defense Fund

One of the world's leading international nonprofit organizations, Environmental Defense Fund (edf.org) creates transformational solutions to the most serious environmental problems. To do so, EDF links science, economics, law, and innovative private-sector partnerships. With more than 3 million members and offices in the United States, China, Mexico, Indonesia and the European Union, EDF's scientists, economists, attorneys and policy experts are working in 28 countries to turn our solutions into action.

About Culp & Kelly, LLP

Culp & Kelly, LLP is a mission-driven law and policy firm that is focused on supporting innovation and change in western natural resources management, serving the communities, industries, NGOs, farmers, ranchers, and entrepreneurs that are leading the way to a more vibrant, resilient, sustainable American West.

Purpose and Scope of Analysis

Environmental Defense Fund engaged Culp & Kelly, LLP to provide research, analysis and support services related to collaborative groundwater management strategies and policies relevant to the Harney Basin in Oregon. Directed by EDF staff and informed by the Harney Community-Based Water Planning (CBWP) Collaborative, this work consisted of an analysis of Oregon Revised Statute 537.745, which authorizes the use of voluntary agreements, and analysis and review of how such agreements might be developed and implemented in the Harney Basin to address groundwater overdraft.

Disclaimer

The information provided in this report is for general informational purposes only. This information does not, and is not intended to, constitute legal advice. Readers of this report should contact their attorney to obtain advice with respect to the application of any particular legal interpretation, policy, or concept discussed in this report related to Harney CBWP Collaborative strategies.

Acknowledgements

The report authors are grateful for the participation of Harney CBWP Collaborative members and other water experts in the development and review of this report.

Table of Contents

Executive Summary

The Harney Basin in southeastern Oregon is roughly 5,240 square miles and is characterized by a semi-arid climate, with mountainous areas receiving greater than 30 inches of precipitation per year, while parts of the valley receive less than 10 inches. Groundwater development in the lowlands has increased substantially over the past few decades, creating an imbalance in the region's water budget.

Where needed to ensure sustained water supplies for existing users and protection of important natural resources, the Water Resources Commission adopts basin programs to set policies for managing administrative basins. Restrictions are typically limited to new uses, except in very severe situations such as critical groundwater areas. Within the Malheur Lake administrative basin, the Commission established the Greater Harney Valley Groundwater Area of Concern (GHVGAC) "to ensure that groundwater in the GHVGAC is appropriated within the capacity of the resource and that new appropriations of groundwater assure the maintenance of reasonably stable groundwater levels and prevent depletion of the groundwater resource."[1] Due to continued overdraft and groundwater level declines in many parts of the GHVGAC, additional regulatory measures, restrictive/corrective controls, and other management options are being considered.

There are two approaches under Oregon law for instituting controls for groundwater use: (1) area designations (Groundwater Administrative Areas / Critical Groundwater Areas) and commission rulemaking, and (2) joint action with groundwater users through "voluntary agreements."[2] Both approaches are being considered within the GHVGAC to address groundwater declines and overdraft issues. The use of voluntary agreements is still untested in Oregon, however, so there are significant uncertainties related to how voluntary agreements would be developed, implemented and what they should contain.

O.R.S. § 537.745 authorizes the Water Resources Commission to "encourage, promote and recognize voluntary agreements among ground water users from the same ground water reservoir." The statute creates an opportunity for groundwater users to implement locally defined measures to manage groundwater use, so long as those measures are consistent with the intent, purposes, and requirements of Oregon's Groundwater Act.

The statute provides minimal guidance for the process and substantive requirements for voluntary agreements. In basic terms, a voluntary agreement must (1) be between groundwater users of the same groundwater reservoir, (2) be consistent with Oregon's groundwater laws and policies and (3) be in writing and filed with the Commission. Upon approval, the agreement controls in lieu of a formal order or rule of the Commission until terminated pursuant to (a) agreement terms, (b) the consent of the agreement parties or (c) an order of the Commission if the Commission finds that the agreement is not being substantially complied with or that changed conditions make continuance of the agreement a detriment to the public welfare,

[1] OAR 690-512-0020(1).

[2] ORS §§ 537.525, 537.745

safety, or health, or contrary to the intent, purposes, and requirements of Oregon's Groundwater Act.

Within these basic requirements, there is likely a wide variety of options as to the geographic scope and subject matter scope of a specific voluntary agreement. A voluntary agreement could, for example, establish management objectives for specific areas of concern, informed by relevant statutory management objectives and local hydrologic, environment, and community considerations. A voluntary agreement could also potentially integrate restrictive/corrective controls on water use, mechanisms for compensating economic hardship associated with water use restrictions, and flexible, incentive-based options in a combined package to balance hydrologic, community, and economic impacts and encourage groundwater user buy-in. (Agreements undertaken in specific basins in Nevada and California could provide model terms.)

However, given the uncertainties around substantive content and procedures for implementing a voluntary agreement, there are a variety of legal risks that an agreement may face. On one hand, voluntary agreements may face challenges from groundwater pumpers that have elected not to join a voluntary agreement. This occurred in basins in Nevada and California, with the agreements and plans ultimately upheld by the reviewing court.[3] On the other hand, the Commission must be able to approve a filed voluntary agreement based on the statutory criteria, and it must have a sufficient basis for that approval or it may face a challenge from the Attorney General's office or another branch of government. There is also likely to be counterpressure around the robustness of a voluntary agreement — some stakeholders may challenge an agreement for going too far, while others may challenge it for not going far enough to satisfy statutory requirements and management obligations.

There are several open questions about how far a voluntary agreement in Oregon could potentially go in relation to Oregon's groundwater laws and regulatory structure. However, a voluntary agreement is in the best position possible to be legally supportable and successful if it does the following:

- Defines a specific management area, thoroughly explaining how it is based primarily on hydrogeologic characteristics, and, as applicable, explaining how/why other factors inform the boundaries.

- Includes as parties to the agreement all groundwater users within the defined area that will be affected by any new water use requirements or restrictions.

- Includes actions and commitments that will make a measurable improvement or arrest any further decline in groundwater levels over a specified period of time.

[3] In Nevada, based on specific aspects of Nevada law, the court determined that the non-joining groundwater users were subject to the terms of the management plan. In California, the court determined that the non-joining groundwater users must be exempted from the terms of the management agreement; however, because of the incentives offered as part of the agreement, all of the non-joining groundwater users eventually opted into the agreement over the following two decades of implementation. More information about each of these case studies is available in **Appendix B**.

- Includes a thorough explanation of how the terms of the agreement (area boundary and actions and commitments of the parties) are consistent with the state's groundwater laws and policies and how they will advance overarching management objectives of assuring maintenance of reasonably stable groundwater levels and preventing depletion of the groundwater resource.

The details of these components are hydrologically and legally technical and involve consideration of a variety of highly local values. Identifying and evaluating priority locations, strategies, and hydrologic, social, and environmental values will be an important next step in exploring the possibility of using voluntary agreements to implement management strategies in the Harney Basin.

Introduction

The Harney Community-Based Water Planning Collaborative is currently undertaking a place-based approach to water planning.[4] The Collaborative has been working together to gather information, identify strategies, and determine in-stream and out-of-stream water needs to help develop solutions to help meet the area's water needs now and into the future.[5] As part of this effort, the Collaborative is exploring how one or more voluntary agreements under Oregon Revised Statutes (O.R.S.) § 537.745 might be utilized to implement the identified strategies for groundwater management. O.R.S. § 537.745 authorizes the Water Resources Commission to "encourage, promote and recognize voluntary agreements among ground water users from the same ground water reservoir." The statute creates an opportunity for groundwater users to implement locally defined measures to manage groundwater use, as long as those measures are consistent with the intent, purposes, and requirements of Oregon's Groundwater Act. However, the use of voluntary agreements in this context is still untested. Consequently, there are significant uncertainties related to development and implementation of voluntary agreements for the purpose of groundwater management.

Several questions and concerns were raised by Collaborative stakeholders regarding voluntary agreements, from the development and approval of voluntary agreements to the different types of strategies and stakeholder roles that could be included in a voluntary agreement. Some of those questions are addressed in this report. However, many of those questions depend on the specific location, types of uses, groundwater users and other stakeholders that may be included in a specific agreement, so are not addressed in detail here. Stakeholder questions that were raised for the report team, along with initial responses, considerations and/or potential next steps are summarized in **Appendix C**.

Oregon Water Policy and Management Entities

Oregon State Legislature: sets water use management and policies.

Water Resources Commission: sets water policies and regulations in accordance with state laws. Oregon statute also authorizes voluntary joint action by the Water Resources Commission and groundwater users to address declining groundwater levels, overdrawing groundwater supplies and other specific groundwater management issues.

Water Resources Department: administers the state's laws, regulations, and policies allocating water resources and managing supplies within the state.

---

[4] "Place-based integrated water resources planning (also known as place-based water planning) is a voluntary, locally initiated and led effort, in which a balanced representation of water interests work in partnership with the state to understand and meet their instream and out-of-stream water supply needs." The Oregon Water Resources Department provides guidance for and partners with local communities in these planning efforts and provides financial, technical, and planning assistance. Oregon Water Resources Dept., *Place-Based Integrated Water Resources Planning*, https://www.oregon.gov/owrd/programs/planning/placebasedplanning/pages/default.aspx.

[5] HC Watershed Council, CBWP, http://hcwatershedcouncil.com/community-based-water-planning/

To provide foundational context on voluntary agreements and how they might be an approach to implementing management strategies in the Harney Basin, this report provides a high-level overview of the current management framework in the region, the voluntary agreements statute O.R.S. § 537.745, and discusses application of the statute in the context of Harney Basin CWBP Collaborative's planning effort and recommended management actions. While this report does not provide specific recommendations related to implementing any given strategy or actions, it does identify legal considerations related to specific elements that might be incorporated into a potential future voluntary agreement and discusses ways to mitigate the various legal uncertainties/risks.

Additionally, there are several examples of voluntary agreements and other collaborative groundwater planning and management efforts around the West that may provide useful lessons and examples for implementing Harney strategies. Various examples are discussed throughout this report where specific elements are relevant to the Harney planning context. Additional case study information, along with links to the full example agreements and plans where available, is in **Appendix B**.

O.R.S. § 537.745
Voluntary agreements among ground water users from same reservoir

(1) In the administration of ORS 537.505 to 537.795 and 537.992, the Water Resources Commission may encourage, promote and recognize voluntary agreements among groundwater users from the same groundwater reservoir. When the commission finds that any such agreement, executed in writing and filed with the commission, is consistent with the intent, purposes and requirements of ORS 537.505 to 537.795 and 537.992, and in particular ORS 537.525, 537.730 to 537.740 and 537.780, the Commission shall approve the agreement. Thereafter, the agreement, until terminated as provided in this subsection, shall control in lieu of a formal order or rule of the commission under ORS 537.505 to 537.795 and 537.992. Any agreement approved by the Commission may be terminated by the lapse of time as provided in the agreement, by consent of the parties to the agreement or by order of the commission if the commission finds, after investigation and a public hearing upon adequate notice, that the agreement is not being substantially complied with by the parties thereto or that changed conditions have made the continuance of the agreement a detriment to the public welfare, safety and health or contrary in any particular to the intent, purposes and requirements of ORS 537.505 to 537.795 and 537.992.

(2) When any irrigation district, drainage district, other district organized for public purposes or other public corporation or political subdivision of this state is authorized by law to enter into agreements of the kind referred to in subsection (1) of this section, the commission may approve such agreements as provided in subsection (1) of this section. Any such agreement approved by the commission shall have the same effect and shall be subject to termination in the same manner and for the same reasons set forth in subsection (1) of this section.

This report does not contain a specific proposal for a Harney Basin voluntary agreement. It provides an overview of how a voluntary agreement could potentially incorporate groundwater management strategies being considered by stakeholders in the Harney Basin and discusses legal considerations that will be important in the future if/when groundwater users determine a voluntary agreement is a preferred approach for implementing one or more groundwater management strategies.

Groundwater Management in the Harney Basin

Oregon's Groundwater Act of 1955 governs the use and management of groundwater within the state. Except for certain exempt uses, water users must obtain a permit or license from the Water Resources Department to use water from any source, whether surface water from lakes or streams or from groundwater. The Water Resources Commission adopts basin programs to set policies for managing administrative basins where restrictions on uses are needed to ensure sustained supplies for existing users and protection of important natural resources. Restrictions are typically limited to new uses, except in very severe situations such as critical groundwater areas.

This section provides a high-level overview of the statutory management standards and basin program rules relevant to the Harney Basin.

Management Goals and Objectives

A variety of increasingly specific management goals and objectives govern the appropriation, use and management of water resources in basins around Oregon. The following statutory, regulatory, and planning goals and objectives apply to the Greater Harney Valley Groundwater Area of Concern:

Statutory

The following policies are set in statute and apply statewide. As discussed further below, any voluntary agreement must be consistent with these and other statutory policies.[6] The general policy of the Groundwater Act is "that there be reasonable public control of all water in the state for the preservation of the 'public welfare, safety and health.'"[7] That general policy is accomplished through:

- The beneficial use of ground water without waste, within the capacity of available sources (O.R.S. § 537.525(3));
- The preservation of adequate and safe supplies of ground water for human consumption (O.R.S. § 537.525(5));
- The preservation of reasonably stable ground water levels (O.R.S. §537.525(7));

[6] O.R.S. § 537.525(2), (3), (5), (6), (7), (8) (*note:* summarized/restated from statutory provisions).

[7] *Doherty v. Oregon Water Resources Director*, 308 Ore. 543 (1989) (citing O.R.S. § 537.525).

- The prevention of the depletion of ground water supplies below economic levels, the impairment of natural water quality, and wasteful practices (O.R.S. § 537.525(8)).

These statutory policies and terms are interpreted and applied by the Director of the Water Resources Department through regulations and department orders.

Regulatory

The Director of the Water Resources Department has the authority to promulgate rules to carry out their functions (which may apply statewide or within specific areas within the state) and may determine on a case-by-case basis if groundwater supply is overdrawn (or about to be overdrawn) or groundwater levels are declining excessively.[8] The department has adopted definitions for these terms, which apply statewide (see call-out box).

The determination of what constitutes excessive declines and/or overdraw in a given basin is based on "the exercise of administrative expertise and judgment based on information derived from experts."[9] and what is ultimately determined to be the "capacity of available sources" or "reasonably stable" may include consideration of both local hydrologic conditions and community-specific values.[10]

The management goals and objectives specific to the Greater Harney Valley Groundwater Area of Concern are:[11]

- Ensure that groundwater in the GHVGAC is appropriated within the capacity of the resource; and,
- New appropriations of groundwater assure the maintenance of reasonably stable groundwater levels and prevent depletion of the groundwater resource.

It is important to note that quantitative standards for both the *capacity of the available resources* and *reasonably stable groundwater levels* have not been determined for the GHGAC. Voluntary agreement terms may supplement regulations that apply to the area covered by the voluntary agreement, and they may override/change regulations upon Commission review of rules and promulgation of new rules, as applicable.

---

[8] O.R.S. § 537.730(1); *see also*, *Doherty v. Oregon Water Resources Director*, 308 Ore. 543 (1989) (stating that "Overdrafting of available ground water supply is legislatively declared to affect public health, safety, and welfare. Excessive decline in ground water levels or interference between wells are also legislatively declared to affect public health, safety and welfare.")

[9] Doherty v. Oregon Water Resources Director, 308 Ore. 543 (1989).

[10] CBWP Collaborative Meeting Discussion with Justin Iverson (May 2022).

[11] OAR § 690-512-0020(1) (*note:* summarized/restated from regulatory provisions).

OAR § 690-008-0001
Definition and Policy Statements

(4) "***Declined Excessively***" means any cumulative lowering of the water levels in a ground water reservoir or a part thereof which:

(a) Precludes, or could preclude, the perpetual use of the reservoir; or
(b) Exceeds the economic pumping level; or
(c) Constitutes a decline determined to be interfering with [senior surface water]; or
(d) Constitutes a lowering of the annual high water level within a ground water reservoir, or part thereof, greater than 50 feet below the highest known water level; or
(e) Results in ground water pollution; or
(f) Constitutes a lowering of the annual high water level greater than 15% of the greatest known saturated thickness of the ground water reservoir. the saturated thickness shall be calculated using pre-development water levels and the bottom of the ground water reservoir, or the economic pumping level, whichever is shallower.

...

(6) "***Excessively Declining Water Levels***" means any ongoing lowering of the water level in a ground water reservoir or part thereof which:

(a) Precludes, or could preclude, the perpetual us of the reservoir; or
(b) Represents an average downward trend of three or more feet per year for at least 10 years; or
(c) Represents, over a five year period, an average annual lowering of the water level by 1% or more of the initial saturated thickness as determined by observation or investigation in the affected area; or
(d) Results in water quality deterioration.

(7) "***Overdraw***" means to artificially produce water, in any one-year period, from a ground water reservoir, or part thereof, at an annual rate that:

(a) Exceeds the average annual recharge to that ground water supply over the period of record; or,
(b) Reduces surface water availability resulting in:
  (A) One or more senior appropriators being unable to use either their permitted or customary quantity of surface water, whichever is less; or
  (B) Failure to satisfy an adopted minimum streamflow or instream water right with an effective date senior to the causative ground water appropriation(s).
(c) Reduces the availability of surface waters that have been:
  (A) Withdrawn with an effective date senior to the priority dates of the causative ground water appropriations; or
  (B) Restrictively classified with an effective date senior to the priority date(s) of the causative ground water appropriations.

Planning – Desired Conditions (Draft Harney Basin Groundwater Portion of Integrated Water Plan, Draft 5)

Collaborative planning efforts may also establish area-specific management goals and objectives. Collaborative planning can define additional/more specific goals and objectives for a region, which can guide cooperative efforts. Collaborative plans, unless accompanied by implementing regulations or agreements, do not have the force of law. Voluntary agreement terms could integrate all or some of the planning goals and desired conditions identified in a region-specific collaborative plan, which could provide a way to implement and enforce actions to achieve the Desired Conditions.

The Draft Harney Basin Groundwater Portion of the Integrated Water Plan (currently in development through the Harney Community-Based Water Planning Collaborative effort) includes the following desired conditions:[12]

- Sustainably managed supply of quality water for people, the economy, and the environment.

Groundwater Supply

- Recharge: Rebalance the groundwater budget by reducing the groundwater deficit (recharge is currently less than discharge by approximately 110,000 afy).
- Groundwater storage: Reduce the draw on storage by adjusting agricultural groundwater use (which use dominates discharge of groundwater, much of which was stored in the aquifer millennia ago).
- Groundwater level change: Help stabilize deep and shallow groundwater (recognizing that desired conditions for groundwater level changes depend entirely on location in the basin since changes are variable).

Groundwater Quality:

- Groundwater is of adequate quality for municipal, domestic, irrigation and stockwater purposes and to support groundwater dependent ecosystems and species.

Groundwater Uses:

- Out-of-stream groundwater uses.
- Agricultural Irrigation Use: Agricultural users reduce their groundwater use considerably, with more significant reductions in the area(s) of acute decline, while maintaining a vibrant agriculture community.
- Domestic Use: Domestic water is available at depths that are affordable to drill to assured water production, and water quality meets drinking water standards.

---

[12] Harney Community-Based Water Planning Collaborative, Harney Basin Groundwater Portion of Integrated Water Plan, Draft 5 (Jun. 2022), https://docs.google.com/document/d/1QR1VklV24u5gYa85d9mEhD8m1ZCpHMMZ/edit?usp=sharing&ouid=100956322340406543697&rtpof=true&sd=true (***Note*** some of the desired conditions are summarized or restated from the Draft Plan)

- Stockwater Use: Stockwater wells have adequate quantity and quality of groundwater on a year-round basis.
- Municipal Use: The towns of Burns and Hines can maintain their consistent, safe supply of quality drinking water and ensure that supply meets both present and future needs of residences and businesses within their jurisdictions. In unincorporated areas, alternative domestic water supplies (i.e., community wells or connection to municipal supplies) does not result in increased groundwater use. *[combined/restated from Plan description]*
- Commercial and Industrial Use: Maintain sufficient supply for future commercial and industrial uses. *[restated in goal form from Plan description]*
- Burns Paiute Tribal Uses: Assure supply of groundwater quality and quantity for the Tribe.

Instream groundwater uses:

- Groundwater Dependent Ecosystems and Species: GDEs are protected, restored and maintained now and in the future by reducing the decline of groundwater and monitoring spring discharge in a consistent manner.

Management Strategies

To achieve these statutory, regulatory, and planning goals and objectives, the Harney Community-Based Water Planning Collaborative is exploring several strategies and actions. Voluntary agreements have been identified as one approach to implement some of these actions. A full list of the recommended actions that may be feasible through voluntary agreements, along with notes and considerations related to including them in a voluntary agreement, is in **Appendix A**.

The main types of actions that the Collaborative is exploring that could potentially be integrated into a voluntary agreement include:

- Data collection, monitoring, and reporting protocols and standards, and a process to review the data sources and standards and update protocols, e.g., standards, roles/responsibilities, funding, and procedures related to water rights information, groundwater diversion and use data, OpenET, hydrologic conditions, drought information, and use of information in decision-making, monitoring progress, and determining when/what additional actions may be needed.

- Enforcing existing well construction standards, groundwater use permits standards, water use limits, and other regulatory controls.

- Implementing water use limitations for existing uses, e.g., encouraging conservation measures across sectors, implementing irrigation conservation, utilizing incentives for conservation.

- Identifying and collaboratively seeking supportive funding sources for ongoing monitoring, assessment of management approaches, and implementing management strategies like alternative water delivery mechanisms, support for domestic well owners, and financial support to incentivize/offset economic impacts of reductions in groundwater use.

Voluntary Agreements

Voluntary agreements are authorized in Oregon's groundwater laws as a way to take joint actions between groundwater users in the same reservoir and the Commission to address declining groundwater levels and overdrawing of groundwater supplies.

Overview of O.R.S. §537.745

Oregon's statutory groundwater policy authorizes voluntary joint actions between groundwater users from the same groundwater reservoir and the Water Resources Commission to address impending or existing declining groundwater level decline and overdrawing of groundwater supply overdraft, whenever possible, with the Commission having authority to control groundwater use whenever such voluntary joint action is not taken or is ineffective.[13] The formal mechanism to implement such voluntary joint actions is through a voluntary agreement

[13] "Whenever wasteful use of ground water, impairment of or interference with existing rights to appropriate surface water, declining ground water levels, alteration of ground water temperatures that may adversely affect priorities or impair the long-term stability of the thermal properties of the ground water, interference among wells, thermal interference among wells, overdrawing of ground water supplies or pollution of ground water exists or impends, controlled use of the ground water concerned be authorized and imposed under voluntary joint action by the Water Resources Commission and the ground water users concerned whenever possible, but by the Commission under the police power of the state except as specified in ORS 537.796, when such voluntary joint action is not taken or is ineffective." ORS 537.525(9).

among groundwater users that is reviewed and approved by the Water Resources Commission.[14] The Commission must approve filed agreements that are "consistent with the intent, purposes and requirements" of Oregon's Groundwater Act of 1955 (O.R.S. §§ 537.505 - 537.795 and 537.992), and enforcement/civil penalties authorities and limitations (O.R.S. § 537.992), and in particular the following statutory sections:

- The Legislature's groundwater policy (O.R.S. § 537.525).
- Critical groundwater area statutes (O.R.S. §§ 537.730 - 537.740).
- Water Resources Commission powers, rules, and limitations on authority (O.R.S. § 537.780).

Read together, these three statutory references promote management of Oregon's groundwater in a manner that avoids overdrawing the resource and causing groundwater level declines. A voluntary agreement is an approach that gives local groundwater users a role in determining the methods to do so, in joint action with the Commission.

Upon approval, the agreement controls for the relevant aspects of administration and management of groundwater resources in the defined area "in lieu of a formal order or rule of the commission" until terminated. Termination may occur by lapse of time as provided in the agreement, by consent of the parties to the agreement, or by order of the Commission if the Commission finds (1) that the agreement is not being substantially complied with by the parties or (2) that changed conditions have made the agreement a detriment to the public welfare, safety and health or contrary in any particular to the intent, purposes and requirements of the Groundwater Act of 1955.[15] However, if joint voluntary action either is not taken or it is ineffective at maintaining reasonably stable groundwater levels or achieving the other stated management policies, the Commission may control the use of groundwater via regulatory actions undertaken through a rulemaking process.[16] For example, regulatory actions may include designating a critical groundwater area and adopting rules to restrict/limit existing and future uses to stabilize the resource, prescribe a preference for certain uses over others, etc.[17]

Note that the Water Resources Commission has not promulgated rules to implement O.R.S. § 537.745 nor provided any other formal policy statements or guidance.

---

[14] ORS 537.745(1) authorizes the Commission to "encourage, promote and recognize voluntary agreements among ground water users from the same ground water reservoir."

[15] ORS 537.745(1).

[16] ORS 537.525(9), 537.730, 537.735, 537.745(1).

[17] ORS 537.730, 537.735. *See also* OWRD 2010, Water Rights in Oregon - An Introduction to Oregon's Water Laws; OWRD, Justin Iverson, *Presentation to Harney CBWP Collaborative, Groundwater Statutes and Rules* (Sept. 2020). Critical Groundwater Areas may be designated where the Commission finds certain groundwater conditions exist; notably, where groundwater levels are declining or have declined excessively in the area; there is a pattern of substantial interference between wells and/or surface water rights; or available groundwater supply is being or is about to be overdrawn.

Potential Scope and Approach Options for Voluntary Agreements

Within these guiding management policies, voluntary agreements are typically discussed as a substitute for, or supplement to, a CGWA designation and rules. Thus, existing CGWA rules can be looked to as a possible template for scope and content of a voluntary agreement. Such an agreement might include:

- Subbasin or subarea objectives, agreement purpose (i.e., to achieve reasonably stable water levels and prevent the aquifer from excessively declining)[18]
- Definitions and general requirements (i.e., what does 'reasonably stable water level' mean within the specific subbasin/subarea? What water budget/sustainable annual yield will achieve reasonably stable water level in the subbasin/subarea?)
- General requirements (i.e., defines total annual yield limitation, irrigation season limitations, restrictions on new applications for appropriation from certain areas/reservoirs within the subbasin/subarea)
- Subarea boundaries, objectives/limitations (i.e., definition of subareas within the subbasin, subarea annual yield limitations and methodologies)
- Exemptions (i.e., O.R.S. § 537.545 exempt uses, other exempt uses like schools)
- Requirements, duties, standards for existing water uses (i.e., limitations or conditions on certain existing uses like annual allotments, flow meters, uniform standards for flow meter specifications/installation/maintenance, water use reporting)
- Distribution of available annual yield (i.e., determining annual allocation based on the annual available resource, considering factors such as priority, type of use, etc.)
- Adaptive management (i.e., periodic review of progress, yield limitation, effectiveness of tools)
- Partnerships with state or federal agency programs to address economic impacts of reduced rates of groundwater pumping
- Alternative water management strategies such as increasing groundwater recharge or increasing irrigation efficiency
- Enforcement/Violation policy and procedures

A potentially important distinction between the voluntary agreements approach and the more traditional CGWA rulemaking approach that imposes regulatory requirements is the

[18] As noted above, quantitative standards for reasonably stable water levels have not been defined within the area.

ability of the voluntary agreement to bundle water management strategies. This means that a voluntary agreement can bundle regulatory curtailment of groundwater pumping with strategies to help off-set either the need for--or the economic impact of--reduced groundwater pumping. Such strategies may range from increasing groundwater recharge in hydrologically-appropriate areas to transitioning some irrigated lands to other income-producing or productive uses compatible with a water-secure and robust agricultural operation. These types of decisions regarding what are appropriate strategies to include in a voluntary agreement are necessarily determined by local hydrologic conditions, the needs and preferences of water users, and the collaborative work and dialogue among the community of people engaged in creating the voluntary agreement.

While much of the discussion related to voluntary agreements has typically centered around regulatory requirements because a voluntary agreement must meet the minimum floor of reversing groundwater decline, a voluntary agreement can also create a powerful vehicle for marshalling state and federal resources to address water data shortcomings, economic impacts on agricultural irrigators, or other community needs. Voluntary agreements simply provide a locally-driven approach to developing the requirements as an alternative to the traditional, narrower Commission rulemaking process. In either approach, the requirements are implemented and enforced by the Department upon approval (of a voluntary agreement) or promulgation (of regulatory restrictions). The opportunity that a voluntary agreement presents is to bundle water management strategies informed by water data with a variety of locally-developed approaches to implement reduced groundwater pumping in ways that can maintain agricultural incomes and sustain rural communities.

Bundling a set of actions together, even where one action may not otherwise require Commission approval, could help identify and coordinate funding and technical assistance among state and federal agencies, local communities, and affected agricultural producers. In the case of the San Pedro Riparian National Conservation Area, faced with significant water management challenges but no specific driving regulatory requirement, local governments and

federal agencies agreed to a coordinated monitoring and adaptive management process to plan, fund, and implement actions to meet shared water objectives. In the case of Mojave Basin, stakeholders were able to develop and implement a groundwater allocation marketing framework that facilitated new water uses with water right changes in a flexible way without increasing water demand, resulting in a more workable process that the state was otherwise not authorized to do itself. (See Appendix B for additional information on these case studies.) A voluntary agreement that includes a suite of programs or strategies to help address the economic impacts on agricultural irrigators or rural communities, bundled with regulatory tools that do require Commission approval could not only help transition to sustainable groundwater use, but may be persuasive that further Commission-driven regulatory action is not needed.

Legal Elements, Constraints and Considerations

Geographic Scope

Many stakeholders have raised the question of the appropriate and legally supportable geographic scope for a potential voluntary agreement under O.R.S. § 537.745. The statute states that "[t]he voluntary agreement must be among users of the *same ground water reservoir*."[19] *Ground water reservoir* is defined within the same chapter to mean "a designated body of standing or moving ground water having exterior boundaries which may be ascertained or reasonably inferred."[20] This statutory term is arguably inexact, given the uncertainties inherent in defining boundaries for hydrogeological systems, particularly those without clear structural boundaries.

Interpretation of this term could potentially generate different boundaries for defining ground water reservoirs. Boundaries could potentially involve a mix of hydrologic, geologic, and administrative factors (i.e., areas of high concentrations of groundwater withdrawals), but they should have a firm basis in hydrogeologic or physical boundaries to be the most legally supportable. The context of the Groundwater Act, legislative history and general maxims of statutory construction may be looked to in interpreting the intended legislative intent and meaning of the term "ground water reservoirs". Elsewhere in the Groundwater Act, the term "ground water reservoir" is used to refer to a distinct source of groundwater, typically for the purposes of determining and administering the relative rights from each distinct source.[21] Throughout Oregon's water laws and regulations there are other terms also used to refer to distinct sources of groundwater or areas of groundwater use, such as "aquifer" [22] and "ground water basin or reservoir."[23]

---

[19] ORS 537.745(1) (emphasis added)
[20] ORS 537.515(6)
[21] See, i.e., ORS §§ 537.665 (Investigation of ground water reservoirs; defining characteristics and assigning names and numbers); 537.675 (determination of rights in several reservoirs or of critical ground water area in same proceeding).
[22] See, i.e., OAR 690-200-0050. Note that this section specifically only applies to well construction standards in Chapter 690, Division 200, but is provided here as an example of a general definition used by the Department in other contexts. See also, Water Resources Commission Order 55-1088, *In the Matter of the Withdrawal of Aquifers Within the Designated Woodland, Edison, Victor Point Area* (2001).
[23] See, i.e., ORS 537.135 (relating to the use of water stored/recharged in any "ground water basin or reservoir")

Use of these various terms over time follows our growing understanding of groundwater science. Groundwater is not confined in perfectly contained underground 'rivers,' or 'reservoirs' as we think of them in the surface water context. Groundwater and surface water are different parts of a hydrological cycle which involves "the continuous movement of water above, on, and below the surface of the Earth."[24] This matters because it supports a variety of considerations being incorporated into the determination of the boundaries for a groundwater reservoir — not only one type of hydrogeologic boundary matters, but also other hydrologic, geologic and administrative considerations.

Defining a smaller boundary area for the ground water reservoir in a given voluntary agreement could help address very localized areas of concern. Smaller boundaries can have the dual benefit of limiting the number of parties that would be required to participate in the voluntary agreement and limit the number of restrictions placed on other parties around the broader basin or area. (See the Kansas Sheridan LEMA case study in **Appendix B**.)

To provide legal support for a limited, sub-area geographic scope, there should be a strong basis in hydrogeologic considerations, but other factors could also be used, such as hydrogeologic areas with different responses to groundwater pumping.[25] All factors influencing the definition of the groundwater reservoir for purposes of a voluntary agreement should be thoroughly explained, particularly how they relate to and advance the Groundwater Act policies and any relevant overarching basin- or area-specific management objectives.

The case studies in **Appendix B** describe a variety of approaches to geographic scope taken in other places, noting relevant lessons of the approach in relation to Oregon's regulatory framework and the Harney Collaborative's identified strategies.

Although a variety of different groundwater reservoir boundary options may potentially be legally supportable, there could still be some risk of a legal challenge. Ensuring that the voluntary agreement and the order approving the agreement include a thorough description of how the agreement (and the boundary definition) are consistent with and advance the statutory policy for voluntary agreements, the overarching GHVGAC management objective, and the state's groundwater policies — importantly, how it addresses overdraw and/or groundwater level declines — should help mitigate the risk of a successful challenge on this point.

Subject-Matter Scope

Another common question is about the appropriate and legally supportable subject-matter scope for a potential voluntary agreement. The statute does not define or limit the potential subject matter scope of voluntary agreements, rather the statute provides open-ended guidance that the "Commission may encourage, promote and recognize voluntary agreements

---

[24] Winter, T.C., Harvey, J.W., Franke, O.L., and Alley, W.M., 1998, *Ground water and surface water—A single resource*: U.S. Geological Survey Circular 1139, 79 p. 3.

[25] For a description of the groundwater-related physical characteristics of the Harney Basin area, see generally Gingerich, S.B., Johnson, H.M., Boschmann, D.E., Grondin, G.H., and Garcia, C.A., 2022, Groundwater resources of the Harney Basin, southeastern Oregon: U.S. Geological Survey Scientific Investigations Report 2021–5103, 118 p., https://doi.org/10.3133/sir20215103.

among ground water users," the "Commission shall approve the agreement" if it is executed in writing, filed with the Commission, and is "consistent with the intent, purposes and requirements" of Oregon's groundwater laws, and that such approved agreements "shall control in lieu of a formal order or rule of the commission."[26]

These statutory sections allow for a variety of different water management strategies, groundwater recharge elements, community water system planning and management, and agricultural irrigation transition support in a voluntary agreement. These programs and strategies can be bundled in a voluntary agreement with different types of restrictive/corrective control measures that are used in regulations for other basins. Commission approval would be needed for voluntary agreements with these types of bundled water management strategies and regulatory controls because they have implications for how OWRD administers and enforces its Groundwater Act authorities. These "safe bet" options, or time-tested regulatory/restrictive controls already implemented in other parts of Oregon, include:

- Defining specific management objectives, i.e., sustainable annual yield or reasonably stable aquifer levels, and methodology for determining[27]
- Defining certain uses exempt from corrective controls[28]
- Limiting irrigation use to a maximum annual acre-foot per acre duty[29]
- Limiting or restricting existing uses based on a sustainable annual yield allocation[30]
- Establishing mitigation requirements to offset impacts of groundwater pumping[31]
- Requiring water meters, withdrawal records, and reporting by existing users to OWRD[32]

Appendix B describes some other approaches implemented outside of Oregon, such as the groundwater trading framework used in the Mojave Basin. A voluntary agreement could also include a variation on restrictive controls already used in Oregon.

A variety of actions to help support the transition to sustainable groundwater use for both rural communities and agricultural irrigators could be implemented by a voluntary agreement do not require Commission approval under O.R.S. § 537.525 because they do not require OWRD's Groundwater Act authorities to administer. However, they may be useful to

---

[26] ORS 537.745(1).
[27] i.e., Butter Creek Critical Ground Water Area, OAR 690-507-0650; 690-507-0660
[28] i.e., Stage Gulch Critical Ground Water Area, OAR 690-507-0775
[29] i.e., Amity Hills/Walnut Hill Ground Water Limited Area, OAR 690-502-0210; Chehalem Mountain, Eola Hills and South Salem Hills Ground Water Limited Areas, OAR 690-502-0200; others
[30] i.e., Butter Creek Critical Ground Water Area, OAR 690-507-0670
[31] i.e., Deschutes Basin Groundwater Mitigation Rules, OAR 690-505-0605 (note, however, that this example only contemplates credit generation through surface water conservation; conservation of groundwater in-place is an outstanding question).
[32] i.e., Water Resources Commission Special Order Vol 10 Pg 216, Cow Valley (1959)

include in a voluntary agreement pursuant to O.R.S. § 537.525 as a way to help transition to the groundwater sustainability underpinning the regulatory requirements. Some examples of state and federal programs, action, and transition support could include:

- Conservation Stewardship Program enrollment for payments for practices that reduce reliance on groundwater pumping while increasing soil health, establishing native grasses, enhancing bird habitat or other conservation outcomes.

- Enrollment of some irrigated acres into a Conservation Reserve Enhancement Program that could provide a per-acre payment for transition to a non-agricultural use such as enhanced fish or wildlife habitat or for reduced irrigation (i.e., CREP program eligibility requirement that participant must be a party to the voluntary agreement that also institutes some level of regulatory corrective control)/

- Rural Development programs to support transition to less water-intensive crops such as lentils or barley, or generation of renewable energy compatible with agricultural operations/

- Town or county residential, building and/or industrial water conservation programs (e.g., parties agree to jointly seek funding for and encourage conservation upgrades).

- Stormwater and/or wastewater management and recharge projects (i.e., consolidating seasonal stormflows for recharge in target impact areas, with coordinated funding and implementation between the parties).

As discussed above, there are benefits and challenges to the different subject-matter scope options for a potential voluntary agreement. Determining the appropriate subject-matter scope will involve weighing legal as well as other interrelated factors, i.e.:

- Legal supportability/challenge risk. (Are the actions well-understood, already utilized in other places? Are they controversial?)

- Stakeholder willingness. (Is there enough financial support and technical assistance available to transition to agricultural operations built on groundwater sustainability?)

- Ease of administration. (Are the actions new, complicated, expensive?)

The case studies in **Appendix B** describe a variety of approaches to subject-matter scope taken in other places. The discussion of the case studies in Appendix B note relevant lessons of the approach in relation to Oregon's regulatory framework and call out parallels to the Harney Collaborative's identified strategies.

Although Oregon's groundwater statutes authorize a wide variety of different actions that could potentially be included in a voluntary agreement, there could still be some risk of challenge to a voluntary agreement. To help insulate a voluntary agreement from the risk of a legal challenge, the voluntary agreement and the order approving the agreement should include a thorough description of how the agreement (and the specific actions included) are consistent with and advance the statutory policy for voluntary agreements, the overarching GHVGAC management objective and the state's groundwater policies. This means that the voluntary agreement should be able to demonstrate that its particular combination of water management strategies, agricultural transition support, water data collection and analysis, rural community water system modernization, groundwater recharge actions, restrictive/corrective controls, and monitoring and enforcement protocols together show a likelihood of addressing overdraw and groundwater level declines across the basin.

Parties

The voluntary agreement statute is not explicit regarding the required parties to a voluntary agreement. The statute generally refers to voluntary agreements as being "among ground water users from the same ground water reservoir."[33] Stakeholders have asked whether agreement among *all* ground water users is required or if it may be some other number, e.g., a majority. Given that the statute does not specifically state the required parties, the element is arguably inexact and open to agency interpretation of the legislative policy.

Considering the text and context of the statute and constitutional due process considerations, the most legally supportable interpretation of the required parties is likely *all* ground water users within the defined area. However, it could potentially also be legally supportable to interpret the requirement to be *all interested/affected* ground water users. Depending on the subject-matter scope of the agreement, that interpretation could mean that a subset of ground water users within the area could join as parties to a voluntary agreement if the terms of the agreement do not affect (place new regulatory restrictions on) other ground water users.

Due process requires that a person be given the opportunity to be heard before being deprived of a property or liberty interest.[34] Although there is no set rule for how the opportunity to be heard should be given,[35] there should be some level of notice and opportunity to participate before restrictive/corrective controls are instituted. In the context of a voluntary agreement, voluntarily signing onto the agreement is likely sufficient to assure a court that a groundwater user has had sufficient notice and opportunity to be heard. However, if the terms of the agreement could affect/injure the water rights of an individual that has not signed onto the agreement, there are likely due process issues.

There potentially is some flexibility to develop voluntary agreements that only apply to certain groundwater users. One hypothetical example could be implementing more stringent water use restrictions only on irrigation water users within a certain geographic area that is

---

[33] ORS 537.745(1)
[34] *See generally, Matthews v. Eldridge*, 424 US 319 (1976); *Skinner v. Jordan Valley Irr. Dist.*, 137 Ore. 480, 300 P. 499 (1931) (internal citations omitted).
[35] *Matthews v. Eldridge*, 424 US 319 (1976).

experiencing high rates of drawdown due primarily to irrigation. The geographic and subject matter scope would limit the number of impacted groundwater users who would be required parties (e.g., excluding domestic and municipal uses inside the area of high drawdown, as well as irrigation uses outside the area of high drawdown).

Voluntary agreements could potentially take a "management framework" approach as another way to implement limited-applicability tools. Through agreement of as many groundwater users as possible, a voluntary agreement could be developed that incorporates the management objective and a framework for taking subsequent management actions. For example, an agreement could (1) establish the area target for reduced water use (explaining how the target advances the broader GHVGAC management objective) and (2) establish a procedure to review and approve exhibits to the agreement for participation in an agreement-defined conservation program. The agreement could lay out conservation program eligibility and participation requirements; participants must agree to the regulatory requirement (e.g., an annual irrigation limit) but may choose a variety of methods to achieve it (rotational or seasonal fallowing, changes to crops that require less irrigation, offset generated by converting from septic to consolidated wastewater treatment with effluent recharge, etc.) and may access incentives to do so (i.e., CREP, ability to do year-to-year storage/carry over unused water to the next year, supportive funding for septic conversion, etc.).[36]

These types of limited-applicability tools could be a way to pilot voluntary agreements by working within a smaller group of people to reach consensus. The case studies in **Appendix B** describe a variety of approaches to determining the appropriate required parties taken in other places, noting relevant lessons of the approach in relation to Oregon's regulatory framework and the Harney Collaborative's identified strategies.

A voluntary agreement could potentially include a variety of non-regulatory management tools in combination with regulatory requirements, in which case relevant other parties might also need to be involved. As a hypothetical example, an agreement might include both new water conservation requirements and regional recharge infrastructure. The combination of discharge and recharge actions together could address overdraft issues and reduce the demand management burden on groundwater users. In this example, groundwater users are required parties under the statute, and optional parties for implementing recharge infrastructure might include sewer/wastewater providers and county flood control districts. Where a nonprofit or other party is committing to contribute technical and/or financial support for implementing any aspect of the monitoring or management actions, those parties may be required parties in the voluntary agreement (or a supplement thereto).

Many stakeholders can potentially be involved in the *development* of a voluntary agreement; however, the required signatory parties will be those entities that are *subject to the terms and obligations* contained in the voluntary agreement.

[36] One example which relates to a very different regulatory context and source of water is the Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement. Water rights holders agreed to allow others to leave water unused and each would forbear on their right to take any unused amount. The conserving party must meet certain requirements to participate, and are incentivized to participate because of the management flexibility value in being able to store water from year to year without risk of a junior or other downstream water user taking the unused water.

Even with wide support and participation of groundwater users as parties in a voluntary agreement, there could still be some risk of challenge. The risk of a successful challenge may be mitigated by ensuring that the voluntary agreement and the order approving the agreement each include a thorough description of how the agreement (and determination of appropriate parties thereto) is consistent with and advances the statutory policy for voluntary agreements, the overarching GHVGAC management objective, and the state's groundwater policies. This means that a voluntary agreement should be able to demonstrate that its particular combination of groundwater users and other parties and the actions they are agreeing to undertake together show a likelihood of addressing overdraw and groundwater level declines across the basin.

Procedure

The voluntary agreement statute includes limited description of the procedures for submission and review of a voluntary agreement. The statute requires that an agreement be "executed [by ground water users] in writing and filed with the commission."[37] Once filed, the Commission "*shall* approve the agreement" if it meets those form requirements (groundwater users execute the agreement in writing and file with the Commission) and if it "is consistent with the intent, purposes and requirements of [the Groundwater Act], and in particular O.R.S. §§ 537.525, 537.730 to 537.740 and 537.780."[38] These call-out provisions include:

- Oregon's statutory groundwater policy (O.R.S. § 537.525).
- Critical ground water area designation, rules and notice (O.R.S. § 537.730).
- Rules designating critical ground water area (O.R.S. § 537.735).
- Filing rules designating critical ground water area (O.R.S. § 537.740).
- Powers of Water Resources Commission; rules; limitations on authority (O.R.S. § 537.780).

Given that the statute does not specifically describe any other details of review, approval or implementation, the element is arguably inexact and open to agency interpretation of the legislative policy. Text, context, and legislative history give little additional guidance on procedure. Unlike agency rulemaking proceedings, which are legislative in nature, the voluntary agreements statute is structured like an administrative decision with its "check-the-box" requirements. However, each of the elements involve substantive determinations, requiring the Commission to determine consistency of a voluntary agreement with all aspects of Oregon groundwater law and policy. If the Commission finds that the voluntary agreement is not consistent in one or more ways with Oregon groundwater policy, it must explain its reasoning and reject the agreement.

A challenge of the Commission's decision to approve or disapprove an agreement would be likely to be based on an argument that the Commission did not adequately explain its

[37] ORS 537.745(1)
[38] ORS 537.745(1) (emphasis added).

decision.[39] To mitigate the risk of such challenges, the Commission could undertake a rulemaking in advance of considering any particular voluntary agreement in order to clarify and provide additional detail to ensure that a voluntary agreement meets the form and consistency requirements of the statute. However, even with additional regulatory procedures for review, approval and implementation of a voluntary agreement, there could still be some risk of challenge. The risk of a successful challenge may be mitigated by ensuring that the voluntary agreement and the order approving the agreement each include a thorough description of how the agreement (and the process for review, approving, and implementing it) is consistent with and advances the statutory policy for voluntary agreements, the basin-specific management objective (here, the GHVGAC objective), the state's groundwater policies (specifically, addressing overdraft and groundwater level declines), and the Administrative Procedures Act.

Effect and Term

The statute states that an approved voluntary agreement "shall control in lieu of a formal order or rule of the Commission" under the Groundwater Act.[40] The agreement will remain in force until:

- Terminated by the lapse of time as provided in the terms of the agreement; or
- By consent of the parties to the agreement; or
- By order of the Commission if the Commission finds, after investigation and public hearing upon adequate notice, that the agreement is not being substantially complied with by the parties thereto or that changed conditions have made the continuance of the agreement a detriment to the public welfare, safety and health or contrary in any particular to the intent, purposes and requirements of [the Groundwater Act].[41]

In other words, a voluntary agreement can define a specific term of years for which it governs groundwater management or it can be structured to continue indefinitely unless terminated by the parties. The Commission can also terminate the voluntary agreement (after investigation, a hearing and notice) if the voluntary agreement is not fulfilling its stated purpose of leading to sustainable groundwater management. The terms of the agreement will apply to all signatory parties throughout the term of the agreement.[42]

Including clear indicators of progress in relation to the management objectives, with procedures for monitoring, reporting, and assessing when and what additional actions may be needed, with clearly defined roles and responsibilities related to carrying out those procedures,

---

[39] ORS 183.482(c) ("The court shall set aside or remand the order if the court finds that the order is not supported by substantial evidence in the record. Substantial evidence exists to support a finding of fact when the record, viewed as a whole, would permit a reasonable person to make that finding.")

[40] ORS 537.745(1)
[41] ORS 537.745(1)

[42] If there is a change in land/water rights ownership, the new owner of the water rights would likely need to join the Voluntary Agreement to be subject to its terms and benefits. Additional research and analysis could be undertaken related to other potential options for addressing succession in interests.

can provide a means to demonstrate whether the agreement is being complied with and is continuing to meet the intent of the agreement and the Groundwater Act.[43]


"Fishing in Harney County, Oregon" by Bureau of Land Management (CC BY 2.0)

Conclusions

The voluntary agreements statute provides minimal, formal requirements for the process and substance of voluntary agreements. In basic terms, a voluntary agreement must (1) be between groundwater users of the same groundwater reservoir, (2) be consistent with Oregon's groundwater laws and policies, and (3) be in writing and filed with the Commission. Upon approval, the agreement controls in lieu of a formal order or rule of the Commission until terminated pursuant to (a) agreement terms, (b) the consent of the agreement parties, or (c) an order of the Commission if the Commission finds that the agreement is not working to achieve its purpose.

Within these basic requirements, there is likely a wide variety of options as to the geographic scope and subject matter scope of a specific voluntary agreement. A voluntary agreement could, for example, establish management objectives for specific areas of concern, informed by relevant statutory management objectives and local hydrologic, environment and community considerations. (Agreements undertaken in specific basins in Arizona, Nevada and California could provide model terms.) A voluntary agreement could also potentially integrate both restrictive/corrective controls and flexible, incentive-based options in a combined package to balance hydrologic, community and economic impacts and encourage groundwater user buy-in. (Agreements undertaken in specific basins in Nevada and California could provide model terms.)

Given the uncertainties around substantive content and procedures for implementing a voluntary agreement, there are a variety of legal risks that an agreement may face. On one hand,

[43] The SPRNCA case study in **Appendix B** provides an example of detailed adaptive management procedures, defined indicators to measure progress, and commitments to continue joint monitoring and modeling activities to ensure effectiveness of the collaborative plan.

voluntary agreements may face challenges from groundwater pumpers that have elected not to join a voluntary agreement. This occurred in basins in Nevada and California, with the agreements and plans ultimately upheld by the reviewing court.[44] On the other hand, the Commission must be able to approve a filed voluntary agreement based on the statutory criteria requiring a voluntary agreement to address overuse and groundwater declines, and the Commission's approval has to have a sufficient basis or it may face a challenge from the Attorney General's office or another branch of government. There is also likely to be counterpressure around the robustness of a voluntary agreement — some stakeholders may challenge an agreement for going too far, while others may challenge it for not going far enough to satisfy statutory requirements and management obligations.

There are several open questions about how far a voluntary agreement in Oregon could potentially go in relation to Oregon's groundwater laws and regulatory structure. However, a voluntary agreement is in the best position possible to be legally supportable and successful if it does the following things:

- Defines a specific management area, thoroughly explaining how it is based primarily on hydrogeologic characteristics and explaining how/why other factors inform the boundaries, as applicable.

- Includes as parties to the agreement all groundwater users within the defined area that will be affected by any restrictive requirements.

- Includes actions and commitments that will make an improvement in the hydrologic trend line over time.

- Includes a thorough explanation of how the terms of the agreement (area boundary and actions and commitments of the parties) are consistent with the state's groundwater laws and policies, how they will advance overarching management objectives of assuring maintenance of reasonably stable groundwater levels and preventing depletion of the groundwater resource.

The details of these components are hydrologically and legally technical and involve consideration of a variety of highly local values. While this report suggests consideration of a broad range of restriction controls bundled with different approaches for supporting agricultural transitions, community water system modernization and groundwater recharge strategies, in the end local water users and community members will determine what path forward works for their basin. Identifying and evaluating priority locations; strategies; and hydrologic, social and environmental values will be important next steps in exploring the use of voluntary agreements to implement management strategies in the Harney Basin.

---

[44] In Nevada, based on specific aspects of Nevada law, the court determined that the non-joining groundwater users were subject to the terms of the management plan. In California, the court determined that the non-joining groundwater users must be exempted from the terms of the management agreement; however, because of the incentives offered as part of the agreement, all of the non-joining groundwater users eventually opted into the agreement over the following two decades of implementation. More information about each of these case studies is available in **Appendix B**.

Appendix A - List of Potential Harney Basin Strategies

The table below contains recommended actions put forward by the Harney Community-Based Water Planning Collaborative in the fifth Draft Groundwater Plan Appendix F: Implementation Framework. The table has been modified to only include Recommended Actions that were noted as "yes," "possibly" or "?" for "Feasible Through a VA" (voluntary agreement) and includes the respective Management Concerns, Strategy to Address Critical Issues and Critical Issues. Comments are from the report authors and are related to the potential implementation of the Recommended Action through a voluntary agreement approach.

Recommended Action*	Management Concerns	Strategy to Address Critical Issue	Critical Issues**	Feasible Through a VA	Comments***
Ask OWRD if there are short-horizon actions that can be taken as a priority to reduce water use in areas of serious groundwater decline	Overallocation / Groundwater Level Declines, Water Security for Groundwater Users	Recommend to OWRD that it take actions in the short term to reduce the amount of groundwater being pumped for irrigation, including permit compliance	1, 11	?	VAs could be used for implementing short-term actions to reduce groundwater pumping for participating groundwater users.
Ask OWRD if there are short-horizon actions that can be taken to reduce water use	Overallocation / Groundwater Level Declines, Water Security for Groundwater Users	Recommend to OWRD that it take actions in the short term to reduce the amount of groundwater being pumped for irrigation, including permit compliance	1, 11	?	VAs could be used for implementing short-term actions to reduce water use for participating groundwater users.
Ask OWRD to add metering and reporting requirement as rule	Overallocation / Groundwater Level Declines, Water Security for Groundwater Users	Recommend to OWRD that it take actions in the short term to reduce the amount of groundwater being pumped for irrigation, including permit compliance	1, 11	yes?	VAs could be used for implementing metering and reporting standards for participating groundwater users.
Ask OWRD to enforce existing permit conditions	Overallocation / Groundwater Level Declines, Water Security for Groundwater Users	Recommend to OWRD that it take actions in the short term to reduce the amount of groundwater being pumped for irrigation, including permit compliance	1, 11	yes	Enforcement of permit conditions is an existing OWRD authority. VAs could be used for encouraging OWRD to exercise this existing authority.
CBWP Collaborative advocate for OWRD to interpret groundwater use data, report to the community and interested stakeholders, and utilize information in management actions	Groundwater Governance and Accountability, Data and Information Gaps	Install accountable water measurement devices on all non-exempt groundwater points of diversion; To develop appropriate reporting procedures for metered non-exempt groundwater points of diversion	6, 8, 9, 10, 14, 15	yes	VAs could be used for defining and implementing data collection and reporting and ensuring information is used to inform management actions.
CBWP partners, such as The Nature Conservancy, secure funding for a scoping assessment to determine potential implementation pathways of a voluntary	Overallocation / Groundwater Level Declines	Explore and consider a voluntary groundwater market approach; Review feasibility study (Upon review, the	1, 2, 3	possibly	VAs could be a groundwater-user-led mechanism for bringing in additional partners and funding for actions that could advance VA and area management goals.

* The first five columns (Recommended Action, Management Concerns, Strategy to Address Critical Issue, Critical Issues, and Feasible Through a VA) are from the Draft Groundwater Plan Appendix F: Implementation Framework. This table only contains the Recommended Actions identified in the Implementation Framework with the following answers to Feasible Through a VA: yes, possibly/possible, and ?

** Critical Issues are listed by number at the end of Appendix A

*** Comments from the report authors related to potential implementation of the Recommended Action through a Voluntary Agreement.

Recommended Action*	Management Concerns	Strategy to Address Critical Issue	Critical Issues**	Feasible Through a VA	Comments***
groundwater market approach in the Harney Basin		Collaborative should make a recommendation to implement or not)			
Collect and summarize information to help understand how the Harney Basin is affected by and responds to the impacts of drought events, as related to water supply and use.	Overallocation / Groundwater Level Declines, Data and Information Gaps, Climate Change Effects on Groundwater	Develop a plan to help mitigate and respond to the impacts of drought on the basin's groundwater.	2, 25, 30, 31	possibly	VAs could be a groundwater-user-led approach for defining and implementing data collection and analyses supportive for informing water use context and management actions.
Compare OpenET data with OWRD-approved water meter information to assess the effectiveness of OpenET, to potentially monitor water use in fields that are irrigated by temporarily broken meters, and to potentially monitor water use for points of diversion that did not have appropriate plumbing (in consultation with a technical committee described in Section 1, Strategy 11). Assess the ability of OpenET to measure water use of unmetered PODs adjacent to metered PODs; use that information to adaptively manage the implementation of the metering and reporting strategy.	Overallocation / Groundwater Level Declines	Explore how OpenET or other remote-sensing applications could be used as a tool to assess water use	2	possibly	VAs could be used for defining and implementing data collection for informing water use context and management actions.
Demonstrate successes of irrigators reducing groundwater use for others to learn and to be encouraged (e.g., "demonstration farms").	Overallocation / Groundwater Level Declines	Implement irrigation conservation measures to help slow the rate of decline and assist in achieving reasonably stable groundwater levels	1	yes	VAs could be used for implementing smaller-scale demonstration projects.
Develop a basin plan with specific actions and tools to help mitigate and respond to meteorological drought impacts. Develop this plan in conjunction with, or as part of, the Harney County's Natural Hazards Mitigation Plan, based on the Harney Community-Based Water Plan, and in consideration of other drought plans from similar basins (e.g., temporary fallowing programs for groundwater irrigated fields during times of drought).	Overallocation / Groundwater Level Declines, Data and Information Gaps, Climate Change Effects on Groundwater	Develop a plan to help mitigate and respond to the impacts of drought on the basin's groundwater.	2, 25, 30, 31	possibly	VAs could be used for implementing a basin plan with specific actions and tools.
Develop a strategy and pursue funding with community support for alternative water delivery mechanisms where feasible	Water Security for Groundwater Users	Identify feasible alternative water delivery mechanisms to meet exempt water supply needs of rural residents	11	possibly	VAs could be a groundwater-user-led mechanism for bringing in additional partners and funding for actions that could advance VA and area management goals.
Enforce well construction standards	Overallocation / Groundwater Level Declines, Groundwater	Work with OWRD to enact improvements in its enforcements of water rights and well	1, 2, 8, 9, 10, 22, 26, 27	yes	Enforcement of well construction standards is an existing OWRD authority. VAs could include

Recommended Action*	Management Concerns	Strategy to Address Critical Issue	Critical Issues**	Feasible Through a VA	Comments***
	Governance and Accountability, Data and Information Gaps	construction standards in a publicly transparent manner			provisions for encouraging OWRD to exercise this authority.
Ensure all permits conditions and water use limits are met	Overallocation / Groundwater Level Declines, Groundwater Governance and Accountability, Data and Information Gaps	Work with OWRD to enact improvements in its enforcements of water rights and well construction standards in a publicly transparent manner	1, 2, 8, 9, 10, 22, 26, 27	possibly	Enforcement of permit conditions and water use limits is an existing OWRD authority. VAs could include provisions for encouraging OWRD to exercise this authority.
Ensure all water right data, including water use data as required, is up to date and publicly available	Overallocation / Groundwater Level Declines, Groundwater Governance and Accountability, Data and Information Gaps	Work with OWRD to enact improvements in its enforcements of water rights and well construction standards in a publicly transparent manner	1, 2, 8, 9, 10, 22, 26, 27	yes	VAs could be used for establishing data collection and reporting protocols.
Ensure the water use information reported to OWRD is available to the certificate/permit-holder	Groundwater Governance and Accountability, Data and Information Gaps	Install accountable water measurement devices on all non-exempt groundwater points of diversion; To develop appropriate reporting procedures for metered non-exempt groundwater points of diversion	6, 8, 9, 10, 14, 15	yes	VAs could be used for establishing data reporting protocols.
Explore ways to generate funding for domestic well owners such as how an insurance fund, where users pay a fee, that could be administered locally	Overallocation / Groundwater Level Declines	Provide financial and technical solutions to domestic well users experiencing declines in groundwater quantity/quality due to declining groundwater levels	2	yes	VAs could be a mechanism for funding and implementing solutions that support domestic well owners.
Identify and prioritize incentives (like CREP) to reduce groundwater use in areas where it would otherwise impact GDEs	Overallocation / Groundwater Level Declines, Ecosystem Health and Protection	Implement actions that protect and conserve GDEs	2, 4, 5	possibly	A VA is likely not required to implement this action. However, VAs could be a mechanism for implementing incentives to reduce groundwater use. Packaging incentives and/or compensation options to mitigate economic hardship for groundwater users can help balance restrictive measures that may also be included in a VA.
Identify and prioritize strategies and approaches to managing groundwater and present them to the RAC	Groundwater Governance and Accountability	Work with OWRD to ensure that Collaborative members are represented and Collaborative developed strategies are presented to the RAC when considering groundwater management rulemaking	7	yes	VAs could be used to implement strategies in addition to or in lieu of groundwater management rulemaking.
Identify funding sources to conduct an inventory of unused wells	Groundwater Governance and Accountability, Data and Information Gaps	Develop a well clean up and safe harbor program	8, 9, 10, 22	yes	VAs could be a mechanism for collaboratively working to identify funding for and implement an unused well inventory.

Recommended Action*	Management Concerns	Strategy to Address Critical Issue	Critical Issues**	Feasible Through a VA	Comments***
Identify incentives for adopting more efficient technology (e.g., finding equipment grants to help convert to more efficient technology, such as Natural Resources Conservation Service's Environmental Quality Incentives Program, Bonneville Power Administration/Harney Electric Cooperative, Oregon Trail Electric Co-Op).	Overallocation / Groundwater Level Declines	Increase use of efficient irrigation technology	1	yes	A VA is likely not required to implement this action. However, VAs could be a mechanism for implementing incentives for adopting efficient technology. Packaging incentives and/or compensation options to mitigate economic hardship for groundwater users can help balance restrictive measures that may also be included in a VA.
If it is confirmed by the appropriate technical agency experts that metering data is unreliable for determining water use from a specific well, convene a technical committee of technical agency experts and stakeholders (i.e., OpenET founders, OWRD, USGS, others). The technical committee will determine a process to achieve water use measurement either through requiring changes in plumbing or through other water use measurement (such as OpenET) that meets the purpose of the data; for any PODs determined by the committee to use a significant amount of water, require changes in plumbing and installation of a meter. Sources of cost-share and incentive funding will be sought for cases requiring changes in plumbing.	Groundwater Governance and Accountability, Data and Information Gaps	Install accountable water measurement devices on all non-exempt groundwater points of diversion; To develop appropriate reporting procedures for metered non-exempt groundwater points of diversion	6, 8, 9, 10, 14, 15	yes	VAs could be used for establishing a technical committee and process to review and update (as needed) data collection protocols.
Implement the conservation implementation strategy by NRCS to reduce groundwater use by 3000 acre-feet/year.	Overallocation / Groundwater Level Declines	Implement irrigation conservation measures to help slow the rate of decline and assist in achieving reasonably stable groundwater levels	1	yes	VAs could be a mechanism for funding and implementing solutions to conserve groundwater.
Improve water resource data collection, interpretation, and information sharing in the Harney Basin	Water Security for Groundwater Users, Data and Information Gaps	Build community understanding of water resource conditions in the Harney Basin	11, 12, 16	yes	VAs could be used can be a groundwater-user-led approach for defining and implementing data collection and reporting protocols and a process for utilizing information to inform water use context and management actions.
In the GHVGAC, require near-real-time, accurate, OWRD-approved groundwater meters be installed on all groundwater points of diversion, except for exempt uses, and report water use from each meter annually to OWRD. Meters should utilize digital data loggers (e.g., USB-compatible) to reduce reporting burden on water users and ensure consistency.	Groundwater Governance and Accountability, Data and Information Gaps	Install accountable water measurement devices on all non-exempt groundwater points of diversion; To develop appropriate reporting procedures for metered non-exempt groundwater points of diversion	6, 8, 9, 10, 14, 15	yes	Establishment of metering/measuring and reporting standards is an existing OWRD authority. VAs could include provisions for encouraging OWRD to exercise this existing authority.

Recommended Action*	Management Concerns	Strategy to Address Critical Issue	Critical Issues**	Feasible Through a VA	Comments***
a) For all those areas where near-real-time meters will not be practical due to technological limitations, the department will be requested to provide a list of approved alternative meters/approaches that could be implemented.					
Include a recommendation for enforcement in the integrated plan	Overallocation / Groundwater Level Declines, Groundwater Governance and Accountability, Data and Information Gaps	Work with OWRD to enact improvements in its enforcements of water rights and well construction standards in a publicly transparent manner	1, 2, 8, 9, 10, 22, 26, 27	yes	Enforcement of well construction standards and permit conditions is an existing OWRD authority. VAs could include provisions for encouraging OWRD to exercise this existing authority.
Local-scale planning protections for conserved water, such as voluntary agreements and/or contractual obligations, are established for water users in the Harney Basin. These agreements or contracts could be entered into between or among private parties, OWRD, and/or a local governance body.	Overallocation / Groundwater Level Declines, Water Security for Groundwater Users	Research policy or planning mechanisms to ensure that conserved water remains in the ground	1, 2, 13?	possible	VAs could potentially be a mechanism for protecting conserved water; however, because conserved water has implications related to statutory provisions and consequences of 'nonuse' of a water right, additional research and analysis is likely needed to develop a legally appropriate approach to doing so.
Provide incentives for irrigators who can prove reduction in their groundwater use.	Overallocation / Groundwater Level Declines	Implement irrigation conservation measures to help slow the rate of decline and assist in achieving reasonably stable groundwater levels	1	yes	VAs could be a mechanism for providing incentives to reduce groundwater use. A voluntary agreement could bundle regulatory curtailment of groundwater pumping with strategies to help off-set either the need for--or the economic impact of--reduced groundwater pumping.
Request OWRD collect data on illegal water use and produce an annual report regarding progress/implementation of RA above	Overallocation / Groundwater Level Declines, Groundwater Governance and Accountability, Data and Information Gaps	Work with OWRD to enact improvements in its enforcements of water rights and well construction standards in a publicly transparent manner	1, 2, 8, 9, 10, 22, 26, 27	yes	Prohibiting illegal water use is an existing OWRD authority. VAs could include provisions for encouraging OWRD to exercise this existing authority.
Request that OWRD collect information on groundwater use, initiate a continuous cancellation process for expired permits and water rights that haven't been used in 5 years, and share information on their findings with the public	Groundwater Governance and Accountability, Data and Information Gaps	OWRD initiate cancellation of all known expired permits and water rights that haven't been beneficially used in 5 years in the Harney Basin and develop a plan to systematically identify those permits that may be subject to forfeit	6, 8, 9, 10, 22	yes	Conducting various water resources investigations, surveys, and studies and enforcing water permits and rights are existing OWRD authorities. VAs could include provisions for encouraging OWRD to exercise these existing authorities.
Set benchmarks and timelines for reducing groundwater use.	Overallocation / Groundwater Level Declines	Implement irrigation conservation measures to help slow the rate of decline and assist in achieving reasonably stable groundwater levels	1	yes	VAs could be used for defining benchmarks and timelines for reducing groundwater use. A VA should explain how the benchmarks and timelines address overdraw and groundwater level declines

Recommended Action*	Management Concerns	Strategy to Address Critical Issue	Critical Issues**	Feasible Through a VA	Comments***
					across the basin consistent with the state and basin policies.
Support OWRD in ensuring that all illegal water use ceases	Overallocation / Groundwater Level Declines	Work with OWRD to enact improvements in its enforcements of water rights and well construction standards in a publicly transparent manner	1	yes	Prohibiting illegal water use is an existing OWRD authority. VAs could include provisions for encouraging OWRD to exercise this existing authority.
The CBWP Collaborative reviews the results of the assessment and evaluates different approaches	Overallocation / Groundwater Level Declines	Explore and consider a voluntary groundwater market approach; Review feasibility study (Upon review, the Collaborative should make a recommendation to implement or not)	1, 2, 3	possibly	A VA could potentially be a mechanism for implementing a voluntary groundwater market. A market approach would likely require an OWRD role related to allocating the available resource (i.e., annual allocations or shares) and processing marketing (i.e., procedures and criteria for evaluating temporary and permanent transfers and/or changes in use, tailored to meet area/sub-area management objectives). Because a market approach has implications related to statutory provisions around transfers, additional research and analysis is likely needed to develop a legally appropriate approach for a market framework.
The interagency team convened by the Oregon Watershed Enhancement Board (OWEB) develops a draft groundwater CREP proposal to be reviewed by Harney Basin stakeholders. The draft proposal should: a) meet federal requirements, including stewardship of enrolled lands (e.g., crop-cover and weed-management requirements), and b) have state willingness to participate. If the proposal lacks buy-in from stakeholders, the interagency team should create an avenue for further stakeholder input for improvement.	Overallocation / Groundwater Level Declines	Support, as a Collaborative, the CREP program described in the application to FSA and encourage voluntary enrollment by water users	1, 2, 3	yes	VAs could be a mechanism for providing incentives to reduce groundwater use, including the CREP program. A voluntary agreement could bundle regulatory curtailment of groundwater pumping with strategies to help off-set either the need for--or the economic impact of--reduced groundwater pumping.

Critical Issues List:

Critical Issue 1	There are declining groundwater levels in the Greater Harney Valley Groundwater Area of Concern (GHVGAC) due to cumulative groundwater discharge, including both human uses (predominantly irrigation) and natural discharge, exceeding recharge.
Critical Issue 2	Many groundwater users are being affected by seasonal and long-term declines in available water, which has unknown impacts on groundwater dependent ecosystems.
Critical Issue 3	Groundwater declines are not uniform across the basin or between shallow and deep groundwater, which can lead to management challenges.
Critical Issue 4	There are limited legal protections for springs.
Critical Issue 5	Declining groundwater levels negatively affect springs, wetlands, cold water inputs to streams, riparian areas, other groundwater dependent ecosystems, and lakes as well as the native flora and fauna associated with these groundwater dependent ecosystems.
Critical Issue 6	There is lack of accountability regarding the use of groundwater for irrigation. Groundwater used by irrigators is reported by only some of the permit holders but is not uniformly measured and reported.
Critical Issue 7	There are limited public participation opportunities and barriers to participation in the water permitting and permit transfer process, which can lead to decisions that do not fully consider potential impacts to the local environment, community, and economy and potentially produce outcomes that lead to disproportionate impacts on people who have not been engaged or represented.
Critical Issue 8	Failure to remove water rights for abandonment or non-use results in inaccurate accounting of valid water rights volume and inaccurate accounting of water availability if based on permitted volume.
Critical Issue 9	Failure to remove water rights for abandonment or non-use allows those water rights to continue to be subject to transfer applications and/or to be reactivated instead of removing those acre feet from permitted volumes and reflecting that removal in stats of water availability.
Critical Issue 10	Failure to remove water rights for abandonment or non-use allows those water rights to be reactivated which creates further draws on already depleted groundwater reservoirs.
Critical Issue 11	The current and potential negative effects of declining groundwater levels on domestic and stock water wells - including lack of water and declining water quality - is having a negative impact on the quality of life and economic security of rural inhabitants of the Harney Basin.
Critical Issue 12	The impact of declining groundwater levels on the water supply for the cities of Burns and Hines is unknown and are not currently monitored.
Critical Issue 13	The community of Burns and Hines have the need to invest in infrastructure to provide water service to their citizens. Ongoing infrastructure updates and funding will likely be needed in the future.
Critical Issue 13	There is limited legal protection for exempt groundwater uses.
Critical Issue 14	There is limited or no baseline information about the condition and location of groundwater-dependent ecosystems and limited or no monitoring to determine the impacts of groundwater declines now and in the future.
Critical Issue 15	The total amount of groundwater pumped in the basin is unknown, which can lead to issues with accurate allocation regimes.
Critical Issue 16	There is limited information about water use from domestic and stock water wells and historic well conditions.

Critical Issue 17	Incomplete information on potential economic impacts of lowering groundwater levels in agricultural and domestic wells.
Critical Issue 18	Incomplete information on potential economic impacts of voluntary curtailment and CREP payments.
Critical Issue 19	Incomplete information on potential economic impacts of curtailment from the State.
Critical Issue 20	Incomplete information on potential economic impacts from ecological impacts of groundwater declines.
Critical Issue 21	Incomplete information on the impacts from continued development in the GHVGAC.
Critical Issue 22	Lack of information about occurrence, distribution, and potential impacts of both unpermitted and poorly constructed wells and impacts on groundwater quality/quantity.
Critical Issue 23	There is a need for better understanding of the effects and amount of supplemental groundwater used.
Critical Issue 24	Previous groundwater data for the basin has been inconclusive. Site-specific groundwater data, such as designation of certain areas for targeted CREP outreach, groundwater markets, etc., might be useful for effective groundwater management as well as ongoing data gathering and collection by the Department.
Critical Issue 25	Incomplete information on the effects of climate change on groundwater resources in the Harney Basin.
Critical Issue 26	There is uncertainty about whether co-mingling between shallow and deep groundwater systems is occurring due to well construction issues in some parts of the basin.
Critical Issue 27	There is an unknown number of undocumented wells in the basin that may not have been properly constructed and have not been inspected or maintained over time. For instance, there are many uncapped wells in the basin that could negatively impact groundwater quality.
Critical Issue 28	Groundwater quality monitoring in the basin is not done on a regular basis, which causes difficulty in understanding changes overtime.
Critical Issue 29	Arsenic is a documented water quality issue in the basin. Arsenic exceeds human health standards in some wells across the basin that provide drinking water. Water quality is an issue in the basin. (Do not have consensus on this language change yet)
Critical Issue 30	Future climate conditions in the Harney Basin are likely to be warmer and drier than current ones, which will likely impact groundwater resources.
Critical Issue 31	Lack of a drought contingency plan

Appendix B - Case Studies

San Pedro Riparian National Conservation Area MOU and Cooperative Monitoring and Adaptive Management Plan (Arizona)

The MOU is designed to achieve a series of shared goals to ensure a healthy San Pedro River and ecologically viable San Pedro Riparian National Conservation Area; adequate long-term water supplies to meet the reasonable needs of the area's current and future residents and property owners as well as the SPRNCA; opportunities for continued economic growth and development in Cochise County and Sierra Vista; and an operationally secure Fort Huachuca that can accomplish its national defense missions, have a safe and adequate water supply, and comply with all obligations under the Endangered Species Act.

The *geographic scope* of the agreement is based on the U.S. boundaries of the hydrologic subbasin, which aids administration of the actions in the agreement by including the hydrologic areas of concern and the specific entities within the region with jurisdiction to undertake relevant actions. Monitoring and adaptive management indicators are based on 14 defined zones within the subbasin area with distinct hydrogeologic characteristics, resource concerns, and/or jurisdictional considerations.

The *subject matter scope* of the agreement is confined to monitoring actions and establishment of an adaptive management process for cooperative management of water resources in the region. The MOU and plan coordinate monitoring activities, create adaptive management framework to track indicators (riparian health trends) and triggers for additional management, and create a process for the parties to determine when/what additional management actions should be taken.

The *parties* to the MOU are the government entities and federal agencies with authority to implement the monitoring and adaptive management actions included in the MOU.

There are important *distinguishing elements* from the Harney context to consider related to this example. The MOU does not identify nor implement specific management strategies. It also does not provide an explicit way to manage/reduce current uses or limit new uses.

The potentially *informative elements* of this agreement for the Harney context include:

- Monitoring framework with defined, trend-based indicators and triggers for when additional management actions are needed.
- Commitments by the parties to collaboratively plan, evaluate, fund and implement ongoing monitoring and management actions.
- Planned management actions to reduce use and bolster aquifer levels that do not place new requirements on existing water users.

Resources

- SPRNCA MOU and Cooperative Plan
- *Agreement gives county a seat at San Pedro conservation discussions* (Herald Review, Sept. 16, 2021)
- *Agencies affirm their commitment to address water and ecological conservation near the San Pedro River in Southeast Arizona* (Sierra Vista, Sept. 21, 2021)

Mojave Basin Settlement (California)

As an alternative to continued litigation initiated by ongoing overdraft issues, a committee representing a variety of water users and interests in the Mojave Basin worked together to develop a groundwater allocation system, management zones and tools, and supply augmentation options.

The *geographic scope* of the agreement is based on the hydrologic basin and defines four subbasins with unique management objectives, which aids administration of the actions in the agreement by including the hydrologic areas of concern and defining areas based on specific hydrogeologic characteristics, resource concerns, and jurisdictional/ implementation considerations. The *subject matter scope* of the agreement is based on the underlying litigated matter, which was to adjudicate all of the water rights within the hydrologic basin. The agreement established a system for monitoring and management within and among subbasins to meet downstream water rights obligations, address changes in use, address conjunctive management issues, and protect special-status species.

The *parties* to the settlement agreement were most of the water users within the hydrologic basin. The agreement defined a "de minimis" category to exempt certain smaller water users. Nine water rights users did not join the settlement agreement. The stipulated judgment filed with the court included over 75% of the parties.

There are important *distinguishing elements* from the Harney context to consider related to this example. Water users in the Mojave Basin had a 'backstop' to help mitigate overuse (imported surface water). This arguably created a softer landing for reducing overuse: Water users can use more than their annual allocation, but they must pay a fee based on the cost

of imported surface water in the overage amount. Additionally, judicial settlement provides an arguably greater degree of legal cover for the implementing agencies because the management plan is approved by the court and has the force of law.

The potentially *informative elements* of this agreement for the Harney context include:

- Subbasin-based management objectives to address localized hydrologic issues.
- Ramp down schedule reduces overuse over time.
- Incorporates a 'water market' management element, which creates a balancing mechanism to allow new uses or changes in use while maintaining the water budget defined as part of the settlement.
- Incorporates environmental values into management goals and subbasin objectives.

There are also potentially *informative process lessons* for the Harney context:

- Defining 'de minimis' uses helped simplify the agreement negotiation process and minimize the required parties.
- If potentially impacted parties do not voluntarily participate, there is risk of a successful legal challenge. However, a successful challenge does not necessarily mean that the agreement is not otherwise supportable and valuable. Nine senior water rights holders did not join the stipulated agreement. They successfully challenged and were exempted from the terms of the agreement, which was otherwise upheld as to the stipulating parties. This meant that those non-stipulating parties were not subject to the water use restrictions agreed to within the agreement but were subject to the general state laws applicable (in California in that region, right to pump water under their lands for current and prospective reasonable and beneficial need for use on their respective properties). Most of the non-joining parties eventually opted into the agreement due to the benefits of participating, notably, the settlement agreement's marketing framework for temporary or permanent transfers of annual allocations, which provides management/operational flexibility and financial support that otherwise is unavailable or burdensome.

Resources

- Mojave River Decree, (Superior Court, State of California, County of Riverside, January 10, 1996)
- *History of the Adjudication*, *Judgement after Trial*, (Mojave Water Agency)

Groundwater Management District 4 / Sheridan 6 Locally Enhanced Management Area (Kansas)

Kansas law enables the creation of local groundwater management districts to help manage and conserve groundwater and prevent economic deterioration. Districts, which are initiated and approved by local petition and vote, are governed by locally elected boards and charged with creating management programs for conservation and management of groundwater within the district that are reviewed and approved by the Division of Water Resources. To implement the approved management program, the Division of Water Resources may establish rules and regulations applicable to the specific district.

Certain designations allow for additional management measures to address groundwater declines and other conditions of concern in certain areas. Intensive groundwater use control areas (IGUCAs) and local enhanced management areas (LEMAs) may be designated on the request of a groundwater management district or a majority of local water users, following reviews, hearings and a determination by the chief engineer. LEMA plans must include goals and corrective control provisions adequate to meet the management problems/goals identified as part of the area designation. The plan may include corrective control provisions that are defined in statute:

- Closing the local enhanced management area to any further appropriation of groundwater;
- Determining the permissible total withdrawal of groundwater in the local enhanced management area each day, month or year, and apportioning the total quantity among groundwater right holders according to priority;
- Reducing the permissible withdrawal of groundwater by any one or more appropriators or by wells in the LEMA;

- Requiring and specifying a system of rotation of groundwater use in the LEMA; or
- Any other additional requirements as are necessary to protect the public interest.

The Sheridan 6 LEMA was designated within Kansas' Groundwater Management District 4 in 2013 on petition of the district and following review and approval by the chief engineer. GMD 4's Management Program defines seven overarching management problems, including groundwater depletion issues. To address localized areas of impact for depletion within the broader district, the Sheridan 6 LEMA program established a limit on total permissible water use from within the area over the five-year LEMA period.

There are important *distinguishing elements* from the Harney context to consider related to this example. This plan is not explicitly a "voluntary agreement," but it does require a majority of groundwater users to support the petition for designation of the area. The authorizing statute sets the standard for required parties and the types of corrective actions that may be incorporated into a plan.

The potentially *informative elements* of this management plan for the Harney context include:

- Subbasin-based management objectives and corrective actions within a broader regulated basin to address localized hydrologic issues.
- Ramp down schedule to bring down overuse over time.
- Incorporates economic, environmental, and community values into management goals and subbasin objectives.

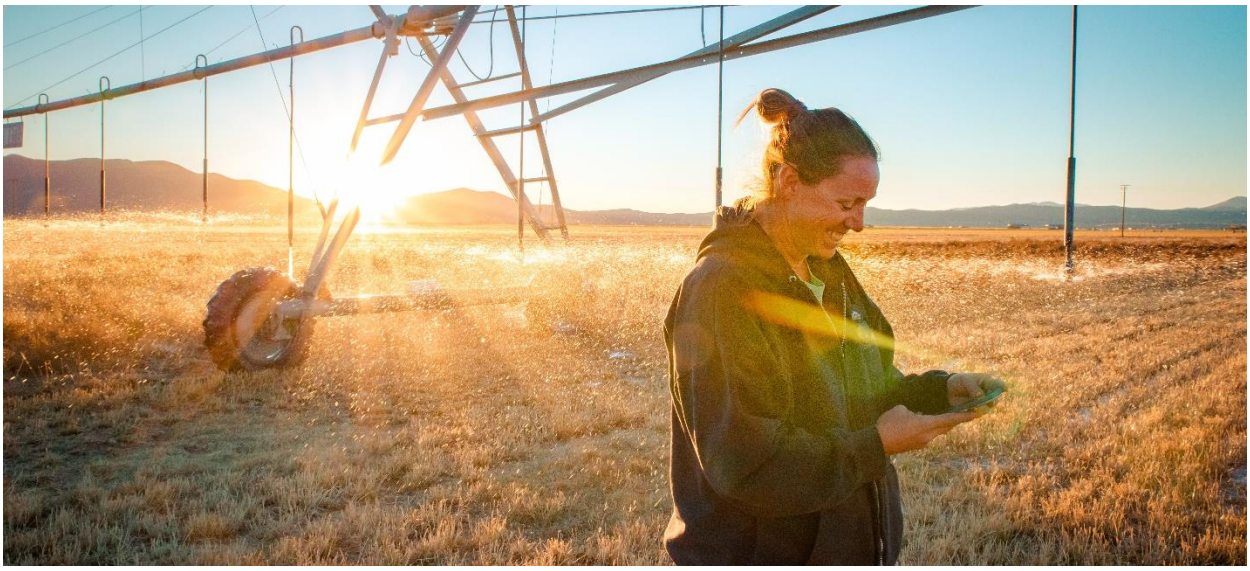
There are also potentially *informative process lessons* for the Harney context:

- The localized approach taken with the Sheridan 6 LEMA appears to have generated less conflict/more buy-in than a district-level LEMA approach, allowing implementation to proceed without/with less legal challenge.

Resources

- Groundwater Management District Act, K.S.A. §§ 82a-1020 – 82a-1042 (Nov. 2018)
- K.S.A. § 82a-1041 Local enhanced management areas
- Order of Designation Approving the Sheridan 6 Local Enhanced Management Area within Groundwater Management District No. 4 (Division of Water Resources, 4/17/2013)
- Northwest Kansas Groundwater Management District No. 4: Revised Management Plan (Adopted by GMD 4 Board and approved by the Chief Engineer 2016)
- Lessons from Kansas: A More Sustainable Groundwater Approach (Stanford Water in the West)
- Fact Sheet: Intensive Groundwater Use Control Areas (Kansas Department of Agriculture)

Diamond Valley Groundwater Management Plan (Nevada)



Recognizing the need to stabilize groundwater declines and in anticipation of a critical management area designation, the local community and stakeholders in Diamond Valley came together to develop a local groundwater management plan. The locally developed plan was approved by a majority of groundwater users in the Valley and approved by the state engineer in 2019. The plan was recently upheld by the Nevada Supreme Court following several years of judicial review.[45]

The *geographic scope* of the agreement is based on the hydrologic basin. The *subject matter scope* of the agreement is limited to managing irrigation water uses within the basin. It establishes a shares-based system based on existing water rights, defines a 'ramp down' schedule to reduce use over time, allows for 'storage' of unused shares for use in later years, and allows trading of shares to manage new and changes in uses.

The *parties* were a majority of groundwater users in the Basin who joined the petition submitted to the state engineer in support of the plan (a standard for approval set by Nevada statute).

There are important *distinguishing elements* from the Harney context to consider related to this example. This plan is not explicitly a "voluntary agreement," but as noted above, it does require a majority of groundwater users to support the petition for approval of the plan. The authorizing statute sets the standard for required parties.

The potentially *informative elements* of this agreement for the Harney context include:

- Ramp down schedule brings down overuse over time.

[45] Diamond Natural Resources Protection and Conservation Assoc. v. Diamond Valley Ranch, LLC, 138 Nev. Adv. Op. 43 (2022).

- Incorporates a 'water market' management element, which creates a balancing mechanism to allow new uses or changes in use while maintaining the water budget.

- Incorporates environmental, social, and economic community values into management objectives.

The potentially *informative legal considerations* of this plan for the Harney context include:

- Whether the relevant state agency can approve a voluntary agreement/plan that includes management tools that the state itself doesn't have the legal authority to implement? [46]

- Whether instituting a voluntary shares-based system is a legally supportable approach to recognize water rights yet manage water use outside of the prior appropriation system? [47]

- What is a reasonable timeline for a ramp down schedule? What if conflicts with senior water rights are already occurring? [48]

- What data and information are necessary to satisfy a 'substantial evidence' standard to legally support an agency determination? [49]

Resources

- Diamond Valley Groundwater Management Plan
- Order #1302 Granting Petition to Adopt a Groundwater Management Plan for the Diamond Valley Hydrographic Basin (Nevada State Engineer, 2019)
- Diamond Valley GMP FAQ (Nevada Division of Water Resources)
- Case Information for Case No. 81224, DIAMOND NAT. RES. PROT. AND CONSERVATION ASS'N VS. DIAMOND VALLEY RANCH, LLC (Nevada Supreme Court, for the Court's Final Opinion, see Document 22-19127)
- *In Diamond Valley farmers are looking to protect their future and testing the limits of Nevada's water laws* (The Nevada Independent, Oct. 28, 2020)
- *Justices uphold groundwater plan in ruling that could 'significantly affect water management'* (The Nevada Independent, Jun. 22, 2022)

[46] The Nevada Supreme Court determined that, based on the specific Nevada laws that applied, the State Engineer had discretion to approve a groundwater management plan that does not strictly comply with Nevada's statutory water laws or strictly adhere to the doctrine of prior appropriation.

[47] As noted above, based on the specific Nevada laws that applied, the Nevada Supreme Court determined that the State Engineer had discretion to approve a plan that does not strictly adhere to the doctrine of prior appropriation.

[48] In Nevada, the Supreme Court deferred to the State Engineer in determining a reasonable timeline, so long as the State Engineer concluded that the plan set forth the necessary steps to remove the basin's critical management area designation and was warranted under statutory factors.)

[49] In Nevada, the Supreme Court looked to the State Engineer's methodical consideration of statutory factors and extensive scientific findings in concluding whether the plan would balance the Basin back to its perennial yield.

Appendix C - Questions and Initial Responses/Considerations

Stakeholder Questions	Comments / Page Reference
What is the appropriate scope of a voluntary agreement? Is there an umbrella agreement or should there be separate agreements to address specific strategies?	The scope of any given voluntary agreement will vary based on the specific management objective it is targeted to address, the geographic scope, and the management tools/actions included. For example, one voluntary agreement might include general, basinwide use limitations (i.e., basinwide limitations on certain type of use), while another agreement might include targeted use limitations (i.e., more restrictive irrigation water duties in an area seeing high rates of groundwater decline). An umbrella agreement could provide a useful regional framework but would include more parties and may be more difficult to develop. Separate agreements for specific strategies and/or targeted issue areas could ease development by limiting parties and scope. Separate agreements could reference and incorporate the Groundwater Plan and/or other planning resources to explain and link the individual voluntary agreement to the comprehensive regional framework and goals. For the Harney Basin context, this question could be explored further in next steps. See pages 15-19 for a general discussion of voluntary agreement geographic scope and subject matter scope.
How can voluntary agreements make things more equitable and improve conditions for all water users, particularly considering the water needs of exempt well users and groundwater-dependent ecosystems, which have been detrimentally impacted?	It will be important in any management approach to consider equitable solutions that improve conditions for all water users and avoid detrimental outcomes. A voluntary agreement approach could potentially provide a collaborative forum and integrate a broader array of management objectives and tools than would otherwise be considered or available through Commission rulemaking. This question will also depend on the specific management objectives (hydrologic, community, and environment), geographic scope, and management tools/actions included in a specific voluntary agreement. For the Harney Basin context, this question could be explored further in next steps.
Are other places dealing with groundwater depletion using voluntary agreements? And if so, how?	Yes. See Case Studies in Appendix B.
Which strategies might require a voluntary agreement vs. which might be amenable to such an agreement?	New requirements and restrictions (i.e., measuring and annual reporting, pumping limitations) for existing uses would require a voluntary agreement (or Commission rulemaking). Many other types of tools could potentially be amenable for inclusion in a voluntary agreement.

Stakeholder Questions	Comments / Page Reference
	For the Harney Basin context, this question could be explored further in next steps. See pages 16-19 for a general discussion of voluntary agreement subject-matter scope and **Appendix A** for notes on Harney strategies and recommended actions.
Could a voluntary agreement be used to execute a transfer between two people, as part of a pilot demonstration for building up to a water market?	Water rights transfers are governed by Oregon law. Voluntary agreements cannot conflict with state statutes. However, it might be possible to include supplemental transfer considerations/procedures in an agreement that are consistent with Oregon's transfer laws. In some places outside of Oregon, for management purposes, groundwater rights have been converted into groundwater "shares" or "allowances" with annual allocations and transfer rules that apply to the annual allocation as opposed to the underlying water right. However, such share transfers would likely implicate POD or POU elements of the underlying water right. For the Harney Basin and broader Oregon contexts, additional legal analysis and outreach with OWRD could be undertaken in next steps. See Case Studies in Appendix B for Diamond Valley (Nevada) and Mojave Basin (California) for examples from other states.
Should and how would supplemental water use be factored into a voluntary agreement?	How and whether to factor in supplemental water use will depend on the specific management objectives (hydrologic, community, and environment), geographic scope, and management tools/actions included in a specific voluntary agreement. For the Harney Basin context, this question could be explored further in next steps.
How can voluntary agreements be used in conjunction with any rulemakings on designations from OWRD to address groundwater issues? Can we have a regulatory structure in the areas with the most acute issues and voluntary agreement(s) in other parts of the basin to address overdraft?	Voluntary agreements are an *approach* to implementing management actions as an alternative or supplement to Commission rulemakings. Voluntary agreements can supplement existing rules and/or change/override existing rules upon review by the Commission and promulgation of new rules. Voluntary agreements could potentially provide an approach to addressing overdraft in certain areas within the broader basin, so long as they are consistent with the broader basin policies and Oregon's groundwater laws. How a voluntary agreement can/should be used in conjunction with rulemakings will depend on specific management objectives (hydrologic, community, and environment), geographic scope of acute issues, preferred management tools/actions, and community buy-in. For the Harney Basin context, this question could be explored further in next steps. See pages 16-19 for a general discussion of voluntary agreement subject-matter scope.
What happens to the agreement if there is a change in landownership? Does the county have a role in ensuring	Voluntary agreements are entered into "among ground water users from the same ground water reservoir." In general terms, any individual groundwater user that is affected by a new requirement or restriction in a voluntary agreement is a required party for an

Stakeholder Questions	Comments / Page Reference
the agreement remains if land ownership changes?	agreement. If there is a change in landownership, the new groundwater user will need to become a party to the agreement. Once a voluntary agreement is approved by the Commission, there could be an important county role in notifying the Commission of relevant changes in landownership and the new landowner of the existence of and terms of the agreement, and potentially providing outreach and education to the new landowner to encourage participation. For the Harney Basin and broader Oregon contexts, additional research and outreach with OWRD could be undertaken in next steps. See pages 19-21 for a general discussion of voluntary agreement parties.
Who are the parties involved in a voluntary agreement?	Voluntary agreements are entered into "among ground water users from the same ground water reservoir." In general terms, any individual groundwater user that is affected by a restrictive requirement in a voluntary agreement is a required party for a voluntary agreement. A voluntary agreement could potentially include a variety of management tools in combination with regulatory requirements, in which case relevant other parties might also be involved. As a hypothetical example, an agreement might include new water conservation requirements (demand management) and regional recharge infrastructure (supply augmentation). The balance between discharge and recharge actions make it so that groundwater users do not have to bear as much of a demand management burden. Groundwater users are required parties, and optional parties for implementing conservation incentives and recharge infrastructure might include sewer/wastewater providers, county flood control districts, and/or NGOs. This question will depend on the specific management objectives (hydrologic, community, and environment), geographic scope, and management tools/actions included in a specific voluntary agreement. For the Harney Basin, this question could be explored further in next steps. See pages 19-21 for a general discussion of voluntary agreement parties.
Who needs to approve of the agreement and who is responsible for ensuring it is carried out? What are the roles of the landowners, the county, and the state in an agreement?	Voluntary agreements are reviewed and approved by the Commission. New requirements and restrictions would likely be implemented and enforced by the Department. Any non-regulatory requirements included in the agreement are implemented according to the terms of the agreement. The agreement could define indicators for measuring progress towards the management objectives, with procedures for monitoring, reporting, and assessing when and/or what additional actions may be needed, with clearly defined roles and responsibilities related to carrying out those procedures. This question will depend on the specific management objectives (hydrologic, community, and environment), geographic scope, and management tools/actions included in a specific agreement. In general:

Stakeholder Questions	Comments / Page Reference
	Landowners can be involved in the development of the voluntary agreement. They will be considered necessary parties to sign onto the agreement if they are also interested and affected groundwater users or otherwise subject to the terms and obligations of the voluntary agreement. *Counties* may participate in the development of a VA, but they are not necessary parties to the agreement unless they are also an interested and affected groundwater user within the scope of the agreement or are otherwise subject to the terms and obligations of the voluntary agreements. Counties could potentially participate in agreements related to non-regulatory terms of the voluntary agreement (i.e., related to actions supportive of the agreement management objective like related land use / development policies, regional recharge infrastructure, etc.). They could potentially provide additional roles in providing notices, education, and outreach to landowners about the voluntary agreement terms. *State* roles include: The Commission will review voluntary agreements for consistency with the statute and Oregon's groundwater laws. The Commission may also promulgate rules to implement terms of an approved voluntary agreement as necessary. The Department will implement and enforce restrictive requirements included in an approved agreement. For the Harney Basin and broader Oregon contexts, additional research and outreach with the Commission and OWRD could be undertaken in next steps.
What level of participation is needed in order to successfully implement a voluntary agreement be successful? Is it 100%?	Voluntary agreements are entered into "among ground water users from the same ground water reservoir." In general terms, any individual groundwater user that is affected by a regulatory requirement in a voluntary agreement is a required party for an agreement. The state likely cannot approve nor enforce a voluntary agreement with a regulatory requirement where 100% of affected groundwater users are not parties. A voluntary agreement could potentially include non-regulatory management actions as well, in which case any individual or entity with authority to undertake that action should be included. This question will depend on the specific management objectives (hydrologic, community, and environment), geographic scope, and management tools/actions included in a specific voluntary agreement. For the Harney Basin and broader Oregon contexts, additional research and outreach with the Commission and OWRD could be undertaken in next steps. See pages 19-21 for a general discussion of voluntary agreement parties.

Stakeholder Questions	Comments / Page Reference
What metrics do you use to evaluate the agreement and how do you ensure that the goals are being met?	This question will depend on the specific management objectives (hydrologic, community, and environment), geographic scope, and management tools/actions included in a specific voluntary agreement. For the Harney Basin context, next steps could involve: evaluating desired outcomes specific to the voluntary agreement objective/scope and overarching basin plan; assessing ongoing monitoring relevant to those outcomes and identifying monitoring/ information gaps; and defining indicators and a process to evaluate progress. See Case Studies for San Pedro Riparian National Conservation Area (Arizona).

123 Mission St, 28th Floor
San Francisco, California 94105
(415) 293-6050
edf.org