

SECTION 1: REDUCING AGRICULTURAL GROUNDWATER USE (11)

Objective 1: To assist groundwater irrigators in using less water; To protect the water rights of an irrigator who conserves by changing their irrigation system to operate at a lower rate than what was originally permitted.

Strategy 1: Implement irrigation conservation measures to help slow the rate of decline and assist in achieving reasonably stable groundwater levels.

Recommended Actions:

- 1.1 Provide a clear explanation of the “ready, willing, and able” (ORS 540.610) to address irrigators’ concern about use it or lose it.
 - 1.2 Demonstrate successes of irrigators reducing groundwater use for others to learn and to be encouraged (e.g. “demonstration farms”).
 - 1.3 Obtain legal recommendations of where barriers lie in the Allocation of Conserved Water program (e.g., in statute, rule, etc.), and what options exist for overcoming those barriers.
 - 1.4 Provide incentives for irrigators who can prove reduction in their groundwater use.
 - 1.5 Implement the conservation implementation strategy by NRCS to reduce groundwater use by 3000 acre-feet/year.
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Objective 2: To ensure that groundwater saved via conservation or efficiency strategies is protected from consumptive use.

Strategy 2: Research policy or planning mechanisms to ensure that conserved water remains in the ground

Recommended Actions:

- 2.1 See Section 1, Strategy 1, Recommended Action 1.3.
- 2.2 State agencies and others identify existing policy mechanisms to ensure that water remains in the ground.
- 2.3 State agencies and CBWP partners, such as The Nature Conservancy and/or others, explore development of a novel policy protection such as in-place (“in situ”) groundwater rights.
- 2.4 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.

Note: All above Recommended Actions are most effective if coupled with both metering of water use and monitoring of local groundwater levels near the site where water was initially conserved.

Objective 3: To irrigate with less water by using more efficient technology to help stabilize or recover groundwater levels and maintain a “good” crop in an economically sustainable manner.

Strategy 3: Increase use of efficient irrigation technology.

Recommended Actions:

- 3.1 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).
 - 3.2 Promote precision irrigation and irrigation scheduling, informed by data such as AgriMet data.
 - 3.3 Support a full time equivalent (FTE) position in the basin to help support irrigators in utilizing efficient technology (i.e., a crop advisor for irrigation efficiency).
 - 3.4 Demonstrate successful use of efficient technology to help gain local support to implement new conservation technologies (e.g., "smart farms" like in Columbia River Basin).
 - 3.5 Ensure technical support is available in the basin to help maintain the equipment (e.g., technicians, technician school/courses for people to educate themselves).
 - 3.6 Continue researching irrigation technology, including sub-surface irrigation, and disseminate information (outreach) so irrigators know how to use the technology.
 - 3.7 Utilize data and data-collecting technology for increased water use efficiency (AgriMet).
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Objective 4: To increase science-based and basin-specific information about economically-viable alternative crops and reducing groundwater use; To increase adoption of alternative crops and efficient irrigation practices to reduce groundwater use.

Strategy 4: Partner with Oregon State University, the County, and the Eastern Oregon Agriculture Research Center to hire a professor of practice, who would research the development of alternative crops and improving irrigation efficiencies.

Recommended Actions:

- 4.1 See Section 1, Strategy 3, Recommendation Action 3.3.
 - 4.2 Partner with Oregon Department of Agriculture's Market Access Group and other experts (e.g., market-analysis consultants).
 - 4.3 Develop demonstration farms (See Section 1, Strategy 1, Recommended Action 1.2).
 - 4.4 Develop and disseminate market-analysis, economic, and risk-management analysis information to groundwater irrigators
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Objective 5: To reduce groundwater use through a groundwater CREP with enrollment of up to 20,000 acres.

Strategy 5: Support a CREP program as a collaborative and encourage voluntary enrollment by water users.

Recommended Actions:

- 5.1 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.
 - 5.2 If the CREP proposal is funded and a program is implemented, the CBWP Collaborative helps conduct outreach to encourage irrigator enrollment.
 - 5.3 Design a mechanism(s) that helps ensure that water 'saved water' through reduced use remains in the aquifer.
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Objective 8: To prepare for and strategically manage groundwater resources during drought events in a way that helps to meet the short-term needs of the Harney basin's people, ecosystems, and economy, while helping to keep the basin on track with long-term groundwater-level goals

Strategy 8: Develop a plan to help mitigate and respond to the impacts of drought on the basin's groundwater (meteorological, hydrological, precipitation and seasonal weather)

Recommended Actions:

- 8.1 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.
 - 8.2 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).
 - 8.3 Collect measurements that can be used to ground-truth remotely sensed and airborne data, and develop higher resolution Groundwater Drought Indicator Maps for the Harney Basin through the National Integrated Drought Information System (NIDIS)
 - 8.4 Explore the accuracy and utility of Arizona's long-term drought mapping methods, and consider supporting similar methodology for Oregon to help provide drought projections for the Harney Basin
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Objective 9: To help understand how and when supplemental groundwater use influences the basin's groundwater levels, and how reliant the basin is on supplemental groundwater rights. This understanding would help inform the development of a drought-impacts mitigation and response plan, as well as the development of voluntary agreements.

Strategy 9: Understand permitted and actual use of supplemental groundwater rights in the basin to better manage water resources during drought events

Recommended Actions:

- 9.1 Determine maximum authorized use of supplemental groundwater rights in the basin

9.2 Determine if maximum authorized supplemental groundwater use is significant in the basin and, if so, engage stakeholders to learn what triggers the use of supplemental groundwater rights (e.g., well issues, drought conditions)

9.3 Determine actual use of supplemental groundwater rights in the basin as well as how that use changes over time and what factors influence supplemental groundwater use.

Objective 10: To convey to OWRD the urgency of responsible water management, including permit compliance; To start reducing the amount of groundwater being pumped for irrigation; To implement short term actions that could start reducing the amount of GW being pumped.

Strategy 10: Recommend to OWRD that it take actions in the short term to reduce the amount of GW being pumped for irrigation, including permit compliance

Recommended Actions:

- 10.1 Ask OWRD to enforce existing permit conditions
- 10.2 Ask OWRD to add metering & reporting requirement as rule
- 10.3 Ask OWRD to evaluate where groundwater decline conditions exist and can be implemented.
- 10.4 Ask OWRD if there are short-horizon actions that can be taken to reduce water use
- 10.5 Ask OWRD if there are short-horizon actions that can be taken as a priority to water use in areas of serious groundwater decline

SECTION 2: ADDRESSING DOMESTIC WELL ISSUES ()

Objective 1: Continue to secure funding for DWUs and ensure effective implementation of the funded programs

Strategy 1: Develop a fund to assist impacted domestic well owners, starting with the 2021 session of the Oregon legislature

Recommended Actions:

- 1.1 Utilize background information to request funding (for specific actions) from legislature for domestic well users experiencing decline in water quantity/quality to remedy well issues without going through a Burden of Proof.

Objective 2: Present community with alternative water delivery mechanisms (i.e. community wells, cisterns, etc...) and offer support to affected rural areas; In developing alternative water delivery mechanisms, provide protection for exempt livestock use.

Strategy 2: Identify feasible alternative water delivery mechanisms to meet exempt water supply needs of rural residents

Recommended Actions:

- 2.1 Using the Anderson Perry report and the GIS capacity of the Harney County Planning Department, the county will identify areas of groundwater decline where there is an economically feasible cluster of homes that would benefit from alternative water delivery mechanisms
 - 2.2 Harney County Court will determine community support/interest in alternative water delivery mechanisms
 - 2.3 Develop a strategy and pursue funding with community support for alternative water delivery mechanisms where feasible
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SECTION 3: CONSERVING GROUNDWATER DEPENDENT ECOSYSTEMS (2)

Objective 1: Protect and conserve groundwater dependent ecosystems to preserve their ecosystem services

Strategy 1: Implement actions to protect and conserve groundwater dependent ecosystems

Recommended Actions:

- 1.1 Identify and prioritize incentives (like CREP) to reduce groundwater use in areas where it would otherwise impact GDEs
 - 1.2 When data are available, identify areas that could impact GDEs from groundwater withdrawals
 - 1.3 Encourage management of springs on public lands (BLM, USFWS, USFS) for ecological benefit including consideration for managing cold water refugia.
 - 1.4 Identify management tools that could help reduce groundwater use where it would otherwise impact GDEs.
 - 1.5 Pursue more aggressive reductions in groundwater withdrawal in areas that affect GDEs
 - 1.6 Assess what legal protections exist for springs
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Objective 2: To establish an understanding of baseline conditions for GDEs and monitor their response to water management.

Strategy 2: Implement a monitoring program for groundwater dependent ecosystems (GDEs) and priority plants and animals that depend on them

Recommended Actions:

- 2.1 Recommend that OWRD implement groundwater monitoring for the basin, and other state agencies as needed, include specifically monitoring GDEs (water table, spring flow, etc.)
- 2.2 Request that state agencies (OWRD, ODFW, etc.) and other organizations develop a comprehensive GDE monitoring program that includes priority species of flora and fauna

- 2.3 Utilize GDE monitoring data to inform the adaptive management and implementation of water management strategies.

Utilize monitoring data to inform adaptive management plans

SECTION 4: MEASURING & REPORTING GROUNDWATER USE (3)

Objective 1: To ensure development does not further deplete available supplies

Strategy 1: Integrate water availability into land use planning

Recommended Actions:

- 1.2 Build an understanding of City and County authorities, tools, and limitations pertaining to land use and water planning (can lay out a vision for the community that State cannot--Refer to OAR 690 10)
- 1.3 County planning department take up the issue of considering water under goals 3 and 5 given the info that has been developed by both the GW study and PBP effort

Objective 2: To improve our understanding and management of water use in the Harney Basin

Strategy 2: Support development and use of OpenET as a tool to monitor consumptive water use and support on-farm irrigation water management

Recommended Actions:

- 1.1 Continue participation of the Harney Basin as a pilot project of OpenET3333333333

SECTION 5: IMPROVING ACCOUNTABILITY, COMPLIANCE AND PUBLIC PARTICIPATION (8)

Objective 1: Work with OWRD to prioritize compliance to ensure all water is being used legally within accordance of permit and certificates and has accountability to OWRD and the public; Ask OWRD to demonstrate all water use is accounted for so we can implement other parts of the water plan

Strategy 1: Work with OWRD to enact improvements in its enforcements of water rights and well construction standards in a publicly transparent manner

Recommended Actions:

- 1.1 Ensure all permits conditions and water use limits are met
- 1.2 Ensure all water right data, including water use data as required, is up to date and publicly available
- 1.3 Ask Harney County to ask OWRD to enforce certificate conditions

- 1.4 Include a recommendation for enforcement in the integrated plan
 - 1.5 Enforce well construction standards
 - 1.6 Support OWRD in ensuring that all illegal water use ceases
 - 1.6.1 Request that OWRD systematically assess where non-use of groundwater rights is occurring and pursue timely cancellation of unused groundwater rights when five years of consecutive non-use has occurred
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Objective 2: Influence the decision of Oregon Water Resources Commission in helping to reduce groundwater use in the Harney Basin

Strategy 2: Propose community supported actions for OWRD to implement (through upcoming rulemaking or otherwise) to manage groundwater sustainably and to meet statutory requirements

Recommended Actions:

- 2.1.1 Utilize science-based, site-specific conditions, and cumulative effects when determining the reduction of water use by regulating well depth and capacity
- 2.1.2 Once a reasonably stable aquifer is defined, utilize science-based, site-specific conditions, and cumulative effects to reduce water use in areas of significant decline identified by OWRD
- 2.1.3 Once a reasonably stable aquifer is defined, utilize science-based, site-specific conditions, and cumulative effects to reduce water use basin-wide
- 2.1.4 OWRD should continue to utilize science-based, site-specific conditions, and cumulative effects when considering transfers and the development of new wells.

Objective 3: Identify number of unused wells; Develop cost share program to address unused wells

Strategy 3: Develop a well clean up and safe harbor program

Recommended Actions:

- 3.1 Identify funding sources to conduct an inventory of unused wells
 - 3.2 Develop a community outreach program to notify people of the need to address unused wells
 - 3.3 Ask OWRD to provide guidance on developing cost share programs (i.e. Mosier)
 - 3.4 Explore alternative funding sources for cost share program (SWCD, HDP,...) both in the short and long term
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Objective 4: Water is a public resource, managed by the State; The public must have a robust opportunity to weigh in on the Department's processes

Strategy 4: Strongly encourage that OWRD rebalances processes to give equal weight to the voice and comments of the general public regarding OWRD actions on groundwater permit matters

Recommended Actions:

- 4.1 Ensure public notice and opportunity for public engagement where the department reverses a decision
 - 4.2 (THIS IS NOT THE FULL SUITE. WHAT ELSE?)
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Objective 5: To increase accountability and ensure that all water use occurs in compliance with a valid water right; To prevent the reactivation of water rights where five years of consecutive non-use has occurred

Strategy 5: Request that OWRD initiate cancellation of all expired permits and water rights that haven't been used in 5 years in the Harney Basin

Recommended Actions:

- 5.1 Request that OWRD collect information on groundwater use, initiate continuous cancellation process for expired permits and water rights that haven't been used in 5 years, and share information with the public
 - 5.2 CBWP Collaborative request that OWRD systematically assess where non-use of groundwater rights is occurring and pursue timely cancellation of unused groundwater rights when five years of consecutive non-use has occurred
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Objective 6: Ensure deliberations and recommendations from the CBWP Collaborative, as well as stakeholder interests, are heard during rule-making process

Strategy 6: Strongly encourage that OWRD ensure fair representation in RAC

Recommended Actions:

- 6.1.1 Ensure balanced representation on the RAC
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Objective 6: Ensure that water permitting decisions by OWRD properly account for the over appropriation of the basin and do not make matters worse

Strategy 6: Strongly encourage that OWRD increase scrutiny of all applications (new permits, extensions, transfers) and create a process requiring review of well-deepening, all with improved public input

Recommended Actions:

- 6.1.1 Request OWRD increase scrutiny of all applications

6.1.2 Request OWRD create a process requiring review of well deepening

6.1.3 Request OWRD improve public input on processes related to new applications

Objective 75: To pay for conservation and management of groundwater / restitution for injured domestic wells

Strategy 75: Explore idea of assessing fees for groundwater use

Recommended Actions:

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Objective 8: To have a legal path that allows irrigation water rights to be transferred or converted to municipalities, community wells that serve exempt water uses, and/or other future potable or commercial uses.

Strategy 8: Work with the OWRD during the RAC to ensure the opportunities outlined in Objective B can be established in the basin rules.

Recommended Actions:

8.1 CBWP Collaborative be proactive in anticipating additional commercial or potable uses of water.

SECTION 6: COLLECTING/SHARING INFORMATION (6)

Objective 1: Use the GW study for GW management considerations

Strategy 1: Fully utilize information from the Groundwater Study, including both the conceptual and numerical models.

Recommended Actions:

- 1.1 Clearly identify what is known about aquifer structure as well as what is unknown about the structure, boundaries, and groundwater movements
 - 1.2 Identify the age of groundwater for consideration in regulation
 - 1.3 Use the GW study for GW management decisions in the future
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Objective 2: Building upon the , identify information gaps that affect management

Strategy 2: Identify ongoing needs for further research and information, including evaluating above and below ground conditions periodically

Recommended Actions:

- 2.1 Use existing information and models to identify additional information necessary for effective management
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Objective 3: Use the GW study, community-based information, and other verified information as a basis for the best information available on GW conditions

Strategy 3: Build community understanding of water resource conditions in the Harney Basin

Recommended Actions:

- 3.1 Acknowledge the value of data gathering efforts and the ongoing use of such data to management of water resources into the future. Use the products to engage the community's understanding of groundwater quantity and quality in the basin
 - 3.2 Improve water resource data collection, interpretation, and information sharing in the Harney Basin
 - 3.3 Encourage community support for the development and calibration of a groundwater model for the Harney Basin that is usable for testing alternative water management options
 - 3.4 Encourage the continuation of evaluation of groundwater dependent ecosystems and culturally significant species
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Objective 4: Ensure Harney County residents have access to information on the GW conditions in the basin as well as the current and past efforts of the CBWP Collaborative

Strategy 4: Develop community communications and information program to inform the public about conditions and planning effort

Recommended Actions:

- 4.1 Develop communication plan
 - 4.2 Build a coordinated communications story of the many components of this collaborative effort
 - 4.3 Develop short summary products for the community when major Collaborative milestones are passed
 - 4.4 Collaborative members coordinate communications amongst themselves and partners to develop short outreach products for implementation of other strategies (audience: other water users) (i.e. develop short brochure outlining strategy and digestible summary of implementation)
 - 4.5 Explore funding partnerships for outreach/communications endeavors
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Objective 5: To determine the comprehensive economic value of water in the Harney Basin

Strategy 5: Obtain/request state funding for economic feasibility studies/analyses

Recommended Actions:

5.1 Secure funding to conduct economic analyses

Objective 6: To explore the potential of a voluntary groundwater market to reduce groundwater use in the Harney Basin, with declining allocation of shares overtime.

Strategy 6: Explore and consider a voluntary groundwater market approach; Review feasibility study (Upon review, the collaborative should make a recommendation to implement or not)

Recommended Actions:

- 6.1 CBWP partners, such as The Nature Conservancy, secure funding for a scoping assessment to determine potential implementation pathways of a voluntary groundwater market approach in the Harney Basin.
- 6.2 The CBWP Collaborative reviews the results of the assessment and evaluates different approaches
- 6.3 The CBWP Collaborative determines whether it supports the establishment of a groundwater market in the Harney Basin as well as immediate next steps to support implementation

TOTAL STRATEGIES=

Recategorize some strategies into a new bin that has something to do with *Engaging in the Planning Process??*

- ***All strategies that have to do with OWRD and RAC***