Harney Groundwater RAC: Discussion Group Materials

Meeting Summary October 21. 2024

Meeting Recording: https://media.pdx.edu/media/t/1_grm63uta

Attendees

Breanna O'Connor, Bobby Cochran (Oregon Consensus), Christopher Hall, Curt Blackburn, Dally Swindlehurst (OWRD), Jason Spreit (OWRD), Harmony Burright (High Desert Partnership), Jerry Grondin, Karen Moon (Harney County Watershed Council), Kelly Meinz (OWRD), Ken Bierly, Kristen Shelman (Harney County Court), Patty Darroh, Sheena Miltenberger, Tim Seymour (OWRD), Holly Stanitsas

Meeting Notes

The group spent time going through the Indicators of Success discussion guide, and added additional information and questions to the table. See edits made to the discussion guide highlighted in green below.

Revised Discussion Guide (changes in green highlights)

The table below includes potential indicators of success that have been identified in various meetings of the Division 512 rulemaking advisory committee (RAC) or discussion groups (Sept 16 and Sept 17), along with potential metrics and data sources for that indicator, how the data might be used, and questions and considerations for the data collection and use. The intent of this table is to help generate some questions and considerations the discussion groups can work through more on October 28, 2024. This is for discussion purposes only and the discussion group will seek to initially focus on indicators and data that have the *potential* to be considered within the scope of the rulemaking process (marked with an asterisk). The scope of the discussion groups include the rulemaking and more broadly supporting groundwater management. Other ideas likely outside of the scope of the rulemaking process, will be captured for complementary efforts in the basin. Across all of these indicators and metrics think about A) success now and for current generations, and B) in the future where the next generations have opportunities.

Potential Indicator of Success	Metric/Source(s) of Data	Potential Use Cases	Questions and Considerations for Data Collection and Use
Hydrology			
*Rate of decline decreases and eventually stabilizes (rate of decline = 0) and/or recovers over a specified period of time (TBD) by geography	Groundwater level measurements and trends (rate of change)	Groundwater level trends indicate whether the basin is "on track" and whether there is a need to adjust groundwater use (amount, location, timing) in different geographies May be used to curtail wells that exceed a certain magnitude of decline (permit decline conditions)	Who collects data for this? Responsible entities for meeting the indicator? How do we look at the time dimensions of response? What data should be used for summary statistics (all data, just OWRD collected data, specific "sentinel wells," etc)? What summary statistics should be used (mean, median, etc)? Oct 2 RAC meeting pointed toward a "median + working with outliers" approach? What is OWRD's authority/ability/capacity to monitor for groundwater levels? What are the considerations for selecting monitoring wells? What is the existing OWRD monitoring network in each geography? What wells are currently proposed to be used and why? How can we make sure that the network is robust and "representative" of the subarea? Is there an opportunity for the groundwater users/community to contribute groundwater level measurements? Under what circumstances? How do we consider static groundwater level measurements versus observing some new dynamic equilibrium over time? How do we account for "outliers" or "extremes"? Will wells be dropped from the monitoring network? Under what conditions? How might that affect ongoing analysis? How can we adapt the monitoring network over time to effectively manage the system based on what we're learning? Who will check to make sure that measurements are correct? Who will collect and analyze the data? What are the quality

			assurance/quality control measures? What will be considered acceptable and who will determine acceptability? How do we distinguish between different locations and depths of the aquifer? How will this be captured and discussed for different geographies? How do impacts differ by depth? What is happening "at depth" can vary for different parts of the basin.
*Magnitude of decline does not exceed some groundwater elevation or level in a particular well or geography	Groundwater level measurements and trends (overall change)	Groundwater level trends indicate whether the basin is "on track" and whether there is a need to adjust groundwater use (amount, location, timing) in different geographies May be used to curtail wells that exceed a certain magnitude of decline (permit decline conditions)	See questions and considerations above What is the "starting point" for measuring the magnitude of decline? How can the starting point be determined across a broad geography? Start in 2018? Start when regulation starts? Start sometime in the past? Could we have the same conditions for every permit? Individual permits can't be modified. Uniformity across a set of wells would only be possible through a CGWA corrective control provision/requirement set forth in rule. Should we consider magnitude of decline in individual wells or for a broader area or both? What summary statistics should be used? How is this determined and enforced in permit decline conditions? Magnitude of change is based on period of record. Could be limited by limited period of record. Existing measurements may not represent full magnitude of change. Will all data from permit conditions (March static water level measurements) be included or considered? Need to take into consideration challenges associated with this dataset. Who will collect and analyze the data? What are the quality assurance/quality control measures?
Prevalence and affect of "comingling" wells on groundwater quantity/movement of	Specific indicators?		Geophysical tool lowered into the well to assess vertical movement of water Depends on well construction (what layers is the well open to? collapsed well? Other considerations)

groundwater is understood and addressed			How to assess this for individual wells versus larger areas? Are there specific wells or areas where this is of concern?
Water use and users			
*Groundwater pumping stays within authorized/"sustainable" limits (direct measurement)	Pumping data (flow meters)	Estimated groundwater use coupled with groundwater level data can be used to determine potential adjustments to groundwater use Regulation in individual wells if groundwater use exceeds permitted amount Groundtruth other tools such as OpenET	Established under a SWMPA - only allows required measurement and annual reporting More frequent measurement and reporting would need to occur under a CGWA Location of the meter - at the well or at the field - if you're metering out in the field, that doesn't tell you which well is providing the water and at what depth - need to have the meter at the well in order to understand what water is coming from different depths - tied to the well in Walla Walla - most effective way to know how much water is coming out of individual wells Should every water user in the basin measure and report groundwater use (including domestic and stockwater users) or should it only be irrigation users? Should all geographies have the same requirement to measure and report groundwater use or should certain areas be prioritized? At what timestep will groundwater use be measured? At what timestep will it be reported? To whom? How will those reported data be used? What are the lessons learned/best practices from Walla Walla? What happens if a groundwater user can't maintain a functional flow meter / a well is abandoned? Is there any flexibility? Who will collect and analyze the data? What are the quality assurance/quality control measures? Important to distinguish between pumping/water use at a single well vs measuring water use across the basin - consider outcomes and scale

			Consider potential for technological advancements? There needs to be more conversations about the implementation of this. Water use information is important, but a measuring device on each well might not be the best way to get at the information. Need to explore alternatives and further discuss how to get water use information and how that information will be used. Consider staged implementation in which measurement devices are used for water rights with a permit condition and ET monitoring is used for other water rights without a permit condition. Old systems weren't designed for flow meters and installation and operation can be difficult or costly to implement. Consider the necessity of every system having a flowmeter. We need to consider groundwater use measurement in the context of other monitoring we can and should be doing to help with managing groundwater overall. Water use is only part of the equation. How will we be measuring groundwater use/discharge from natural vegetation - uplands and lowlands? There is support for the objective, but what will the consequences be if we can't get flow meters to work? What will happen with this information? Will it be good for us? Bad for us? How can this information help us? How can it hurt us? What are the appropriate specifications for measurement devices?
*Groundwater pumping and use stays within authorized/"sustainable" limits (indirect)	Evapotranspiration data (OpenET), pump electricity records	Estimated groundwater use coupled with groundwater level data can be used to determine potential adjustments to groundwater use	Can proxies be used to estimate water use? What are the benefits and drawbacks of using proxies? Would proxies be used in addition to or in lieu of direct measurement in some geographies?

			Important to distinguish between pumping/water use at a single well vs measuring water use across the basin - consider outcomes and scale Compare OpenET data with water meter information to continually assess the effectiveness of OpenET to estimate groundwater use Place-based Plan: 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
Near-term and long-term impacts to exempt (domestic and stockwater) wells are understood and minimized	Dry well complaints? Applications to WARRF and Harney County Well Fund? Treatment systems installed? OSU Survey	Affected domestic and stockwater wells may inform the geographic distribution and magnitude of impacts and inform adjustments to groundwater use (amount, location, timing) or potential measures to mitigate impacts	Very little information about stockwater wells Valuable to look at data sources for both of these (domestic and stockwater) Office of Resilience & Office Management can be a resource for domestic well needs.
The footprint of groundwater irrigated agriculture is “sustainably” maximized in each geography	Evapotranspiration data (OpenET?)		Ties back to tax rate that those properties fall under - tax revenue is impacted if they aren’t being irrigated

There is no unauthorized or illegal water use in the basin	Evapotranspiration data (OpenET?) Flowmeters?	Unpermitted irrigation is identified and regulated on an annual basis Groundwater use in excess of authorized amounts is identified and regulated on an ongoing basis	
Environment & recreation			
Near-term and long-term impacts to natural discharge to springs and streams are minimized	Measurements of natural discharge of springs?	Track changes in spring discharge and contribution of groundwater to stream flows to better understand the relationships between groundwater use and spring discharge and to inform potential adjustments to groundwater use (amount, location, timing) over time	What is the geographic distribution of springs? What is the lag time between management actions and spring discharge for various parts of the basin? What are the hydrologic thresholds for springs? How could you continuously measure spring flows? What legal protections exist for springs in the basin? Are there rights related with these springs? What springs are a priority to monitor and why? Also monitor for priority species (flora and fauna) with springs
Near-term and long-term impacts to natural discharge to streams are minimized	Measures of natural discharge to surface water flows?		How would measure changing contributions of groundwater to stream flows and lakes? Groundwater discharge to Stinking Water Lake (Silver Creek) and Malheur Lake (Donner Und Blitzen) are of specific interest
Overall ecological health	Specific metrics and data?		To what extent is this related to groundwater management/use? More affected by surface water management. May not be a priority for this effort?

Thriving bird and wildlife habitat and populations	Specific metrics and data?		Is habitat a close enough proxy for populations? Or are other measures important? To what extent is this related to groundwater management/use? More affected by surface water management. May not be a priority for this effort?
Vibrant opportunities to hunt and fish	Specific metrics and data?		To what extent is this related to groundwater management/use? More affected by surface water management. May not be a priority for this effort?
Thriving recreation economy	Specific metrics and data?		To what extent is this related to groundwater management/use? More affected by surface water management. May not be a priority for this effort?
Groundwater quality and conditions			
Groundwater quality does not deteriorate due to groundwater level declines	Specific metrics and data?		
Thermal properties of groundwater are not affected by groundwater declines	Specific metrics and data?		
Abandoned and poorly constructed wells are identified and addressed to reduce impacts to groundwater quality (including potential for comingling)	Specific metrics and data?		

Community and Economy			
Near-term and long-term impacts to the local economy are minimized	County revenue? Hay production (acres, volume, value)? Farm net income? Agriculture support revenue?		
Community cohesion and wellbeing are maintained	Change in assessed value of land? Public service levels? Public sector job numbers? Utility prices? Level of active community participation and cohesion? Mental health?		
System Dynamics Affecting Success			
Impacts of management actions between different geographies (how do actions in one area have	Specific metrics and data?		

the potential to affect another area) are understood and accounted for			
Lag time of management actions on outcomes (when we "observe" impacts) are understood and accounted for	Specific metrics and data?		Document assumptions for how we expect actions to materialize in different parts of the basin. In the future would it be possible to update the model with new data?
Upland management and impacts to water budget (recharge and discharge) are understood and accounted for	Changes in surface water discharge? Changes to upland Evapotranspiration ?		How will the forest fires and other upland management activities affect surface water supplies and groundwater recharge? How does upland management (e.g., forest thinning, juniper removal) affect groundwater recharge at different scales?
Changes in climate and impacts on water budget (recharge and discharge) are understood and accounted for	Weather station?, Agrimet stations?, Changes in surface water discharge?		
Larger economic drivers of change are identified and considered	Changes in hay prices? Changes in fuel costs? Changes in hay production costs? Availability of alternate crops?		

List of Potential Indicators of Success - what is missing? what would you add?

	Rulemaking Scope	Voluntary Agreements	Priority
Hydrology			
*Rate of decline decreases and eventually stabilizes (rate of decline = 0) and/or recovers over a specified period of time (TBD) by geography	**Likely**		
*Magnitude of decline does not exceed some groundwater elevation or level in a particular well or geography	**Likely**		
Prevalence and effect of "comingling" wells on groundwater quantity/movement of groundwater is understood and addressed			
Groundwater Use/Users			
*Groundwater pumping stays within authorized/"sustainable" limits (direct measurement)	**Likely**		
*Groundwater pumping and use stays within authorized/"sustainable" limits (indirect measurements)	**Potentially**		
Near-term and long-term impacts to exempt (domestic and stockwater) wells are understood and minimized			

The footprint of groundwater irrigated agriculture is “sustainably” maximized in each geography	**Potentially**		
There is no unauthorized or illegal water use in the basin	**Potentially**		
Environment and Recreation			
Near-term and long-term impacts to natural discharge to springs are minimized			
Near-term and long-term impacts to natural discharge to streams are minimized			
Overall ecological health is maintained			
Thriving bird and wildlife habitat and populations			
Vibrant opportunities to hunt and fish			
Thriving recreation economy			
Groundwater Conditions/Quality			
Groundwater quality does not deteriorate due to groundwater level declines			
Thermal properties of groundwater are not affected by groundwater declines			
Abandoned and poorly constructed wells are identified and addressed to reduce impacts to groundwater quality (including potential for comingling)			
Community and Economy			
Near-term and long-term impacts to the local economy are minimized			
Community cohesion and wellbeing are maintained			
System Dynamics Affecting Success			
Impacts of management actions between different geographies (how do actions in one area have the potential to affect another area) are understood and accounted for			
Lag time of management actions on outcomes (when we “observe” impacts) are understood and accounted for			
Upland management and impacts to water budget (recharge and discharge) are understood and accounted for			
Changes in climate and impacts on water budget (recharge and discharge) are understood and accounted for			
Larger economic drivers of change are identified and considered			