Harney Groundwater Rules Advisory Committee: Discussion Groups

Meeting #2 Hybrid in person & Zoom

Monday, September 16, 2024 from 10-5:00 PM (PT)

DRAFT Meeting Summary

Meeting Zoom Recording Link: https://media.pdx.edu/media/t/1_lt8sbqfx

Meeting Materials Link:
https://drive.google.com/drive/folders/1f9AnBce7ytjeZIQNUE5oKbF1H96O7t1A?usp=drive_link

I. Attendees:

Alexandria Scott (OWRD), Andrew Beers (Burns Paiute Tribe), Andy Root, Barbara Cannaday (Burns Times Herald), Barbra Howard, Ben Scandella (OWRD), Bobby Cochran (Oregon Consensus), Breanna O'Connor (Harney SWCD), Brenda Smith (High Desert Partnership), Cade Tiller (OWRD), Chad Karges (High Desert Partnership), Christopher Hall (Oregon Water League), Craig, Curt Blackburn, Dally Swindlehurst (OWRD), Debbie Guevea, Fred Flippence (Harney Electric), Harmony Burright (High Desert Partnership), Holly Mondo (GSI Water Solutions), Jake Blackburn, Jason Spriet (OWRD), Jerry Grondin, Jess Wenick (USFWS), Josie Wilson (HDP), Julie Weikel, Karen Moon (HC Watershed Council), Kelly Meinz (OWRD), Ken Bierly, Kristen Shelman (Harney County Court), Lisa Brown (Water Watch), Lorissa Singhose, Louie Molt, Luke Bailey, Melissa Petschauer (High Desert Partnership), Mitra K (OWRD), Nick Schott, Sam Redding, Steve Rickman (Burns Electric), Tim Seymour (OWRD), Tracy Kennedy (Burns Paiute Tribe), Travis Singhose

II. Action items

- ☐ Distribute meeting summary, slides, and meeting recording (Oregon Consensus)

III. Summary

3.1. Introductions

Bobby Cochran from Oregon Consensus opened the meeting and asked participants to introduce themselves. Harmony Burright, Brenda Smith, and Chad Karges representing High Desert Partnership introduced themselves as part of the Oregon Consensus-led facilitation team for the Discussion groups. The discussion group participants then introduced themselves.

3.2. Discuss Criteria for Delineating Sub-Areas

The group was asked to brainstorm 3-5 criteria that they would use to delineate sub-areas and then discuss these criteria with others to identify criteria in common. The group shared the criteria that they had in common as well as other criteria that came up in conversation. All criteria were captured without prioritization, though similar groupings were noted.

Table 1. Brainstormed Criteria

Theme	Criteria
Groundwater flow	USGS model - what areas continue to decline or recover? Groundwater flow paths Hydrologic connection between wells Hydrologic connectivity across the basin Groundwater level contour maps Areas with similar hydrogeology
Geology/subsurface materials	Subsurface geology Geologic formations and characteristics Aquifer sub-surface materials
Recharge	Speed of recharge - recharge response (how quickly will the area respond to recharge) Areas of recharge and source of recharge (where surface water areas recharge groundwater)
Groundwater levels/groundwater level trends	The current static groundwater levels Rates of decline in different areas Magnitude of declines in different areas Shallow and deep groundwater in different areas Well level declines since 1990 Consider anomalies (where groundwater levels in nearby wells don't "track" with other nearby wells)
Topography and geography	Surface water flows Surface water drainage areas Geography and surface topography
Pattern of water uses	Depth of wells (how deep or shallow) Impacts from pumpage Usage in common Historic development
How groundwater management might reflect current conditions or future arrangements	Land ownership and geographic location of wells Ownership complexity Location and impact on exempt uses (domestic and stockwater) Community relationships and interconnectivity Effectiveness of voluntary agreements How community delineates sub-areas (thinking about community

	relationships, neighbors, etc.) Location of GDEs Economic impacts Management considerations

3.3. Discuss Options for Delineating Sub-Areas

The group split up into smaller groups to discuss options for delineating sub-areas using the criteria they identified and discussed. Some small groups had people who recommended sticking with the boundaries of the 15 sub-areas delineated by OWRD, and some people suggested sub-areas were not needed and recommended focusing on implementing regulation by priority at the basin scale. Several participants felt that it was important and easy to distinguish between the North and South part of the basin and also felt that it was important, though tricky, to distinguish between the West and East parts of the basin. Most of the discussion group participants defined some version of lumping the 15 sub-areas into larger regions.

Some of the remaining questions that emerged after the discussion include:

- Should the North Harney, Rock Creek, Crane, Windy Point, Malheur Lake, and Poison/Rattlesnake Creek areas be treated as one region or split up? There was recognition that these areas had both variability and similarities that could swing a decision on delineation either way;
- Several participants looked to split the Poison/Rattlesnake sub-area delineated by OWRD into parts more connected to Silvies and parts more connected to the Crane region based on surface water recharge and localized groundwater recharge. How should the Poison/Rattlesnake Creek area be delineated and/or associated with other sub-areas? If the east side of the Poison/Rattlesnake Creek basin is differentiated from or associated with the Silvies area, which does contribute some recharge, how would that affect proposed reductions?
- A number of participants really wanted to focus attention on the most severe areas of decline or “hot spots”, and were concerned a sub-area approach might not address hot spots in a timely manner. What would a “hotspot” focused scenario look like?
- Some participants felt that the entire Blitzen region didn’t need consideration, and others felt it was an important recharge area that showed declines approaching a problem. Should Upper Blitzen and Lower Blitzen-Voltage be treated as one region or two?
- There are regions that are important for recharge (Silvies River and Donner Und Blitzen). How should these be delineated and managed so that recharge was protected and better understood? If sub-areas are delineated, can the model help us understand how much water is moving into and out of different areas?
- There are parts of Dog Mountain (e.g., on the slopes) that seem more connected to Weaver Springs, and other parts that seem different. Should Dog Mountain be split? Should it be combined with Weaver Springs? Should it be combined with Silvies or Silver?
- In some areas, participants didn’t feel that groundwater levels were dropping in a uniform manner, which would make grouping wells difficult. In some areas groundwater levels

have increased. Where are more observation wells needed to understand groundwater level trends in an area over time?

- While there was interest from some participants in a “hot spot” approach (an approach that focused on managing in areas immediately surrounding the most significant areas of decline), some cautioned that these boundaries are drawn around senior water rights holders and regulating these users before junior users would contradict the prevailing approach to manage by priority date. Some participants indicated that had OWRD been more protective of existing and senior users while considering groundwater allocation decisions, they would not now be the potential target for regulation. Prior appropriation provides some degree of certainty in an otherwise uncertain situation and financial decisions have been made based on the belief that prior appropriation would continue to be the guiding management framework. How should priority be taken into account when delineating sub-areas?
- Some participants felt that the sub-areas should include the uplands and not just the lowlands to foster a more basin-wide understanding and approach to water management given that the uplands provide much of the recharge to the lowlands and development in those areas may affect recharge potential. Should uplands be included or excluded from sub-areas?

Table 2. Sub-Area Options

Options	Considerations
Option A1: 5 sub-areas (don’t split Poison/Rattlesnake Creek) *From NW to NE to S* 1. Silver [Upper Silver Creek, Harney Lake]; 2. Weaver/Dog Mountain [Weaver Springs, Dog Mountain]; 3. Silvies [Silvies, Poison/Rattlesnake Creek?]; 4. Northeast/Crane [Poison/Rattlesnake Creek?, North Harney, Rock Creek, Crane-Buchanan, Crane, Lawen, Malheur Lake, Windy Point]; 5. Blitzen [Lower Blitzen-Voltage, Upper Blitzen]	Under this option the existing sub-area boundaries could be grouped together. There was an outstanding question as well as a stated preference by some participants to include upland areas in sub-area delineations. There was also an outstanding question as well as a stated preference by some participants to distinguish between shallow and deep groundwater where appropriate.
Option A2: 5 sub-areas (split Poison/Rattlesnake Creek) *From NW to NE to S* 1. Silver [Upper Silver Creek, Harney Lake]; 2. Weaver/Dog Mountain [Weaver Springs, Dog Mountain]; 3. Silvies [Silvies, Part of Poison/Rattlesnake	There was support from multiple participants across small group discussions to split the Poison/Rattlesnake Creek area between the Silvies and Northeast/Crane areas. Determining this boundary would require additional conversation. There was an outstanding question as well as

Creek]; 4. Northeast/Crane [Part of Poison/Rattlesnake Creek, North Harney, Rock Creek, Crane-Buchanan, Crane, Lawen, Malheur Lake, Windy Point]; 5. Blitzen [Lower Blitzen-Voltage, Upper Blitzen]	stated preferences regarding the inclusion of upland areas in these sub-area delineations. There was also an outstanding question as well as a stated preference by some participants to distinguish between shallow and deep groundwater where appropriate.
Option B: 7-8 sub-areas (distinguish between Blitzen upper and lower sub-area and Dog Mountain and Weaver Springs) *From NW to NE to S* 1. Silver [Upper Silver Creek, Harney Lake]; 2. Dog Mountain (included in Silvies?); 3. Weaver Springs (add 3 pivots from Dog Mountain Area); 4. Silvies [Silvies, Part of Poison/Rattlesnake Creek]; 5. North/East/Crane [Part of Poison/Rattlesnake Creek, North Harney, Rock Creek, Crane-Buchanan, Crane, Lawen, Malheur Lake, Windy Point]; 6. Lower Blitzen-Voltage; 7. Upper Blitzen	There are outstanding questions about whether Upper Silver Creek and Harney Lake should be combined into one sub-area (with a preference from some stated for combining them), whether Upper Blitzen and Lower Blitzen-Voltage should be combined into one sub-area (with a preference from some stated for splitting them), and whether Weaver Springs and Dog Mountain should be separated as well as whether Dog Mountain should be standalone or combined with Silvies or Silver. For Silver, groundwater use is concentrated in the Upper Silver Creek, but likely affects spring discharge in the Harney Lake area. For Donner Und Blitzen, groundwater use is concentrated in the Lower Blitzen-Voltage area and there are fewer concerns about ongoing development in the Upper Blitzen. Preferences were stated by some to combine these areas, but questions remain.
Option C: 15 sub-areas Use OWRD's proposed 15 sub-areas.	These were based on OWRD's analysis and focus on the areas of greatest decline and make sense for some people. Smaller sub-area boundaries may limit the ability to implement voluntary agreements or look at broader trends across an area. Smaller sub-areas may isolate senior water users from recharge areas and may lead to disproportionately high reductions amongst senior users.
Option D: No sub-areas No sub-areas - use the whole basin as the boundary.	Several participants expressed interest in using regulation by priority at the basin scale as the proposed management approach and indicated a desire to see this scenario modeled.

3.4. Characterize the Groundwater Problems & Success by Different Regions of the Basin

Breakout groups, organized by region, discussed the current conditions or nature and extent of problems and potential definitions of success. Several participants expressed a desire for further discussion about how success will be measured–the minimum, maximum, or median rates of decline within a set of "representative" wells? Some participants also discussed some "prerequisites" or "conditions of success" that should be a part of any scenario to ensure fairness to existing water users that have been acting in good faith and following the law:

- Ensure no new permits / limit future development
- Cancel unused water rights (preference for an OWRD-led process rather than a complaint based process)
- Limit groundwater use to actual use (e.g., 2018 pumping levels) rather than the certificated duty
- Enforce decline conditions in permits (address any "loop holes" that prevent these from being addressed)
- Systematically address unused/abandoned wells

Some broad themes that emerged included A) groundwater declines vary across the basin with significant declines in some areas, little or no declines in others, and increases in some wells, B) the challenge to sustaining agriculture production, and C) limiting further impact or restoring flows to groundwater dependent ecosystems.

There was less discussion about "how" to measure trends toward success (this topic will be covered in future discussion groups). But one participant noted:

- Pay attention to the cost-benefits of monitoring individual wells, and think about approaches to determine success across larger areas.

Table 3. Problem and success definition by regions
Note: These contributions only reflect the participants of the discussion group and are not comprehensive and may not fully represent all interests in each region. Nothing documented here denotes agreement or consensus.

Geographic "Region"	Problems	Measures or Indicators of Success
Silvies River (4 participants)	No concerns Groundwater levels have come up in some places	Maintain current groundwater levels from today (2024) Increase groundwater monitoring efforts

Geographic "Region"	Problems	Measures or Indicators of Success
	The Tribe has pivots and has upgraded its groundwater well with little notice of a problem Some shallow domestic wells have gone dry There is no longer flow in the bottom of the East Fork Silvies in some parts of the year and effects of climate should be further examined New wells are going into recharge zones which might affect groundwater recharge and "downstream" groundwater users There are good flows in Poison Creek	for next 10+ years to ensure sustainable levels of use No new permits or development
Silver Creek (2 participants)	Slight declines, but not affecting reservoirs, stock wells, or irrigation wells What rate of decline will cut off spring discharge? What is the threshold? There may be more data on problems in the Silver than we realize	No new permits or development Maintain the current small rate of decline (some participants offered that no decline needs to be the definition of success across the basin) No impacts to springs Collect data so thresholds are not crossed that affect springs or surface flows Economy doesn't collapse
Weaver Springs & Dog Mountain (3	WEAVER	WEAVER

Geographic "Region"	Problems	Measures or Indicators of Success
participants)	Big rate and magnitude of declines About 3,500 acres currently irrigated (much less than permitted acres because of limited access to water resulting from steep declines) Limited domestic well interference Limited recharge Self-regulating as people stop pumping because there's no water <u>DOG MOUNTAIN</u> Has a different response than Weaver Springs, and the challenge is really with 3 pivots on Dog Mountain Limited recharge Should Dog Mountain be part of Silvies or Silver?	Cut rate of decline by 50% (to 3.5 ft/year) within 10 years Cut rate of decline by another 50% (1.75 ft/yr) within 20 years Determine the number of acres that can be sustainably irrigated No permits/certificates for abandoned wells or wells without water Focus EQIP, CREP, LESA payments in this area <u>DOG MOUNTAIN</u> Cut rate of decline by 50% (to 1.0 ft/year) within 10 years Cut rate of decline by another 50% (0.5 ft/yr) within 20 years No permits/certificates for abandoned wells or unused water rights Focus CREP payments in this area
Northeast / Crane Region (7 participants)	Groundwater is overallocated and groundwater levels are declining Groundwater declines are variable across the area There are too many stock wells that run all the time (overflowing, little to no	Cut rate of decline by 30% within 10 years, another 30% within 20 years, another 30% within 30 years Stabilization measured as an average over all wells in a subarea, not stabilization in every well.

Geographic “Region”	Problems	Measures or Indicators of Success
	management) Recharge is lower than in other areas - Recovery rates differ across this area Evapotranspiration from trees and upland vegetation (interest in monitoring this given significant number of acres recently burned) Economic impact of less production Wells are concentrated in some areas where there is known to be water - some areas are historically low yield - declines are concentrated around senior users with productive wells Within this area need to know everyone who is contributing to the problem and how much? Surface water reductions (less recharge due to drought and other alterations to surface water flow) Change in groundwater flow direction due to cones of depression Sustainability of farming in this area - will we still be able to farm in the future? What about future generations? This region is very variable with some	Stop declines in 15-20 years Iterative approaches based on latest monitoring to “right size” reductions over time By 2100 all participants of the discussion group desire stabilization with most preferring recovery Everyone is monitoring and measuring water use, including irrigators, exempt well users (domestic and stockwater) Future generations can keep farming Participation and accountability for all users Economic sustainability Identify the number of acres that can be sustainably farmed Long-term sustainability Are there impacts to springs here? What are the impacts to domestic wells here? Need to put these impacts into context, not always about declining groundwater levels.

Geographic "Region"	Problems	Measures or Indicators of Success
	similarities Increased housing development in this area that add additional stress - Significant increases in residential use in this area (localized effects of rural residential use) Water availability has been a known problem for 60 years in some areas (where electricity demand is, is a good proxy for trends in pumping) Unpredictable trends or anomalies in this area and differences noted between "shallower" and "deeper" parts of the system - perhaps some pockets of water in places? Water moves slowly here due to the underlying geology - may take longer to recharge Groundwater quality - increases in boron? arsenic? salt? due to declines?	Water security for rural residents
Donner Und Blitzen Rivers (virtual participants ~5 participants)	There are some wells that show an almost 40ft magnitude decline and a rate of 1.1ft/year rate of decline. The problems are not severe, but approaching a problem The Sodhouse spring at refuge HQ has gone dry, and there is concern about	0 rate of decline, not losing the 100-200AF (monthly) of natural discharge currently, and no further impact to groundwater dependent ecosystems by 2035 Return pumping rates to 2018 levels

Geographic "Region"	Problems	Measures or Indicators of Success
	springs and domestic wells on the south end of the Lower Blitzen There has been more recent development in the region with more development possible in the future There is less of a problem in the Upper Blitzen, but that's largely due to large public ownerships and geography not conducive to agriculture The areas is a source of recharge for the center of the Basin and source of surface flows for the refuge	The Blitzen has enough surface flows to support refuge operations There may be some wiggle room or uncertainty on the date Rules are not suppose to allow decline, and Blitzen and other areas are needed for recharge How significant is the Blitzen recharge to the rest of the sub areas? Don't allow for 10 years of detrimental impact to groundwater dependent ecosystems Monitoring springs and stream flows can be challenging. Can we do better? Spring thresholds are specific to each spring

3.5. Considerations for Potential Model Management Scenarios

The discussion group talked about what potential model scenario Inputs might be, and some ways to judge model Outputs as OWRD is iterating on model runs to see which scenarios achieve which outcomes, where, and when. Some participants emphasized that the model is not deterministic, meaning any decisions around groundwater management should recognize the role of the model as providing useful information, but not the answer to the groundwater management problems. That there are always uncertainties, and it is important to name these uncertainties, manage for them, and incorporate adaptive management into any decisions to adapt as those uncertainties also change.

Participants noted two important considerations that are important to keep in mind and requested clarity regarding whether and how these are accounted for in the model:

- The role of uplands management (forest management, forest fires, juniper encroachment) and the impacts that uplands management has on the overall groundwater budget, specifically surface water contributions as well as groundwater recharge;
- Future changes in climate (e.g., precipitation volume and timing, and changes in evapotranspiration) and the impacts that has on recharge over time and the overall groundwater budget; and,
- Future movement of water (e.g., the location and amount of water uses will change over time and the model cannot anticipate the ways they might change).

Some of the "guidelines" the group outlined for judging outputs included:

- The rate and magnitude of groundwater decline by geography
    - Some participants talked about achieving a phased reduction in the rate of decline
        - For example, 30% reduction in the rate of decline by year 10, 60% by year 20, 100% by year 30 in the North/East/Crane region
        - Or, 50% reduction in rate of decline by year 10 and 100% by 20 in the Weaver Springs/Dog Mtn region

- The impact on natural discharge to streams and springs
    - Some participants talked about the protection, or even recovery, of groundwater levels to protect and restore natural discharge in springs and to surface water flows
        - For example, a 100% reduction in the rate of decline, and even some recovery by year 10 in the Blitzen region whose natural discharge is important to the wildlife refuge

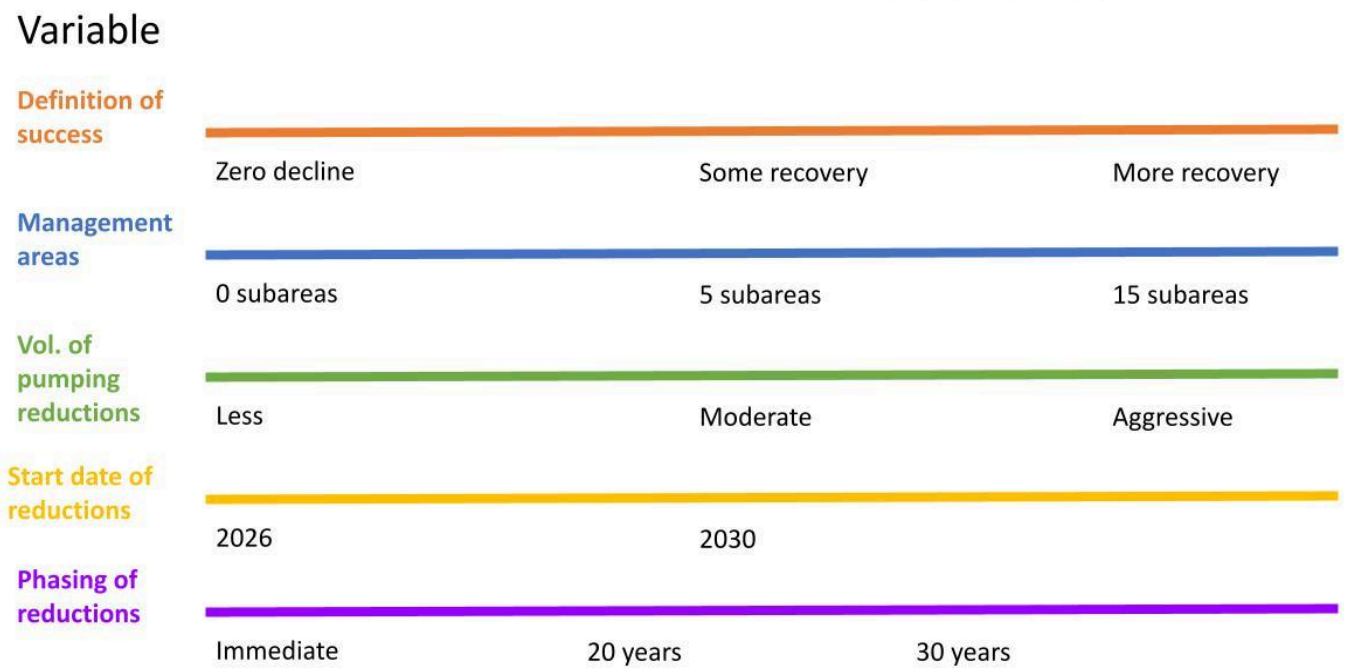
- The impact on domestic wells and desire for long-term household water security
    - Participants expressed a desire to get a sense of the potential impact to domestic wells from different scenarios and further discussion about water security for rural residents, accounting for both water quantity and quality
    - It was noted that not every "dry well" story is the same and it is important to know the context (how deep is their well, where does their pump sit, what is the well construction, etc)

- The contribution of flows and recharge from one region to another
    - For example, would having less reduction in recharge areas like Silver, Silvies, or Blitzen, affect the ability of other areas like Crane or Weaver Springs to achieve their goals for reducing rate of groundwater level declines

- Lag time (or the year in which stabilization or recovery goals will be met after pumping reductions have occurred) is important to consider in terms of the start time and duration of reductions and when impacts or stabilization might be seen in different parts of the basin

As OWRD goes to run scenarios, OWRD is also looking for feedback on which of these guidelines might be more important for the different scenarios being run.

The discussion group also began brainstorming what some of the model input options might include. Some of these are:



- Subarea delineation (see Section 3.3 above for options)
    - Some version(s) of the 5-7 larger regions
    - OWRD 15 sub-areas
    - The entire Harney Basin
- Target pumping level reductions - best first guess and desire for iteration
    - Some participants spoke explicitly to phased reductions in the rates of groundwater level declines, but did not explicitly name % pumping level reductions associated with those;
    - In a subarea approach the pumping level reductions would vary by subarea (none [0%], minimal [up to 10%], moderate [10-30%], significant [30-50%], severe [>50%]) depending on the extent of the problems in that area as well as the timing for achieving desired results.
    - Even though there is not a linear relationship between % pumping reductions and % reduction in rates of decline, some participants felt those were close enough starting points to use. The group discussed a desire to see and hear about the results from other scenarios to make an informed guess about where to begin along with a desire to iterate depending on the results.
- Start and duration of pumping reductions
    - The groups discussed an option of a 2030 start date (assuming a contested case and little action before that is complete) and an option of a 2026 start date (assuming voluntary agreements begin);
    - The group discussed duration options of 10 years, 20 years, 30 years, and by 2100.
    - OWRD clarified that that start date doesn't matter as much in terms of examining overall groundwater level stabilization goals in the model outputs.