AGENDA

**WRIA 15 Watershed Restoration and Enhancement**

**Technical Workgroup Meeting**

August 21, 2019 | 9a.m – 11a.m.

## **Location**

Webex

**Committee Chair**

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**Handouts**

Agenda

Growth Projections

Consumptive Use Calculator

Consumptive Use Scope of Work

# Participants

Stacy Vynne (Ecology), Bob Montgomery (Anchor QEA), Chad Wiseman (HDR), Susan Gulick (Sound Resolutions/Facilitator), Dan Graves (HDR), Austin Jennings (Pierce Co.), Brittany Gordon (WDFW), Joe Hovenkotter (King Co), Zack (Port Orchard), David Nash (Kitsap Co.), Greg Rabourn(King Co.), Paul Pickett (Squaxin Island Tribe), John O’Leary (Squamish Tribe), Dave Windom (Mason Co.), Joel Purdy(Kitsap PUD)

# Growth Projections

Chad Wiseman introduced himself as the HDR project manager and liaison to WRIAs 12, 13 and 14. HDR provided Ecology and the Committee the initial growth projections at the end of July (memo and spreadsheets). The projections were done at the county level and summed to compose the growth projections for the WRIA. Counties use different methodologies and therefore the approach to the growth projections varied by county. In addition, Kitsap and King counties did the work in house; HDR developed for Mason and Pierce counties under direction by the counties.

Chad summarized the methods used for the growth projections by each county (see *Growth Projections* memo). HDR seeks feedback on the methods, but wants to be sensitive to the county information. HDR is working with King and Kitsap counties to finish up work on their heat maps. We anticipate them soon.

HDR can run up to four scenarios for the WRIA by altering the variables in the growth projection methods. HDR and Ecology are developing a memo that lays out potential options for running different scenarios. The workgroup can recommend to the committee which alternative scenarios they want. The workgroup needs to be mindful that the current growth projections are calculated using the counties’ preferred methods.

For growth projections, HDR seeks input from the workgroup and committee on two areas:

1. Are there any technical errors that need correction in the memo or spreadsheets?
2. Is there feedback on the methods used and do we want to see growth projections calculated in a different way? (for example, run different growth projection scenarios)

Questions and Discussion

* Recommendation to capture the assumptions in the growth projections and ensure it is an iterative process.
* Clarification that the use of the term “interpolate data” in the memo in reference to Mason Co process should be replaced by “extrapolate” – the comprehensive plan is through 2036 and HDR had to project the additional 2 years to reach the 20 year growth projection estimate.
* Interest in using parcel inventory to come up with the maximum range and then apply it to the growth projections to ensure we are not overshooting. This may be more relevant for Pierce Co in WRIA 12, but want to see this reflected in the memo (is represented in the workflow).
* Forested lands are technically developable, but usually don’t see much development in those areas. Concern than inclusion could water down the heat map (likely not huge issue for WRIA 15 but is for other Pierce Co WRIAs). We are likely to see more development in the fringe areas. The reallocation will not impact the projected number of new wells, but does impact how we represent growth on the map and therefore where we might consider projects.
* HDR should review the maps and table for the south sound portion of Mason Co as anticipate some of this should be covered under Hood Canal region. There is a map labeling error (SS instead of HC) that HDR will fix. Mason Co will also review the data.
* Kitsap County used 200-ft from water mains. KPUD has an "obligation" to serve any parcel within 1/4-mile of a 4-inch-diameter or greater water main. KPUD would be curious to see a scenario of changing that to ~ 1,000 ft and see how that changes the estimate for Kitsap County, which is projected to have ~233 PEW/year. [note – should HDR change the scenario to 1320 feet instead of 200??]
* Squaxin Island Tribe is interested in walking through the growth projection summary tables and heat maps in detail. Stacy will see who is interested in having another meeting to walk through with the HDR analyst.
* Interest in higher spatial resolution for the heat maps. Their intent is to get a better understanding of the distribution of projected growth within each region to support the subbasin discussion. HDR will defer to the counties to help with the heat map and develop the data behind them. Need to avoid parcel scale projected growth data, but HDR can look at spatial scale that show potential impact to salmon streams. Note that the workgroup and committee will consider further delineation of subbasins once we have growth projections and project ideas.
* HDR will move the heat maps into the WRIA (not by county) once all data is available.
* Pierce Co is interested in seeing another period of growth.

Chad shared that a memo is in development that will outline potential growth projection scenarios. If we define scenarios for WRIA 15 growth, we need to consider the changes that would occur across the counties and the implications to the WRIA if we make a change in one of the counties. Some initial potential options for scenarios by county include:

* Kitsap- change the OFM population estimates, broader historical date range, spatial allocation based on historical well growth.
* King – different historical date range, spatial allocation based on proportion of build out (in process).
* Mason- change the OFM population estimates (but departs from the comprehensive plan), spatial allocation based on historical growth, adjust assumptions to rely on building permit for well connections.
* Pierce- different historical date range, maximum growth year, spatial allocation on proportion of buildout capacity, allow for connections in the water system service areas (difficult).

Discussion

* We need to consider that it could be complicated if we have different changes by county for the 4 counties in WRIA 15.
* We may want to consider applying overall percentage of growth for uncertainty or safety factor; or wait and apply at the consumptive use stage.
* Squaxin Island Tribe provided a spreadsheet on assumptions and buffers and would like feedback from the counties and HDR. They would like to run some scenarios to plug in some conservative options so we can have a basis for the uncertainty or safety factor that we apply.
* The committee should consider the added value of various growth scenarios at this stage. The committee may want to consider a standard safety buffer on the growth projections and/or waiting to define additional scenarios until after we have focused on consumptive use.

# Consumptive Use Estimates

Dan Graves walked through the process for indoor and outdoor water use. The Committee has Ecology’s guidance (NEB Guidance Appendix A) as a starting point for the approach, but we can apply other numbers if justified. For instance, the guidance recommends an indoor water use of 60 gpd per person while the USGS Kitsap Model uses 66 gpd. Once we know how much water is used, we apply the consumptive use calculation. For outdoor lawn size we use the Washington Irrigation Guide and requirements to understand how much watering is needed for lawns. We can consider the metered data to calculate outdoor use if that is more appropriate.

There are two types of metered data: 1) data on typical water system that bills based on water use; 2) flat rate billing process. Metered data for systems on flat rates is likely more representative of the permit exempt well use as these users are not paying by volume (but be cautious as they are paying pumping costs). Rate structures can lead to incentives for conservation. We will need to see what data we can get. Tiered bill data will also be useful for consideration on average water use. HDR is working with public health, water system providers and counties to get various data to look at average use. They are looking for systems that bill by volume, but previously didn’t to see how water use changed and to develop a correction factor. HDR is starting this work this week. HDR is interested in getting recommendations for water systems that they can reach out to.

Discussion

* From Mason Co: The EPA has a study for the Seattle area that found indoor water use of 58 gallons per day. We are required to use the 60 gpd in all septic planning.
* Kitsap PUD is an advocate for real data and we have data we can compare flat rate fee systems. 66 gpd per person is based on USGS study from 1985-2012. Not just from PUD, from other water purveyors on Kitsap Peninsula (Vashon-Maury not included). Skagit Co study found similar numbers to Kitsap (Joel has documentation of the study and can provide citation to Dan).
* Members were cautioned from developing arbitrary scenarios; we need to base our assumptions on solid data.
* KPUD spreadsheets - Billing cycle of 2 months, with billing dates variable so peak water use in summer doesn’t align for all systems. This study is specific to Kitsap Peninsula. KPUD looked at usage by Group A and Group B systems. Pretty uniform. Some group A systems have higher use in more affluent areas. Affluence is better correlation of water use than Group A or B system. KPUD will look at more years of data. KPUD is doing a water efficiency study and there is the possibility to consider this information and see how water use is going down and efficiencies are increasing.
* Irrigation efficiency relates to the type of sprinkler or application. HDR will look into the application requirement from the irrigation guide (e.g. if only 75% efficient, will need to use 25% more than the irrigations guide tells you to fully irrigate a lawn).
* For consumptive use (how much does not return to the ground), Ecology recommends 80% unless there is better local data.
* The basis for the outdoor consumptive use is lawns. Are there other outside uses (gardens, water features) that we need to consider? KPUD does not think there are a lot and HDR thinks that what we’ll find the lawn analysis is likely higher than the metered data (which would capture outdoor water use). It might be difficult to estimate water use for other features. Likely more effort than it’s worth.
* Squaxin Island Tribe would like input on their spreadsheet for consumptive use calculations and assumptions and safety factors. Want to ensure that safety factors or levels of uncertainty are grounded in data.
* HDR is scoped to look at 6 different consumptive use scenarios per WRIA. We need a targeted way to do the analysis. HDR will set up analytical, spreadsheets and methods. Dan may reach out to folks to acquire additional data. Workgroup needs to start thinking about assumptions and potential scenarios to run and provide a list to HDR.
* The lawn analysis is going to be more complicated than HDR anticipated. They are working on a process summary and will provide to the workgroup for input.

# Action Items and Next Steps

* Paul volunteered to do a report out at the next committee meeting to summarize the discussion and next steps from today’s meeting.
* HDR will make corrections to the Mason Co heat map regarding the Hood Canal and South Sound boundaries and work with the county to check the well projections.
* Workgroup and committee members to provide comments on the growth projection analysis memo by August 31st.
* Stacy will request interest in a more detailed walk through of the growth projection data and heat maps. Stacy will set up a meeting with HDR for interested workgroup and committee members.
* HDR will develop a memo and heat maps specific to WRIA 15.
* Workgroup should provide feedback to Paul on his spreadsheet *WREC PEW CU Assumptions and Buffers.*
* Workgroup should begin to think about scenarios they want to see for the growth projections. A forthcoming memo will describe potential options. The workgroup will revisit the topic at the next meeting.
* Workgroup should provide input to HDR on the water systems they should reach out to for metered data.
* Joel will provide a citation for the Skagit study and provide additional historical metered data once available.
* Workgroup will begin thinking through consumptive use assumptions to consider and further discuss at the September workgroup meeting.
* The next meeting of the workgroup is September 11th via webex and will likely cover growth projection scenarios, consumptive use assumptions and potentially the method for the lawn analysis.

Resources mentioned:

The Skagit County exempt well usage study that Joel mentioned is described on pages 18 and 19 (24 and 25 of 33 on the PDF) of:

Culhane, T., and Nazy, D., 2015, Permit-exempt domestic well use in Washington state. Washington State Department of Ecology, Water Resources Program, Publication No. 15-11-006

<https://fortress.wa.gov/ecy/publications/documents/1511006.pdf>

The indoor and outdoor water usage data for the Kitsap peninsula used in the USGS groundwater model (also posted on WRIA 15 committee webpage) are found on page 31 (41 of 56 on the PDF) here:

<https://pubs.usgs.gov/sir/2014/5106/pdf/sir20145106.pdf>