



CHEHALIS BASIN PARTNERSHIP

Fairfield Marriott Inn, Rochester, Washington

October 25, 2019

9:30am - 12:00pm

Meeting Summary

MEMBERS* and ALTERNATES' PRESENT

Alissa Shay', <i>Port of Grays Harbor</i>	Brian Thompson*, <i>Lewis County Citizen</i>
Brian Shay*, <i>City of Hoquiam (phone)</i>	Chris Lunde*, <i>Port Blakely, Business Representative</i>
Wes Cormier*, <i>Grays Harbor County</i>	Dave Windom*, <i>Mason County</i>
Phil Papac*, <i>Port of Grays Harbor</i>	Kim Ashmore*, <i>City of Centralia</i>
Kaitlynn Nelson', <i>Thurston County</i>	Rick Eaton', <i>City of Centralia, wastewater</i>
Mike Noone*, <i>Ecology Water Resources</i>	Bobby Cox*, <i>Town of Pe Ell</i>
Terry Harris*, <i>City of Chehalis</i>	Caprice Fasano', <i>Quinault Indian Nation</i>
Paula Holroyde*, <i>Citizen, League of Women Voters Thurston County</i>	Claire Williamson' <i>WDFW</i>
Sabra Noyes' <i>Chehalis River Basin Land Trust</i>	Lee Napier', <i>Lewis County</i>
Tye Menser*, <i>Thurston County</i>	Colleen Suter', <i>Chehalis Tribe</i>
Patrick Wiltzius', <i>City of Chehalis</i>	Chris Stearns*, <i>Thurston PUD</i>
Dave Vasiluskas', <i>City of Chehalis</i>	Dusty Guenther*, <i>Boistfort Valley Water</i>
Brian Thompson*', <i>Lewis County Farm Bureau</i>	Terry Willis*, <i>Grays Harbor citizen</i>
Tristan Weiss', <i>WDFW</i>	Andy Oien', <i>City of Centralia</i>

GUESTS

Karin Strelieff, *Thurston Conservation District*; Bob Amrine, *Lewis Conservation District*; Dave Nazy, *EA Engineering*; Alexa Jones, *Grays Harbor Stream Team*; Joes Massman, *Keta Waters/Quinault Indian Nation contractor*; Brad Murphy, *Thurston County Planning*

STAFF

Kirsten Harma, *Partnership Watershed Coordinator*; Cynthia Carlstad, *Facilitator, NHC*

FOR MORE INFORMATION

- Meeting summaries are available on the Chehalis Basin Partnership website: www.chehalisbasinpartnership.org
- PowerPoint presentations from this meeting are available on the Chehalis Basin Partnership website: www.chehalisbasinpartnership.org/presentations

MEETING

1. Welcome, Introductions

The Chair convened the meeting and participants introduced themselves.

Chair Harris also congratulated Ms. Harma on her marriage last month and the group enjoyed a rustic western wedding photo of the bride and groom.

Approval of September Meeting Summary

All were in favor of the meeting summary with no changes were needed.

Ms. Harma passed around an attendance sheet to everyone.

Ms. Carlstad noted that she will be following up with member groups who have not yet signed the charter.

Permit-Exempt (PE) Well 20-Year Projections

Ms. Carlstad introduced the permit-exempt well (PE wells) projection topic. Because there have been a few requests for additional evaluation, the Partnership will not vote on this topic today. She reminded the group about the table of projections from various sources – OFM, past trends based on building permits, and Thurston Regional Planning Council - that they discussed last month, and the proposed projection to be used for the basis of consumptive use estimates. This proposal would result in 4,457 projected new permit-exempt wells by 2040.

Based on individual entity review, Quinault Indian Nation brought two requests for revisions to the projection. The first request is to use linear trend instead of average for past trends projection. This increases the projection in the following subbasins:

1. Chehalis-Salzer – increase from 55 to 192 projected PE wells
2. Chehalis Headwaters – increase from 68 to 84 projected PE wells
3. Cloquallum-N. Delezene – increase from 301 to 384 projected PE wells.

Ms. Napier asked if this is all homes or just those relying on PE wells; Ms. Carlstad clarified that this is areas expected to rely on PE wells. Mr. Thompson asked if this considers zoning and ability to subdivide, and Ms. Carlstad said that it does not. NHC did a crude capacity analysis based on parcels that appear to allow residential development but have low confidence in that work because of uncertainties around subdivision potential and actual feasibility of building on all lots. The capacity analysis indicated capacity for the projected PE wells. Mr. Windom said that their analysis is showing that development is not projected to increase over the 20-year planning period. Ms. Nelson clarified that Thurston County data does consider subdivision potential which is one reason it is higher. Also, she stated her experience is that it is not worth the time investment to repeatedly fine-tune the growth projection estimates, it is better to focus on the offset water target. Ms. Shay cautioned against using the linear trend numbers for the last few years of data considering that awareness about permit-exempt wells may have spurred a burst of permit activity. Ms. Willis noted how different the past trends and OFM numbers are in some subbasins and questioned how the group could have any confidence in them. Ms. Napier shared that Lewis County tends to trail the OFM medium slightly.

Ms Napier also said there are many parcels that would not really have buildable lands. Mr. Noone asked about identifying areas where land would not yield buildable lots or where groundwater is not available; Ms. Carlstad affirmed that this could be considered.

Mr. Stearns described the general shape, depth and configuration of the aquifers in Thurston County, and said that in areas like Skagit County the thinner, less extensive areas of the aquifers have experienced shortages. With changing water use practices, there could be physical limitations on water availability.

Mr. Noone asked about the numbers in the table and why Black River is larger than the either the past trends, OFM and TRPC; Ms. Carlstad clarified that the TRPC is just for Thurston County portion of the subbasin so they are added together. Mr. Noone also advised that setting the projection high could make it more challenging to find enough water to offset.

Mr. Stearns commented on Group A and Group B water systems. Group B systems are often not fully built-out and he offered to look into that.

Ms. Carlstad summarized the purpose and how this projection will be used.

The second request (also from Quinault Indian Nation) was to evaluate whether PE wells have been drilled within water service areas. Ms. Carlstad described that NHC had confirmed where water distribution lines and sewer collection lines exist, and these areas were removed from the projected PE areas. NHC did not review Ecology's well log database to see if wells are still being drilled in these areas even though water service is available. They have done this in other watersheds and found that PE wells do appear to occur; they propose to do that evaluation this month. Mr. Stearns confirmed this practice does happen in Thurston PUD service areas, and Mr. Ashmore confirmed that it may also occur in Centralia. Ms. Willis stated that there are also areas that would rely on PE wells that are built-out no more could be installed, and Ms. Carlstad said that these projections should take that into account. The Satsop community is one example of this.

Questions/Answers/Comments

Mr. Stearns commented that he learned from his participation on the State WSAC committee that the reporting and fee collection for permit-exempt wells has fallen behind. Mr. Noone said he would follow up but understood the paperwork on those may be trailing behind.

WebMap Demonstration

Ms. Carlstad demonstrated the WebMap tool that NHC/GeoEngineers has developed for the Partnership. It shows GIS data and is available through a web link; having GIS knowledge and software is not necessary to use it. The WebMap has some data layers included now, including watershed boundaries, building permit data (10 years), Group A and B water systems, city boundaries, UGAs, parcels, and preliminary permit-exempt well projections. They will continue to add data, including project data as that is created.

Mr. Noone suggested that people could provide information via the WebMap if they know where there are limitations like what Ms. Willis described. Mr. Thompson suggested that the group go through the WebMap subbasin by subbasin to identify development potential. Mr. Harris also suggested talking with realtors to gain understanding about what areas are desired by home buyers and what areas are not.

Consumptive Use Estimates from Projected Permit-Exempt Wells

Ms. Carlstad introduced the topic of consumptive use estimates and oriented participants to the handout "Draft Consumptive Use Estimate Work Plan." The Partnership had a presentation from Ecology about a year ago on approaches and use of consumptive use estimates and a few copies of that presentation were available as handouts.

Ms. Carlstad reviewed general considerations about consumptive use (excerpt below)

"General Considerations about Consumptive Water Use

Several considerations are described in the Ecology guidance document provided to the Partnership:

- Estimates of water use by future domestic permit-exempt wells must account for the portion of water consumptively used from indoor and outdoor water uses.
- Legally, new well users can irrigate up to one-half acre of land and use up to an annual average of 950 gallons per day per connection.
- Ecology's *Recommendations* document identifies generally accepted and reasonable assumptions. The Partnership can use different assumptions if it provides adequate documentation and technical justification.

- Homes supplied with municipal water pay for the use of the water. Because using more water will cost them more money, they tend to be more conservative in their water usage than people on well water. They are also more likely to be fitted with water saving appliances.
- Few permit-exempt wells are metered. Therefore, it is challenging to estimate how much water is used in these homes.

The two major categories of household consumptive water use are indoor use and outdoor use. The Chehalis Basin work plan for each category and the combined result are described below.

Indoor Consumptive Use

There are two basic elements to estimating indoor consumptive use:

- Amount of total water used. Ecology’s guidance recommends an assumption of 60 gallons per person per day is a reasonable estimate of indoor water use. We are interested in the amount of consumptive water use per permit-exempt well connection.
- Percentage of total water used that is consumptive. Ecology guidance recommends that 10% of the total indoor water use is considered consumptive when a home is on a septic system.

Work plan for Chehalis Basin indoor consumptive use estimate:

1. Calculate total estimated indoor use using the selected permit-exempt well projection.
 - a. Calculate the number of people in projected new homes with permit-exempt well connections using each county’s estimated number of people per home in rural areas:
 - i. Lewis – 2.4 people per home
 - ii. Thurston – 2.5 people per home
 - iii. Mason – 2.75 people per home
 - iv. Grays Harbor – 2.5 people per home
 - b. Calculate total indoor water use based on number of projected new connections required for the average household size in each subbasin using Ecology’s recommended 60 gallon per day per person assumption.
2. Calculate consumptive fraction of total indoor water use.
 - a. Determine whether any areas projected to be served by permit-exempt wells have sewer service. If there are areas served by sewer service, then 100% of total indoor water use will be considered consumptive.
 - b. For all areas not served by sewer, use Ecology-recommended 10% assumption – 10% of total indoor water use is consumptive.”

“Outdoor Consumptive Use

Outdoor water use is typically the larger portion of domestic single-family residential water use, with irrigation of lawn and garden being the dominant outdoor water use component. The work plan for estimating outdoor consumptive water use focuses on this lawn and garden irrigation component, and also scans for other subbasin-specific outdoor water uses that may increase or decrease water use in some areas.

The Ecology-recommended option for estimating lawn and garden outdoor water use is to conduct a subbasin-specific assessment to determine typical outdoor water use patterns

and apply findings to projections. We propose using this option. The NHC team has conducted irrigated footprint delineations in WRIs 8 and 9 and developed the methods described below which has been vetted by Ecology. We recommend the same methodology for the Chehalis Basin.

Irrigated Footprint Delineation Data and Methods

Data Required:

Single Family Residential (SFR) Building Permit data circa 2006-2017

County Tax Parcels (2019)

Chehalis Subbasins

WA ECY WRIA Boundary

Google Earth Pro software and available historical imagery within the program

1. The permit locations/data for years ~2006 through 2017, associated tax parcels, subbasins, and the WRIA ECY boundaries will be exported from the ArcGIS platform into Google Earth to perform the irrigated area analysis. These years were selected to provide a large enough collection of sites to evaluate, and to ensure that construction and landscape installation is complete. We will select permits for homes believed to be using permit-exempt wells based on locations without water service.
2. Tax parcel areas associated with new SFR construction permits from 2006 to 2017 will be evaluated visually in Google Earth for irrigated lawn areas. The most recent Google Earth images are 2018. Google Earth's historical imagery collection allows for assessing whether irrigation occurs by scrolling through aerial photos spanning seasonal changes and several years. It also enables comparison of pre- and post-construction conditions in most cases. Additionally, the historical imagery provides a way to see the land surrounding the homes in different lighting conditions and from different angles, i.e. a tree shadow obscuring the backyard might not be present in aerial imagery from a year prior, etc.

Using this method has given us confidence in deciding whether irrigation occurs at a specific parcel in previous delineations. In many cases, seasonally green yards in the spring turn brown by late July at a non-irrigated site while a nearby yard that is irrigated stays green throughout the summer.

3. Polygons will be created in Google Earth representing the irrigated area within a given tax parcel. Several necessary judgements and assumptions include the following:
 - a. Landscaped shrub/flower bed areas will be included in the irrigated footprint (not just lawn areas). For example, homes may have a non-grass (barked or bare soil) shrub /tree /flowerbed in the front and grass in the backyard.
 - b. If the irrigated area extends beyond the parcel boundary, we will include the area outside the parcel boundary in our estimates.
 - c. Homes that do not show visible signs of irrigation will be tracked as zero irrigated footprint.
 - d. We will not include areas that appeared to be native forest or unmaintained grass (such as pasture) in the irrigated footprint.
 - e. Homes that were still under construction in the most recent Google Earth imagery will be excluded from the analysis.

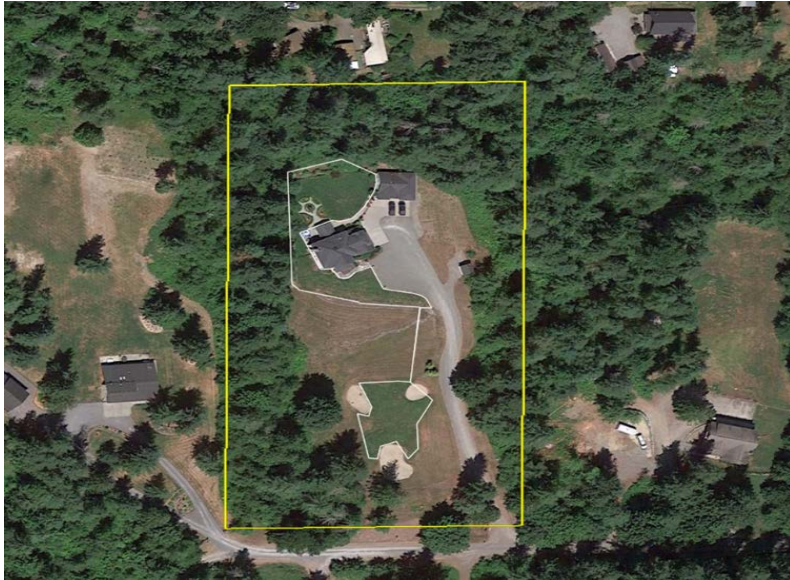
- f. Permit data that indicates that the new construction was due to an additional dwelling unit (ADU) will not be counted. We have spot-checked several sites in other WRIsAs where building permit data indicated construction of an ADU and determined that irrigated footprint did not increase following construction of the ADU. In some cases, it actually decreases if the ADU is built upon part of the previously irrigated yard. Indoor water use for ADUs is captured in the growth projection-based permit-exempt well projections.
 - g. Replacement permits, i.e. mobile home replaced with another mobile home or SFR, SFRs replaced after fires, etc., will not counted as these should not result in a new permit-exempt well.
4. The Google Earth polygons will then be imported (KMZ) into GIS, where acreages and summary statistics for the irrigated areas will be calculated.

Example Delineations from other WRIsAs

The following examples illustrate delineations using these methods for a few sites in other WRIsAs.



In the example above, the light blue line shows the parcel boundary and white line shows the irrigated footprint delineation. This example shows how the delineation excludes the house, driveway, outbuildings, and forest.



The above example illustrates a site where irrigated grass can easily be distinguished from grass that is not irrigated.



The example above shows an existing farm where a new home was added. In this case, we assume that the permit-exempt well for the new home is not being used to irrigate the pasture since the pasture was already there.



The example above was excluded from the analysis because the yard is still under construction. We considered measuring and reporting the cleared area but decided not to because the cleared area may be more than what the homeowner chooses to landscape, they may not irrigate, or they may install a large deck/patio.

Questions/Answers/Comments

Regarding 60 gpd per person estimate – Mr. Windom shared that the studies this was based on included a Pierce County example that measured 59 gpd. Mr. Nazy added that he was involved in developing the guidance and most of the consumption is in the septic system.

Mr. Windom asked how sub-irrigation would be accounted for. Ms. Carlstad replied that usually those areas have more of a mottled appearance.

Mr. Thompson asked about areas where well capacity limits how much irrigation can be done. Ms. Carlstad clarified that this analysis is based only on yard appearance, not on well capacity.

Mr. Cox asked about climate change and how that will be included. Ms. Carlstad responded that the Partnership will have the option of adjusting water offset targets and/or selecting projects for climate change.

Mr. Noone cautioned against dedicating too much analysis time to these factors which can only be estimated and not proven.

Mr. Windom shared that in WRIA 14 they sampled 85 homes and came up with 0.07 acres of average irrigation per home. Mr. Mobbs stated that we have good climate change information available for the basin, and the big takeaways are drier summers and wetter winters.

Mr. Weiss asked about keeping track of outlier situation like the farm example above. He noted that in some areas like the Skagit, it was found that a few home sites that irrigate a large area skews the average up. Ms. Carlstad agreed, and said that these would be tracked for that purpose, but would not be reported individually.

Ms. Willis offered a cautionary note to not target people's property when we don't have full information. That is outside the scope of this work.

Consumptive Use Calculator

Ms. Carlstad then introduced the group to a spreadsheet-based consumptive use calculator tool that will be available to Partnership members to use for “what-if” scenarios to satisfy their curiosity about how different factors may change the consumptive use. This should help understand the impact of uncertainties in the estimates. It contains crop irrigation requirements for specific geographic areas within the basin and several adjustment factors to represent things like sprinkler efficiency, evapotranspiration, etc. Mr. Noone commented that the Washington Irrigation Guide being used to determine crop irrigation is very conservative as it is tailored to commercial crop production.

Mr. Stearns commented that water conservation measures are required by the State for Group A systems, but not for Group B systems, so those are at the discretion of the Commission.

Grays Harbor Stream Team Update

Ms. Jones provided a snapshot of her background and shared work that the Stream Team is doing. She described their mission, vision and brief history.

- **Mission:** The Grays Harbor Stream Team strives to increase community involvement and environmental stewardship of our streams and estuaries in the lower Chehalis watershed and Grays Harbor area by conducting volunteer stream restoration projects and environmental education and outreach.
- **Vision:** The Grays Harbor Stream Team envisions an engaged local community that is dedicated to clean, healthy streams and estuaries that sustain salmon, shellfish, and our way of life.
- **History:** The Chehalis Basin Management Plan released in 2004, identified the need to educate and involve local community members in protecting and enhancing ecosystems. The Stream Team originated in 2009 to fulfill this need as a coalition of students, educators, citizen volunteers, local agencies, and non-profit organizations dedicated to the protection and restoration of streams that flow through Grays Harbor County.

The Stream Team has recently pulled together a Steering committee of its original partner organizations including Chehalis Basin Partnership, Chehalis River Basin Land Trust, Grays Harbor County, Gray Harbor Audubon Society, Grays Harbor Historical Seaport. They also have many collaborator organizations that they work with regularly. Funding sponsors include the Rose Foundation for Communities and the Environment, Chehalis Basin Partnership, Wildlife Forever Fund, and Rayonier.

2019 accomplishments include extensive planting and removal of garbage and invasive plants. They've had 133 new volunteers, including 67 youth volunteers and logged 752.5 volunteer hours:

- Invasive species removal – 9 events, removed 5,700 lbs. of invasives removed
- Garbage removal – 5 events, removed 2,806 lbs. of garbage
- Planting parties – 4 events, 4,905 plants planted
- Outreach – 15 events including Shorebird Festival, Splash Festival, Prairie Appreciation Day, Aberdeen Sunday Market, Cosi Days, and coordinated the Watershed Festival. They also started hosting Pub Talks at local breweries this year.
- Education – 9 events reaching 699 youths, focusing on field trips, river and coastal processes, salmon life cycle, and invasive species.

Questions/Answers

Mr. Thompson asked if they are limited to Grays Harbor County – yes.

Mr. Mobbs asked if there is a corollary in Lewis County – no.

Ms. Willis asked about methods for removing scotch broom. Ms. Jones said they work to get the roots out but need to return for several years to prevent it from coming back.

Ms. Noyes asked about Stream Team helping get Oakville School District involved; Ms. Jones will follow up.

Mr. Thompson asked Global Rivers Environmental Education Network in Grays Harbor County. They were active in Thurston County. Ms. Jones will check into that as a great resource.

Ms. Harma stated that the Partnership has financially supported the Stream Team in the past. Stream Team has applied for and received grant funding but lacks discretionary funds sufficient to support a Coordinator. She encouraged partner members to consider providing financial support to the Stream Team from their individual organizations.

Watershed Plan Addendum Progress Reports

Projects Update – there is a work session in the same room from 1-3pm today.

No update to the Work Plan this month.

For the Good of the Order / Public Comment

Chair Harris opened public comment and partner updates

Mr. Noone announced that the Streamflow Restoration Grant guidance was published on October 23. Public workshops will be held, the closest being in Lacey on November 1.

Ms. Fasano reported on the field trip to the Ohop restoration site in the Nisqually basin. The project provides additional water storage and salmon habitat improvements.

Mr. Mobbs announced the Phase 1 Aquatic Species Restoration Plan will be released in November.

Mr. Harris stated his appreciation to the group for their good work together and acknowledged Mr. Wiltzius who will be retiring in November. Mr. Wiltzius has been with this group since the beginning and contributed greatly to its accomplishments.

Mr. Stearns stated his appreciation to Chair Harris for his leadership and commitment to the group.

AJOURNMENT

With there being no further business, Chair Terry Harris adjourned the meeting at 11:45am.

RECORD OF DECISIONS:

1. June 28, 2019 – Members voted by full consensus to review the Charter Addendum as edited at this meeting within their organizations and be prepared for a second reading and approval at the July 26, 2019 meeting.
2. July 26, 2019 – Members voted by full consensus to approve the Charter Addendum to the 2004 Operating Procedures. The Quinault Indian Nation voted “Formal Disagreement, but Willing to Go with Majority” and will provide a written statement to include with the final charter.

NEXT MEETING: December 6, 2019