



# AGENDA

## WRIA 15 Watershed Restoration and Enhancement Committee Meeting

May 7, 2020 | 9:30 a.m.-1:30 p.m. | [WRIA 15 Committee Webpage](#)

### Location

WebEx Only  
(See instructions below)

### Committee Chair

Stacy Vynne  
Svyn461@ecy.wa.gov  
(425) 649-7114

### Handouts

- Agenda
- Technical Memo Revisions
- Project Inventory
- Compiled Input on Projects
- Meeting Notes – Consumptive Use and Plan Recommendations

### Welcome

9:30 a.m. | 5 minutes | Susan Gulick

### Meeting Agenda and April Meeting Summary

9:35 a.m. | 5 minutes | Susan Gulick

### Updates and Announcements

9:40 a.m. | 10 minutes | Stacy Vynne, All

### Committee Feedback on Technical Memos

9:50 a.m. | 30 minutes | Stacy Vynne, All

- Overview of comments received (<https://ecy.box.com/v/WRIA15TechnicalMemos>)
- Questions/Discussion
- Next steps to finalize memos

### Projects: Status and Needs

10:20 a.m. | 80 min | All | Discussion

- Update on Water Rights Assessment (<https://ecy.box.com/v/WRIA15WRAcquisitionsAssess>)
- Discuss status and needs for islands (sub-basins: Vashon/Maury, Bainbridge, and Anderson/McNeil & Ketron Islands). *Continuation from our last meeting.* (<https://ecy.box.com/v/WRIA15ProjectInventory>)
- Results of committee and partner input to identify priority projects: (<https://ecy.box.com/v/April2020ProjectHomework>)
- Direction for technical consultants regarding next steps in project development
- Direction for the May 21 project workgroup workshop
- Next steps

### Break

11:40 a.m. | 10 minutes | All

### Consumptive Use

11:50 a.m. | 30 minutes | Stacy Vynne and Susan Gulick | Discussion

- Update on special committee meeting discussion ([Meeting summary available on Committee webpage](#))
- Skokomish irrigation analysis
- Discussion and next steps

### Refinement of Policy and Adaptive Management Recommendations

12:20 p.m. | 60 minutes | Susan Gulick, All | Discussion

- Update on workgroup meeting ([Meeting summary available on Committee webpage](#))
  - Structure for proposals
  - Proposal topics
- [Review developed proposals](#) for concerns and feedback
  - WDFW – Project Implementation Tracking
  - Squaxin Island Tribe – Multiple Recommendations
  - Others
- Discussion and next steps

### Public Comment

1:20 p.m. | 5 minutes | Susan Gulick

### Next Steps and Action Items

1:25 p.m. | 5 minutes | Susan Gulick, Stacy Vynne

- Next meeting—Thursday, June 4, 2020, 9:30 a.m., Kitsap County Commissioner’s Chambers, Port Orchard, 9:30-2:30 (anticipated, **WebEx Only Likely**)

**WRIA 15 Upcoming Meetings:** <https://ecy.box.com/v/WRIA15UpcomingMtgs>

#### **WebEx Information**

Meeting number: 801 028 598

Password: dmHcmbA4F93

[Link to join meeting](#)

Join by phone

+1-206-207-1700 United States Toll (Seattle)

Access code: 801 028 598



## MEETING SUMMARY

### WRIA 15 Watershed Restoration and Enhancement Committee Meeting

April 2, 2020 | 9:30 a.m. - 1:30 p.m. | [WRIA 15 Committee Webpage](#)

#### Location

WebEx

#### Committee Chair

Stacy Vynne McKinstry  
Svyn461@ecy.wa.gov  
(425) 649-7114

#### Handouts

- Agenda
- Revised subbasin technical memo
- Refined list of policy and regulatory recommendations
- Refined list of adaptive management recommendations
- Projects Inventory

## Attendance

### Committee Representatives and Alternates \*

Joel Purdy (*Kitsap Public Utility District*)  
David Winfrey (*Puyallup Tribe*)  
Stacy Vynne McKinstry (*WA Dept of Ecology*)  
Greg Rabourn (*King County*)  
Teresa Smith (*City of Bremerton*)  
Allison Satter (*alternate - City of Bremerton*)  
Dave Ward (*Kitsap County*)  
Dave Nash (*alternate-Kitsap County*)  
Jacki Brown (*City of Port Orchard*)  
Zach Holt (*alternate - City of Port Orchard*)  
Alison O'Sullivan (*alternate - Suquamish Tribe*)  
Joy Garitone (*Kitsap Conservation District*)  
Brittany Gordon (*WA Dept of Fish & Wildlife*)  
Nam Siu (*WA Dept of Fish & Wildlife*)

Shawn O'Dell (*Washington Water Service - ex-officio*)  
Austin Jennings (*alternate - Pierce County*)  
Dan Cardwell (*Pierce County*)  
Seth Book (*alternate - Skokomish Tribe*)  
Dana Sarff (*alternate - Skokomish Tribe*)  
Nate Daniel (*Great Peninsula Conservancy*)  
Paul Pickett (*alternate - Squaxin Island Tribe*)  
Randy Neatherlin (*Mason County*)  
Russ Shiple (*Kitsap Building Association*)  
Brienn Ellis (*City of Gig Harbor*)  
Sam Phillips (*Port Gamble S'Klallam Tribe*)  
Mike Michael (*City of Bainbridge Island*)  
Christian Berg (*alternate - City of Bainbridge Island*)

### Committee Representatives Not in Attendance\*

City of Poulsbo  
Mason-Kitsap Farm Bureau (ex-officio)

### Other Attendees

Susan Gulick (*Sound Resolutions, Facilitator*)  
Angela Pietschmann (*Cascadia, Info Manager*)  
Burt Clothier (*Pacific Groundwater Group*)  
Bob Montgomery (*Anchor QEA*)  
John Covert (*WA Dept of Ecology*)  
Stephanie Potts (*WA Dept of Ecology*)

Angela Johnson (*WA Dept of Ecology*)  
Paulina Levy (*WA Dept of Ecology*)  
Mugdha Flores (*WA Dept of Ecology*)  
Joel Massmann (*Suquamish Tribe*)  
Kell Rowan (*Mason County*)  
Erik Steffans (*Great Peninsula Conservancy*)

\*Attendees list is based on roll call and participants signed into WebEx.

## Meeting Agenda and March Meeting Summary

Susan summarized the last meeting and reviewed the agenda. *No revisions to the agenda.*

Stacy reviewed revisions to the March meeting summary, based on feedback from Squaxin Island Tribe. Ecology will post the final meeting summary on the committee webpage. *No further refinements to the meeting summary provided.*

## Updates and Announcements

Stacy provided updates from Ecology:

- COVID-19 plan: WRE committee meetings are deemed essential by Ecology due to the legislative deadline. Ecology will continue to hold meetings remotely as long as there is sufficient participation from committee members. Please let Stacy know if you or your entity is unable to continue participating.
- The competitive streamflow restoration grant round application deadline was extended to April 30, 2020. Stacy will provide an update on applications in WRIA 15 at the May meeting. As of April 2, only two applications are started in WRIA 15.
- The Project Work Group met on March 19<sup>th</sup> and is scheduling a full day work session on May 21<sup>st</sup>. The Work Group reviewed PGG's water rights assessment work, gravel pit assessment, and the project list by subbasin.
- Ecology met with the Squaxin Island Tribe for a quarterly check in and discussed (1) concerns around commitments to implementation across the watersheds the Tribe is involved in; (2) COVID-19 planning; and (3) how Ecology will address disagreement amongst committee members.
  - The Squaxin Island Tribe has an interpretation of the legislation that differs from Ecology's interpretation of RCW 90.94 ([Policy 2094](#)). The Tribe would like to plan for past permit exempt well use as well as all future uses, which is beyond Ecology's requirements for the planning process. Ecology's interpretation does not prevent any individual entities from doing additional work, but this approach must be discussed/approved by the committee.
  - The Squaxin Island Tribe has proposed leading a presentation on tribal treaty rights at the WRIA 15 May committee meeting (as they have done in WRIs 12, 13, and 14). Other Tribes on the committee are invited to add their points of view.
- Ecology met with the Department of Fish & Wildlife (DFW) to check in on progress within each committee. DFW shared ideas and concerns around (1) quantifying the streamflow benefit of habitat projects; and (2) tracking implementation of projects. Ecology will continue to share information from these conversations at committee meetings.

## Committee Feedback on Technical Memos

Ecology is seeking feedback from the committee on the Subbasin Delineation technical memo and the Growth and Consumptive Use technical memo. These memos will serve as the basis of the WRIA 15 Plan content. These memos were distributed on February 14, but no comments were received. Ecology would like to identify any concerns and address feedback/errors as early as possible.

### Reference Materials

- [Subbasin Memo](#)
- [Growth and Consumptive Use](#)

## Discussion

- Ecology updated the Subbasin Delineation technical memo to replace “regions” with subbasins throughout and clarify that “subbasin” is a planning term (does not refer to hydrological / geological term usage).
- The committee will ensure that projects are as close to anticipated growth/impacts as possible.
- Stacy will re-distribute both memos with official deadlines for comment submission (April 24). The committee will review any recommended revisions at the May meeting. Stacy will send the documents as a separate email.

## Decision on Subbasin Delineations

### Committee Voting Results: Approved Subbasin Delineations

The committee voted on and approved the subbasin delineations (as presented in the Subbasin Delineation technical memo).

*Susan established there was a quorum among committee members before facilitating the vote.*

Affiliation	Representative	Vote
City of Bainbridge	Mike Michael	Approve
City of Bremerton	Teresa Smith	Approve
City of Gig Harbor	Brienn Ellis	Approve
City of Port Orchard	Jacki Brown	Approve
Department of ECY	Stacy Vynne	Approve
Department of Fish and Wildlife	Nam Siu	Approve
Great Peninsula Conservancy	Nate Daniel	Approve
King County	Greg Rabourn	Approve
Kitsap Building Association	Russ Shiplet	Approve
Kitsap County	Dave Ward	Approve
Kitsap Public Utility District	Joel Purdy	Approve
Mason County	Randy Neatherlin	Approve, with reservations
Pierce County	Dan Cardwell	Approve
Port Gamble S'Klallam Tribe	Sam Phillips	Approve
Puyallup Tribe	David Winfrey	Approve
Skokomish Tribe	Dana Sarff	Approve
Squaxin Island Tribe	Paul Pickett	Can live with it
Suquamish Tribe	Alison O'Sullivan	No issues

## Projects: Status and Needs by Sub-Basin

The committee discussed potential projects within each subbasin to: (1) determine if there are sufficient projects to offset potential impacts; (2) identify gaps; and (3) provide direction to the technical consulting team for further development of projects. The technical consultant team has mapped projects where location data is available in the Project Inventory spreadsheet.

## Reference materials

- [Water rights assessment](#)
- [Gravel pit assessment](#)
- [Project inventory](#)
- [WRIA 15 Webmap](#)

## Discussion

- Burt Clothier (Pacific Groundwater Group) provided an update on PGG's water rights assessment.
  - PGG is working with Ecology to collect a complete dataset of water rights within the basin, focusing on surface water, groundwater irrigation, commercial/industrial, and stock water rights. Spring sources can be categorized as surface or ground water.
  - PGG will continue to subdivide / prescreen the large number of rights within the basin and narrow down which rights to investigate in greater detail.
  - PGG is only reviewing active rights, not claims. PGG has also developed a one-page summary for water rights associated with two golf courses in the basin and will present to committee for review.
- Bob Montgomery (Anchor QEA) provided an update on the managed aquifer recharge (MAR) assessment of eight potential gravel pit sites.
  - Bob's team analyzed these sites with the Project Work Group based upon gravel pit operations, aerial photos, zoning, and geology.
  - Several were active commercial sites with reclamation plans that include filling sites with low quality fill (i.e., pits accept fine-grain fill from developed areas and commercial buildings not suitable for infiltration).
  - Based on the assessment and feedback from the Department of Natural Resources, during the project workgroup call, Bob recommends focus on (1) county owned parcels in suitable geologic areas that are inactive or have not been used recently, (2) or pits that will be residentially or commercially developed which will provide opportunities to incorporate stormwater recharge in development plans. Any sites considered should have stormwater available for recharge.
    - Port Orchard: The Port Orchard Airport could be a good site for collection and infiltration of stormwater into nearby Kitsap County-owned pit.
      - Port Orchard Sand and Gravel (near Silverdale) and Port Orchard Industrial Park are proposed for housing development. If not already required, the committee could consider a project that allows stormwater infiltration as a development requirement.
    - Pierce County: Paul from Squaxin Island Tribe and Austin of Pierce County summarized their discussion of potential County-owned sites. Austin will be continuing to discuss the more promising sites with the appropriate County division. Parcels owned by the County's Surface Water Management department ~~(primarily in Rocky Creek Watershed)~~ are are most suitable for projects particularly promising.
    - Kitsap County: County has identified an opportunity to restore the natural water cycle in the vicinity of the Kingston Wastewater Treatment Plant by significantly reducing the discharge of treated wastewater into Puget Sound.
- GeoEngineers prepared a methodology for estimating recharge potential/streamflow benefit associated with habitat restoration projects. Ecology technical staff are discussing this methodology with DFW to address their concerns regarding quantifying streamflow benefits from habitat projects. If the committee chooses, there may be an opportunity to estimate

streamflow benefit (quantitatively) from some habitat projects such as beaver and beaver dam analogue (BDA) projects.

- The committee is working to identify which subset of projects warrant consultant time for further development.
  - Consider having short-, mid-, and long-term buckets for project implementation.
- Categorical or bundled projects can be noted in the comments section
- Reviews should add comments or questions, not edit someone else's notes
- There is a WebMap layer with project locations. The spreadsheet will note which have been mapped. Send Bob any information on unmapped or incorrectly mapped sites.

Homework: in each subbasin, committee members should highlight projects with highest [realistic] potential for offset in the short term for further discussion at the May meeting and see if there's consistency in list.

### Projects by Subbasin Discussion Summary

Subbasin	Project name	Notes	Next Steps
North Hood Canal	Big Beef DNR Parcel	Technical consultant time not necessary. Sam is continuing to do some work to develop this project.	Sam will provide information to the committee once further developed.
North Hood Canal	Little Anderson Asbury Parcel	Could use technical consultant time (not reviewed as part of gravel pits assessment). Small-scale topsoil businesses with ponds. Looks feasible from first review of geology.	Consider for technical support.
North Hood Canal	Gamble Cr Arness Parcel and Gamble Cr Michak Parcel	Could use technical consultant time to identify projects in this area.	Consider for technical support.
North Hood Canal	Big Beef Creek Restoration	Fits well with floodplain habitat / headwater wetland restoration project; could probably calculate some storage offset.	
North Hood Canal	Seabeck Holly Road Bridge	Remove from project list; barrier removals have limited offset capacity and are funded through Fish Barrier Removal Board or Salmon Recovery Funding Board.	Stacy to remove from project list.
North Hood Canal	Stream Augmentation projects	Joel discussed how the augmentation projects would be treated for water quality and the approximate costs. The augmentation is physically easy to do but will need some refinement on the exact location and timing. There are a lot of details that need to be worked out.	
North Hood Canal	Other potential project ideas	<ul style="list-style-type: none"> <li>• Hood Canal Salmon Enhancement Group projects</li> <li>• Timber rotation/forestry projects</li> </ul>	
South Hood Canal	General	Although this region has lower growth projection compared with the rest of the WRIA,	

		it has good project potential and is home to ESA listed species.	
South Hood Canal	GPC Projects	Great Peninsula Conservancy (GPC) has proposed multiple projects in other subbasins but not S Hood Canal. GPC staff time is very limited, so they want to strategically pursue projects/funding.	
South Hood Canal	Wastewater reclamation infiltration - City of Belfair	On South Sound project list but <del>could</del> <u>may</u> include <del>on</del> South Hood Canal <del>list too</del> (benefits <u>too</u> (both watersheds). <u>Mason Count believes there is no South Hood Canal benefit – more discussion needed.</u> Need to avoid double-counting benefit <del>and ensure there is streamflow benefit to WRIA 15.</del>	
South Hood Canal	MAR Project Tahuya	John Covert (Ecology) identified this project as potential opportunity (based on geology). Source waters nearby are on publicly owned ground (easier to get access to). This project is not developed, but could put some consultant resources towards development if committee sees potential and needs additional offset.	Consider for technical consultant support.
South Hood Canal	Bear Creek Protection	Might have potential as there is a single landowner. There is higher development pressure in area (more than rest of South Hood Canal), however we will hold off on requesting time and energy for consultants to work on this one.	
South Hood Canal	Other potential project ideas to consider for this area	<ul style="list-style-type: none"> <li>• Beaver / BDA projects.</li> <li>• Timber rotation/forestry projects</li> <li>• Gold Creek Golf Course has reclaimed water potential.</li> <li>• Seth Book (Skokomish Tribe) will work with the Tribe's consultant to generate more of potential project ideas.</li> </ul>	
West Sound	Blackjack Watershed Protection & Restoration Feasibility Plan	Opportunity for floodplain restoration / augmentation as needed, but City of Port Orchard is scaling back to feasibility study for this streamflow funding grant round.	
West Sound	Chico Creek Culvert (Golf Club Hill Road) and Floodplain Restoration	Culvert replacement itself is underway (design done by Suquamish tribe). Not as much a culvert project for our purposes as a floodplain project.	
West Sound	MAR Project- Grovers Cr	On GPC owned preserve, good possibility but lower priority for consultant time right now. Nate Daniel (GPC) and Alison O'Sullivan	



		(Suquamish Tribe) to collaborate on projects related to Grover's Creek.	
West Sound	Strawberry and L. Anderson Creek Parcel with Storage	Quarry project discussed previously. Proposed for land use change (comprehensive plan amendment) and in front of County Commissioners right now to approve the land use change.	Committee should wait to see what happens with the decision by the Commissioners before further pursuing this project.
West Sound	Augmentation projects	Recommend change reference for "ephemeral" to "seasonal" on the augmentation projects.	Stacy will make change in spreadsheet.
South Sound	Wastewater reclamation infiltration - City of Belfair	Paul Pickett (Squaxin Island Tribe) reviewing with Kell Rowan (Mason County).	
South Sound	Port Orchard Airport Stormwater	Don't see red flags yet and will continue to look into opportunities around this area.	Committee reps and consultants will continue to explore.
South Sound	Piercy County Parcels	Paul Pickett (Squaxin Island Tribe) looking at 10 Pierce County parcels with Austin Jennings (Pierce County) <del>and Nate Daniel (GPC).</del>	
<a href="#">South Sound</a>	<a href="#">GPC Parcels</a>	<a href="#">Paul Pickett (Squaxin Island Tribe) looking at GPC parcels with Nate Daniel (GPC).</a>	
<a href="#">South Sound</a>	<a href="#">Other floodplain/wetland projects</a>	<a href="#">Paul Pickett (Squaxin Island Tribe) looking at other potential sites for floodplain/wetland projects suggested by Brittany, with support from Kitsap CD.</a>	
South Sound	Horseshoe and Trophy Lake Golf Course Water Use Options	PGG reviewing for opportunities for reduction / transfer of water right.	PGG will present results of assessment to committee.
Vashon/Maury		The committee did not have time to discuss projects in these subbasins.	Discuss in May.
Bainbridge Island		The committee did not have time to discuss projects in these subbasins.	Discuss in May.
Anderson, McNeil and Ketron Islands		The committee did not have time to discuss projects in these subbasins.	Discuss in May.

## Refinement of Plan Recommendations

The committee discussed the list of (1) policy and regulatory recommendations, (2) climate change considerations, and (3) adaptive management and implementation recommendations, which were refined based on discussion at the March meeting.

### Reference materials

- [WRIA 15 Policy & Adaptive Management Refinement](#)
- Squaxin Island Tribe Proposals:
  - [WRE Plan Policy & Regulatory Recommendations](#)
  - [WRE Plan Adaptive Management & Implementation](#)

## Discussion

- Policy and Regulatory Recommendations
  - Paul Pickett (Squaxin Island Tribe) walked through the WRE Plan Policy & Regulatory Recommendations document he prepared.
  - The Kitsap Conservation District is interested in a leading role on a number of items related to incentives and water conservation. KCD wants the committee to consider unintended consequences for any recommendations that move forward.
  - The City of Bainbridge Island could consider elevating native vegetation protection beyond what current stormwater regulations require.
  - Pierce County would like to hold off on engaging on this subject until the list is more refined/pared down and there are funding sources and specific details associated with the recommendations. Once this list is narrowed down, the County would like to identify challenges / obstacles in implementing recommendations. The County is striving for consistent language across the WRIA committees they participate in. The County prefers incentives/voluntary participation over enforcement efforts.
  - Kitsap County notes that developing County code is limited by the public process for developing land use regulations. P15 not applicable within County (already have a stormwater permit/manual that requires a lot of infiltration and LID for new development). Department of Commerce leading a parallel project to incentivize LID in urban areas.
  - Greater Peninsula Conservancy is willing to remove increasing the building permit fee from the list. [Squaxin Island Tribe wants the discussion of funding to continue.](#)
  - The committee would like to pare down the long list of recommendations. Some members participate on multiple committees and are struggling to follow the changes in this list month to month (multiple iterations of same document).
    - Reminder that there is no technical consultant time allocated to these [actions/projects](#) and we are relying on enthusiasm from committee members to refine list. Ecology cannot take a leadership role in developing these ideas.
    - [The committee may want to consider formal proposals from committee members compared to reviewing a long list with no details. However, there is concern that relying on committee members to bring forward proposals will not identify the best or highest priority policies.](#)
    - [Items that one member would like included but another has concerns about may need further discussion to better define the item so it is acceptable.](#)
    - The committee may want to consider reviewing the list by [objectives or](#) topic areas instead of reviewing recommendations one by one.
    - The committee may want to consider having a subgroup review these recommendations in detail and bring back a refined list of recommendations to the committee.
    - Stacy and Susan will work on reformatting the list to make it easier for committee members to review and highlight which ideas they would support moving forward.
- Adaptive Management

- Paul Pickett (Squaxin Island Tribe) added additional adaptive management proposals. Paul noted that the plan must include adaptive management, or the Tribe will not approve it.
- Zack Holt (City of Port Orchard) and Sam Phillips (Port Gamble S’Klallam Tribe) are developing monitoring proposals. Zack and Sam are seeking volunteers to assist with this effort (ideally a representative from each entity).
- The facilitation team is working on generic/consistent adaptive management language to use across committees (for instance, if there are recommendations to Department of Ecology or the Legislature).
- DFW is working on a project implementation tracking recommendation.

## Public Comment

No public comment.

## Action Items for Committee Members

- Review technical memos and submit comments to Ecology by April 24.
- Complete homework associated with project list review and plan recommendation review (homework forthcoming).
- Let Zach or Sam know if you are interested in developing a monitoring proposal for inclusion in the plan.

## Action Items for Ecology and Consultants

- Stacy will re-distribute the Subbasin Delineation and Growth and Consumptive Use technical memos with deadlines for comment submission (April 24). The committee will review any edits that need discussion at the May meeting. Stacy will send as a separate email.
- Technical consultants will indicate in the project inventory whether a project has been mapped.
- Stacy will follow up with LE staff, HCSEG, and others with the committee’s refined North Hood Canal project list to identify any red flags or additions.
- Stacy, Bob, John to develop rough estimates of project offset values where possible.
- Stacy and Susan will send out homework on the plan recommendations.
- Stacy and Susan will send out homework on the project list review.

## Upcoming Meetings

- Special meeting to discuss Consumptive Use – **April 22, 2020, beginning at 10 a.m.**, WebEx Only
- Next committee meeting: **Thursday, May 7, 2020, 9:30 a.m.**, Kitsap County Commissioner’s Chambers, Port Orchard (likely WebEx only)

# Technical Memorandum

## WRE Committees Technical Support



To: Stacy Vynne McKinstry, Washington State Department of Ecology  
From: Bob Montgomery, Anchor QEA; Chad Wiseman, HDR  
Date: February 12, 2020  
Subject: WRIA 15 Subbasin Delineation  
(Work Assignment WA-01, Task 2)

### 1.0 Introduction

HDR is providing technical support to the Washington State Department of Ecology (Ecology) and the Watershed Restoration and Enhancement (WRE) committee for Water Resource Inventory Area (WRIA) 15. The Streamflow Restoration law (Revised Code of Washington [RCW] Chapter 90.94) requires that WRE plans include actions to offset new consumptive-use impacts associated with permit-exempt domestic water use. RCW 90.94.030(3)(b) states, "The highest priority recommendations must include replacing the quantity of consumptive water use during the same time as the impact and in the same basin or tributary." Therefore, delineations must be developed for the subbasins in WRIA 15 that will be used as a spatial framework for growth projections, consumptive-use estimates, and priority offset projects. The Net Ecological Benefit (NEB) evaluation will also be based on this framework. This technical memorandum addresses the basis for subbasin delineation in WRIA 15 (Kitsap).

**Commented [VMSJ(1): From Paul]**

Do you recall why the three South Sound islands were considered separately (but not Fox Island)? After working on the analysis for these areas, I'm inclined to combine the three islands into South Sound. Combining is easier than splitting, but I'd like to know who the advocates were for the proposed 2 separate regions. I suspect that only Pierce County would care – I can check with them.

### 2.0 Subbasin Delineation

This section explains the initial and final delineations for WRIA 15. The term "subbasin" is used by the WRIA 15 WRE committee for planning purposes only and to meet the requirements of RCW 90.94.030 (3)(b).

#### 2.1 Initial Delineation

The WRIA 15 workgroup (a subcommittee of the WRE committee) was tasked to delineate subbasin boundaries for discussion at WRE committee meetings. An initial discussion was held at the April 4, 2019, workgroup meeting and Pierce County, the Kitsap Public Utility District (PUD), and the Squaxin Tribe subsequently developed maps of proposed subbasin boundaries and provided those to Ecology and the WRE committee.

The initial, general considerations included the following:

- Subbasins should be neither too big nor too small.
- Surface water flows and rain flow patterns should be included.
- Anticipated rural growth and where there is little growth will likely drive projects and impacts.
- Priority areas for salmon recovery should be included.
- Isolated areas like islands without connectivity should be included.

- There should be recognition that the WRE committee can revise subbasins throughout the process.

The maps were further discussed at the May 2, 2019, WRE committee meeting and the workgroup meeting that immediately followed that meeting.

The result of the discussion on May 2, 2019, was a proposal that divides WRIA 15 into “regions” that are an initial delineation of subbasins that will be revisited as the watershed planning process continues. The key points discussed are as follows:

- Considerations for subbasins include starting large, using a nesting approach, and ensuring that there is justification for offset projects outside of a subbasin.
- The workgroup is committed to finding projects closest to the impact and revisiting subbasin delineations throughout the process.
- The regions map will be used for generating growth projections and consumptive use. The counties shared that they can project growth at any level but recognize that the smaller the subbasins are, the less reliable the data are. It is helpful for the counties to have the proposed size of regions for providing their growth projections.
- Some workgroup members are interested in using smaller assessment areas as well, such as Hydrologic Unit Code 12 (HUC12) boundaries, to look at particular stream impacts.
  - Workgroup members also suggesting using Assessment Units (from Ecology’s Puget Sound Watershed Characterization Project) as a starting point for mitigation.
- The Squaxin Tribe would like to see a road map of how the subbasin delineations will be revisited throughout the process.

Further discussion of the regions approach occurred in the June 4, 2019, workgroup meeting and the June 6, 2019, WRE committee meeting. Agreement was reached on proceeding with use of the regions with the following caveats:

- The regions approach is a nested approach where regions are essentially a “do not cross” line for finding projects to offset impacts.
- Projects will be found that are closest to the impact and beneficial. Using a nested approach, the potential for offsets will be evaluated first at the assessment unit scale, then at the HUC 14 scale, and finally at the subbasin scale. If the offsets are not achievable at the small or intermediate unit scale, justification will be provided (for example, there is greater relative benefit in a larger project in a stream of importance).
- ~~Projects will be found that are closest to the impact and beneficial.~~
- The WRE committee will continue to revisit delineation of subbasins once growth projections and projects are developed.

The June proposal included three main regions: South Sound, West Sound, and Hood Canal. The boundary between the West Sound region and the Hood Canal region in the northern Kitsap Peninsula was left flexible with the recognition that projects in one region could benefit streams in the other region. The other regions are Bainbridge Island, Vashon-Maury Island, and the three south Puget Sound islands (McNeil, Anderson, and Ketron).

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Commented [VMSJ(2)]: From Sam. Can the committee commit to this approach for the projects?

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## 2.2 Revision to Hood Canal Region

The Skokomish Tribe proposed to revise the region delineation by dividing the Hood Canal region into North Hood Canal and South Hood Canal regions. The reason is differing precipitation amounts, development and status of fish species. The proposal was first presented to the WRIA 15 Committee in October who passed it to the workgroup for discussion. A subset of workgroup members reviewed the proposal and recommended the proposal be accepted. The proposal was further discussed at the November 7, 2019 WRIA 15 Committee meeting. There was agreement amongst all Committee members present to accept the revision to the Hood Canal region.

## 2.3 Final Delineation

Agreement was reached at the March 5, 2020 WRIA 15 committee meeting to accept the region delineations as the subbasin boundaries. Figure 1 presents the subbasins as agreed to at that meeting.

## 3.0 Conclusion

The WRIA 15 WRE committee delineation of subbasins will be used as an organizational framework for growth projection and consumptive-use scenarios. References

Revised Code of Washington (RCW). 2019. Watershed Planning, Chapter 90.82 RCW. Accessed on June 23, 2019, at <https://app.leg.wa.gov/rcw/default.aspx?cite=90.82>.

RCW. 2019. Streamflow Restoration, Chapter 90.94 RCW. Accessed on June 23, 2019, at <https://app.leg.wa.gov/RCW/default.aspx?cite=90.94>.

U.S. Geological Survey and U.S. Department of Agriculture, Natural Resources Conservation Service (USGS). 2013. Federal Standards and Procedures for the National Watershed Boundary Dataset (WBD) (4 ed.): Techniques and Methods 11–A3, 63 p., <https://pubs.usgs.gov/tm/11/a3/>.

Figure 1. WRIA 15 subbasin delineation

# Technical Memorandum DRAFT



To: Angela Johnson, Washington State Department of Ecology  
From: Chad Wiseman, HDR  
Copy:  
Date: February 13, 2020  
Subject: WRIA 15 PE Growth and Consumptive Use Summary  
(Work Assignment 2, Tasks 2 and 3)

**Commented [A1]:** Edits by Joel to spell out CU and use Kitsap PUD  
Edits by Stacy to define 20 years as the planning horizon.  
Edits by Austin to replace Pierce Co buildable lands.

From Paul: [Growth and Consumptive Use memo](#)

- The basis for low, medium, and high PE growth projections for each county should be described.
- The values used in the calculations of consumptive use should be provided in addition to the formulas.
- The methods used in the USGS study should be summarized.
- The USGS study used for consumptive use (5.0) should be cited in references

See comments from DFW on the methodology for calculating the average acreage for outdoor irrigation.

## 1.0 Introduction

HDR is providing technical support to the Washington State Department of Ecology (Ecology) and the Watershed Restoration and Enhancement (WRE) committees for Water Resource Inventory Areas (WRIAs) 10, 12, 13, 14, and 15.

Under RCW 90.94, consumptive water use ~~(CU)~~ by permit-exempt (PE) domestic wells and connections occurring over the ~~next~~ 20 year [period of 2018-2038 \(planning horizon\)](#)s must be estimated to establish the water use that watershed restoration plans and plan updates are required to address and offset. This memorandum summarizes PE domestic wells and connections and related [CU-consumptive use](#) of groundwater that is projected to impact WRIA 15 over the ~~20-year~~ planning horizon.

This memorandum includes:

- A summary of WRIA 15 baseline, low, and high PE growth scenarios.
- A summary of WRIA 15 baseline, low, and high scenario consumptive use using three different methods.

## 2.0 WRIA 15 PE Growth Projection Methods

Portions of ~~Kitsap~~, Mason, Pierce, and King Counties and all of Kitsap County are located within WRIA 15. The WRIA 15 WRE committee agreed to develop high and low growth projection scenarios based on varying the Kitsap and Pierce County projections. At this time, Mason County and King County growth projections remained the same for the baseline high and low scenario projections; however the Squaxin Island Tribe has expressed interest in possibly seeing a higher growth scenario or safety factor for Mason County. Mason County wants to ensure that the adaptive management component of the plan considers the results of the census for changes in population growth (available in 2022).

### 2.1 Kitsap County

Two methods were used to project growth over the planning horizon for Kitsap County. Both the Kitsap County Land Capacity Analysis, completed by County staff, and the Historical Wells Method, completed by Kitsap Public Utility District ([Kitsap PUD](#)), result in similar numbers:

Kitsap County Land Capacity Analysis





- 1) Identify 20-year growth projections from the Kitsap Regional Coordinating Council growth projections (conversion to single-family residences based on assumed people per household and rural growth target).
- 2) Allocate growth by subbasin based on proportion of historical building permits by subbasin from 2002 to 2019.
- 3) Conduct a land capacity analysis. Determine vacant parcels within each subbasin that is within and outside of the waterline or sewerline 200-foot buffer. Assume that all parcels greater than 0.15 acre are buildable if they are within the 200-foot buffer. Buildout capacity for parcels greater than 0.75 acre outside of a 200-foot waterline buffer is assumed to be served by PE well connections. Assume that that growth occurs along the waterline areas first, and that the forecasted number of permit exempt wells is less than the forecasted number of single family residences as some wells may have multiple connections.
- 4) Multiply the growth for each subbasin (step 2) by the proportion of growth expected to be served by PE well connections (step 3).
- 5) The application of this method to City of Bainbridge Island results in no new well connections. An alternative method for City of Bainbridge Island was performed which assumes one PE well connection per parcel, regardless of parcel size. It was also assumed that growth occurs along the waterline areas first with the remaining growth occurring on parcels needing PE wells.

Kitsap County developed three iterations of growth projections in rural areas based on varying the minimum parcel size to be suitable for a PE well in the land capacity analysis (Step 3). The versions included 0.25 acre, 0.75 acre, and 1.0 acre. The final version recommended by the county assumed a minimum acreage for PE wells of 0.15 acre in their land capacity analysis and also used additional data on water lines and sewer lines (as a proxy for water lines). This version was provided to HDR on November 22, 2019. Kitsap County provided a flow chart of the land capacity analysis and heat map (HDR 2019a).

#### Historical Wells Method:

- 1) Calculate historical growth rates of PE wells using County records of wells drilled (2003-2018). Note this is all wells drilled, not just PE wells.
- 2) Forecast growth of future PE well connections for the 20-year planning horizon, based on the historical growth rate.
- 3) Allocate growth of PE wells within each subbasin spatially, based upon land capacity analysis (i.e., parcel must be outside of UGA, not in a water and wastewater system boundary, not already built upon, or must have zoning category that allows for domestic use).

## 2.2 King County

The following methods were used to project growth over the planning horizon:

- 1) Use historical building permit data (2000–2017) to project future growth.
- 2) Define if each historical building permit used for growth projections is public or private (aka PE well) water service.



- 3) Multiply the annual (projected) number of building permits per year by the percentage of permits using private water to determine a projected number of PE well connections per year to yield the annual rate of PE well connections.
- 4) Multiply the rate of annual PE well connections by 20 for the estimated total of PE well connections over a 20-year period.
- 5) Overlay subbasins to determine number of new PE well connections in each subbasin.
- 6) Remove the portion of the wells that are projected to be inside of the water district service boundaries.

The King County method is described in more detail in a technical memo provided by the county dated December 16, 2019 (HDR 2019a). King County growth projections did not change from the initial projections on July 31, 2019.

### 2.3 Mason County

The following methods were used to project growth during the planning horizon:

- 1) Develop 20-year growth projections based on the Mason County Comprehensive Plan (the Comprehensive Plan is based on [OFM-Office of Financial Management](#) medium population growth estimates, and conversion to dwelling units based on assumed people per dwelling unit).
- 2) Determine available land for single-family domestic units and determine proportion of buildout capacity by county urban growth areas (UGAs) and rural lands.
- 3) Apply growth projections to buildable lands.
- 4) Remove projected development unlikely to connect to a PE well (i.e., parcel is located within a water system service area; parcel is smaller than 1 acre).
- 5) Overlay subbasins to determine new PE connections in each subbasin.

Initial growth projections for Mason County were updated because of 1) updates to county parcel attributes and 2) a request from the WRIA 14 and WRIA 15 WRE committees to [allow-account for](#) PE growth within water system service areas. Parcel data were updated to correct for circumstances where the zoning and land use attributes identified a parcel as buildable but were also associated with a feature that was incompatible with building (e.g., on top of a waterbody). The initial methods assumed zero PE growth within water system service areas in both the urban growth areas (UGAs) and rural areas. HDR developed a method that allocates PE growth in rural water systems proportional to the number of parcels in each water system not currently served by the water system.

The method is comprised of the following steps:

- 1) Assume future growth is proportional to buildable parcels with available water system hookup and parcels that would require a PE well or connection for development.
- 2) Define total buildable parcels per county buildable lands analysis that are contained within each respective water system service area. The water system service areas are defined by the Washington State Department of Health (DOH) as polygons in the Geographic Information Service (GIS) platform.



- 3) Define active and total approved (active + available) water system connections from the DOH Sentry database.
- 4) Calculate buildable parcels with an available water system hookup (total approved minus active water system connections)
- 5) Calculate buildable parcels that would require a PE well or connection for development (total buildable parcels minus total approved connections).
- 6) Calculate ratio of buildable parcels that would require a PE well or connection (step 5) to the parcels with an available water system hookup (step 4) and multiply by the number of dwellings predicted to occur in that water system service area.

## 2.4 Pierce County

The following methods were used to project growth over the planning horizon:

- 4) Calculate historical growth rates of PE wells for each subbasin using the Tacoma-Pierce County Health District (TPCHD) well database (1999–2018).
- 5) Forecast growth of future PE well connections for the 20-year planning horizon, based on the subbasin-specific historical growth rate.
- 6) Allocate growth of PE wells within each subbasin spatially, based upon [a buildable-land-parcel assessment for PE well potential analysis](#) (i.e., parcel must be outside of UGA, not in a water and wastewater system boundary, not already built upon, or must have zoning category that allows for domestic use).

No changes were made to the growth projection methods or results occurred since the initial growth projection on July 31, 2019.

## 2.5 High and Low Growth Scenarios

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## 3.0 WRIA 15 Consumptive Use Methods

Consumptive use of water from projected PE connection growth was estimated using three different methods; 1) the Irrigated Area Method; 2) the Water System [\(Kitsap PUD\) eData](#) Method and; 3) the [Kitsap Peninsula Survey Data](#)[USGS Groundwater Model](#) Method

### 3.1 Irrigated Area Method

Consumptive use was calculated using Ecology's recommended assumptions for indoor and outdoor consumptive use (Ecology 2018; 2019).

#### 3.1.1 Indoor Consumptive Use – Irrigated Area Method

Ecology (2018; 2019) recommends the following assumptions for estimating indoor consumptive water use:

- 60 gallons per day per person within a household
- 2.5 persons per household (or as otherwise defined by the Counties)
- 10 percent of indoor use is consumptively used



- Most homes served by a PE well use septic systems for wastewater. This method assumes 10 percent of water entering the septic system will evaporate out of the septic drain field and the rest will be returned to the groundwater system.

The above assumptions were used to estimate indoor consumptive water use by occupants of a single dwelling unit. Assuming that there is one PE well connection per dwelling unit, a “per PE well connection” consumptive use factor was applied to the growth projections forecast in each subbasin to determine total indoor consumptive use per subbasin. This method is summarized by the following equation:

$$HCIWU \text{ (gpd)} = 60 \frac{\text{gal}}{\text{day} * \text{person}} * 2.5 \frac{\text{people}}{\text{household}} * CUF$$

Where:

HCIWU = Household Consumptive Indoor Water Use (gpd)

CUF= Consumptive use factor; assumed to be 10% (factor expressed as 0.10)

This estimate of indoor per household per day can be annualized and converted to acre-feet per year or [cubic feet per second](#).

### 3.1.2 Outdoor Consumptive Use – Irrigated Area Method

Ecology (2018; 2019) recommends estimating future outdoor water use based on an estimate of the average outdoor irrigated area for existing homes served by PE domestic wells. To calculate the consumptive portion of total outdoor water required per parcel/connection over a single growing season, Ecology recommends:

- Estimating the average irrigated lawn area (pasture/turf grass) per parcel in each WRIA,
- Applying crop irrigation requirements,
- Correcting for application efficiency (75 percent efficiency recommended by Ecology guidance) to determine the total outdoor water required over a single growing season, and
- Applying a percentage of outdoor water that is assumed to be consumptive (80 percent outdoor consumptive use recommended).

WRE Committees were given the opportunity to adjust variables used in the analysis when applicable to the specific WRIA. [WRIA 15 opted not to adjust variables.](#)

The average irrigated area in WRIA 15 was estimated by measuring areas of visible irrigation (i.e. green lawns relative the surrounding, gardens, managed landscaping) in using aerial imagery in 80 random parcels with existing dwellings that have a PE well or connection (Figure 1). The average irrigated area was 0.08 acres (Table 1). Most parcels evaluated did not have visible signs of irrigation in the aerial imagery (Figure 2). Detailed methods and results are defined in the consumptive use methods technical memorandum and report (HDR [2019b](#)).

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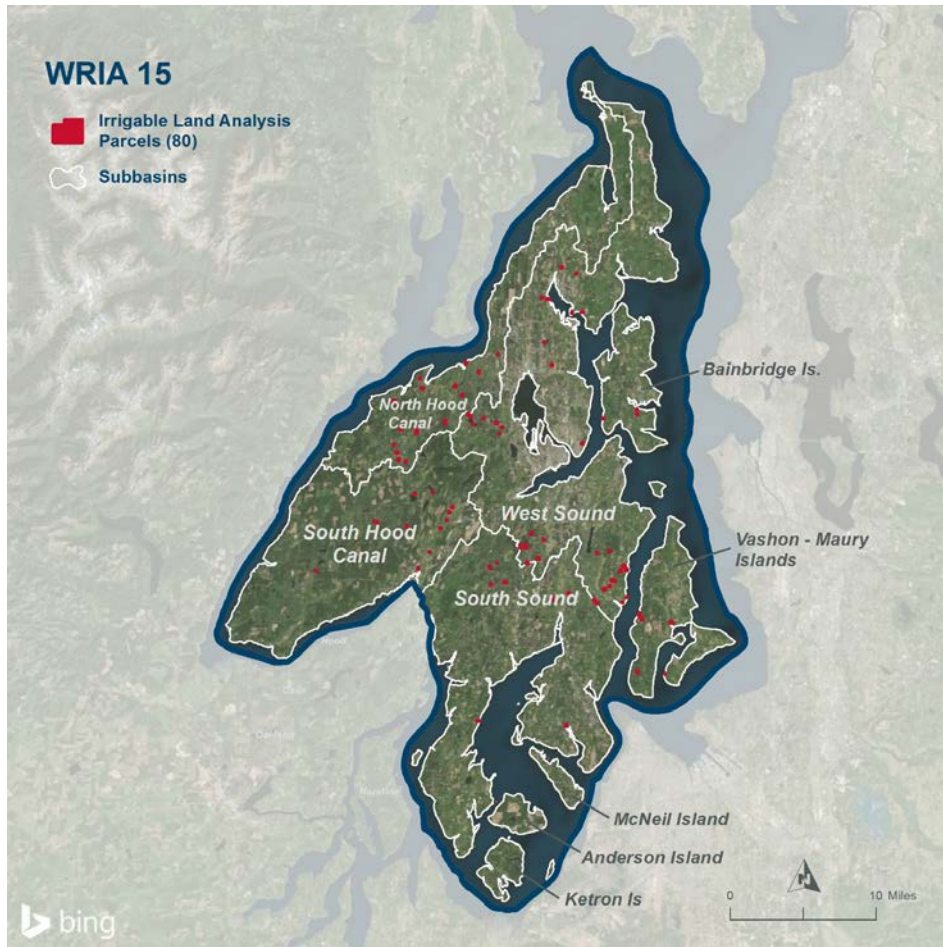


Figure 1. Parcels selected in WRIA 15 with existing PE connections that were delineated for apparent irrigated areas.

Table 1. Irrigated acreage delineation results.

Statistic	WRIA 15
PE Parcel Sample Pool	8,987
Sample Size	80
Mean (acres)	0.08
Standard Deviation (acres)	0.13
95% UCL (acres)	0.14

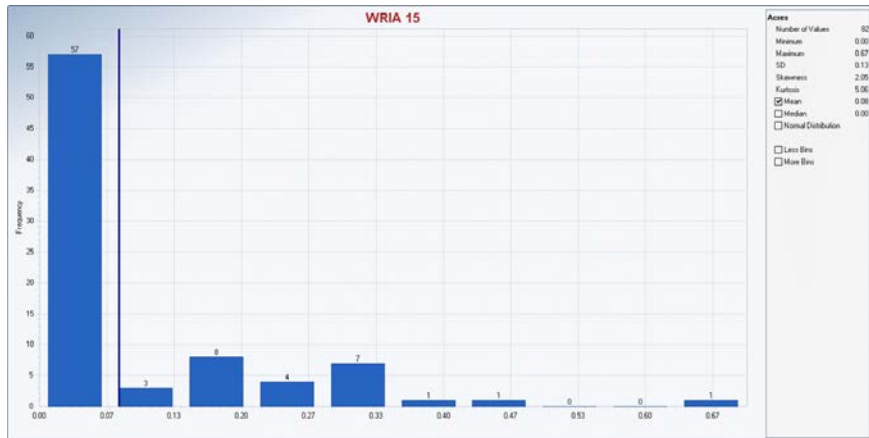


Figure 2. Histogram of WRIA 15 irrigated acreage delineation results.

Once average irrigable acreage per connection was determined for a WRIA, water use was calculated based on irrigation requirements and application efficiency. Crop irrigation requirements were estimated for pasture/turf grass from nearby stations as provided in the Washington Irrigation Guide (NRCS-USDA, 1997). An irrigation application efficiency was applied to account for water that does not reach the turf. Ecology (2018; 2019) recommends using a 75 percent application efficiency factor. The consumptive portion of total amount of water used for outdoor use was assumed to be 80 percent of the total. This method is summarized in the following equation:

$$HCOWU (gpd) = A (acres) * IR(feet) * AE * CUF * CF$$

Where:

HCOWU = Household Consumptive Outdoor Water Use (gpd)

A = Irrigated Area (acres)

IR = Irrigation Requirement over one irrigation season (feet)

AE = Application efficiency; assumed to be 75% (factor expressed as 1/0.75)

CUF= Consumptive use factor; assumed to be 80% (factor expressed as 0.80)

CF = Conversion Factor to convert afy to gpd; 1 afy = 892.742 gpd

#### 4.03.2 Water System (Kitsap PUD) Data Method

Consumptive use by PE wells and connections may also be estimated using metered connections from water systems. HDR requested data from WRE Committee members for water systems that use (or have used) a flat rate billing structure and were similar in character to the rural environments

**Commented [A4]:** Joel proposed using "Kitsap PUD" but I'd recommend leaving generic to follow NEB guidance and then explain that data was used from KPUD. Need to confirm with Joel on whether he's recommending we switch from 80-90% for outdoor CU. The CU calculator uses 80%.

**Commented [A5]:** Edits from Joel  
Was this just Kitsap PUD or did we pull in data from other water systems?

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in which households may connect to PE wells. In WRIA 15, ~~the~~ Kitsap PUD provided consumption data for all Kitsap PUD water systems for years 2017 and 2018.

#### 4.4.3.2.1 Indoor Use

Average daily use in December, January, and February is representative of year-round daily indoor use. Average daily system-wide use is divided by the number of connections (assuming all connections are residential), to determine average daily indoor use per connection. A 10 percent consumptive use factor was applied to the average daily use in the winter months to determine the consumptive portion of indoor water use per connection.

#### 4.23.2.2 Outdoor Water Use

Average daily indoor use was multiplied by the number of days in a year to estimate total annual indoor use. Total annual indoor use was subtracted from total annual use by a water system to estimate total annual outdoor use. An ~~8~~ 890 percent consumptive factor was applied to determine the consumptive portion of outdoor use.

#### 4.33.2.3 Seasonal Outdoor Water Use

Outdoor consumptive use was also estimated on a seasonal basis. The Washington Irrigation Guide reports irrigation requirements between the months of April and September for representative weather stations in WRIA 15. Therefore, seasonal outdoor water use was assumed to occur over a period of six months. Average daily indoor use was multiplied by the number of days in the irrigation season to calculate total indoor use for the irrigation season. Total irrigation season indoor use was then subtracted from total season use to determine total outdoor use for the irrigation season. The value was proportionally allocated to each month in the irrigation season using the requirements from the Washington Irrigation Guide. An ~~890~~ percent consumptive factor was applied to determine the consumptive portion of outdoor use.

## 5.0 3.3 USGS Groundwater Model Method Additional Kitsap Peninsula Survey Data

A 2014 USGS study by Welch, Frans, and Olsen titled *Hydrogeologic Framework, Groundwater Movement and Water Budget of the Kitsap Peninsula, West-Central Washington* provides a survey of consumption from select water utilities serving more than 221,700 people with more than 88,500 residential connections. The study area was the Kitsap Peninsula, not including WRIA 15 areas of Key Peninsula, and Vashon, Fox, Anderson, McNeil and Ketron Islands. The USGS study differentiated between the indoor and outdoor portions of use. Kitsap PUD used these estimates of indoor and outdoor use to develop an additional estimate of consumptive use per PE well connection in WRIA 15. Kitsap PUD applied a 10 percent indoor consumptive use factor and 90 percent outdoor consumptive use factor to the USGS survey data. ~~and differentiated between the indoor and outdoor portions of use. Kitsap PUD used these estimates of indoor and outdoor use to develop an additional estimate of consumptive use per PE well connection in WRIA 15.~~

<sup>4</sup> Kitsap PUD used 90 percent consumptive use factor for outdoor watering. This is the same percent applied to the USGS Groundwater model.

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## 6.04.0 Results

### 6.14.1 PE Connection Growth

Baseline PE connection growth is projected to be 5,568 connections (Table 2). The high PE growth scenario is projected to have 584 additional connections, for a total of 6,152 PE connections. The low PE growth scenario is projected to have 707 fewer connections than the baseline scenario, for a total of 4,861 PE connections. PE connection growth is expected to be greatest in the “South Sound” subbasin.

### 6.24.2 Consumptive Use

~~The USGS data yielded a total consumptive use per PE connection of 74.2 gpd.~~

~~The irrigated area method yielded a total consumptive use per PE connection of 122.9 gpd.~~

The water system data method yielded a total consumptive use per PE connection of 64.3 gpd. ~~The USGS data model method yielded a total consumptive use per PE connection of 754.2 gpd.~~

~~The irrigated area method yielded a total consumptive use per PE connection of 122.9 gpd.~~

~~The estimates of consumptive use in WRIA 15 over the 20 year planning horizon using the irrigation area method was 1.06 (baseline), 0.93 (low growth), and 1.17 cfs (high growth).~~

The estimates of consumptive use in WRIA 15 over the 20-year planning horizon using the water system data method were 0.55 cfs (baseline), 0.48 cfs (low growth), and 0.61 cfs (high growth).

~~The estimates of consumptive use in WRIA of 15 over the planning horizon using the USGS survey data model method were 0.65 cfs (baseline), 0.57 (low growth), and 0.72 (high growth).~~

~~The estimates of consumptive use in WRIA 15 over the 20 year planning horizon using the irrigation area method was 1.06 (baseline), 0.93 (low growth), and 1.17 cfs (high growth).~~

For WRIA 15 scenarios, the estimates of consumptive use using the irrigation area method estimates are approximately 1.9 times higher than the water system data method. Consumptive use is 1.1 times higher in the high growth scenario than the baseline scenario, and approximately 1.7 times higher than the USGS data model method. Consumptive use is approximately 1.14 times higher in the baseline scenario than the low growth scenario.

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**Table 2. Annualized Average Consumptive Use Estimates for WRIA 15 – Baseline Growth**

Annualized Consumptive Use Estimates for WRIA 15 (2020–2040) – Baseline Growth Projection; 0.75 acre minimum threshold										
Subbasin	Projected PE Well Connections	Annual Consumptive Use: Water System Estimate			Annual Consumptive Use: USGS Estimates			Annual Consumptive Use: Irrigated Area Estimate (per Ecology Guidance)		
		AFY	GPM	CFS	AFY	GPM	CFS	AFY	GPM	CFS
West Sound	1,336	96.2	59.6	0.1331	112.2	69.6	0.1553	183.9	114.0	0.2545
Hood Canal	656	47.2	29.3	0.0653	55.1	34.2	0.0763	90.3	56.0	0.1249
South Hood Canal	1,126	81.0	50.2	0.1121	94.6	58.6	0.1309	155.0	96.1	0.2145
Bainbridge Island	491	35.3	21.9	0.0489	41.3	25.6	0.0571	67.6	41.9	0.0935
South Sound	1,553	111.8	69.3	0.1547	130.5	80.9	0.1805	213.8	132.5	0.2958
Vashon – Maury Island	368	26.5	16.4	0.0367	30.9	19.2	0.0428	50.7	31.4	0.0701
McNeil Island, Anderson Island, Ketron Island	38	2.7	1.7	0.0038	3.2	2.0	0.0044	5.2	3.2	0.0072
<b>Totals</b>	<b>5,568</b>	<b>400.8</b>	<b>248.4</b>	<b>0.5545</b>	<b>467.8</b>	<b>290.0</b>	<b>0.6473</b>	<b>766.4</b>	<b>475.1</b>	<b>1.0605</b>

**Table 3. Annualized Average Consumptive Use Estimates for WRIA 15 – Low Growth**

Annualized Consumptive Use Estimates for WRIA 15 (2020–2040) - Low Growth Projection; 0.75 acre minimum threshold										
Subbasin	Projected PE Well Connections	Annual Consumptive Use: Water System Estimate			Annual Consumptive Use: USGS Estimates			Annual Consumptive Use: Irrigated Area Estimate (per Ecology Guidance)		
		AFY	GPM	CFS	AFY	GPM	CFS	AFY	GPM	CFS
West Sound	1,142	82.2	51.0	0.1137	95.9	59.5	0.1328	157.2	97.4	0.2175
Hood Canal	561	40.4	25.0	0.0559	47.1	29.2	0.0652	77.2	47.9	0.1068
South Hood Canal	1,119	80.5	49.9	0.1114	94.0	58.3	0.1301	154.0	95.5	0.2131
Bainbridge Island	491	35.3	21.9	0.0489	41.3	25.6	0.0571	67.6	41.9	0.0935
South Sound	1,158	83.3	51.7	0.1153	97.3	60.3	0.1346	159.4	98.8	0.2206
Vashon – Maury Island	368	26.5	16.4	0.0367	30.9	19.2	0.0428	50.7	31.4	0.0701
McNeil Island, Anderson Island, Ketron Island	22	1.6	1.0	0.0022	1.8	1.1	0.0026	3.0	1.9	0.0042
<b>Totals</b>	<b>4,861</b>	<b>349.9</b>	<b>216.9</b>	<b>0.4841</b>	<b>408.4</b>	<b>253.2</b>	<b>0.5651</b>	<b>669.1</b>	<b>414.8</b>	<b>0.9258</b>



**Table 4. Annualized Average Consumptive Use Estimates for WRIA 15 – High Growth**

Annualized Consumptive Use Estimates for WRIA 15 (2020–2040) - High Growth Projection; 0.75 acre minimum threshold										
Subbasin	Projected PE Well Connections	Annual Consumptive Use: Water System Estimate			Annual Consumptive Use: USGS Estimates			Annual Consumptive Use: Irrigated Area Estimate (per Ecology Guidance)		
		AFY	GPM	CFS	AFY	GPM	CFS	AFY	GPM	CFS
West Sound	1,403	101.0	62.6	0.1397	117.9	73.1	0.1631	193.1	119.7	0.2672
Hood Canal	689	49.6	30.7	0.0686	57.9	35.9	0.0801	94.8	58.8	0.1312
South Hood Canal	1,128	81.2	50.3	0.1123	94.8	58.8	0.1311	155.3	96.2	0.2148
Bainbridge Island	516	37.1	23.0	0.0514	43.4	26.9	0.0600	71.0	44.0	0.0983
South Sound	1,992	143.4	88.9	0.1984	167.4	103.8	0.2316	274.2	170.0	0.3794
Vashon – Maury Island	368	26.5	16.4	0.0367	30.9	19.2	0.0428	50.7	31.4	0.0701
McNeil Island, Anderson Island, Ketron Island	56	4.0	2.5	0.0056	4.7	2.9	0.0065	7.7	4.8	0.0107
<b>Totals</b>	<b>6,152</b>	<b>442.8</b>	<b>274.5</b>	<b>0.6127</b>	<b>516.9</b>	<b>320.4</b>	<b>0.7152</b>	<b>846.8</b>	<b>524.9</b>	<b>1.1717</b>

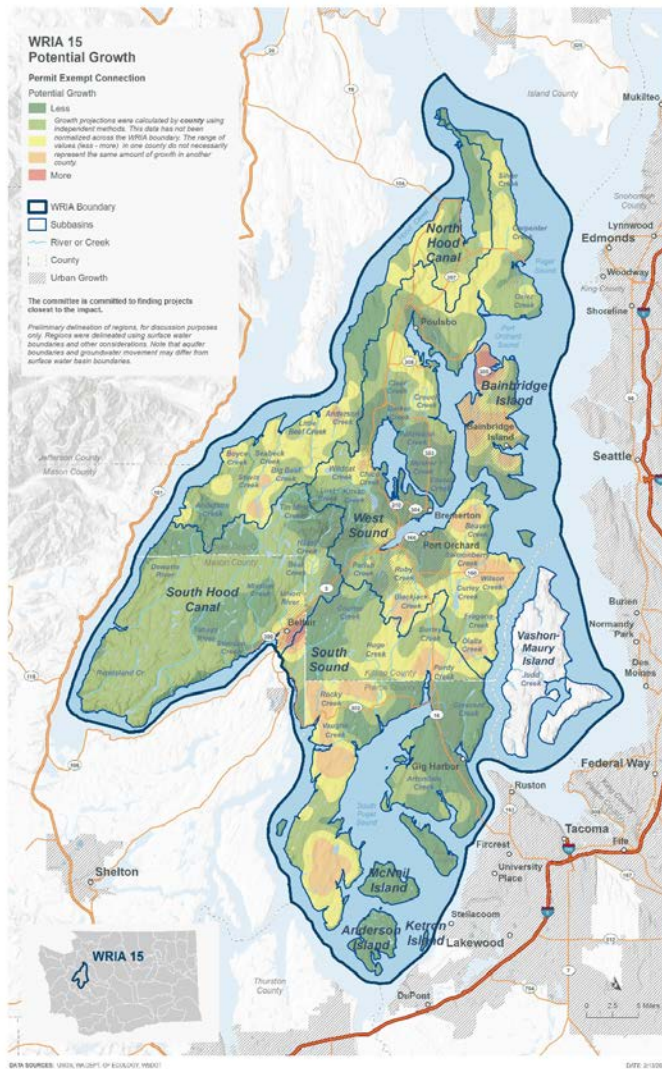


Figure 3. WRIA 15 projected PE connection growth.



### 7.05.0 Seasonal Use

Monthly outdoor water use was calculated as part of the consumptive use analysis for the Irrigated Area method. Seasonal water use by month is reported by subbasin and scenario (Table 4). The month of July has the highest irrigation requirement, resulting in the highest monthly consumptive use impact. This information may be used when evaluating projects designed to offset subbasin- and season-specific impacts.

Table 4: WRIA 15 Monthly Consumptive Water Use

Subbasin	Projected No. PE Wells (Baseline)	Consumptive Use by Month (cfs)											
		Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
West Sound	1,336	0.0311	0.0311	0.0311	0.0311	0.3316	0.7239	0.9879	0.7585	0.3726	0.0311	0.0311	0.0311
Hood Canal	656	0.0153	0.0153	0.0153	0.0153	0.1628	0.3555	0.4851	0.3724	0.1829	0.0153	0.0153	0.0153
South Hood Canal	1,126	0.0262	0.0262	0.0262	0.0262	0.2795	0.6101	0.8327	0.6393	0.3140	0.0262	0.0262	0.0262
Bainbridge Island	491	0.0114	0.0114	0.0114	0.0114	0.1219	0.2661	0.3631	0.2788	0.1369	0.0114	0.0114	0.0114
South Sound	1,553	0.0361	0.0361	0.0361	0.0361	0.3855	0.8415	1.1484	0.8817	0.4331	0.0361	0.0361	0.0361
Vashon – Maury Island	368	0.0086	0.0086	0.0086	0.0086	0.0914	0.1994	0.2721	0.2089	0.1026	0.0086	0.0086	0.0086
McNeil Anderson, Ketron	38	0.0009	0.0009	0.0009	0.0009	0.0094	0.0206	0.0281	0.0216	0.0106	0.0009	0.0009	0.0009
Totals	5,568	0.1295	0.1295	0.1295	0.1295	1.3822	3.0171	4.1174	3.1612	1.5527	0.1295	0.1295	0.1295
Subbasin	Projected No. PE Wells (Low Growth)	Consumptive Use by Month (cfs)											
		Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
West Sound	1,142	0.0266	0.0266	0.0266	0.0266	0.2835	0.6188	0.8445	0.6484	0.3185	0.0266	0.0266	0.0266
Hood Canal	561	0.0130	0.0130	0.0130	0.0130	0.1393	0.3040	0.4148	0.3185	0.1564	0.0130	0.0130	0.0130
South Hood Canal	1,119	0.0260	0.0260	0.0260	0.0260	0.2778	0.6064	0.8275	0.6353	0.3120	0.0260	0.0260	0.0260
Bainbridge Island	491	0.0114	0.0114	0.0114	0.0114	0.1219	0.2661	0.3631	0.2788	0.1369	0.0114	0.0114	0.0114
South Sound	1,158	0.0269	0.0269	0.0269	0.0269	0.2875	0.6275	0.8563	0.6574	0.3229	0.0269	0.0269	0.0269
Vashon – Maury Island	368	0.0086	0.0086	0.0086	0.0086	0.0914	0.1994	0.2721	0.2089	0.1026	0.0086	0.0086	0.0086
McNeil Anderson, Ketron	22	0.0005	0.0005	0.0005	0.0005	0.0055	0.0119	0.0163	0.0125	0.0061	0.0005	0.0005	0.0005
Totals	4,861	0.1130	0.1130	0.1130	0.1130	1.2067	2.6340	3.5946	2.7598	1.3555	0.1130	0.1130	0.1130
Subbasin	Projected No. PE Wells (High Growth)	Consumptive Use by Month (cfs)											
		Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
West Sound	1,403	0.0326	0.0326	0.0326	0.0326	0.3483	0.7602	1.0375	0.7965	0.3912	0.0326	0.0326	0.0326
Hood Canal	689	0.0160	0.0160	0.0160	0.0160	0.1710	0.3733	0.5095	0.3912	0.1921	0.0160	0.0160	0.0160
South Hood Canal	1,128	0.0262	0.0262	0.0262	0.0262	0.2800	0.6112	0.8341	0.6404	0.3145	0.0262	0.0262	0.0262
Bainbridge Island	516	0.0120	0.0120	0.0120	0.0120	0.1281	0.2796	0.3816	0.2930	0.1439	0.0120	0.0120	0.0120
South Sound	1,992	0.0463	0.0463	0.0463	0.0463	0.4945	1.0794	1.4730	1.1309	0.5555	0.0463	0.0463	0.0463
Vashon – Maury Island	368	0.0086	0.0086	0.0086	0.0086	0.0914	0.1994	0.2721	0.2089	0.1026	0.0086	0.0086	0.0086
McNeil Anderson, Ketron	56	0.0013	0.0013	0.0013	0.0013	0.0139	0.0303	0.0414	0.0318	0.0156	0.0013	0.0013	0.0013
Totals	6,152	0.1430	0.1430	0.1430	0.1430	1.5272	3.3336	4.5493	3.4928	1.7155	0.1430	0.1430	0.1430

## 8.06.0 References

Commented [A8]: Add USGS Studies

- Ecology. 2018. *Recommendations for Water Use Estimates*. Washington State Department of Ecology, Publication 18-11-007.
- Ecology. 2019. Final Guidance for Determining Net Ecological Benefit. Washington State Department of Ecology, Publication 19-11-079.
- HDR. 2019a. Draft PE Well and Connection Growth Projections. Technical memorandum provided to the Washington State Department of Ecology on December 31, 2020.
- HDR. 2019b. Draft Consumptive Use Technical Memorandum. Technical memorandum provided to the Washington State Department of Ecology on December 31, 2020.
- Natural Resource Conservation Service, 1997. Washington Irrigation Guide (WAIG). U.S. Department of Agriculture.

Project Review Homework: WRIA 15 Committee April 2020 Greatest Potential <a href="https://ecy.box.com/v/April2020ProjectHomework">https://ecy.box.com/v/April2020ProjectHomework</a>					
Identified By:	Project Name (in no particular order)	Implementation Likelihood (low, med, high)	Realization of Benefit (short, med, long)	Comments (optional)	Stacy's notes
KPUD, Kitsap, Bremerton	1. Kingston Recycled Water Feasibility Study	High/med	short	This project should be given the highest priority because: it puts "wet" water into the streams, reduces the use of potable water for irrigation, eliminates(?) an outfall to PS, and it is ready to go if funding was in place. Top priority for Kitsap.	no additional work needed here.
KPUD, Bremerton	2. Reclaimed water facility in Silverdale	High	short	Installation of the infrastructure is on-going, funding needed to kick-start, large infiltration component and continuous source of water, willing partners. Top project for Kitsap	are 2 and 3 the same project? Need a fact sheet/one pager on the project.
KPUD	3. Silverdale Water District Augmentation (there may be overlap with project above).	High	short		are 2 and 3 the same project?
KPUD	4. Stream Augmentation (by KPUD). Creeks: Seabeck, Little Beef, Big Beef, Anderson, Jump-Off, Hudson, Gamble, Buck Lake, Finland, Grovers, Dogfish, and Port Madison.	High	Short	The assessment of these 12 separate projects combined.	Does KPUD need any additional techn support for development these projects? They could consider a bundled grant request. Note that concerned raised by Kitsap Co on these projects.
KPUD	5. Update of USGS Groundwater Flow Model	High	Long	Offset of all(?) future water rights (not PEWs) determined by using the model. Update would better ensure the likelihood that the proper amount of mitigation is done in the proper place.	Could move to monitoring; won't provide offset or habitat for our immediate need.
KPUD, Kitsap, Bremerton; Squaxin	6. Wastewater reclamation infiltration - City of Belfair	High/med	Short/med	Top priority for Kitsap Co. Squaxin Is Tribe is meeting with Mason Co April 30 to discuss potential project.	Need to confirm stream that benefits. Some concern that it won't benefit streams in WRIA 15.
KPUD, Kitsap; DFW; squaxin	7. Burley Creek Watershed Mine Reclamation Options	Med	Short	Deserves further investigation; quantifiable streamflow benefit	consultant time?
KPUD, DFW, Bremerton	8. Infiltrate County Owned Gravel Pit Near Port Orchard Airport	Med	Short	Deserves further investigation, quantifiable streamflow benefit	consultant time? Bob still looking into but some concerns about site

KPUD, Kitsap	9. Coulter Creek Protection ((there may be a duplication of effort with "Coulter Tree Farm project, line 84))	Med	long	The owner has an unusual water right agreement, see footnote to table in WAC 173-515-030. Single landowner simplifies negotiations.	Check with Burt.
KPUD	10. Little Anderson Asbury Parcel	Med	Short	Deserves further investigation	
KPUD	11. Gold Mtn Golf Course Water Use Options	Med	short	City of Bremerton owns the golf course. I believe there is one irrigation right (G1-23787C) for 125 gpm and 75 acre-feet. Likely the rest of the irrigation use is covered under City's municipal rights. It might be worth looking into reducing water use.	Check with Teresa and Burt.
KPUD, Kitsap	12. Coulter Creek Heritage Park infiltration (airport?)	Med	Short/Med	Unique location. The airport overlaps the drainage divides of Coulter Creek, Union River and Gorst Creek	
KPUD	13. MAR Project Minter Cr	Low	Short		on concern list
KPUD	14. MAR Project: Grovers Cr	Low	Short		
KPUD, Kitsap	15. MAR Project: Union R	Low	Short		
KPUD	16. MAR Project Judd Cr	Low	Short		
KPUD, Kitsap	17. MAR Project Tahuya	Low	Short		
KPUD, DFW	18. Piner Point	High	Short/long	Sounds like this project is "down the road" toward implementation; quantifiable streamflow benefits	
KPUD, DFW	19. Misty Isle Farm	high	Short/long	quantifiable streamflow benefits	
KPUD, DFW	20. Maury Island Initiative	high	Short/long	quantifiable streamflow benefits	
Pierce, Kitsap, Squaxin	21. Upper Little Minter Creek watershed acquisition and floodplain/wetland restoration project.	Med	Depends on landowner willingness and project type.	Depends on landowner willingness to sell. They have discussed it with various contacts, but are not currently open to the idea. If we keep it on the list, this could be a great project once the property becomes available. Area has been extensively ditched and drained. Water offset via wetland restoration and enhanced storage, potential water right. Habitat value from wetland and channel restoration. habitat project under development with potential offset benefit.	consider for long term opp as need to wait until landowner willingness
Pierce	22. Purdy Creek Fish Passage- Floodplain Reconnection	High	Short	Currently pursuing funding through SRFB. No anticipated water offset value. Potential habitat benefits along with passage improvement.	may want to consider removal if concerns re: SRFB \$\$



Pierce	23. 360 Trails/Gateway Park	Med	Long	Explore acquisition around existing park. Habitat restoration opportunities. Potential BDA/ELJ to improve storage in upper Minter Crk.	may be worth considering for further development
Pierce, DFW	24. Pierce County parcel near Belfair - Elgin Clifton Road	Med/low	Med/long	Not all that near to Belfair-recommend project name change. Pierce County SWM-owned properties along Rocky Crk (0022221036, 0022221046, 0022221020, 0022221019, 0022224030, 0022228010). Habitat generally very good, but opportunity for BDA/ELJ for increased storage. Forest preservation opportunity. Quantifiable streamflow benefits	change name
Pierce	25. Pierce County parcel near Home - 18th St NW	Low	Unknown	Parcel 0021352000. Some potential for project on this site, although it's not clear what that project would be. May face restrictions on site utilization, Pierce County road operations owns this parcel.	ask Paul for more details on what envisioned here. May be low feasibility if used by roads.
Pierce, Kitsap, Squaxin	26. Rocky Creek Protection and Riparian Buffer	Med	Med/long	This is a GPC project, but one the County supports. Sounds like floodplain and restoration benefits on up to 4 miles of stream. Several possibilities with GPC and Pierce Co properties	
Pierce	27. Floodplain enhancement on multiple sites	High	Med	GPC has several properties in Rocky and Filucy Bay watersheds. Could be great opportunity for increased storage since the land is already held. We should have the consultant assess/quantify potential benefit on GPC-owned sites.	
Pierce	28. Pierce County parcel near Gig Harbor Golf Club, Artondale	Low	Med	This site has potential. I still need to find out from other County staff whether this site is an eligible project location. (Parcels 0121132016, 0121133024) Would need the consultant or committee to define what type of project we are proposing in order to start assessing our level of support.	need to further define project idea to support further exploration by county and consultants.

Pierce, DFW	29. Pierce County parcel near Minter Ck trib - 144th St	Low	Med	I think this title is supposed to be Rocky Crk, not Minter. The Rocky Creek Conservation Area is on the south fork of Rocky Creek near 144 <sup>th</sup> . Several of the parcels are used by Pierce County road operations, but there is some project potential on parcel 0022242019. We would need the consultant or committee to further define what type of project is being proposed in order to assess support from our road ops folks.	talk with Paul about the name and if this is Rocky - consider name change. need to further define project idea to support further exploration by county and consultants. On concern list
Kitsap, Bremerton	30. Big Beef Creek Restoration	Med	Med		
Kitsap	31. Gamble Cr Arness Parcel	Med	Med		
Kitsap	32. Seabeck DNR Parcel	Med	Long		
Kitsap	33. Bear Creek Protection	High	Long		
Kitsap, Bremerton	34. Koch Creek Regional Stormwater facility	Med	Short		
Kitsap	35. Mid Olalla Creek Floodplain/Wetland restoration	Med	Med		
Kitsap	36. Mid-Upper Blackjack Creek Floodplain / Wetland Restoration	High	Med	Same as the Ruby Creek Project	
DFW	37. Horseshoe Lake Golf Course	med	long	quantifiable streamflow benefits	on concern list ; PGG looking into
DFW	38. Trophy Lake Golf Course	med	long	quantifiable streamflow benefits	on concern list ; PGG looking into
DFW	39. Gold Mountain Golf Course	med	long	quantifiable streamflow benefits	PGG looking into
DFW	40. Forest Glen Natural Area	High	Long	quantifiable streamflow benefits	
DFW, Bremerton	41. Transfer surface water right to groundwater for public farmland	med	long, short	quantifiable streamflow benefits	
DFW	42. Pierce Co parcel near Home- Cornwall	low	long	quantifiable streamflow benefits	
DFW	43. Union R Watershed Mine Reclamation Option	med	long	quantifiable streamflow benefits	
Bremerton, Squaxin	44. Port Orchard Airport Stormwater	med	short/med	consultants working on this one. Ground work still needed to connect key players.	
Bremerton	45. Clear Creek Wetland and Floodplain Restoration	med	med		
Bremerton	46. Floodplain Restoration Upstream of Kitsap Lake	med	med		
Bremerton	47. Illahee Creek Stormwater Retrofit	med	med		note recommendation to pull from
Bremerton	48. Onsite Offset (Mason Co)	med	short		
Squaxin	49. Minter Creek floodplain restoration	med	long	several possible areas	

**Project Review Homework: WRIA 15 Committee April 2020****Potential Concern****<https://ecy.box.com/v/April2020ProjectHomework>**

Identified By:	Project Name	Comments (optional)
KPUD	1. Pierce County parcel near Gig Harbor Golf Club, Artondale	Enlargement of wetland will impact golf course (they once removed a beaver); however, re-meandering or enhancement of the stream reach that crosses the golf course would be an option.
KPUD	2. Horseshoe Lake Golf Course Water Use Options	Irrigation water right G1-25736C is for 250 gpm and 140 acre-feet. Highly unlikely the privately owned golf course needs less water for 125 acres of golf course. Within the water right report of examination is a statement "Although this annual quantity is less than the anticipated irrigation requirement, it should be adequate for the irrigation of the fairways and greens."
KPUD	3. Trophy Lake Golf Course Water Use Options	The irrigation portion of water right G1-26623C is for 700 gpm and 256 acre-feet. Unlikely the privately owned golf course management will agree to using less water for 140 acres of golf course. However, the owners could be approached to ascertain what they actually use and if they could use less.
Pierce	4. MAR Project Minter Cr	Very few project details. Location not clear, so difficult to evaluate if MAR feasible. Is this the same project area as the 360 Trails/Gateway park project??
Pierce	5. Pierce County parcel near Home - Cornwall Road	This site is actively used by Pierce County for road operations and maintenance. Project on this site is unlikely. (0021344004)
Pierce	6. Pierce County parcel near Minter Ck trib - 144th St	These sites are actively used by Pierce County for road operations and maintenance. Project on this site is unlikely. (0122212004, 0122212075, 0122163027)
Pierce	7. Pierce County parcel on Anderson Island	These sites are actively used by Pierce County for solid waste and road operations. Project on this site is unlikely (0119061024).
Kitsap	8. Streamflow Augmentation Projects, multiple	This seems to be a "robbing Peter to pay Paul" situation and I question them.

DFW	9. Fleming Fish Passage and Restoration Design	Concern using streamflow restoration \$ for projects that should have other funding sources as well as be the responsibility of owners to replace
DFW	10. Chico Way NW Bridge Replacement and Side Channel Reconnection	Concern using streamflow restoration \$ for projects that should have other funding sources as well as be the responsibility of owners to replace
DFW	11. Chico Creek Culvert (Golf Club Road)	Concern using streamflow restoration \$ for projects that should have other funding sources as well as be the responsibility of owners to replace
DFW	12. Springbrook Bridge	Concern using streamflow restoration \$ for projects that should have other funding sources as well as be the responsibility of owners to replace
DFW	13. Kitsap Creek @ Northlake	Concern using streamflow restoration \$ for projects that should have other funding sources as well as be the responsibility of owners to replace

**Project Review Homework: WRIA 15 Committee April 2020****Potential Additions****<https://ecy.box.com/v/April2020ProjectHomework>**

Identified By:	Project Name	Brief Description
KPUD	1. KPUD stream augmentation wells	In Kitsap County basins where offset is most needed, KPUD to install wells that are dedicated only for stream augmentation. Pumping rate could be adjusted for season, precipitation rates (e.g. drought) or number of PEWs as adaptive management component. A single well could provide the entire offset for a subarea.
DFW	2. Acquisition of Johnson Creek headwaters	The headwater wetlands of Johnson Creek (a salmon stream) in Poulsbo is relatively intact and undeveloped, however it is at risk of being developed. There is opportunity to acquire for preservation (GPC) or recreation (Parks)

# WRIA 15 Watershed Restoration and Enhancement Committee:

## Special Meeting on Consumptive Use

**April 22, 2020**

### **WebEx Only**

### **Participants**

Alora McGavin (ECY), Austin Jennings (Pierce Co), Bob Montgomery (Anchor QEA), David Nash (Kitsap Co), David Windom (Mason Co), David Winfrey (Puyallup Tribe), Dana Sarff (Skokomish Tribe), Dan Cardwell (Pierce Co), Joel Purdy (KPUD), John Covert (ECY), Stacy Vynne (ECY), Joel Massmann (Keta Waters, Suquamish Tribe Consultant), Mike Michael (Bainbridge Island), Parker Whitman (Aspect, Skokomish Tribe Consultant), Paul Pickett (Squaxin Island Tribe), Randy Neatherlin (Mason Co), Sam Phillips (Port Gamble S'Klallam Tribe), Seth Book (Skokomish Tribe), Susan Gulick (Sound Resolutions), Joy Garitone (KCD)

### **Meeting Materials**

All consumptive use materials are posted on Box: <https://ecy.box.com/v/WRIA15ConsumptiveUseFolder>

Materials for the meeting are posted on Box here: <https://ecy.box.com/v/22April2020ConsUseMeeting>

### **Meeting Goal**

- Identify a negotiated number or range for consumptive use to provide as a recommendation to the Committee.

OR

- Identify a path forward for a negotiated number or range for consumptive use.

### **Review of Where We Have Been and Where We Are Stuck**

Stacy provided an overview of what the committee has discussed over the last 9-12 months regarding consumptive use and where we have made progress. Stacy briefed the group on the three methods under discussion and where the committee has reached agreement. We will include all three methods in the plan for comparison, but need to determine which method or range to use for the consumptive use estimate. Susan shared different ways for the committee to consider uncertainty and recognized that there may be very different approaches preferred by committee members. Susan and Stacy recognized that the committee has not yet reached agreement on use of a consumptive use method nor how to account for uncertainty.

Seth and Parker discussed work that Aspect Consulting is doing to account for improved data on precipitation and irrigation. The data they are generating could be considered when accounting for uncertainty or a safety factor. Their work aligns with work that Joel M has completed for WRIAs 22/23. The Skokomish Tribe will present the information to the full committee at a future meeting for discussion on the results and consideration for inclusion in the plan.

### **Proposals on the Table**

Susan reviewed all of the proposals that have come forward to the committee so far. Participants shared their perspective on what method and range they prefer. The table below summarizes the perspectives shared on the phone call as well as through follow up review of the meeting summary.

<b>Table 1. Participant Preference for Consumptive Use Estimates</b>			
<b>Representative</b>	<b>Preference</b>	<b>Alternative</b>	<b>Other Comments</b>
Mason Co	USGS Method	Willing to use outdoor irrigation if do not apply additional safety factor.	Would like to use estimate closest to reality. If safety factor applied, would like to start with the metered data method or USGS and USDA data.
Port Gamble S'Klallam Tribe	Outdoor Irrigation Method		
Squaxin Island Tribe	Outdoor Irrigation Method (with Safety Factor considered in future)		Safety factor can be either a number or a combination of policy/regulation and/or adaptive management options
Kitsap PUD	USGS	Willing to use outdoor irrigation if do not apply additional safety factor.	
Bainbridge Island	USGS	Willing to use outdoor irrigation if do not apply additional safety factor.	
Pierce Co	USGS	Willing to use outdoor irrigation if do not apply additional safety factor.	
Kitsap CD	USGS	Willing to use outdoor irrigation if do not apply additional safety factor.	
Puyallup Tribe	Outdoor Irrigation Method (with Safety Factor considered in future)		Prefers highest possible number.
Kitsap Co	USGS		Need further internal discussions if willing to accept outdoor irrigation method.

## Discussion

- The group did not discuss focusing on a certain population growth range, but several folks seemed most comfortable starting with the medium growth. For WRIA 15, there is still a low and high growth projection under consideration based on the comfort level of the county to include (see growth projection technical memo).
- USGS biased low (low water use value, no high growth scenario, climate change not addressed)
- Adaptive management will need to consider the potential to amend the plan if assumptions are proven to be incorrect--either too high or too low.
- We should recognize that we may face a building crisis now, which could impact future water use.
- We may need to consider community buy in and incentives, and will need to clarify why we select a certain number for consumptive use.
- Consumptive use estimates are the minimum requirement for offsets and the plan must go above and beyond to meet Net Ecological Benefit.
- We need to recognize that projects are expensive. Adding more projects as safety factor will cost additional money, and this consideration should not be taken lightly.
- Projects also need to be fully developed so that committee members are confident that the projects will deliver the desired results.
- Jurisdictions that sit on multiple committees may need to consider how to justify if a committee chooses to use a different method than other committees.
- The Plans need to be a Hirst fix and offset PEW with real water and protect from future litigation.
- Tribal treaty rights must be protected through the plans by putting water in the streams for fish.

<b>Table 2. Annual Consumptive Use – Outdoor Irrigation Method</b>		
<b>Lower Growth Projection</b>	<b>Medium Growth Projection</b>	<b>Higher Growth Projection</b>
669.1 ac ft 414.8 gpm .9258 cfs	766.4 ac ft 475.1 gpm 1.0605 cfs	846.8 ac ft 524.9 gpm 1.1717 cfs

## Summary and Next Steps

- There is general “I can live with it” support for the outdoor irrigation method (122.9 gpd; see consumptive use estimates in Table 2). However, some participants want this to be the absolute high number while others want the opportunity to consider a safety factor later in the process.
- We will need to reach consensus on the final plan, not necessarily the individual pieces, and it may make sense to set the conversation aside until folks have the opportunity to see the full plan.
- All perspectives are valid. We have a diverse group and expect diverse perspectives. It is important for committee members to listen and to understand the diverse perspectives. Committee members are not expected to agree on all details within the plan, but plan approval will depend on committee members accepting details they disagree with.



- Stacy will share notes with the participants, including a summary of which proposal participants support. Participants should provide feedback.
- On May 7, Stacy and Susan will share with the committee the conclusions of this meeting and see how the Committee wants to proceed with the conversation. One approach is that we pause the conversation until the draft plan is prepared in order to better understand the project list and adaptive management components.



# Meeting Summary

## WRIA 15 Watershed Restoration and Enhancement Plan Recommendations: Workgroup Meeting

Monday, April 27, 2020 | 9:00 a.m. to 11:00 a.m.

### Location

Webex Only –See below

### Committee Chair

Stacy Vynne McKinstry  
Svyn461@ecy.wa.gov  
(425) 649-7114

### Handouts

Agenda  
Recommendation Matrix  
Proposals

**Documents Available on Box Here:** <https://ecy.box.com/v/WRIA15PlanRecommendations>

### **Participation**

Stacy Vynne McKinstry (Ecology)  
Susan Gulick (Sound Resolutions)  
Sam Phillips (Port Gamble S’Klallam Tribe)  
Allison O’Sullivan (Suquamish Tribe)  
Paul Pickett (Squaxin Island Tribe)  
Dan Cardwell (Pierce County)  
Austin Jennings (Pierce County)  
Dave Ward (Kitsap County)  
David Nash (Kitsap County)  
Mike Michael (City of Bainbridge)  
Roma Call (Port Gamble S’Klallam Tribe)  
Paulina Levy (Ecology)

### **Purpose of Meeting**

To agree on a way to bring developed draft recommendations to the Committee for their consideration.

### **Information to Include in Proposals Before Committee Discussion**

- Susan introduced certain proposal components such as:
  - Proposal proponent
  - Short description/abstract
  - Challenges and benefits of proposal
  - Magnitude of proposal, affected areas and jurisdictions
  - Responsible party (for implementation)
  - Budget estimate and funding options
  - Roles of various Committee members and other key players
- Paul suggested some policy recommendations may have alternative ways to implement, and would like those to be included. Discussing how a proposal is implemented is key for its development.
- Many members agreed that a cost estimate is important to include.
- Dave mentioned that despite proposal beings in different phases, all need descriptors before further consideration.
- Members acknowledged that a cost estimate will be difficult for policy recommendations, but some analysis should be conducted if proposal is to be considered.
- Dan mentioned that beyond local government’s costs, the cost to homeowners should be included as well.

## How to Get from a Laundry List to Realistic Proposals?

- The group reviewed the current list of proposals and expressed interest or concerns for each policy suggestion. WRIA 12 followed this method and Paul offered a recap of how the discussion went:
  - Paul mentioned WRIA 12 is smaller (1 county, 2 tribes, and additional members), but they all shared common goals: successful projects, implementation, plan that adds value to ecosystem
  - Adaptive management was discussed in reference to the role the Nisqually tribe plays in WRIA 11. WRIA 12 small group agreed that ECY needs to continue having a supportive role, but that a local group could take the lead after plan adoption.
  - Monitoring and reporting ideas were brought up. A main suggestion was to create a website where information could be updated. Ecology's role would be to maintain consistency if multiple WRIA's choose this website approach to reporting. Dan supports the transparency and the accountability in this type of reporting.
  - Another main discussion topic surrounded how to acknowledge commitment (which leads to durability).
  - Susan suggested separating policy recommendations and adaptive management since the latter has greater support and will be a big topic of discussion going forward.
- The group went through each current proposal idea for policy or regulatory change recommendations. The group did not discuss adaptive management. Notes were taken directly on the table which can be found on Box under [WRIA15PolicyAMRefinementv2](#). A few additional comments are included below.
  - Members agree cisterns are promising, but Dan cautioned that the Pierce County Health Department should be brought in to provide feedback.
  - Members expressed concern over raising the \$500 building permit fee required under 90.94.030 (\$150 retained by permitting authority, \$350 sent to Ecology).
    - Ecology is preparing a summary of how state is using the current portion of fees collected. The law directs the funds to be invested in the WRIA.
    - Paul mentioned that in WRIA 11 they estimate \$50K per year to keep the committee going. Alison is also interested in the cost for implementation, beyond administrative necessities.
    - It was recommended that we wait until the end of the process to determine whether we want to include a recommendation for raising the building permit fee in order to determine if we have other funding sources. Stacy emphasized that jurisdictions will need to start vetting early any consideration for raising the fee in order to make the case to their decision makers. Developing funding solutions may need to occur earlier and in conjunction with other policy suggestions.
    - Funding discussion will be given more time in future meetings.

## Action Items and Next Steps

- Summarize recommendations for Committee – see edits in the plan recommendation matrix.
- Present information to Committee for feedback.
- Determine if future meeting is needed for the workgroup to vet proposals or further refine the process.

Proposed Language: Project Tracking

April 16<sup>th</sup>, 2020

To: Watershed Restoration and Enhancement Committees, 90.94.030 RCW

From: Tristan Weiss, Streamflow Restoration Ecologist, WA Department of Fish and Wildlife

RE: Proposed project tracking language for inclusion in draft watershed plans

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### Project Tracking

The Committee has identified the need to track streamflow restoration projects and new domestic permit-exempt wells to: (1) improve the capacity to conduct implementation monitoring of streamflow restoration projects and actions, (2) build grant funding opportunities and track streamflow restoration associated costs, and (3) provide a template for adaptively managing emergent restoration needs. The Committee recommends piloting the Salmon Recovery Portal (<https://srp.rco.wa.gov/about>), managed by the Recreation and Conservation Office (RCO), for satisfying these needs. The implementation of project tracking through a pilot program using the Salmon Recovery Portal will be coordinated by the Washington Department of Fish and Wildlife in collaboration with the Washington Department of Ecology, RCO, and the Committee. To improve harmonization of streamflow restoration with ongoing salmon recovery efforts, local salmon recovery Lead Entity Coordinators shall be consulted prior to initial data uploads. University of Washington data stewards will be employed to conduct data entry, quality assurance, and quality control (see *Supplemental document: project tracking*).

## Supplemental Document: Project Tracking

April 16<sup>th</sup>, 2020

To: Watershed Restoration and Enhancement Committees, 90.94.030 RCW  
From: Tristan Weiss, Streamflow Restoration Ecologist, WA Department of Fish and Wildlife  
RE: Proposed project tracking supplemental document for inclusion in draft watershed plans

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### 1.1. Project Tracking

This section describes the elements required to track projects from a conceptual stage through completion. Project tracking is an essential component of implementation monitoring and adaptive management procedures. Therefore, it is recommended that projects be tracked through planning and implementation phases to enhance the Committee's ability to conduct implementation monitoring at the sub-basin and WRIA scale, monitor grant funding, identify plan successes and deficiencies, and streamline project development.

The Committee recommends a pilot program using the Salmon Recovery Portal (SRP; <https://srp.rco.wa.gov/about>) to conduct project tracking for the streamflow restoration effort under 90.94.030 RCW. As a statewide salmon recovery tracking tool, the capacity for SRP to allow for goal setting, hierarchical project tiers, supplemental information, and printing of automated reports makes it well suited for tracking projects associated with streamflow restoration and salmon recovery efforts. As a statewide tool administered by the Recreation and Conservation Office (RCO) and in partnership with salmon recovery Lead Entities (LE), the SRP provides a dynamic platform to track project offsets.

Tracking of projects will consist of two primary phases: (1) uploading required project information from all projects included in this plan into the SRP, and (2) uploading and updating all funded projects, project reports, and completed projects into the SRP database on an annual basis. Phase 1 will be coordinated and funded by the Washington Department of Fish and Wildlife (WDFW) and implemented by trained University of Washington (UW) data stewards in collaboration with RCO staff and Washington Department of Ecology (Ecology) staff. Phase 2 project uploads will be implemented by UW data stewards in consultation with Ecology grant management, RCO, and WDFW staff. To improve harmonization of streamflow restoration efforts with ongoing salmon recovery efforts, local salmon recovery LE Coordinators shall be consulted prior to initial data uploads. While input and oversight is welcomed, no commitment of additional work is required from LE Coordinators. Streamflow restoration projects not funded through the streamflow restoration grant program, will be updated by data stewards during any grant reporting to Ecology or RCO. Primary quality control measures will be performed by data stewards. Funds to support initial and ongoing costs of data steward data entry (Phases 1 and 2) will be provided by WDFW.

The Committee recommends, at minimum, the following data fields for streamflow tracking: WRIA, sub-basin, project description, funding source, estimated cost, project spatial boundaries or coordinates, project proponent (if applicable), estimated water offset or habitat benefits, and

## Supplemental Document: Project Tracking

target implementation date. Projects with sensitive locations can be made private or those with undetermined locations can be entered as a project boundary or defined at the sub-basin scale. New permit exempt well locations at the section or sub-basin scale may be incorporated into the SRP to support implementation monitoring and adaptive management goals.

To support the implementation of the above pilot program for tracking projects under 90.94.030 RCW, WDFW has initiated pilot projects in two 90.94.020 RCW basins: the Nisqually River Basin (WRIA 11) and the Chehalis River Basin (WRIAs 22/23). These pilots are coordinated by WDFW in conjunction with RCO, Ecology, local LE Coordinators, and the Planning Units. Intended as a proof of concept, these pilots are planned to explore the capacity and effectiveness of the SRP to track streamflow restoration projects.