



AGENDA

Snohomish (WRIA 7)

Watershed Restoration and Enhancement Committee meeting

November 14, 2019 | 12:30pm – 3:30pm [WRIA 7 Committee Webpage](#)

Location

Brightwater Facility
22505 State Route 9 SE,
Woodinville

Committee Chair

Ingria Jones
Ingria.Jones@ecy.wa.gov
(425) 649-4210

Handouts

Glossary & resources
Subbasin delineation map and
draft memo
Local approval process form
Draft plan outline
Adaptive management discussion
guide

Welcome, Introductions, and Standing Business

12:30 p.m. | 20 minutes | Facilitator | **Decision**

- Introductions
- Review agenda
- Approve October meeting summary
- Follow up on subbasin delineations
- Introduction to BOX

Calendar and process

12:50 p.m. | 30 minutes | Counties, Facilitator, & Committee | Discussion

- Objective: Discuss evolution of process and discuss decision-making and timeline
 - Calendar and upcoming meeting topics
 - Process and timing for decision on 20-year consumptive use estimates
 - Local approval process form

Plan outline and adaptive management

1:20 p.m. | 40 minutes | Chair & Facilitator | Overview

- Objective: Review detailed plan outline and what adaptive management elements to include in WRIA 7 plan
 - Overview of draft plan outline
 - Overview from counties and Ecology of PE well fee tracking
 - Revisit adaptive management following September break-out group discussions

Break

Projects

2:15 p.m. | 30 minutes | Technical consultants & Committee | Discussion

- Objective: continue discussions of the project inventory process and discuss takeaways from existing inventory
 - Presentation from technical consultants on project inventory
 - Discussion of project inventory

- Update from the project subgroup on project screening criteria & water right acquisitions

Streamflow restoration grant guidance

2:45 p.m. | 25 minutes | Paulina Levy, Ecology | Questions and Discussion

- Objective: Provide committee with overview of 2020 streamflow restoration grant round
 - Presentation from Ecology on streamflow restoration grant guidance

Public Comment

3:10 p.m. | 10 minutes | Facilitator

Next Steps and Action Items

3:20 p.m. | 10 minutes | Facilitator & Chair

- Next WRIA 7 Committee meeting: Thursday, December 12, Willis Tucker Community Park, Snohomish
- Next Technical Workgroup meeting: Monday, November 18, WebEx
- Next Project Subgroup meeting: TBD

To request ADA accommodation, visit <https://ecology.wa.gov/accessibility>, call Ecology at 360-407-6831, Relay Service 711, or TTY 800-833-6384.



DRAFT Meeting Summary

Snohomish (WRIA 7)

Watershed Restoration and Enhancement Committee meeting

October 10, 2019 | 12:30 p.m. - 3:30 p.m. [WRIA 7 Committee Webpage](#)

Location

Gary Weikel Room,
Willis Tucker Community Park,
6705 Puget Park Drive,
Snohomish

Committee Chair

Ingrid Jones
Ingrid.Jones@ecy.wa.gov
(425) 649-4210

Handouts

Growth projections map
Subbasin delineation proposal
maps
Projects one-pager
Draft fatal flaw criteria
Snohomish CD project
description

Attendance

Committee Representatives and Alternates *

Brant Wood (*Snohomish PUD*)
Keith Binkley (alternate) (*Snohomish PUD*)
Mike Wolanek (*City of Arlington*) (phone)
Lindsey Desmul (alternate) (*WA Dept. of Fish & Wildlife*)
Jordan Ottow (*City of Monroe*)
Matt Baerwalde (*Snoqualmie Indian Tribe*)
Julie Lewis (alternate) (*Snoqualmie Indian Tribe*)
Souheil Nasr (alternate) (*City of Everett*)
Morgan Ruff (*Snohomish Basin Salmon Recovery Forum*) (ex officio)
Denise Di Santo (*King County*)
Dylan Sluder (*MBA of King & Snohomish Counties*)
Elissa Ostergaard (*Snoqualmie Watershed Forum*) (ex officio)
Jaime Burrell (*City of North Bend*)

Steve Nelson (*City of Snoqualmie*)
Paul Faulds (*City of Seattle*)
Amanda Smeller (*City of Carnation*)
Kurt Nelson (alternate) (*Tulalip Tribes*)
Anne Savery (alternate) (*Tulalip Tribes*) (phone)
Matthew Eyer (*City of Marysville*)
Leah Everett (*City of Lake Stevens*)
Michael Remington (*City of Duvall*)
Cynthia Krass (*Snoqualmie Valley WID*)
Emily Dick (*Washington Water Trust*)
Bobbi Lindemulder (*Snohomish CD*)
Ann Bylin (alternate) (*Snohomish County*)
Glen Pickus (*City of Snohomish*)
Stacy Vynne McKinstry (alternate) (*WA Dept. of Ecology*)
Ingrid Jones (*WA Dept. of Ecology*) (chair)

Committee Representatives and Alternates in Not Attendance*

Town of Index

City of Gold Bar

Other Attendees

Susan O'Neil (*ESA, Facilitator*)
Angela Pietschmann (*Cascadia*) (info manager)
Bridget August (*GeoEngineers*)
Patty Dillon (*NHC*)
John Covert (*WA Dept. of Ecology*) (phone)
Paulina Levy (*WA Dept. of Ecology*)

Yorik Stevens-Wajda (*Snohomish County Council*)
Beth Liddell (*Snohomish County*)
Kevin Lee (*WA Dept. of Fish & Wildlife*)

*Attendees list is based on sign-in sheet.

Welcome, Introductions, and Standing Business

Susan welcomed the group and began introductions.

Susan reviewed the agenda.

No revisions to the agenda.

Ingria made one correction to the meeting attendance in the August meeting summary.

- Snohomish PUD commented that the value of the smaller system is often the system's water rights; when larger water systems take over service for a smaller system, the larger system usually adds the smaller system's water right to its portfolio.

The meeting summary was approved without further changes.

Ingria provided updates from Ecology.

- Beginning this month, Ecology and technical consultants will share large files and working documents with committee and workgroup members via BOX, a secure file sharing program. Ingria will send invitations.
- Ecology is holding a series of workshops to inform potential grant applicants about the process and purpose of the streamflow restoration grants. Ecology will begin accepting applications February 3, 2020. See Ecology's [streamflow restoration grants](#) webpage for more information.
- Ecology is beginning targeted water right application processing in WRIA 7. This does not affect WREC planning.
 - If you have questions, contact Chelsea Jefferson: Chelsea.jefferson@ecy.wa.gov; (425) 649-7202

No additional updates from committee members.

Subbasin delineation

Objective: Consider subbasin delineation proposal from workgroup, determine best path forward

Ingria provided an update on the technical workgroup's October 2 meeting.

- The technical workgroup developed a subbasin delineation proposal for the committee that includes 16 subbasins.

Elissa Ostergaard (Snoqualmie Watershed Forum) and Matt Baerwalde (Snoqualmie Tribe) provided an overview of the King County portion of the technical workgroup's subbasin delineation proposal.

- The proposal includes 7 subbasins in the King County portion of the watershed:
 - Snoqualmie North
 - Cherry-Harris
 - Snoqualmie South
 - Patterson
 - Raging
 - Upper Snoqualmie
 - Upper Skykomish (spans both counties)
- The workgroup considered the following guiding principles: PE well projections, potential project locations, and aligning with Protection Planning Units in the Snohomish Basin Protection Plan (the WRIA 7 Watershed Characterization Model developed for the SBPP describes flow importance for the subbasins and the SBPP outlines strategies for protecting hydrological processes).
- The workgroup also considered characteristics unique to specific watersheds, including low streamflow in the Raging River, development pressure near Patterson Creek, Tolt Reservoir regulating flows on the Tolt River, and a marshy plateau area separating Cherry Creek and Harris Creek (not a strict hydrological boundary).

Morgan Ruff (Snohomish Basin Salmon Recovery Forum) provided an overview of the Snohomish County portion of the workgroup's subbasin delineation proposal.

- The proposal includes 10 subbasins in the Snohomish County portion of the watershed:
 - Tulalip
 - Quilceda-Allen
 - Little Pilchuck
 - Estuary/Snohomish Mainstem
 - Pilchuck
 - Woods
 - Sultan
 - Lower Mid-Skykomish
 - Skykomish Mainstem
 - Upper Skykomish (spans both counties)
- The workgroup considered the same guiding principles for the Snohomish County portion of the watershed. The workgroup kept Tulalip, Quilceda, and Little Pilchuck as separate subbasins due to projected growth. Allen Creek was included in the Quilceda watershed to align with existing planning in the estuary.

Reference Materials

- Subbasin delineation proposal maps (see [meeting packet](#))
- [Technical Workgroup Meeting Notes](#)

Discussion

- The committee agreed to use the technical workgroup's subbasin delineation proposal for the consumptive use estimates.
- The committee discussed the process for approving the subbasin delineation proposal and other elements of the WRE Plan referred to as interim decisions in the committee's operating principles.
 - Committee members would like to understand specific upcoming decision points.
 - When formal agreement is needed, Ingria will provide materials describing the decision point, the context for the decision, and supporting documents that committee members can share with their entities.
 - Ingria will be sharing a form for committee members to take back to their entities to describe their process for approval of the Plan. This will be accompanied by an overview brochure outlining the committee's task, status, and timeline.
- The committee discussed the process for raising concerns or identifying further discussions or analysis needed on elements of the WRE Plan.
 - Ingria responded that committee members are encouraged to voice their ideas and concerns during committee meetings. Depending on the topic and timing, further discussion may be needed at a future technical workgroup or committee meeting. Some technical or policy matters may be best suited to separate meetings with specific relevant entities.
- Some committee members would like to revisit elements of the growth projections to understand the number of PE wells projected in Tulalip and Quilceda as well as how nonconforming parcels were considered in the projections. The technical workgroup will discuss this at a future meeting.

Bridget August (GeoEngineers) provided an overview of next steps for growth projections.

- GeoEngineers will compile the growth projections by subbasin and identify any areas where additional analysis may be needed.

Consumptive Use approach

Objective: Provide update on consumptive use and determine path forward

Patty Dillon (NHC) presented on the refined consumptive use work plan for WRIA 7.

- Reference materials [updated consumptive use work plan](#) - presentation
- Updated WRIA 7 Consumptive Use Work Plan (BOX)

Discussion and Considerations:

- The Committee discussed the process for parcel selection.
 - Technical consultants will evaluate tax parcel areas associated with single-family residential construction permits in areas served by domestic permit-exempt wells (PE wells). They are excluding areas served by public water but are not excluding areas based on zoning.
 - Homes relying on PE wells in agricultural areas may have extensive irrigated areas. Areas outside of the vicinity of the home are assumed to have an associated water right.
 - Technical consultants anticipate reviewing a minimum of 250 parcels in WRIA 7 in order to capture the range of lawn sizes.
 - If there are too few past parcels to sample, technical consultants will identify a nearby subbasin with similar development patterns and apply that average irrigated footprint.
- The consumptive use estimates account for the average people per household.
 - Snohomish County's rural capacity analysis estimates an average housing unit size of 2.9 for occupied, single family residential units in unincorporated areas.
- Technical consultants will calculate the average irrigated footprint for each subbasin.
 - Preliminary results for WRIA 9 have a high standard deviation in lawn sizes, however the margin of error surrounding the mean is statistically defensible. Since there were so few rural parcels in WRIA 9, technical consultants analyzed all recent parcels in order to develop accurate averages.
 - Once results from other watersheds are reviewed by their committees, Ingria can share.
- Committee members requested that technical consultants note when a parcel has an associated outdoor pool. Consultants will note this during their analysis.
- The committee discussed the consumptive use calculator technical consultants are developing.
 - The calculator will include results in acre-feet (AF), gallons per day (gpd), and cubic feet per second (cfs).
 - The basic version of the calculator includes annual totals for consumptive use distributed over the year, but technical consultants can build a version of the calculator that incorporates irrigation demand during June, July, and August.
 - The calculator will include scenarios for 950 gpd and ½ acre irrigated area.
- The committee had questions about where similar methods had been used before and how ground-truthing could be incorporated.
 - RH2 used aerial photos to calculate average irrigated area for parcels as part of their technical support for the WRIA 1 watershed plan update.
 - The [water use data](#) provided by Snohomish PUD serves as a ground-truth.
 - Members of the WRIA 15 technical workgroup are ground truthing select properties to compare to their technical consultant's work.
 - While ground truthing data takes additional effort, assumptions and sensitivity analysis can be easily analyzed in the calculator.
- The committee discussed how water use may change year to year.
 - Snohomish Conservation District noted landowners converting portions of their lawns to small gardens. The consumptive use estimates use the crop irrigation requirements for commercial turf grass, which requires more water than a typical garden.
 - Snohomish PUD compared water use for 2015 (drought year) and 2017; the differences between the two years were relatively small.
 - Committee members expressed interest in using a conservative (high) estimate for consumptive use from outdoor irrigation and developing scenarios for drought years.
 - The committee may consider climate change in consumptive use estimates or other elements of the WRE Plan.

The committee agreed that technical consultants should begin the irrigated footprint analysis. The technical workgroup will review consumptive use results and discuss additional scenarios for the committee's consideration.

Project updates

Objective: Continue discussions of specific projects and project inventory process

Ingria introduced a projects and actions one-pager and encouraged committee members to share copies with their entities, partners working on capital projects, and other planning groups in the watershed.

Reference materials:

- Projects and Actions: Needs for WREC (On BOX and in [meeting packet](#))

Morgan Ruff provided an overview on 4-year work plan coordination.

- The Snohomish Basin Salmon Recovery Forum will be sending guidance to project sponsors soon and requesting that projects be submitted by November 20.
 - Guidance included additional questions to identify potential water resource benefits of projects.
 - Sponsors can update existing projects or add new projects and describe potential streamflow benefits or water rights associated with their project.
- Coordination provides the Forum and the WREC a better understanding of the streamflow benefits of existing and new projects.
- Projects identified through the 4-year work plan can be added to the committee's project inventory, however projects on the committee's project list does not need to go through the 4-year work plan.

Committee members shared takeaways from the [Moga back channel restoration](#) project tour.

- The Snohomish Conservation District (Snohomish CD) sponsored a project on private land to remove fish passage barriers, install log jams, increase off-channel habitat, and plant native vegetation.
 - The project was a priority for salmon recovery.
 - Feasibility studies were developed several years ago, enabling the project to come together quickly once there was a willing landowner.
- Ingria explained that this is an example of a project that has clear habitat benefits, but the water offset benefits (volume and timing) are difficult to calculate with certainty.
 - The Final NEB Guidance does not prescribe methods for calculating the water offset benefits of floodplain reconnection projects.
 - The committee needs to demonstrate how a project has water offset benefits and the certainty of the benefit. Technical consultants can assist in evaluating project benefits for a subset projects identified by the committee for further analysis.
- Committee members were interested in understanding how other committees are estimating water offset benefits from habitat projects and learning how Snohomish CD is evaluating streamflow benefits under their project grant.

Cynthia Krass provided an overview of the Snoqualmie Valley WID's Natural Storage Enhancement and Comprehensive Storage Study funded by a streamflow restoration grant.

- Anchor QEA is under contract to develop conceptual design for one or more natural storage enhancement project and to develop assess storage opportunities in the Snoqualmie watershed.
 - The natural storage enhancement project will build off of SVWID's previous study that identified potential storage sites on specific tributaries in the lower Snoqualmie watershed and near the SVWID service area.
 - The new storage study will include the whole Snoqualmie watershed and a broad assessment of potential storage opportunities.
- SVWID is planning to coordinate with the project subgroup and committee to identify a priority natural storage site, to develop study priorities, and to identify potential sites that benefit instream resources. Anchor QEA will develop a GIS weighted analysis model for the potential sites that committee members can use.

Bobbi Lindemulder provided an overview of the Snohomish CD's Community-Based Water Storage Restoration project funded by a streamflow restoration grant.

- The project takes course over 5 years in the Pilchuck, French, and Lower Skykomish watersheds, which are high priority areas for restoration, surface storage, and discharge.
- The project includes three components: wetland restoration, developing a *living with beavers* program, and developing a small farm water storage pilot program.
- Snohomish CD is planning to coordinate with the project subgroup and committee on development of the project, including presenting to the committee.

Emily Dick provided a report out from the project subgroup on the project inventory and initial project screening criteria.

- GeoEngineers updated the project inventory to align with the project categories in the Final NEB Guidance. They will manage the inventory on BOX.
- Technical consultants developed draft fatal flaw screening criteria that includes 5 yes/no questions.
 - Additional projects identified through the 4-year work plan will be screened for fatal flaws.
 - Projects that pass the fatal flaw criteria can be considered by the committee.

Resources

- Draft fatal flaw screening criteria (see [meeting packet](#))

Discussion and Considerations:

- Committee members want to track monitoring projects that don't have a direct benefit to streamflow or habitat, but are important for planning and adaptive management.
- The draft prioritization screening criteria includes criteria for cost/benefit ratio that the committee can use or customize.
 - Some but not all projects in the inventory have cost estimates.
 - Technical consultants will develop cost estimates for a subset of projects identified by the committee for further analysis.
- Committee members are interested in what types of projects are included in the "habitat and other" category and wants to have input on how water offset benefits of habitat projects are developed and how habitat projects are screened.

Technical consultants will begin initial project screening. The project subgroup will discuss subsequent screening criteria and brainstorm existing methods for calculating water offset benefits.

Next Steps and Action Items

- Committee members share projects one-pager with partners and discuss project ideas.
- Ingria will invite committee members to BOX.
- Ingria will work with technical consultants to develop a draft subbasin delineation memo and refine maps.
- Next WRIA 7 Committee meeting: Thursday, November 14, Brightwater Facility, Woodinville
 - The committee will meet in November and December. The committee will not meet in January.
- Next Technical Workgroup meeting: TBD
- Next Project Subgroup meeting: November 4, 12:00-2:00 pm, Duvall Community Center

To: Ingria Jones, Washington State Department of Ecology
From: Bridget August and John Monahan, GeoEngineers, Inc.
Date: November 12, 2019
File: 00504-161-00
Subject: WRIA 7 Subbasin Delineations - DRAFT

INTRODUCTION

GeoEngineers, Inc. (GeoEngineers) 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) 7, 8 and 9. This memorandum provides a summary of the deliverable for Work Assignment GEO102, Task 2, WRIA 7 Subbasin Delineations.

BACKGROUND AND CONTEXT

The Streamflow Restoration Act (SRA, Chapter 90.94 Revised Code of Washington [RCW]) specifies that by June 30, 2021, Ecology must establish a WRE Committee and adopt a WRE Plan in the Snohomish Watershed (WRIA 7). The WRE Plan needs to address impacts on streamflows from consumptive use from new domestic permit-exempt wells anticipated between January 19, 2018 and January 18, 2038. Dividing the Snohomish WRIA into subbasins is an essential step in developing a plan that complies with the law. 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." The Final Guidance for Determining Net Ecological Benefit (GUID-2094; Ecology 2019) states that, "Planning groups must divide the WRIA into suitably-sized subbasins to allow meaningful analysis of the relationship between new consumptive use and offsets. Subbasins will help the planning groups understand and describe location and timing of projected new consumptive water use, location and timing of impacts to instream resources, and the necessary scope, scale, and anticipated benefits of projects. Planning at the subbasin scale will also allow planning groups to consider specific reaches in terms of documented presence (e.g., spawning and rearing) of salmonid species listed under the federal Endangered Species Act."

WRIA 7 includes the Snohomish River, the Snoqualmie River, the Skykomish River, and associated tributaries. It also includes streams draining directly to Puget Sound between the City of Mukilteo and the City of Everett, on the Tulalip Plateau, and in the Marysville Trough.

The methods used to delineate subbasins in WRIA 7 are summarized below.

SUBBASIN DELINEATION METHODS

GeoEngineers worked with the WRIA 7 – Snohomish WRE Committee to delineate subbasins for WRIA 7. The WRIA 7 WRE Committee considered existing subwatershed units for their subbasin delineation, including

hydrologic unit codes, King County drainage basins, and the Snohomish Basin Protection Plan's Protection Planning Units.

- Hydrologic unit codes (HUCs) refer to the U.S. Geological Survey (USGS) delineation of watersheds into successively smaller hydrologic units (USGS 2013). The USGS uses a nationwide system based on surface hydrologic features. This system divides the country into 21 regions (2-digit), 222 subregions (4-digit), 370 basins (6-digit), 2,270 subbasins (8-digit), ~20,000 watersheds (10-digit), and ~100,000 subwatersheds (12-digit). A hierarchical HUC consisting of 2 additional digits for each level in the hydrologic unit system is used to identify any hydrologic area. HUC-12 is at the subwatershed level (12-digit) of HUCs and there are over 60 HUC-12 subwatersheds in WRIA 7.
- King County drainage basins are similar in size to HUC-12s, but do not exactly match the HUC-12 boundaries. They are a boundary layer developed by King County using LIDAR technology to delineate drainage basins. There are 23 King County drainage basins in the King County portion of WRIA 7.
- The Snohomish Basin Protection Plan (Protection Plan) was developed “to identify protection strategies that prevent the degradation of hydrologic processes that support salmon or salmon habitat” and is intended to set a framework for “implementation and accounting of protection efforts by all Basin partners.” There are 17 Protection Planning Units in WRIA 7. Protection Planning Units were determined based on critical flows for chinook and focal stream reaches, considering areas with similar hydrology and land uses.

Subbasin Selection Considerations

The WRIA 7 Committee used existing HUC-12s, King County drainage basins, and Protection Planning Units and applied the following guiding principles to develop subbasin delineations:

- Align subbasins with the Protection Plan as closely as possible.
- Combine HUC-12s and King County drainage basins with lower projected growth of new homes using permit-exempt domestic wells.
- Keep distinct subbasins for HUC-12s and King County drainage basins with higher projected growth of new homes using permit-exempt domestic wells.
- Consider important salmon habitat and potential location of offset projects and actions.
- Consider streams with known low flow issues.
- Consider streams with year-round closures¹.

WRIA 7 Subbasin Delineation

The WRIA 7 subbasin boundaries are based on HUC-12 subwatersheds in the Snohomish County portion of the watershed and King County stream basin boundaries in the King County portion of the watershed. GeoEngineers used existing HUC-12 shapefiles from the USGS (2016) and stream basin shapefiles from King

¹ The following streams have year-round closures in WAC 173-507: Griffen Creek, Harris Creek, Little Pilchuck Creek, May Creek, Patterson Creek, Quilceda Creek, Raging River, and Bodell Creek.

County (2018) to develop a map and GIS shapefile for the WRE Committee's subbasins. The following adjustments were made:

- The Allen Creek drainage was added to Quilceda HUC-12.
- The Snoqualmie mainstem King County drainage basin was split where the Tolt River enters the Snoqualmie River.
- Stream basin boundaries were shifted to align with the boundary between WRIA 7 and WRIA 8.
- HUC-12 boundaries were extended to the Puget Sound.
- Hat Island and Jetty Island, located in Tulalip Bay within Snohomish County and WRIA 7, were added to the Estuary/Snohomish Mainstem subbasin.

The WRIA 7 subbasin delineations are shown on Figure 1.

WRIA 7 Subbasins

- The North, Middle, and South Fork Snoqualmie stream basins are combined (**Upper Snoqualmie**).
- The Raging River is one subbasin (**Raging River**).
- Patterson Creek is one subbasin (**Patterson Creek**).
- The South Fork Tolt, North Fork Tolt, and Lower Tolt stream basins are combined with nearby stream basins Tokul Creek, Griffen Creek, and the southern half of the Snoqualmie mainstem drainage basin (**Snoqualmie South**).
- The northern half of the Snoqualmie mainstem drainage basin is combined with Tuck Creek, Cathart drainages, and Ames Lake (**Snoqualmie North**).
- Cherry Creek and Harris Creek are combined into one subbasin (**Cherry/Harris**).
- The South Fork and North Fork Skykomish tributaries are combined (**Upper Skykomish**). This includes the following HUC-12 subwatersheds and drainage basins:
 - Foss River, Miller River, Tye River, South Fork Skykomish River, Beckler River, Rapid River, Upper Beckler River, Lower South Fork Skyomish River, Lower North Fork Skykomish River, Middle North Fork Skykomish River, and Upper North Fork Skykomish River.
- Wallace River and Olney Creek are combined (**Lower Mid-Skykomish**).
- Elwell Creek-Skykomish River and McCoy Creek-Skykomish River are combined (**Skykomish Mainstem**).
- Woods Creek is one subbasin (**Woods Creek**).
- Upper, Middle, and Lower Sultan River are combined (**Sultan**).

- Upper and Lower Pilchuck River are combined (**Pilchuck**).
- Little Pilchuck is one subbasin (**Little Pilchuck**).
- The Allen Creek drainage, which is part of the Snohomish River – Frontal Procession Sound HUC-12 subwatershed, is combined with the Quilceda Creek HUC-12 subwatershed to create one subbasin (**Quilceda-Allen**).
- The Snohomish River, Evans Creek, and French Creek are combined (**Estuary/Snohomish Mainstem**).
- Tulalip Creek is one subbasin (**Tulalip**).

NEXT STEPS

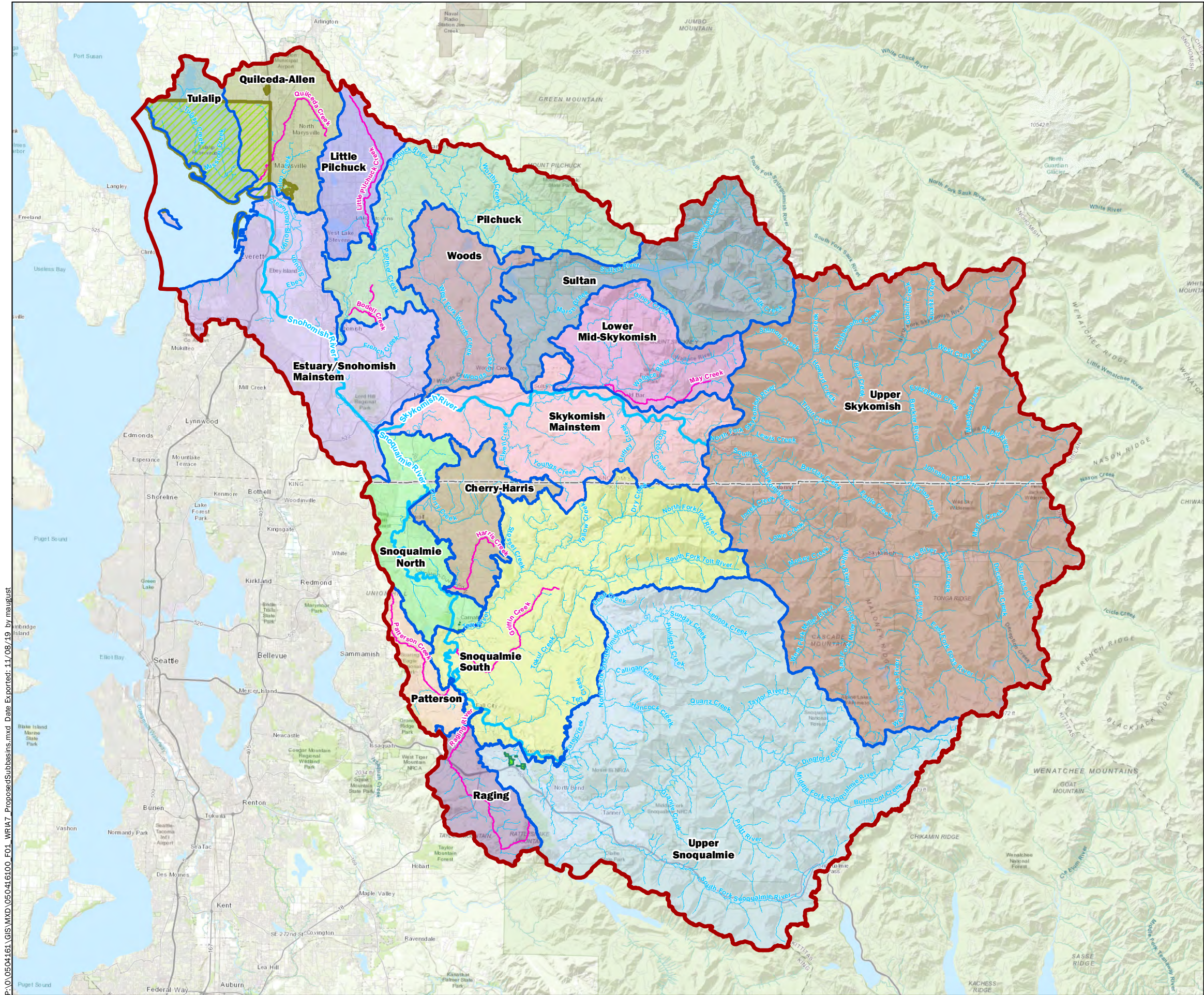
- The WRIA 7 WRE Committee agreed to use the proposed 16 subbasins to estimate potential permit-exempt well growth and consumptive use by subbasin. The Committee can revisit the subbasin delineations later in the planning process, if needed.

REFERENCES

- Department of Ecology (Ecology), 2019. Final Guidance for Determining Net Ecological Benefit, GUID-2094 Water Resources Program Guidance. Washington State, Department of Ecology, Publication 19-11-079, p. 131.
- King County, 2018. GIS Open Data, *Basin boundaries derived from terrain data, King County only / topo basin kc area*. <https://gis-kingcounty.opendata.arcgis.com/datasets/basin-boundaries-derived-from-terrain-data-king-county-only-topo-basin-kc-area>, December 3, 2018.
- Snohomish County Surface Water Management, King County Snoqualmie Watershed Forum Staff, and Tulalip Tribes Natural Resources Department, 2015. *Snohomish Basin Protection Plan*. Snohomish Basin Salmon Recovery Forum, Everett, Washington.
- U.S. Geological Survey and U.S. Department of Agriculture, Natural Resources Conservation Service, 2013. Federal Standards and Procedures for the National Watershed Boundary Dataset (WBD) (4 ed.). U.S. Geological Survey Techniques and Methods 11-A3, 63 p.
- U.S. Geological Survey, 2016. USGS National Hydrography Dataset (NHD) Downloadable Data Collection - National Geospatial Data Asset (NGDA) National Hydrography Dataset (NHD): USGS - National Geospatial Technical Operations Center (NGTOC): Rolla, MO and Denver, CO. <http://nhd.usgs.gov>, <http://viewer.nationalmap.gov/>.

Attachments:

Figure 1. WRIA 7 – Snohomish Subbasin Delineation



Legend

WRIA 7 Boundary

Surface Water Closures³

WRIA7 Proposed Subbasins

Snoqualmie Tribe Reservation

Tulalip Tribes Reservation

Cherry-Harris

Estuary/Snohomish Mainstem

Little Pilchuck

Lower Mid-Skykomish

Patterson

Pilchuck

Quilceda-Allen

Raging

Skykomish Mainstem

Snoqualmie North

Snoqualmie South

Sultan

Tulalip

Upper Skykomish

Upper Snoqualmie

Woods

Notes:

1. The locations of all features shown are approximate.

2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

3. Closed streams represent GeoEngineers' interpretation of the language in WAC 173-507 and this map is to only be used for planning purposes.

Data Source: ESRI Topographic Map Base

Projection: NAD 1983 StatePlane Washington North FIPS 4601 Feet

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WRIA 7 - Snohomish Subbasin Delineation

Watershed Restoration and Enhancement Plan WRIA 7
Snohomish County, Washington

GEOENGINEERS

Figure 1

WRIA 7 (Snohomish) WRE Plan Local Approval Process

What is your organization's plan local approval process? All members of the WRIA 7 Watershed Restoration and Enhancement Committee must approve the plan before Ecology's review. The legislation does not require governments and organizations on the Committee to go through a formal internal approval process before approving the plan, however we recognize that as a representative of an entity you need time for your entity to review the final plan. Please consult with your organization to determine your internal review process and provide the following information to the Committee chair. The Committee chair may ask members to share information on internal plan approval processes and timelines at an upcoming Watershed Restoration and Enhancement Committee meeting. Please return this form to the Committee chair by February 7, 2020.

Who at your organization will need to *review* the plan before approval?

- _____

Are there specific individuals or boards that must authorize approval of the plan prior to your vote?

- _____

Briefly describe the process and timeline for reviews, including meeting schedule and/or frequency.

- _____

How can Ecology help?

- _____

Template: 203 Watershed Restoration and Enhancement Plan Outline

For Committee Review

V21October2019

Purpose: The content below is an interpretation of the law, NEB policy and other guidance in terms of the required and recommended components of the watershed restoration and enhancement plans under chapter 90.94.030 RCW. The content below is intended to take those required and recommended components, along with general information that provides context, and organize into an outline for the watershed restoration and enhancement plans. **This is a draft template intended for the committee's review and feedback.**

Minimum Requirements and Recommended Components for Inclusion in the Watershed Restoration and Enhancement Plans

Executive Summary

Section One. Purpose and Scope (5-6 pages)

1.1 Purpose and scope of plan

- 1.1.1. Provide a brief overview of the legislation history and implementation, what the plan is intended to do (i.e. what issue are we trying to solve), what the plan is not intended to do, and how the plan is intended to be implemented. *Not required, but provides context for the plan.*
- 1.1.2. Describe the relationship of the WRE Plan to other planning processes (e.g. salmon recovery, ecosystem recovery plans, etc). *Required.*
- 1.1.3. Provide a summary of critical, relevant local conditions and ongoing planning work used to assess the impacts. *Recommended in NEB guidance; not called out in legislation.*

1.2 Brief overview on the process

- 1.2.1 Describe the formation of the committee, the committee makeup, the process the committee used to develop the plan (including decision making process) and the process for final plan approval. *Not required, but provides context for the plan.*
- 1.2.2 Provide an overview of the facilitation and technical support. *Not required, but provides context for the plan.*
- 1.2.3 Provide an overview of workgroups, subgroups and any relevant information about the structure of and/or support to the committee. *Not required, but provides context for the plan.*

1.3 Table of Contents

1. 4 Acronyms and Glossary

1.5 Acknowledgements

Section Two. Watershed Overview and Subbasins (2-4 pages)

2.1 Critical history/overview of the watershed

- 2.1.1. Provide a brief overview of the watershed; relevant history around water resources and planning efforts; applicable information as it relates to historic, current and future climate and water availability. Include whether streamflow or streamflow-affected traits are a limiting factor to salmon recovery. *Not required, but provides context for the plan.*

2.2 Subbasins

- 2.2.1. Very brief introduction to the WRIA's geography, hydrology, instream flow rules as relevant for subbasin delineation. *Not required, but provides context for the plan.*
- 2.2.2. Summary of approach to develop subbasins, justification for the delineation, results. *Required.*
- 2.2.3. Map of subbasin delineation. *Required.*

Section Three. Water Use and Impact (3-5 pages)

3.1 Projected Population Growth

- 3.1.1. Summarize anticipated growth (range or number) for each subbasin and technical basis (method summary) for the 20 year estimates. Include summary of uncertainty and/or scenarios and how accounted for in the projections. Climate change considerations are optional. Reference growth projections technical memo in appendix. *Required.*
- 3.1.2. Map with growth projections by subbasin. *Not required, but provides context for the plan.*

3.2 Evaluation of impacts from new consumptive water use

- 3.2.1. New indoor consumptive water uses. Summarize anticipated consumptive water use, range or number and justification if adding safety factor, justification if diverged from ECY recommended methods. Climate change considerations are optional. Estimated water use should be by subbasin. Include summary of uncertainty. *Required.*
- 3.2.2. New outdoor consumptive water uses. Summarize anticipated consumptive water use, range or number and justification if adding safety factor, justification if diverged from ECY recommended methods. Summarize outdoor irrigation assumptions. Climate change considerations are optional. Estimated water use should be by subbasin. Include summary of uncertainty. *Required.*
- 3.2.3. Consumptive use summary. Include table showing the growth projections, indoor consumptive use/household, outdoor consumptive use/household, total consumptive use per subbasin, etc. Map is optional. Reference consumptive use technical memo in appendix. *Required.*

Section Four. Projects and Actions (5-10 pages)

4.1 Description and evaluation of projects and actions

- 4.1.1. Summary providing an overview of how the list was developed, an overview of the types of projects and actions, their contribution to offsets and NEB, likelihood of implementation, organization of the list (e.g. did you prioritize, sequence or tier? Why?), any issues or

concerns raised by the committee around certain projects or actions. Climate change considerations are optional. *Not required, but provides context for the plan.*

- 4.1.2 List of projects and actions with brief descriptions (*required*) and level of priority, “sequencing”, and / or “tiering”. *Optional*. Reference projects technical memo in appendix.
- 4.1.3. Project and action cost evaluation and estimate. *Required, may be included as part of 4.1.2.*

Section Five. NEB Evaluation (3-5 pages) *Recommended*

- 5.1. Clearly and systematically describe the NEB evaluation and results in a brief summary. Include a clear statement that the planning group finds the plan does/does not provide a NEB. Reference technical memo in appendix. *Recommended in NEB guidance.*

Section Six. Plan Benefit and Summary (2-4 pages)

6.1 Benefit summary of projects and actions

- 6.1.1. Summary paragraph on the offset and NEB contribution of the projects and actions and likelihood of implementation. *Recommended in NEB guidance, may be included as part of Section 5.*

6.2 Adaptive management process

- 6.2.1. Describe the committee’s recommended approach to implementation and adaptive management. *Recommended in NEB guidance.*

Section Seven. References

Appendices (examples)

- A. Committee operating principles?
- B. Detailed technical memo: Subbasins
- C. Additional maps/other versions of the subbasin maps
- D. Detailed technical memo: Growth projection methodologies and scenarios
- E. Detailed technical memo: Consumptive use estimates and assumptions
- F. Detailed technical memo: Project development methodology
- G. Detailed technical memo: NEB evaluation
- H. Detailed Project Lists: May include variations of the lists that have prioritization, tiering and/or sequencing.
- I. Rosters: Committee members, workgroup members
- J. SEPA Summary/Review?
- K. Others...

Additional Considerations for Inclusion in the Watershed Restoration and Enhancement Plans

Each committee will need to determine other components that they want to include in the main body of the plan or in appendices. This starting list is developed from initial conversations with our committee.

- [each planner and facilitator should develop here as separate section or can build into the outline above]

Discussion Guide: Adaptive Management

WRIA 7 WREC v20191106

Purpose of Discussion

The purpose of this discussion is to continue the dialogue of how adaptive management should be addressed in the WRE plan for WRIA 7. This discussion is intended to frame up options to bring back to the committee for further discussion in the spring.

Background and Context

NEB Guidance and Adaptive Management

The NEB Guidance defines Adaptive Management as follows: An iterative and systematic decision-making process that aims to reduce uncertainty over time and help meet project, action, and plan performance goals by learning from the implementation and outcomes of projects and actions. (pg. 4)

The Guidance also states:

Planning groups may want to consider adaptive management. An adaptive management component of the plan helps demonstrate the watershed planning group's intent that the plan will be implemented, thereby bolstering the plan's reasonable assurances. Ecology will not interpret adaptive management provisions in a plan as an obligation of the planning group to continue its work or for Ecology to continue to fund the planning group. (pg. 13)

In addition, the Streamflow Restoration Policy and Interpretative Statement states that planning groups may include components which they believe help ensure that projects/actions will be completed successfully (e.g. conditions to allow for adjustment of the watershed plan in the future) as an "adaptive management" element. However, Ecology cannot include statutory-defined requirements or changes that would require rulemaking as part of adaptive management. (pg. 9)

Committee should note that at this time there is no funding for adaptive management. Consideration around adaptive management in the plan should identify potential funding sources.

Existing PE Well Tracking

Counties and cities in watersheds planning under RCW 90.94.030 are required to record the number of building permits issued for homes relying on new permit-exempt wells and transmit that accounting to Ecology annually by WRIA. They must also collect a \$500 fee associated with the building permits and annually transmit to Ecology \$350 of each fee collected.

Options for Committee Consideration

There are many options for the committee to consider to address the broad topic of adaptive management. Listed below are examples committee members identified during small group discussions at the September committee meeting. The committee will likely want to further develop some of these approaches and potentially add additional approaches. Committee members also identified the possibility of developing a detailed funding strategy, which is anticipated to be a separate discussion.

- **Track number and location of permit except wells:** Identify an approach for determining whether the assumptions for amount and location of growth/PE wells are still accurate (1-year, 2-year, 5-year, 10-year intervals). Determine potential trigger points and responses to consider if assumptions are not met (e.g. sequencing, identifying additional projects in response to actual growth patterns, implementing monitoring.)
- **Track and manage project implementation:** Identify an approach for determining what projects are being implemented, where they are, what funding source they are using, and whether the offset element of the project has been included. Determine if and how new projects or new types of projects can be added to the plan. Determine potential trigger points and responses to consider if projects are not implemented on schedule (e.g. develop/update funding strategy, develop/update education strategy, develop/update policy recommendations, develop/update project climate change considerations.)
- **Effectiveness monitoring and adaptive management at the project level:**
 - Identify pilot projects or studies to determine the offset potential of certain project types (overall or in certain basins). Using a project tiering approach to manage the project list to add or remove projects or project types as more is understood (e.g. floodplain reconnection projects). Use common metrics to repeat and apply lessons learned across the WRIAs.
 - Determine project performance of offset projects by monitoring flows before and after installation (where applicable).
 - Determine long-term project benefits (flows and habitat improvements) by tracking specific metrics over time.
- **Effectiveness monitoring and adaptive management at the subbasin:**
 - Implement flow monitoring across a subbasin or WRIA to determine overall status and trends and changes to streamflow from additional inputs such as impervious surface, climate impacts, logging practices, etc.
 - Implement flow and groundwater monitoring to track changes as projects and wells are installed to determine overall effectiveness of the Plan.
- **Incorporating new science and management frameworks:**
 - Identify data gaps: climate or groundwater studies, models (e.g. VELMA), hydropower dam management, forest management or other relevant information specific to the WRIA that may be in process or planned that could improve future plan implementation or project identification. These could be prioritized or sequenced based on relevance of informing future plan implementation.
 - Develop a process and timeline for integrating new science into project selection, project construction, long-term monitoring, or other elements of the plan.

Key Elements to Consider in an Adaptive Management Program

- Commitments of partner governments and stakeholders.
- Long-term governance structure – does the committee continue to meet? How often and with what resources?
- The roles and responsible parties in the adaptive management program; Ecology, counties, other committee members, and internal or external support (for data collection, analysis, reporting)

- Updates and communications post 2021
- Integration into ongoing local processes (e.g. salmon recovery Lead Entity, local integrating organizations, Floodplain planning, farm/fish/flood processes, etc.)
- Coordinating implementation with non-committee members (e.g. other state agencies.)
- Triggers for reconvening the committee - does the committee meet regularly or just if a certain milestone is reached? (e.g. permit exempt wells exceed more than 5% of projections)
- Funding sources for effectiveness and implementation monitoring
- Role of the committee in supporting or selecting projects or adaptive management elements to advance for funding (e.g. preparing letters of support for priority projects)

Questions for committee discussion

- How are wells currently tracking by each county?
- Of these options, which do you think will be most useful for inclusion in our WRE plan?
- What additional information would you like to help you discern the best approach to adaptive management?
- What existing project tracking tools could we use?
- Do you see opportunities to develop adaptive management approaches or recommendations across committees?
- Are there other elements in addition to those above that would be useful in the WRIA 7 plan?
- What should be the committee's role in adaptive management and/or who would participate in the adaptive management process?