AGENDA

Snohomish (WRIA 7)
Watershed Restoration and Enhancement Committee meeting
October 8, 2020 | 12:30 - 3:30 p.m. | Committee website

Location
WebEx
+1-415-655-0001 US Toll
+1-206-207-1700 United States Toll (Seattle)
Access code: 133 850 9312

Committee Chair
Ingria Jones
Ingria.Jones@ecy.wa.gov
425-466-6005

Handouts (link to meeting folder)
Project development tracking sheet
Draft prospective projects & actions language
Project tiering discussion guide
Comments on Draft WRE Plan
Plan approval timeline discussion guide
NEB evaluation discussion guide

Click here to join WebEx Meeting

Welcome, Introductions, and Standing Business

12:30 p.m. | 15 minutes | Facilitator | **Decision**

- Review agenda
- Approve September meeting summary
- Updates and announcements

Projects

12:45 p.m. | 45 minutes | Chair & Committee | Discussion

- Recap of September 23 Project Subgroup meeting.
- Discuss additional project recommendations from Project Subgroup.
- Overview of draft projects chapter and prospective projects & actions language.
- Proposals for project tiering.

Break

WRE Plan

1:45 p.m. | 1 hr 15 minutes | Chair & Facilitator | Discussion

- Review and discuss comments on Draft WRE Plan.
- Develop recommended revisions for inclusion in second draft plan.
- Review & discuss revised timeline for development of draft plan.

NEB Evaluation

3:00 p.m. | 15 minutes | Chair & Facilitator | Discussion

- Review purpose of including a NEB evaluation in the plan.
- Confirm Committee support for Project Subgroup developing NEB evaluation

Public Comment

3:15 p.m. | 10 minutes | Facilitator

Next Steps and Action Items

3:25 p.m. | 5 minutes | Facilitator & Chair

- Next WRIA 7 Committee meeting: Thursday, November 12, WebEx
- Next WRIA 7 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
September 10, 2020 | 12:30pm – 3:30pm WRIA 7 Committee Webpage

Location
WebEx

Committee Chair
Ingria Jones
Ingria.Jones@ecy.wa.gov
(425) 466-6005

Handouts (electronic)
Draft August Meeting Summary
Operating Principles – Suggested Revisions
Project Development Tracking Document
Draft Adaptive Management Chapter
Template for NEB Chapter

Please send corrections to ingria.jones@ecy.wa.gov by October 1.

Attendance

Committee representatives and alternates

Ingria Jones (WA Dept. of Ecology)
Daryl Williams (Tulalip Tribes)
Matt Baerwalde (Snoqualmie Indian Tribe)
Denise Di Santo (King County)
Cynthia Krass (Snoqualmie Valley WID)
Kirk Lakey (WA Dept. of Fish & Wildlife)
Emily Dick (WA Water Trust)
Mike Wolanek (City of Arlington)
Mike Remington (City of Duvall)
Jim Miller (City of Everett)
Matthew Eyer (City of Marysville)
Liz Ablow (City of Seattle ex-officio)
Steve Nelson (City of Snoqualmie)
Terri Strandberg (Snohomish County)
David Levitan (City of Lake Stevens)
Stacy Vynne McKinstry (WA Dept. of Ecology, alternate)
Lindsey Desmul (WA Dept. Fish & Wildlife, alternate)
William Stelle (WA Water Trust, alternate)
Bobbi Lindemulder (Snohomish Conservation District)
Dylan Sluder (MBA of King and Snohomish Counties)
Elissa Ostergaard (Snoqualmie Watershed Forum – ex-officio)
Megan Darrow (City of Monroe)
Anne Savery (Tulalip Tribes, alternate)
Brant Wood (Snohomish PUD)
Keith Binkley (Snohomish PUD)
Glen Pickus (City of Snohomish)
Jamie Burrell (City of North Bend)
Kurt Nelson (Tulalip Tribes, alternate)

Committee representatives and alternates not in attendance

City of Carnation
City of Gold Bar
Town of Index
Snohomish Basin Salmon Recovery Forum (ex-officio)

Other attendees

Susan O'Neil (ESA – Facilitator)
Angela Pietschmann (Cascadia – Info Manager)
John Covert (WA Dept. of Ecology)
Joe Hovenkotter (King County)
Eric Ferguson (King County)

Introductions and standing business

Susan O'Neil (Facilitator) welcomed the group, began introductions, and reviewed the agenda. *No revisions to the agenda*. *The August meeting summary was approved without further changes*.

Ecology updates:

- Upcoming Ecology furlough dates: 9/25, 10/30, 11/30
- Streamflow restoration grant: Ecology program leadership team is reviewing the grant scoring; expect to announce awards in the fall. Ingria will share with Committee when available.
- Ecology has developed a new Focus Sheet that provides an overview of how the Foster decision affects Ecology's work on water right change applications, mitigation packages, and water banking in watershed with instream flow rules.
- Recap of WRE Plan requirements:
    - Draft plan was distributed on 8/27 for Committee review. Includes draft Chapters 1-4, outline of Chapters 5 and 7, and draft policy chapter. The draft incorporated relevant comments from WRIA 8 on Chapter 4.
    - The Committee should focus comments on the new content (Chapters 4, 5, 6, 7).
    - The Committee should be briefing decision-makers:
        - Ecology provided a cover memo with the draft plan and other resources.
        - Ecology has developed a presentation committee members can use to brief decision makers. Contact Ingria if you need assistance tailoring to meet your needs, or would like Ecology to present to your decision makers.
    - Required elements of plan:
        - As articulated in the Streamflow Restoration Policy Interpretive Statement, *"Watershed plans must identify projects and actions necessary that at a minimum, offset the consumptive use of new groundwater permit-exempt domestic withdrawals over the planning horizon and achieve NEB."* NEB is evaluated at the WRIA scale.
        - The plan must address indoor and outdoor household water use from new permit-exempt domestic groundwater withdrawals over the 20 year planning horizon: January 19, 2018 – January 18, 2038. Offsets must continue as long as well pumping continues.
        - Offset time and place: "*Projects and actions identified in watershed plans are not limited to those that can provide strict in-time, in-place offsets, though projects in the same sub-basin or tributary (within the same WRIA), and during the same time that the use occurs are prioritized."*
        - Plan does not obligate entities to implement projects or actions: as articulated in the Final Guidance for Determining Net Ecological Benefit, watershed plans are to be prepared with implementation in mind. However, RCW 90.94.020 and 90.94.030 do not create an obligation on any party to ensure that plans, or projects and actions in those plans or associated with rulemaking, are implemented.
        - All Committee **voting** members must approve the plan in order for it to go to Ecology for review and adoption. The alternative is that Ecology finishes the plan and then adopts it through rulemaking, which is open to statewide input.

Operating Principles

The committee can periodically review its operating principles and amend them as needed. Unanticipated circumstances have the raised the need for the chair to bring forward a recommendation

for an amendment regarding remote participation in the final approval of the plan and addressing members that stop participation in the committee.

It is unlikely that the committee will meet in person for a final plan approval vote due to the global pandemic. The committee voted on a revision to the operating principles to formalize and clarify the allowance of remote participation and voting. In addition, to reduce complications during a final plan approval vote, the committee voted on a revision to account for members that stop participating in the committee process or those that would like to resign ahead of a final plan approval vote.

Proposed additions to Operating Principles:

- Remote participation section: "*If extraordinary events, such as a pandemic or natural disaster, require the committee to meet remotely, all meetings will be held remotely and the operating procedures will remain in force, except portions that assume in-person versus remote participation.*"
- Final approval of Plan section: "*The final plan approval may also be given verbally when in person participation is not possible: Approve or Disapprove.*"
- *NEW* withdrawal/resignation section:
    - Resignation from the Committee: "*If an entity no longer wishes to participate in the committee process or the final plan approval, they should send written notice (electronic or mailed notice) to the chair as early as possible prior to their resignation. Advance notice will support the chair and facilitator in managing consensus building and voting procedures.*"
    - Presumed Withdrawal from the Committee: "*Entities must participate in the committee process for the six month period prior to the final plan approval in order to vote on the final draft plan. ("Participate" means partaking in a minimum of one full committee or workgroup meeting, engaging over email or phone. It does not mean presence at every committee meeting with the understanding that entities may need to occasionally miss committee meetings.) If an entity does not respond to communication over email or phone, or does not attend committee or workgroup meetings, during the six month period prior to the vote on the final plan, it is assumed that they have withdrawn from the committee. The chair will send an electronic notice to all entities providing this information no later than September 30, 2020. The chair will send electronic notice to all entities providing this information at least two months prior to the anticipated vote on the final plan and no later than January 31, 2021."*

A quorum was established. The following voting members *approve* proposed additions to Operating Principles:

- City of Snoqualmie
- City of Snohomish
- City of North Bend
- City of Monroe
- City of Marysville
- City of Lake Stevens
- City of Everett
- MBA of King and Snohomish Counties
- Snohomish Conservation District
- Washington Water Trust
- WA Department of Fish & Wildlife
- Snohomish Public Utility District
- Snoqualmie Valley WID
- Snohomish County
- King County
- Snoqualmie Indian Tribe
- Tulalip Tribes
- WA Department of Ecology

Voting members not present:

- City of Arlington (not present for this portion of the meeting)
- City of Duvall
- City of Carnation
- City of Gold Bar
- Town of Index

Resources:

- Updated Operating Principles (see meeting packet)

Projects

The projects chapter will include recommendations from the WRIA 7 Committee for projects and actions to offset consumptive use and meet NEB. Projects identified in a watershed plan that has been adopted by Ecology, or through a rulemaking process to meet the requirements of RCW 90.94, receive priority points in the streamflow restoration grant program. The demand for these competitive grants is likely to exceed available funding and projects identified in a plan are not guaranteed funding.

As articulated in Ecology's Final Guidance for Determining NEB, watershed plans are to be prepared with implementation in mind. However, RCW 90.94.020 and 90.94.030 do not create an obligation on any party to ensure that plans, or projects and actions in those plans or associated with rulemaking, are implemented.

The project list will contain projects in varying levels of development with varying available information. Projects with project sponsors committed to implementing the project provide an increased level of certainty. The Committee can continue to identify and seek to implement projects that are not included in the plan at the time of adoption, but Ecology only has authority to adopt the plan once (e.g., cannot add projects to adopted plan).

The Project Subgroup will aim to finalize project list during 9/23 Project Subgroup meeting. The Committee will review their recommendation during 10/8 Committee meeting. GeoEngineers and Project Sponsors will finalize project descriptions by 10/5. Ecology will distribute draft Chapter 5 (Projects) by 10/23. The Committee will review and discuss comments at 11/12 Committee meeting.

Resources:

- Project Development Tracking Document
- Detailed Project Descriptions
- Project Inventory

Discussion:

- **Water Offset Projects:**
    - *Lake Stevens Outlet Modification*: Finalizing project description. The City of Lake Stevens is actively pursuing this project.
    - *Lake Shoecraft*: Finalizing project description. Tulalip Tribes will be listed as project sponsor. Potential additional benefits due to hydrologic connection between Lake Shoecraft and Lake Goodwin, but too uncertain at this point to estimate benefits.
    - *Lochaven Source Switch*: Project Subgroup recommended counting the portion of water consumptive used for the offset estimate. If the project progresses, Ecology would still be interested in acquiring the whole water right to protect the used and inchoate portion instream.
    - *Water Rights Acquisitions*: Washington Water Trust (WWT) developed offset estimates based on available information about water use from metering records and aerial

photos and estimating the portion of water that is consumptively used. The Project Subgroup recommends keeping these estimates as they are.

- **MAR Projects:**
  - Currently have a suite of MAR projects in inventory with WWT as project sponsor, who would work with landowners & develop feasibility study. GeoEngineers has developed project descriptions for 5 potential MAR projects.
  - MAR projects would withdraw water when ISF rules are being met – typically during the winter, and recharge it into the aquifer for release to the streams. GeoEngineers used a USGS analytical tool to develop estimates for the timing of benefits based on best available information and informed assumptions about aquifer characteristics.
  - The Project Subgroup discussed only counting the offset from augmented streamflow when water is not being withdrawn for the MAR facility, or only during the critical flow period. GeoEngineers has developed monthly offset estimates for each MAR project as well as an estimate based on when water is not being withdrawn. The Subgroup will discuss these at the next Project Subgroup meeting.
  - King County prefers to avoid describing MAR projects as "adding" water to the aquifer. Rather, water is controlled and retimed as it moves through the aquifer.
    - John Covert (Ecology) noted that water is taken out of a river, infiltrated into the aquifer, then moves through back into river. Water that otherwise would have stayed in the river is being added to the aquifer at the storage facility.
  - Snoqualmie Indian Tribe is concerned by the large estimated water offsets for MAR and stormwater projects. The Project Subgroup discussed reducing these estimates or not including MAR projects in offset total (include in NEB).
    - WDFW, King County, and Tulalip Tribes agree.
    - The project subgroup will revisit these estimates at next meeting and develop recommendation for offsets to include in plan.
  - King County suggested combining the 5 MAR projects into a Snoqualmie basin package (potentially tiered); do not want to discount offset altogether but could reduce to more conservative estimate and/or include a range. MAR projects work quite well at retiming and adding water to the system.
  - Tulalip Tribes noted that GeoEngineers is developing estimates using USGS formula with existing data only. To build confidence in offset numbers, need more site specific information currently unavailable (e.g., geology and rate groundwater moves in area). Generally support retiming projects that provide water when it's needed most.
  - Ecology noted the Salmon Recovery Fund Board has funded feasibility studies and construction of MAR projects. As the sponsor, Washington Water Trust would conduct a feasibility study as a first phase in any MAR project.
- **Stormwater Projects:**
  - There are two stormwater projects on the Committee's working project list: Little Bear Stormwater Project (Snohomish County project) and Quilceda Stormwater Project (Snohomish CD project involving several small stormwater upgrades and depave projects—above and beyond existing stormwater requirements). The Snohomish CD applied for streamflow restoration funding for this project.
  - The Project Subgroup has expressed concerns about assuming year-round benefits from stormwater projects because they infiltrate water into the aquifer and the timing of the release into the stream cannot be controlled and is based on distance to the stream and

aquifer characteristics. The Project Subgroup will revisit the offset estimates for stormwater projects at the next meeting.

- **SVWID Storage:** Project Subgroup will discuss a few sites with potential at next meeting and decide how to include in the plan. If more conceptual, can still include just less certainty with offset and/or may not have offset numbers.

- **Snohomish CD Storage:** Snohomish CD received a streamflow grant to identify small storage opportunities in Woods Creek, Pilchuck, and Lower Mid-Skykomish subbasins. They will provide an update at next Project Subgroup meeting. The Subgroup will develop a recommendation for how to include in the plan. If more conceptual, can still include just less certainty with offset and/or may not have offset numbers.

- **Source Switches:**
    - Removed Sultan – dam upgrade already in progress, making it less financially viable.
    - Removed May Creek/Gold Bar/Startup – removed one of Gold Bar's wells from the offset estimate since it taps a deep aquifer that is likely not connected to the Skykomish River, reducing overall cost/benefit ratio. Gold Bar indicated they do not support the project at this time.

- **Tulalip Coho Creek Project**: the Tribe is working to restore Coho Creek to a meandering stream/wetland. Partially restored with stream barriers removed. Since the Tribe implemented a membrane bioreactor (MBR) system, the WWTP outfall/effluent is close to drinking water standards. Effluent from MBR plant is currently discharged into EPA-approved UIC facility, which goes into the ground and eventually reaches Quilceda Creek. The UIC facility is currently at capacity and looking for other options for discharging effluent. Parametrix is studying additional treatment locations/options for resolving effluent issues (temperature, nitrogen). Study nearly completed.
    - The Project Subgroup will discuss this new offset project at 9/23 meeting; if information not ready in time, can discuss at October Committee meeting.

- **Habitat Projects:** GeoEngineers and project sponsors are developing project descriptions for projects recommended for inclusion in the Plan. Project Subgroup will finalize any remaining recommendations at next meeting; do not anticipate much change to this list of habitat projects. Information about funding status will be included in the project descriptions. Have at least one habitat project in every subbasin except Tulalip and Lower Mid-Skykomish (Wallace/May Creek).
    - Snoqualmie Valley WID is working with King County to identify habitat projects that would be implemented on agricultural land to identify potential conflicts and determine whether projects would be reviewed by the Fish Farm Flood group.

- **Expressing support for types of projects/prospective projects:**
    - Ecology doesn't currently have authority to re-adopt a plan. Committees cannot add projects to an already approved project list but can still continue to identify new projects and seek to implement them. However, the projects included in the "adopted plan" are relevant to the funding priority. The WRIA 7 Committee could choose to include language in the WRE Plan to express support for certain *types* of projects/include prospective projects without writing up a project description or estimating a water offset quantity. The projects would not include an estimated water offset and would not contribute to meeting NEB. Ecology cannot guarantee these projects would receive priority points in future grant rounds.
        - Tulalip Tribes wants to ensure source switch language would consider relevant mechanisms and controls for future water right changes and would not limit the ability to comment on a water right change in the future.

        - The Project Subgroup has expressed interest in support for types of habitat projects and may want to include language to support these in the plan.
    - Ecology will work with Snoqualmie Indian Tribe and Tulalip Tribes to prepare draft language for committee consideration at a future meeting.

- **Potential for tiering the project list in WRE Plan:**
    - Project subgroup discussed option to tier/sequence the project list. *Tiering* would involve organizing our project list in tiers, based on likelihood that the project will be completed. *Sequencing* our projects would involve organizing them in terms of priority for funding. Project Subgroup recognized the potential benefit of tiering but felt that the project list is short enough to forgo this task, given the level of effort to develop and apply tiering criteria, which would still be somewhat subjective.
    - The Subgroup thought that once project descriptions are all submitted, a more obvious sorting of projects could come up and they may recommend revisiting later to organize projects by subbasin in plan. Project descriptions will have estimated cost information and project status (i.e., shovel ready vs conceptual) if available.
        - Tulalip Tribes suggested potentially tiering by near-term/long-term implementation, prioritizing shovel-ready projects.
        - City of Everett supports tiering and would like to see cost/benefit information. Concerns that the project list does not include costs, benefits or priorities at this point. The City indicated that they could not support a plan if the project list was not tiered or sequenced in some way.
        - King County supports tiering after project list is more developed.

Adaptive management & policy recommendations

WRE Committees may decide to address water use beyond minimum requirements of law. However, any work undertaken beyond the minimum requirements increases the likelihood that time and funds are spent on matters that will not necessarily yield a locally approvable or adoptable plan within the very tight timeframes of the law.

Committee members should consider support/lack of support from their respective entities for policies included in Chapter 6. Provide comments via the comment tracker by 9/28; policy recommendations with red flags (serious concerns) will be dropped. Policy recommendations with yellow flags will work with lead and entity with concerns to address; note that policy leads have already put in a considerable amount of time and limited time will be spent further tweaking policy recommendations.

The Facilitation Team is drafting an Adaptive Management Chapter for review by a subset of Committee members. Denise Di Santo (King County), Daryl Williams (Tulalip Tribes), Matt Baerwalde (Snoqualmie Tribe), Liz Ablow (City of Seattle) and Mike Wolanek (City of Arlington) volunteered to review and refine the draft.

Resources:
Draft adaptive management chapter and draft policy chapter (see meeting packet)

Discussion:

- **Policies**
    - *Proposal: Encourage conservation through connections to public water*
        - City of Everett is concerned about funding source noted in proposal (fees collected through local permitting processes; pass-through fees associated with well maintenance services collected by service providers; state or local rate

increases or taxes.). Local funding sources need state funding; add Salmon Recovery Funding as potential funding source.

- Tulalip Tribes would like more information on how able these public water systems are to take on additional Group systems. Some small water systems were built before GMA; larger municipal systems may allow for expanded growth in areas where growth is not desirable (densities beyond what is currently allowed under GMA). Avoid encouraging growth in these areas through this recommendation.
- *Proposal: Development and use of reclaimed water*
- City of Seattle noted it would be helpful to provide more information on the goal of this proposal. The City has concerns around water quality and will add specific comments to tracker for this chapter.
- King County is comfortable adjusting this proposal based on Committee feedback. County will work with any proposed changes. Want to heighten public awareness of potential uses for reclaimed water and its fitness to restore streamflow.

- *Proposal: Correction of impediments to sustainable watershed restoration and streamflow enhancement*
  - MBA of King and Snohomish Counties thinks "proliferation of PE wells" is strong language. The WRE Committee's goal is to offset PE wells; proposal could inadvertently undermine the plan (looks like Committee did not serve its purpose).
  - Everett noted the goal of this proposal is to address the large number of PE wells allowed to take water where streams are closed (to new appropriations) or water purveyor has turned down new customers because there is "no water available". Support extending water service to areas that need water and to reduce the number of PE wells.
  - Snoqualmie Valley WID has minor concerns. Language is unclear: "no water available." Agrees this proposal could undermine plan.
  - Ecology noted including "require the Legislature" in the proposal is strong. The first bullet of this recommendation is already covered by *Encourage conservation through connections to public water* proposal. Last two bullets of recommendation are outside the scope of offsetting PE wells.
- **Committee members provide feedback on policy proposals in comment tracker for draft plan by September 28.**

- **Adaptive Management**
  - City of Everett proposed a 5-year update schedule. King County agrees.
  - Tulalip Tribes would like progress updates every other year (send out information to full Committee to show progress). For example, how many new PE wells have gone in and project status. The trigger for reconvening the committee is the most important piece of the adaptive management proposal. Potentially look at percentage of development as a threshold (may need to tailor for small basins).
    - Snohomish CD recommended including environmental triggers as well (e.g., drought conditions).
  - **Committee members provide feedback on draft adaptive management chapter in comment tracker for draft plan by September 28.**

WRE Plan Chapter 7: Net Ecological Benefit (NEB)

The NEB evaluation is an optional component of the WRE Plan; however, NEB guidance recommends a process for planning groups to use to complete a NEB evaluation: "*A watershed plan that includes a NEB evaluation based on this guidance significantly contributes to the reasonable assurances that the offsets and NEB within the plan will occur. Ecology will review any such plan with considerable deference in light of the knowledge, insights, and expertise of the partners and stakeholders who influenced the preparation of their plan.*"

The Draft WRE Plan included an outline of potential elements to be included in Chapter 7:

- Compare water offset to consumptive use at WRIA level.
- Compare water offset to consumptive use at subbasin level.
- Explain how plan achieves NEB by providing additional benefits to instream resources, beyond those needed to offset consumptive use.
- Explain how adaptive management helps with plan implementation.
- Statement that the Committee believes we achieved NEB.

Resources:

- Draft NEB chapter outline (see meeting packet)
- Final Guidance for Determining Net Ecological Benefit

Discussion:

- **Pros for including NEB evaluation section:**
  - Better chance Ecology will approve the plan.
  - Focused time on evaluating overall ecological impact of plan.
  - Good exercise to go through to build confidence in plan, regardless of whether it is included.
  - Gives more credibility to the ecological benefits of plan.
  - Opportunity to reconsider small offset credits for habitat projects if falling short.
- **Cons for including NEB evaluation section:**
  - Could create institutional drag on approval process.
  - Time commitment.

Public comment

No public comment.

Next steps and action items

- Next WRIA 7 Committee meeting: Thursday, October 8, WebEx
- Next Project Subgroup meeting: Wednesday, September 23, WebEx
- Committee members should continue to keep local decision makers updated on the Committee discussions and decisions.
- Committee members provide comments on the draft plan, including policy recommendations and adaptive management plan via the comment tracker by September 28 (see Draft Plan Compiled 8/27 and see meeting packet for draft adaptive management plan).
- Snoqualmie Valley WID, Snohomish CD, and King County will meet to review projects for impacts to zoned agricultural land and ensure alignment with Fish, Farm, Flood.
- Ecology request vote on operating principles from Committee members not present.
- Ecology draft language for prospective projects and send to Snoqualmie Tribe and Tulalip Tribes for review.
- Consultants develop draft projects chapter for the plan.

WRIA 7 Project Development Tracking

Snohomish (WRIA 7) Watershed Restoration and Enhancement Committee

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GeoEngineers Work Assignment includes supporting the identification and evaluation of projects and actions to offset streamflow impacts from permit-exempt well consumptive water use within the WRIA. The consumptive use estimate for WRIA 7 is 797.4 acre-feet per year (AF/YR). Projects proposed offset impacts to stream flows and/or contribute to achieving a Net Ecological Benefit. GeoEngineers scope allows for preliminary project descriptions for 10-30 projects, and the evaluation and more detailed analysis of a subset of two and up to ten water offset projects identified by the committee.

This document tracks project development and evaluation for WRIA 7, including projects currently being evaluated by the GeoEngineers technical consultant team. For some projects where Ecology has local knowledge and jurisdiction, Ecology technical staff will work directly with project proponents to analyze the project. Washington Water Trust has developed project descriptions (project profiles) for 15 water rights in WRIA 7. Water rights that have been discussed by the Project Subgroup and recommended to the Committee for including in the plan are also in the table below.

To-date, GeoEngineers has developed preliminary project descriptions for 12 water offset projects and gathered information on several additional projects. If the Committee identifies a critical need to identify additional water offset projects, Committee members are expected to identify projects and gather needed information.

GeoEngineers and Project Sponsors are drawing from existing information to develop habitat project descriptions. GeoEngineers has developed project descriptions for 15 habitat projects and reviewed project descriptions developed by project sponsors. Preliminary project descriptions include project status, location, nearest affected water body, mileage of affected river or stream reaches, potential benefits, etc.

Additional analysis will include more detailed descriptions and analyses of offset benefits, consideration of ongoing operations and maintenance, approximate implementation costs, potential funding opportunities, etc. GeoEngineers will conduct additional analysis, where needed, on water offset projects the Committee decides to include in the Plan. Additional analysis has been conducted to fill critical gaps in preliminary water offset project descriptions and planning-level cost estimates are being developed for water offset projects.

Water Offset Projects

Subbasin	Project Name	Project Type	Water Offset Estimate (AF/YR)	Status[1]	Project Development lead	Box Link
Little Pilchuck	Lake Stevens Outlet Modification	Water storage and retiming	500 AFY	Phase 3 - Selection of Projects for Inclusion in the Plan	GeoEngineers and **Lake Stevens**	link

Subbasin	Project Name	Project Type	Water Offset Estimate (AF/YR)	Status[1]	Project Development lead	Box Link
Tulalip	Lake Shoecraft	Modification of reservoir operations	62.5 AFY	Phase 3 - Selection of Projects for Inclusion in the Plan	GeoEngineers, **Tulalip Tribes and DFW**	link
Quilceda-Allen	Coho Creek Relocation and Enhancement Project (2018-0400) = (07-USR-064)	Streamflow Augmentation	TBD[1]	Phase 3 - Selection of Projects for Inclusion in the Plan; Project Subgroup has not discussed water offset estimate	**Tulalip Tribes**	link
Pilchuck	Lochaven Source Switch	Water right acquisition	12.7 AFY	Phase 3 - Selection of Projects for Inclusion in the Plan	Ecology and **PUD**	link
Pilchuck	Lower Pilchuck 1	Water Right Acquisition	2.8 AFY	Phase 3 - Selection of Projects for Inclusion in the Plan (lower priority)	**WWT**	link
Pilchuck	Lower Pilchuck 11	Water Right Acquisition	2.09 AFY	Phase 3 - Selection of Projects for Inclusion in the Plan (lower priority)	**WWT**	link
Woods; Pilchuck; Lower-Mid Skykomish	Snohomish CD Small Farm Water Storage Pilot	Storage	None specified	Phase 2- Project Subgroup recommends for inclusion in the plan	**Snohomish CD**	
Snoqualmie South	Raging River 1	Water right acquisition	126 AFY	Phase 3 - Selection of Projects for Inclusion in the Plan	**WWT**	link
Patterson	Patterson 1	Water right acquisition	27.9 AFY	Phase 3 - Selection of Projects for Inclusion in the Plan	**WWT**	link
Patterson	Patterson 4	Water right acquisition	71.6 AFY	Phase 3 - Selection of Projects for Inclusion in the Plan	**WWT**	link
Upper Snoqualmie; Snoqualmie North; Snoqualmie South	MAR in Snoqualmie Watershed; Potential Sites: North Bend; Stillwater, Three Forks, NF 5700	Water storage and retiming – MAR	100 AFY	Phase 3 - Selection of Projects for Inclusion in the Plan	GeoEngineers	link link link link link

[1] The project sponsor, Tulalip Tribes, estimates this project will provide 362 AFY of offset, but this has not been discussed by the Project Subgroup or Committee.

Subbasin	Project Name	Project Type	Water Offset Estimate (AF/YR)	Status[1]	Project Development lead	Box Link
Snoqualmie North[2]	Silver Firs Stormwater Pond Retrofits (Little Bear Stormwater)	Stormwater	TBD	Phase 2 - Project Subgroup discussed; Project Subgroup still considering offset estimate	**Snohomish County** and GeoEngineers	link
Quilceda-Allen	Marysville Stormwater Retrofits (Quilceda stormwater project)*	Stormwater	TBD	Phase 2 - Project Subgroup discussed; Project Subgroup still considering offset estimate	**Snohomish Conservation District**	link
Various	SVWID Comprehensive Storage Study	Storage – various types	TBD	Phase 1 – Project Subgroup to continue discussions and select sites for inclusion in the Plan	**Snoqualmie Valley WID**	
Total Offset Potential			**908 AFY**			

Notes:
AF/YR = Acre-feet per year
TBD = to be determined as part of project evaluation
[1]Phases refer to project development phases described in GeoEngineers Non-Acquisition Water Offset Project Identification Work Plan, dated April 4, 2020. Phase 1 = Initial Identification; Phase 2 = Prioritization and Further Analysis; Phase 3 = Selection of Projects for Inclusion in the Plan.
*Project applied for 2020 streamflow restoration grant round.

Habitat Projects

Subbasin	Project Name	Project Type	Brief Description	Status	Project Development Lead	Box Link
Skykomish Mainstem	Snohomish Confluence Project (2018-0799) + Left Bank Floodplain reconnection at RM 1.5	Floodplain & Acquisition	Tulalip Tribes and partners propose to restore and enhance floodplain connection, abandoned side channels and connections to Riley Slough at and just upstream of the junction of the Skykomish and Snoqualmie rivers that we describe as the Snohomish Confluence Project.	Phase 3 - Selection of Projects for Inclusion in the Plan	GeoEngineers	link

[2] Project located in Little Bear subbasin, within WRIA 8. Offset benefits to Snoqualmie North subbasin, within WRIA 7.

Subbasin	Project Name	Project Type	Brief Description	Status	Project Development Lead	Box Link
Raging	Lower Raging River Floodplain Reconnection (07-MPR-196)	Floodplain	Remove up to 1500 feet of levee and revetment along the lower Raging River.	Phase 3 - Selection of Projects for Inclusion in the Plan	GeoEngineers	link
Raging	Raging River Left Bank Mouth Levee Removal (Bernard Memorial Park)	Floodplain	Remove up to 500 feet of levee along the left bank of the Raging River at Bernard Memorial Park at the confluence with the Snoqualmie River reconnecting 6 acres of floodplain habitat.	Phase 3 - Selection of Projects for Inclusion in the Plan	GeoEngineers	link
Raging	Raging River Bridge to Bridge Acquisitions (07-MPR-204) + Raging River Bridge to Bridge Floodplain Restoration	Floodplain & Acquisition	Acquire riverfront properties from willing landowners between rivermile 0.5 and 328th Way SE at rivermile 2. The intent of these acquisitions would be for future floodplain restoration projects. Remove and setback 4000 feet of levee along the right bank of the Raging River at rivermile 1.0 restoring 35 acres of floodplain.	Phase 3 - Selection of Projects for Inclusion in the Plan	GeoEngineers	link
Patterson	Patterson Creek Floodplain Restoration (Sub-Watershed 2C) (07-RSR-038) + Patterson Creek Floodplain Acquisitions	Floodplain, Acquisition, & Reconnection	Restore up to 30 acres of floodplain through riparian restoration and increased channel complexity; Acquire 18 acres along Patterson Creek at mile 7. Completes several phases/ projects in a stretch of creek.	Phase 3 - Selection of Projects for Inclusion in the Plan	GeoEngineers	link
Pilchuck; Woods; Estuary/Snohomish Mainstem; Little Pilchuck	Living with Beavers Program**	Beaver restoration	This project will implement beaver pond expansion and education & outreach in the Pilchuck River, French Creek, Woods Creek, and Lower Skykomish River subbasins.	Phase 3 - Selection of Projects for Inclusion in the Plan	**Snohomish CD**	

Subbasin	Project Name	Project Type	Brief Description	Status	Project Development Lead	Box Link
Pilchuck; Woods; Estuary/Snohomish Mainstem; Little Pilchuck	Wetland Restoration**	Riparian	This project will implement wetland restoration/riparian planting in the Pilchuck River, French Creek, Woods Creek, and Lower Skykomish River subbasins.	Phase 3 - Selection of Projects for Inclusion in the Plan	**Snohomish CD**	
Woods	Woods Creek Riparian Restoration Partnership (07-RPR-022) + Snohomish Conservation District Wetland Restoration + Action Plan approach for East Fork or West Fork	Riparian, ELJs, culvert replacement	New combination project. Plant 45 acres or riparian forest along mainstem of Woods Creek. See Woods Creek Habitat Condition Report and Sponsor's action plan.	Phase 3 - Selection of Projects for Inclusion in the Plan	**Snohomish CD**	
Sultan	Expansion of Sultan River Side Channel Network (Sultan River Floodplain Activation)*	Floodplain	This project would divert / redirect flow from the main channel of the Sultan River into off-channel areas currently used for solely for grazing. The project would tie into a remnant channel. This project would build upon similar efforts conducted in 2012.	Phase 3 - Selection of Projects for Inclusion in the Plan	**Snohomish PUD**	link
Upper Skykomish	Miller River Alluvial Fan Restoration	Floodplain	Remove 0.5 miles revetment and levee along the left bank of the Miller River reconnecting 58 acres of floodplain habitat in the alluvial fan and restoring 7 acres of riparian area.	Phase 3 - Selection of Projects for Inclusion in the Plan	**King County**	link

Subbasin	Project Name	Project Type	Brief Description	Status	Project Development Lead	Box Link
Skykomish Mainstem	East Monroe Heritage Site Acquisition	Acquisition	The East Monroe Heritage Site consists of 43 acres of undeveloped and vacant land. The site is located on the lower main stem of the Skykomish River in Snohomish County in Monroe. The goal is that once the property is acquired several other phases of the project will take place: riparian restoration of the nearly one-mile long oxbow channel, reconnect the river to its floodplain at the east end of the property and improve fish access to off-channel habitat.	Phase 3 - Selection of Projects for Inclusion in the Plan	**City of Monroe**	link
Quilceda-Allen	Jones Creek Relocation and Wetland Enhancement (07-USR-034)*	Floodplain & Riparian	700 ft. channel relocation; .13 miles instream habitat treated; 5 acres riparian planting; LWD installed; Water Quality/Quantity improvements, instream habitat, flood control	Phase 3 - Selection of Projects for Inclusion in the Plan	**City of Marysville**	link
Skykomish Mainstem	Shinglebolt Slough (07-MPR-137)	Acquisition & Floodplain	4000 ft. off channel habitat; 5 acres invasive plan control and plantings	Phase 3 - Selection of Projects for Inclusion in the Plan	**Snohomish County**	link
Upper Snoqualmie	South Fork Snoqualmie River Levee Setback Project (07-HRA-004) (Nintendo Project)*	Floodplain	Remove and setback 2500 feet of levee and restore 25 acres of floodplain.	Phase 3 - Selection of Projects for Inclusion in the Plan	**North Bend**	link

Subbasin	Project Name	Project Type	Brief Description	Status	Project Development Lead	Box Link
Lower Mid-Skykomish; Upper Skykomish; Raging; Upper Snoqualmie	Tulalip Tribes Beaver Reintroduction Program	Beaver	The Tulalip Tribes will use a previously developed habitat suitability model (HSM) and site scoring card to select sites in the Snohomish watershed that are suitable & unoccupied habitat for beaver and in need of restored hydrological function. Nuisance beavers will be trapped from Snohomish, King, and Skagit County lowlands and beavers will be relocated to selected sites. Tulalip Tribes will map changes in in-stream habitat and water storage at relocation sites.	Phase 3 - Selection of Projects for Inclusion in the Plan	**Tulalip Tribes**	
Snoqualmie South	Fall City Floodplain Reconnection Design and Construction (2018-0296) - Left Bank and Right Bank	Floodplain	The two adjacent floodplain reconnection projects are located along the lower Snoqualmie River at rivermile 34.5. The Barfuse project will remove and set back 2000 feet of levee which will reconnect and restore up to 45 acres of floodplain habitat. The Hafner project will remove and set back 1000 feet of levee which will reconnect and restore up to 55 acres of floodplain habitat.	Phase 3 - Selection of Projects for Inclusion in the Plan	GeoEngineers	link
Snoqualmie North	Camp Gilead Levee Removal Phase 2	Floodplain	Remove 1800 feet of levee on the left bank of the Snoqualmie River at rivermile 23	Phase 3 - Selection of Projects for Inclusion in the Plan	GeoEngineers	link
Snoqualmie North	McElhoe-Pearson Restoration Project (07-MPR-321)	Floodplain	Channel Connectivity/Rehabilitation/Creation - Floodplain Restoration 2,500 Linear Feet	Phase 3 - Selection of Projects for Inclusion in the Plan	GeoEngineers	link

Subbasin	Project Name	Project Type	Brief Description	Status	Project Development Lead	Box Link
Snoqualmie South	Lower Tolt LB Floodplain Reconnection (SR 203 to confluence) (07-MPR-259)	Floodplain	Feasibility study to determine options for fully or partially removing existing levee/revetment in order to improve floodplain connection within a 20 acre area.	Phase 3 - Selection of Projects for Inclusion in the Plan	GeoEngineers	link
Estuary/Snohomish Mainstem	Thomas' Eddy Hydraulic Reconnection (07-MPR-030)	Floodplain	1,400 linear feet of levee removal, Creosote pile removal, 33 acres of plantings	Phase 3 - Selection of Projects for Inclusion in the Plan	GeoEngineers	link
Skykomish Mainstem	Haskel Slough Connectivity (#20-11140).	Floodplain	Tulalip Tribes will complete designs, outreach and implement restoration on Haskel Slough, an approximately ~2.4 mile long2.4-mile-long (71 acre) side channel of the Skykomish River near Monroe, Washington. The slough provides critical spawning and rearing habitat for Chinook salmon and other listed fish species.	Phase 3 - Selection of Projects for Inclusion in the Plan	GeoEngineers	link
Pilchuck	Snohomish Floodplain Acquisitions Phase 1 (NEW)	Floodplain & Land Acquisition	Waiting for short description.	Phase 3 - Selection of Projects for Inclusion in the Plan	**Tulalip Tribes**	link
Pilchuck	Pilchuck River City of Snohomish Acquisition (Pilchuck Dam Property) (07-MPR-265) / City of Snohomish Pilchuck River Property Acquisition (2018-0425)	Land Acquisition	This project includes the acquisition of a 25 acre property adjacent to the Pilchuck river and an associated off-channel wetland complex. Acquisition of the largely forested parcel will protect the property from degradation associated with future development, and will protect habitat currently being restored through dam Restoration for listed species including chinook, steelhead, bull trout, and other salmonids.	Phase 3 - Selection of Projects for Inclusion in the Plan	**Tulalip Tribes**	link

Subbasin	Project Name	Project Type	Brief Description	Status	Project Development Lead	Box Link
Cherry-Harris	NEW Combo Project: Cherry Creek Restoration/Cherry Valley Initiative - process-based floodplain restoration.	Floodplain & Riparian	New project combines several existing projects focused on process-based floodplain restoration. Multiple sequenced phases and sponsors, includes: Cherry Creek Restoration Phase II (07-RPR-036), Phase III (07-RPR-037), Cherry Creek Levee Setback Floodplain Restoration, etc.	Phase 3 - Selection of Projects for Inclusion in the Plan	**SVWID**	
Raging	Raging River Upper Preston Reach Acquisitions (07-MPR-072)	Land Acquisition	The Raging River Upper Preston Reach Acquisitions project will acquire 7 acres on the right bank of the Raging River at rivermile 5.	Phase 3 - Selection of Projects for Inclusion in the Plan	**Snoqualmie Watershed Forum**	link
Quilceda-Allen	Quilceda 8 Restoration and potential water right acquisition	Riparian	Waiting for short description.	Phase 2- Project Subgroup recommends for inclusion in the plan	GeoEngineers	

Notes:
Additional habitat projects are under discussion by the Project Subgroup. Several Subgroup members are verifying whether project sponsors can develop project descriptions.
*Project applied for 2020 streamflow restoration grant round.
**Project received streamflow restoration funding in pilot grant round.

5.2.3 Prospective Projects and Actions

In addition to the projects described in this chapter, the WRIA 7 Committee supports projects and actions that achieve the following goals:

- Acquisitions of water rights to increase streamflows and offset the impacts of PE wells. Water rights should be permanently and legally held by Ecology in the Trust Water Rights Program to ensure that the benefits to instream resources are permanent. The WRIA 7 Committee acknowledges that all water rights transactions rely on willing sellers and willing buyers.

  [Language supporting the acquisition of agricultural water rights is still under development.]

  The Committee also supports the acquisition of municipal water rights to increase streamflows and offset the impacts of PE wells where the current withdrawal impacts surface water or groundwater in direct hydraulic continuity to surface water. Prior to purchase a water purveyor with a more efficient distribution system with limited to no impact to streams that frequently experience critical low flows would be identified.

- Projects or programs that support improved lake level management to reduce flood risk and increase streamflows during low flow periods. Projects would improve existing lake outlet structures and management of existing outlet structures to benefit instream resources.

- Projects which are shown to have direct improvements to benefit stream flow above and beyond existing requirements e.g. develop new stormwater infiltration facilities, upgrade existing stormwater retention facilities to provide infiltration, remove impervious surfaces (de-pave projects), and encourage rainwater catchment and storage to help manage runoff from impervious surfaces. The WRIA 7 Committee also supports the expansion of voluntary programs that provides rebates or incentives to cover most or all of the cost of installing cisterns and rain gardens at private residences. Cisterns can benefit water quality by helping to control stormwater and reduce sewer overflow events during high flows.

- Managed aquifer recharge projects that offset the impacts of PE wells and improve streamflow during critical low flow periods without impacting critical areas. The WRIA 7 Committee supports managed aquifer recharge projects when feasibility studies ensure site conditions and project benefits are understood with best available information, prior to construction, and when projects will not preclude or counteract ecological process-based stream restoration and floodplain connection efforts, or cause other unintended negative ecological consequences at the expense of re-timing streamflows.

- Projects or programs that support connections of existing homes on exempt wells to public water systems without impacting critical areas or indirectly encouraging development outside of UGAs. Projects could provide financial incentives for homes using PE wells to connect to public water service and decommission the well; and/or provide financial support for water purveyors to extend water distribution systems further into their individual service areas, particularly where PE wells are concentrated or rapid rural growth is anticipated. The purveyor will need to demonstrate how they plan to connect PE users to the extended line. The purveyor will need to agree forgo the consolidation of the groundwater right(s) exempt from the permit requirement under RCW 90.44.050 (the groundwater right associated with the formerly exempt well) through the RCW 90.44.105 process.

- Projects or programs that provide outreach and incentives to rural landowners with wells in order to lower indoor and outdoor water use through water conservation best practices, and comply with drought and other water use restrictions. Programs would encourage the following types of water conservation strategies and best practices: natural lawn care; irrigation efficiency; rainwater catchment and storage; drought resistant and native landscaping; smaller lawn sizes; forest, meadow and wetland conservation; indoor water conservation; and voluntary metering. Conservation and water use efficiency projects that involve water rights should permanently convey the saved water to Ecology to be held in the Trust Water Rights Program for instream flow purposes. The Committee encourages these projects or programs to monitor for effectiveness in reducing water use.

- Studies, monitoring, and long-term forest management projects that improve the ability of forests to benefit streamflow by protecting and improving hydrological processes, including reducing runoff and improving the retention of snow on the landscape. As an example, the Committee supports the Snoqualmie Indian Tribe's study to model the interaction of riparian management strategies and climate projections on Snoqualmie River hydrology and water temperature, including modeling the ability of canopy gaps to affect snow recruitment and storage (extend the melt-off period later in the season) in the Snoqualmie watershed. [Language supporting longer forest management rotation & VELMA modeling still under development.]

- Projects that beneficially switch the source of withdrawal from surface to groundwater, or other beneficial source exchanges such as a source switch to recycled water. The benefits of a source exchange project may depend on the connection between the sources, benefits to instream resources (e.g., a surface to groundwater source switch may have negative impacts on fish if the groundwater derived base flow provides flow and or temperature refugia in streams with high water temperature issues). Source switches should take into consideration the possible consequences of unsustainable withdrawals from the affected aquifer and the impacts to streamflow, particularly baseflows, would need to be assessed. Specifically, source switches should take into consideration that recycled water is not a new source of water.

- Projects that provide streamflow and habitat benefits by returning stream habitat to a more natural state, such as through levee setback or removal, river-floodplain restoration, and instream habitat restoration.

- [Language supporting beaver restoration still under development.]

v20201001

Discussion Guide: Project Tiering

Purpose of Discussion

The purpose of the discussion is to decide whether the committee would like to tier the project list within the WRIA 7 watershed plan, and if so, what the tiering criteria should be applied.

Background

In the NEB guidance, Ecology identifies several ways that Committees may organize the project list:

"In the event a watershed plan's number and/or types of projects make the NEB evaluation challenging, planning groups may, at their discretion, opt to engage in a "tiering" exercise. **Projects could be organized into groups or "tiers" that reflect the likelihood that individual projects will be implemented and/or the certainty that the benefits will occur.** In instances where plans only require a subset of projects to achieve a NEB, planning groups may find this approach helpful as this will enable the bulk of their analyses to focus on just those projects that are needed to provide reasonable assurance that their plan will achieve a NEB. Ecology may incorporate this type of analysis in our NEB determination."

The committee reviewed the draft project list (see project development tracking document) at the August 13 and September 10 Committee meetings. Detailed project descriptions have been developed for over 25 water offset projects and habitat projects and links are included in the project development tracking document. A few project descriptions are still under development and expected to be completed soon.

Ingria has asked committee members to bring proposals for tiering the project list to the October 8 committee meeting.

Considerations

- Tiering the project list may help the committee describe the certainty of implementation of the project list.
- Tiering the project list may provide context for the NEB evaluation, if the committee decides to include the NEB evaluation in the plan.
- Ecology may incorporate this type of analysis in our NEB determination.
- It will take time and effort for our committee to conduct this evaluation, and may lead to adjusting the committee's plan approval timeline.
- The tiered project list will not be ready to include in draft Chapter 5 (projects) by October 15; committee members may have limited time to review and comment on tiering criteria.
- It is up to the committee whether and how to tier the project list. For example, criteria could include water offset quantity, certainty of implementation, anticipated time of implementation (e.g. near-term/far-term), resilience, cost/benefit, etc.)
- The committee can choose to tier the water offset habitat projects and/or habitat projects.
- The committee may choose only one criterion, or several criteria.
- If the committee chooses to tier the project list, the more complex the tiering criteria the more time it may take to develop, reach consensus on, and apply to our project list.

- Project descriptions include varying levels of detail based on the stage of the project and available information. Descriptions may not have sufficient detail to inform all potential tiering criteria.

Questions for committee discussion

- Do you want to tier the project list?
- If so, do what proposed tiering criteria do you support?

Next Steps

- If the Committee decides to tier the project list, Ingria will work with the technical consultant team (and Project Subgroup, if applicable) to develop an initial tiering of the project list based on direction from the Committee on what criteria to use.

Watershed Restoration and Enhancement Plan - DRAFT

WRIA 7 – Snohomish Watershed

Draft Chapters
August 2020

DEPARTMENT OF ECOLOGY
State of Washington

Commented [AP1]: Arlington: Re: Cover, use a photo(s) reflective of WRIA 7 (maybe a collage of four photos: Snoqualmie, Skykomish, Snohomish Mainstem, Estuary sloughs)

Commented [AP2R1]: Snoqualmie Tribe: Cover photo doesn't feel representative of the Snohomish.

Commented [JI(3R1]: New cover photo will be included in final plan.

Commented [AP4]:

Commented [AP5R4]: Seattle: It would be helpful if ECY provide some type of comment tracker to see if and how responses were incorporated.

Commented [JI(6R4]: WDFW: Multiple references to "goals" are made throughout the document, yet no specific goals are described. Committee goals regarding implementation, evaluation, or adaptive management should be clearly stated. Additionally, care should be taken to differentiate between general goals, such as when referencing "the goal of streamflow restoration" and more specific actionable goals set forth by the committee.

Commented [JI(7R4]: Re: Seattle: The chair is providing this comment tracker and the marked-up draft plan.

Committee input requested

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Table of Contents

List of Tables

Commented [AP8]: Seattle: Tables should restart numbering at each chapter

Commented [JI(9R8]: Ecology is formatting the plans consistently across all WRIAs. The final plan will receive additional formatting review.

List of Figures

Chapter One. Plan Overview

1.1 Plan Purpose and Structure

The purpose of the Water Resource Inventory Area (WRIA) 7 Watershed Restoration and Enhancement Plan is to offset the impacts of domestic permit-exempt wells to streamflows. The watershed restoration and enhancement plan is one requirement of RCW 90.90.030. Watershed restoration and enhancement plans must identify projects to offset the projected consumptive impacts of new permit-exempt domestic groundwater withdrawals on instream flows over 20 years (2018-2038) and provide a net ecological benefit to the WRIA. The WRIA 7 watershed restoration and enhancement plan (watershed plan) considers priorities for salmon recovery and watershed recovery, while ensuring it meets the intent of the law.

Pumping from wells can reduce groundwater discharge to springs and streams by capturing water that would otherwise have discharged naturally, reducing flows (Barlow and Leake, 2012). Consumptive water use (that portion not returned to the aquifer) reduces streamflow, both seasonally and as average annual recharge. A well pumping from an aquifer connected to a surface water body can either reduce the quantity of water discharging to the river or increase the quantity of water leaking out of the river (Barlow and Leake, 2012). Projects to offset consumptive use associated with permit-exempt domestic water use have become a focus to minimize future impacts to instream flows and restore streamflow.

[Language to be included when appropriate]: While this watershed plan is narrow in scope and is not intended to address all water uses or related issues within the watershed, successful completion of the watershed plan by the WRIA 7 Committee represents a noteworthy achievement regarding a technically and politically complex issue. This achievement by the Committee could indicate that more comprehensive, improved coordination of water resources for both instream and out of stream uses, and resultant improvements in overall watershed health in our WRIA, are also achievable.

This watershed plan includes 7 Chapters:

- Plan overview.
- Overview of the watershed's salmon and limiting factors, hydrology, hydrogeology, and streamflow;
- Summary of the subbasins,
- Growth projections and consumptive use estimates;
- Description of the recommended projects and actions identified to offset the future permit-exempt domestic water use in WRIA 7; Explanation of recommended policy, adaptive management and implementation measures; and
- Evaluation and consideration of the net ecological benefits.

Commented [AP10]: Will Stelle: Did the committee explicitly agree to such a narrow objective? I think this is Ecology direction to describe the minimum and sidestep more ambitious objective. We recommend a broader objective for the WRIA plan beyond merely offsetting PE wells: achieving NEB for the WRIA; contribute to restoring fishery resources and aquatic productivity; and increase water supply reliability for people and the environment.

Commented [JI(11R10]: Committee input requested. Note that Ecology is aiming for consistency in Chapter 1 across all plans and may limit Committee edits.

1.1.1 Legal and Regulatory Background for the WRIA 7 Watershed Restoration and Enhancement Plan

In January 2018, the Washington State Legislature passed Engrossed Substitute Senate Bill (ESSB) 6091 (session law 2018 c 1). This law was enacted in response to the State Supreme Court's 2016 decision in Whatcom County vs. Hirst, Futurewise, et al. (commonly referred to as the "Hirst decision"). As it relates to this committee's work, the law, now primarily codified as RCW 90.94, clarifies how local governments can issue building permits for homes intending to use a permit-exempt well for their domestic water supply. The law also requires local watershed planning in 15 WRIAs, including WRIA 7.

This watershed restoration and enhancement plan, the law that calls for it, and the Hirst decision are all concerned with the effects of new domestic permit-exempt water use on streamflows. Several laws pertain to the management of groundwater permit-exempt wells in WRIA 7 and are summarized in brief here for the purpose of providing context for the WRIA 7 watershed plan.

First and foremost, RCW 90.44.050, commonly referred to as "the Groundwater Permit Exemption," establishes that certain small withdrawals of groundwater are exempt from the state's water right permitting requirements, including small indoor and outdoor water use associated with homes. It is important to note that although these withdrawals do not require a state water right permit, the water right is still legally established by the beneficial use. Even though a water right permit is not required for small domestic uses under RCW 90.44.050, there is still regulatory oversight, including from local jurisdictions. Specifically, in order for an applicant to receive a building permit from their local government for a new home, the applicant must satisfy the provisions of RCW 19.27.097 for what constitutes evidence of an adequate water supply.

[Comment 1. If the committee recommends changing the fee or gallon per day allocation, we will note that in the below paragraph.]

RCW 90.94.030 adds to the management regime for new homes using domestic permit-exempt well withdrawals in WRIA 7 and elsewhere. For example, local governments must, among other responsibilities relating to new permit-exempt domestic wells, collect a $500 fee for each building permit and record withdrawal restrictions on the title of the affected properties. Additionally, this law restricts new permit-exempt domestic withdrawals in WRIA 7 to a maximum annual average of up to 950 gallons per days per connection, subject to the five thousand gallons per day and ½-acre outdoor irrigation of non-commercial lawn/garden limits established in RCW 90.44.050. Ecology has published its interpretation and implementation of RCW 19.27.097 and RCW 90.94 in Water Resources POL 2094 (Ecology 2019a). The WRIA 7 Committee directs readers to those laws and policy for comprehensive details and agency interpretations.

Commented [AP12]: Arlington: A clear synopsis of the Hirst decision is critical early in the background of the plan. It is far more than clarification of local permitting processes, and more than the interception and reduction of groundwater that would otherwise discharge to and sustain streamflows. What was the decision? What were the effects of the decision that spawned the legislative action? The Hirst decision identified the infringement upon or the impairment of the beneficial use of one water user (User Group A) by another beneficial user of water (Group B) during water limiting situations when the former (Group A) have a senior priority for beneficial use of the water when there is not enough to go around.The text makes no reference to the conflict between "parties" with water seeking to put the same water to valid beneficial uses.

Commented [JI(13R12]: Committee input requested. Note that Ecology is aiming for consistency in Chapter 1 across all plans and may limit Committee edits.

Commented [AP14]: Arlington: Not streamflows, rather "established instream flows protected as a beneficial use by water rights". Modify text to communicate such…

Commented [JI(15R14]: Committee input requested. Note: This chapter is written in "plain talk" language as much as possible to ensure it is readable to a broad audience, including decision makers who will give their representative authority to approve the plan.

1.1.3 RCW 90.94.030 Planning Requirements

While supplementing the local building permit requirements, RCW 90.94.030(3) goes on to establish the planning criteria for WRIA 7. In doing so, it sets the minimum standard of Ecology's collaboration with the WRIA 7 Committee in the preparation of this watershed plan. In practice, the process of plan development was one of integration, collectively shared work, and a striving for consensus described in the WRIA 7 Committee's adopted operating principles, which are further discussed below and in Appendix D.

In addition to these procedural requirements, the law and consequently this watershed plan, is concerned with the identification of projects and actions intended to offset the anticipated impacts from new permit-exempt domestic groundwater withdrawals over the next 20 years and provide a net ecological benefit. In establishing the primary purpose of this watershed plan, RCW 90.94.030 (3) also details both the required and recommended plan elements. Regarding the WRIA 7 Committee's approach to selecting projects and actions, the law also speaks to "high and lower priority projects." The WRIA 7 Committee understands that, as provided in the Final Guidance on Determining Net Ecological Benefit (Ecology 2019), "use of these terms is not the sole critical factor in determining whether a plan achieves a NEB… and that plan development should be focused on developing projects that provide the most benefits… regardless of how they align with [these] labels" (page 12). It is the perspective of the WRIA 7 Committee that this locally approved plan satisfies the requirements of RCW 90.94.030.

1.2 Requirements of the Watershed Restoration and Enhancement Plan

RCW 90.94.030 of the Streamflow Restoration law directs Ecology to establish a watershed restoration and enhancement committee in the Snohomish watershed and develop a watershed restoration and enhancement plan (watershed plan) in collaboration with the WRIA 7 Committee. Ecology determined that the intent was best served through collective development of the watershed plan, using an open and transparent setting and process that builds on local needs.

At a minimum, the watershed plan must include projects and actions necessary to offset projected consumptive impacts of new permit-exempt domestic groundwater withdrawals on streamflows and provide a net ecological benefit (NEB) to the WRIA.

Ecology issued the "Streamflow Restoration Policy and Interpretive Statement" (POL-2094) and "Final Guidance on Determining Net Ecological Benefit" (GUID-2094) in July 2019 to ensure consistency, conformity with state law, and transparency in implementing chapter 90.94 RCW. The "Final Guidance on Determining Net Ecological Benefit" (hereafter referred to as Final NEB Guidance) establishes Ecology's interpretation of the term "net ecological benefit." It also informs planning groups on the standards Ecology will apply when reviewing a watershed plan completed under RCW 90.94.020 or RCW 90.94.030. The minimum planning requirements identified in the Final NEB Guidance include the following (pages 7-8):

Commented [AP16]: Will Stelle: Do not simply describe the minimums, but be more expansive.

Commented [JI(17R16]: Committee input requested. Note that Ecology is aiming for consistency in Chapter 1 across all plans and may limit Committee edits.

1. Clear and Systematic Logic. Watershed plans must be prepared with implementation in mind.
2. Delineate Subbasins. [The committee] must divide the WRIA into suitably sized subbasins to allow meaningful analysis of the relationship between new consumptive use and offsets.
3. Estimate New Consumptive Water Uses. Watershed plans much include a new consumptive water use estimate for each subbasin~~s~~, and the technical basis for such estimate.
4. Evaluate Impacts from New Consumptive Water use. Watershed plans must consider both the estimated quantity of new consumptive water use from new domestic permit-exempt wells initiated within the planning horizon and how those impacts will be distributed.
5. Describe and Evaluate Projects and Actions for their Offset Potential. Watershed plans must, at a minimum, identify projects and actions intended to offset impacts associated with new consumptive water use.

The law requires that all members of the WRIA 7 Committee approve the plan prior to submission to Ecology for review. Ecology must then determine that the plan's recommended streamflow restoration projects and actions will result in a NEB to instream resources within the WRIA after accounting for projected use of new permit-exempt domestic wells over the 20-year period of 2018-2038.

1.2.1 Overview of the WRIA 7 Committee

The Streamflow Restoration law instructed Ecology to chair the WRIA 7 Committee, and invite representatives from the following entities in the watershed to participate:

- Each federally recognized tribal government with reservation land or usual and accustomed harvest area within the WRIA.
- Each county government within the WRIA.
- Each city government within the WRIA.
- Washington State Department of Fish and Wildlife.
- The largest publicly owned water purveyor providing water within the WRIA that is not a municipality.
- The largest irrigation district within the WRIA.

Ecology sent invitation letters to each of the entities named in the law in September of 2018.

The law also required Ecology to invite local organizations representing agricultural interests, environmental interests, and the residential construction industry. Businesses, environmental groups, agricultural organizations, conservation districts, and local governments nominated interest group representatives. Local governments on the WRIA 7 Committee voted on the nominees in order to select local organizations to represent agricultural interests,

Commented [AP18]: Arlington change

environmental interests, and the residential construction industry. Ecology invited the selected entities to participate on the WRIA 7 Committee.

The WRIA 7 Committee members are included in Table 1. This list includes all of the members identified by the Legislature that agreed to participate on the WRIA 7 Committee.[1]

Table 1: WRIA 7 Committee Participating Entities

Entity Name	Representing
City of Arlington	City government
City of Carnation	City government
City of Duvall	City government
City of Everett	City government
City of Gold Bar	City government
City of Lake Stevens	City government
City of Marysville	City government
City of Monroe	City government
City of North Bend	City government
City of Snohomish	City government
City of Snoqualmie	City government
King County	County government
Snohomish County	County government
Washington Water Trust	Environmental interest group
Snohomish Conservation District	Agricultural interest group
Snoqualmie Valley WID	Irrigation district
Master Builders Association of King and Snohomish Counties	Residential construction industry
Town of Index	City government
Washington State Department of Ecology	State agency
Washington Department of Fish and Wildlife	State agency
Tulalip Tribes	Tribal government
Snoqualmie Indian Tribe	Tribal government
Snohomish PUD	Water utility

Roster with names and alternates is available in Appendix C.

The WRIA 7 Committee also invited the Snohomish Basin Salmon Recovery Forum, the Snoqualmie Watershed Forum and the City of Seattle to participate as "ex-officio" members. Although not identified in the law, the ex officio members provide valuable information and

[1]The law did not require invited entities to participate, and some chose not to participate on the Committee. Listed entities committed to participate in the process and designated representatives and alternates.

perspective as subject matter experts. The ex officio members are active but non-voting participants of the WRIA 7 Committee.

1.2.2 Committee Structure and Decision Making

The WRIA 7 Committee held its first meeting in October 2018. Between October 2018 and January 2021 [insert appropriate end date], the WRIA 7 Committee held XX meetings open to the public. The WRIA 7 Committee typically met once a month, and as needed to meet deadlines.

The two and a half years of planning consisted of training, research, and developing plan components. WRIA 7 Committee members had varying degrees of understanding concerning hydrogeology, water law, salmon recovery, and residential development. Ecology technical staff, WRIA 7 Committee members, and partners presented on topics to provide context for components of the plan.

In addition to playing the role of WRIA 7 Committee chair, Ecology staff provided administrative support and technical assistance, and contracted with consultants to provide facilitation and technical support for the WRIA 7 Committee. The facilitator supported the WRIA 7 Committee's discussions and decision-making, and coordinated recommendations for policy change and adaptive management. The technical consultants developed products that informed WRIA 7 Committee decisions and development of the plan. The technical consultants developed all of the technical memorandums referenced throughout this plan. Examples include working with counties on growth projections, calculating consumptive use, preparing maps and other tools to support decisions, and researching project ideas.

The WRIA 7 Committee established two workgroups to support planning and to achieve specific tasks. The Technical Workgroup focused on developing growth projections, subbasin delineations, and consumptive use estimates. The Project Subgroup focused on developing and prioritizing projects for the plan and also supported coordination with salmon recovery planning. The workgroups were open to all WRIA 7 Committee members as well as non-Committee members that brought capacity or expertise not available on the Committee. The workgroups made no binding decisions but presented information to the Committee as either recommendations or findings. The WRIA 7 Committee acted on workgroup recommendations, as it deemed appropriate.

During the initial WRIA 7 Committee meetings, members developed and agreed to operating principles, which are included in Appendix D. The operating principles set forward a process for meeting, participation expectations, procedures for voting, structure of the WRIA 7 Committee, communication, and other needs in order to support the WRIA 7 Committee in reaching agreement on a final plan.

This planning process, by statutory design, brought a diversity of perspectives to the table. Therefore, it was important for the Committee to identify a clear process for how it made decisions. The Committee strived for consensus, and when consensus could not be reached, the

chair and facilitator documented agreement and dissenting opinions. The reason why the Committee strived for consensus is that the authorizing legislation requires that the final plan itself must be approved by all members of the Committee prior to Ecology's review (RCW 90.94.030[3] "...all members of a watershed restoration and enhancement Committee must approve the plan prior to adoption"). As such, consensus during the foundational votes or decisions about plan development served as the best indicators of the Committee's progress toward an approved plan. The WRIA 7 operating principles recognize that consensus can be difficult to achieve and in some cases decisions need be made quickly to stay on track to meet the plan deadline. The operating principles allow for decisions leading up to the plan (e.g. growth scenarios, inclusion of individual projects, etc.) to be approved by two-thirds majority of the Committee members in attendance. Once planning was underway, the WRIA 7 Committee and facilitator limited the number of formal decisions held in order to prioritize reaching consensus on foundational components of the watershed plan. [Language to be tailored later, if needed]: Consensus was reached on all interim decisions. The chair and facilitator documented agreement and dissenting opinions, as outlined in the Committee's operating principles. The Committee did not make any decisions by two-thirds majority.

The WRIA 7 Committee reviewed components of the watershed plan and the draft plan as a whole and on an iterative basis. [Language to be included when appropriate]: Once the WRIA 7 Committee reached initial agreement on the final watershed plan, broader review and approval by the entities represented on the WRIA 7 Committee was sought as needed. The WRIA 7 Committee reached final agreement on the Watershed Restoration and Enhancement Plan on THIS DATE 2021.

Chapter Two: Watershed Overview

2.1 Brief Introduction to WRIA 7

WRIA 7 (the Snohomish River Watershed) is one of the 62 designated major watersheds in Washington State, formed as a result of the Water Resources Act of 1971. The Snohomish River Watershed is approximately 1,856 square miles in area and includes all the lands drained by the Snohomish, Snoqualmie, and Skykomish Rivers, including marine nearshore areas that drain directly to Puget Sound and Quilceda Creek on the Tulalip Plateau. Approximately half of the watershed is located within King County and the other half is located within Snohomish County. It is the second largest watershed (behind the Skagit River watershed) that drains to Puget Sound (Snohomish County 2005). WRIA 7 is bounded on the north by WRIA 4 (Upper Skagit) and WRIA 5 (Stillaguamish), on the west by Puget Sound, on the south by WRIA 8 (Cedar-Sammamish), and on the east by WRIA 39 (Upper Yakima) and WRIA 45 (Wenatchee) (Ecology 2020).

The Snohomish River has two main tributaries: the Snoqualmie and the Skykomish Rivers. The Snoqualmie River originates in the western Cascade Range near Snoqualmie Pass and flows in a generally northwest direction for approximately 45 miles before combining with the Skykomish River near the City of Monroe. The Skykomish River originates in the western Cascade Range near Stevens Pass and flows in a generally westward direction for approximately 29 miles before its confluence with the Snoqualmie River. The Snohomish River originates at the confluence of the Snoqualmie and Skykomish Rivers and flows northwest for approximately 20 miles before discharging to Possession Sound just north of the City of Everett (Earth Point 2020). Major tributaries within the system include the Tolt River, the Sultan River, and the Pilchuck River (Ecology 1995).

The watershed contains the Tolt Reservoir and Spada Lake, which are operated for municipal water supply by the Cities of Seattle and Everett, respectively. The Snohomish PUD generates hydropower with water from the Spada Lake that flows through a pipeline to a powerhouse on the Sultan River (Snohomish County PUD 2020) and the City of Seattle generates hydropower with water from the Tolt Reservoir that is conveyed through a penstock approximately 6 miles downstream of the Tolt Dam to a powerhouse on the South Fork Tolt River (Seattle City Light 2020). The lower portion of the watershed contains Lake Stevens and Lake Goodwin. Numerous smaller lakes, ponds, and wetlands are present throughout the watershed.

2.1.1 Land Use in WRIA 7

The Snohomish Watershed supports industry, commercial facilities, agriculture, individual residences, and municipalities that all compete for a limited water supply, causing a strain on water availability. These out of stream uses compete with instream water needs, including providing water for salmon and other aquatic resources.

Commented [AP19]: Arlington: Chapter 2, and section 2.1.1 in particular, is not bad in itself as a description, but totally misses the opportunity to describe the various basin stakeholders vying to use water where the State of Washington has determined there is more desire (demand) for beneficial use of water than the basin can provide, thus intensifying competition for the resource.

Commented [JI(20R19]: Committee input requested

The eastern or upland portion of the watershed generally consists of commercial forest land and public forest land associated with the Mt. Baker-Snoqualmie National Forest. Land uses shift to rural developments and small urban centers in the foothills of the Cascade Mountains. Agricultural development is widespread within the lower portion of the Skykomish River valley and the Snoqualmie and Snohomish River valleys. Extending from the City of Snohomish, the western portion of WRIA 7 is urbanizinged and characterized by a combination of residential, industrial, commercial, transportation, communication, and utility land covers (See Figure 1: WRIA 7 Vicinity Map with Land Uses). The most populated cities in the watershed are all within Snohomish County, including Everett, Marysville, Lake Stevens, Arlington, and Monroe (OFM 2020). The terminus of the watershed is located north of the urbanized and highly industrialized Port of Everett where the Snohomish River discharges to Possession Sound.

Many aquifers in WRIA 7 are connected to surface water. Groundwater pumping may diminish surface water flows by capturing water that would otherwise have discharged to springs and streams. Consumptive water use (that portion not returned to the aquifer) reduces streamflow, both seasonally and as average annual recharge. A well drawing from an aquifer connected to a surface water body either directly or through an overlying aquifer can either reduce the quantity of water discharging to the river or increase the quantity of water leaking out of the river (Ecology 1995). This watershed plan addresses impacts on groundwater discharge to streams due to withdrawals from permit-exempt wells for domestic use. Projects to offset consumptive use associated with permit-exempt domestic water use have become a focus to minimize future impacts to instream flows and restore streamflow.

Commented [AP21]: Arlington change

Commented [AP22]: Arlington change

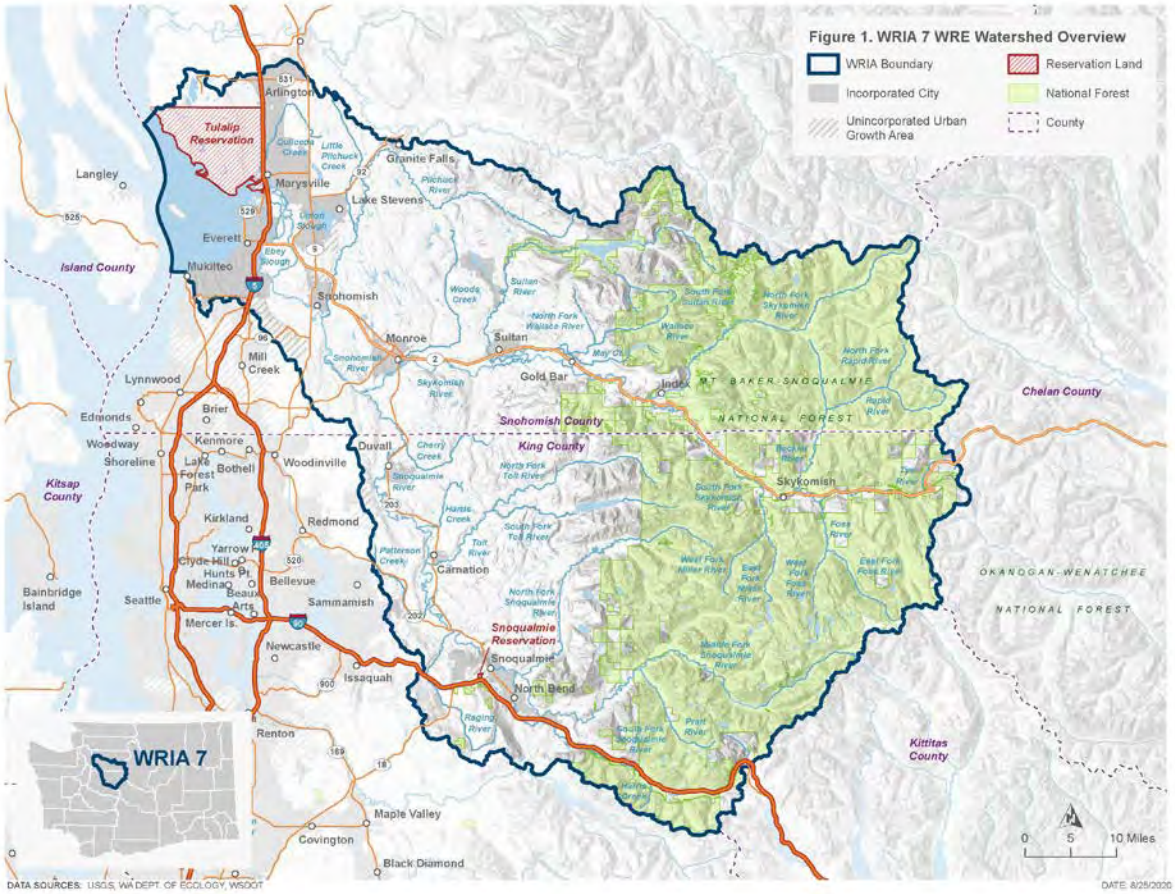

Figure 1: WRIA 7 WRE Watershed Overview

2.1.2 Tribal Reservations and Usual and Accustomed Fishing Areas

[Comment 2: WREC Tribal Representative should review the section above for accuracy. Ecology's Tribal Liaison will review the section above following committee representative review.]

WRIA 7 is located within the ancestral homelands of Indian tribes and bands that occupied this area since time immemorial. Tribes hold reserved treaty rights to fish, hunt and gather throughout the watershed (Treaty of Point Elliott). The earliest (most senior) priority rights to water within the Snohomish Watershed are claimed by Indian tribes. While unquantified, these may include federally reserved water rights, intended to serve current and future uses of land reservations, and can extend to instream flows and minimum lake levels necessary to protect resources in all areas where Tribes have reserved rights. Treaty rights to fish, hunt, and gather can support claims for habitat, which may include stream flow.

The Snoqualmie Indian Tribe (Snoqualmie Tribe) and Tulalip Tribes of Washington (Tulalip Tribes) both have reservation lands in WRIA 7. The Snoqualmie Tribe reservation is located in the upper Snoqualmie Valley near Snoqualmie Falls and the Tulalip Tribes reservation is located on the Tulalip Plateau north of the Snohomish River.

Indian people have always relied on the natural resources of this land. Their personal, cultural, and spiritual survival depended on the ability to fish, hunt and gather the bountiful natural resources that once blessed this country (NWIFC 2014). Salmon are one of those resources that is critical to the cultural, spiritual and economic wellbeing of Tribes. Tribes depend upon salmon that originate from the waters found in the Snohomish River and its tributaries.

2.1.3 Salmon in WRIA 7

[Comment 3: WDFW representative and other members should review this section for accuracy.]

The Snohomish River Basin has anadromous salmonid runs that include ~~all~~ five Pacific salmon species (SWIFD 2020). Chinook (Oncorhynchus tshawytscha), ~~C~~coho (Oncorhynchus kisutch), ~~C~~chum (Oncorhynchus keta), ~~S~~sockeye (Oncorhynchus nerka), and ~~P~~pink ~~S~~salmon (Oncorhynchus gorbuscha) migrate in and out of the Snohomish watershed from Puget Sound. Steelhead ~~T~~trout (Oncorhynchus mykiss), ~~C~~coastal ~~C~~cutthroat ~~T~~trout (Oncorhynchus clarki clarki), rainbow trout (Oncorhynchus mykiss), and ~~B~~bull ~~T~~trout (Salvelinus confluentus) also inhabit the watershed. There are two distinct Chinook salmon populations: the Skykomish ~~P~~population and the Snoqualmie ~~p~~Population and both populations are thought to be at less than 10 percent of historic levels. There are four bull trout populations and five steelhead populations (Snohomish County 2019). Kokanee (Onchorynchus nerka), resident sokeye, are also present in Lake Stevens.

Commented [AP23]: James Kraft (WWT): What happens if a Plan isn't effective and treaty rights are being impaired? Should there be an offramp to DOE taking other actions?

Commented [JI(24R23]: Committee Input Requested

Commented [AP25]: Tulalip comments on this section.

Commented [JI(26R25]: Ecology will work with WREC tribal representatives on the language in this section.

Commented [AP27]: Snoqualmie Tribe: "all five Pacific salmon species" ; strike "all" ; goes to a lumping/splitting argument, and ignores Masu salmon

Commented [AP28]: Snoqualmie Watershed Forum: Only Chinook is capitalized because it is based on a proper name. Other salmonid names are not capitalized (coho, chum, pink, sockeye, steelhead, etc.) There are also O. nerka - kokanee in Lake Stevens.

Commented [JI(29R28]: Ecology will ensure consistency throughout the plan.

Three species are currently protected under the ESA—Chinook salmon, steelhead, and bull trout. Coho salmon are listed as a species of concern. The Puget Sound evolutionarily significant unit (ESU) of Chinook salmon was designated as threatened under the ESA on May 24, 1999. Critical habitat for Chinook salmon was designated in 2005 and includes select marine nearshore and freshwater habitats within WRIA 7 (70 FR 52630-52853). The Puget Sound distinct population segment (DPS) of steelhead trout was designated as threatened under ESA on May 7, 2007. Designated critical habitat (DCH) for Puget Sound steelhead was finalized in 2016 and includes freshwater tributaries to and estuarine habitat in Puget Sound, Washington (81 FR 9252-9325) including select areas within WRIA 7. The Coastal-Puget Sound Distinct Population Segment (DPS) of Bull Trout was designated as threatened under ESA on December 1, 1999. Critical habitat has been designated for Bull Trout and includes both select freshwater and saltwater aquatic habitat within WRIA 7 (75 FR 63897). Table 2 below lists the species present in the Snohomish watershed and their regulatory status.

Table 2: Salmonids Present Within the Snohomish Watershed

Common Name	Scientific Name	Evolutionary Significant Unit	Designated Critical Habitat	Regulatory Agency Status
Chinook Salmon	*Oncorhynchus tshawytscha*	Puget Sound Chinook	Yes	NMFS/Threatened/ 1999
Chum Salmon	*Oncoryhnchus keta*	Puget Sound Chum	No	No listing
Coho Salmon	*Oncorhynchus kisutch*	Puget Sound/Strait of Georgia Coho	No	NMFS/Species of Concern/1997
Pink Salmon	*Oncorhynchus gorbuscha*	No listing	No listing	No listing
Sockeye Salmon	*Oncorhynchus nerka*	No listing	No listing	No listing
Steelhead Trout	*Oncorhynchus mykiss*	Puget Sound Steelhead	Yes	NMFS/Threatened/ 2007
Bull Trout	*Salvelinus confluentus*	Puget Sound Dolly Varden/Bull Trout	Yes	USFWS/Threatened/ 1999
Coastal Cutthroat Trout	*Oncorhynchus clarkii clarkii*	No listing	No listing	No listing

Table 3 below lists the run timing and life stages of anadromous salmon and trout present throughout the watershed. Watershed specific data concerning salmonid life history and timing was summarized from the 2002 Washington State Conservation Commission Salmonid Habitat Limiting Factors Analysis (Haring, 2002).

331 Table 3: Salmonid Life History Patterns within the Snohomish Watershed

Species	Freshwater Life Phase	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Subbasin Presence
Sockeye[1]	Upstream migration						■	■	■	■				-Estuary/Snohomish Mainstem -Pilchuck -Quilceda-Allen
	Spawning									■	■	■	■	
	Fry emergence	■	■	■	■	■	■	■						
	Juvenile rearing	■	■	■	■	■	■	■	■	■	■	■	■	
	Smolt outmigration				■	■	■	■						
Chinook (fall)[2]	Upstream migration								■	■	■	■		-Cherry Harris -Estuary/Snohomish Mainstem -Lower mid-Skykomish -Patterson -Pilchuck -Quilceda-Allen -Raging -Skykomish Mainstem -Snoqualmie North -Snoqualmie South -Sultan -Upper Skykomish -Woods
	Spawning									■	■	■	■	
	Incubation	■	■	■	■	■				■	■	■	■	
	Juvenile rearing	■	■	■	■	■	■	■	■	■	■	■	■	
	Juvenile outmigration	■	■	■	■	■	■	■	■					
Chinook (summer)[2]	Upstream migration								■	■				-Estuary/Snohomish Mainstem -Lower mid-Skykomish -Pilchuck -Quilceda-Allen -Skykomish Mainstem -Sultan -Woods
	Spawning									■	■	■	■	
	Incubation	■	■	■	■	■				■	■	■	■	
	Juvenile rearing	■	■	■	■	■	■	■	■	■	■	■	■	
	Juvenile outmigration	■	■	■	■	■	■	■	■					
Coho	Upstream migration									■	■			-Cherry Harris -Estuary/Snohomish Mainstem -Little Pilchuck -Lower mid-Skykomish -Patterson
	Spawning	■	■								■	■	■	

Species	Freshwater Life Phase	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Subbasin Presence
	Incubation[3]	■	■	■	■	■						■	■	-Pilchuck -Quilceda-Allen -Raging
	Juvenile rearing	■	■	■	■	■	■	■	■	■	■	■	■	-Skykomish Mainstem -Snoqualmie North -Snoqualmie South
	Smolt outmigration[3]			■	■	■	■	■						-Sultan -Tulalip -Upper Skykomish -Woods
Chum	Upstream migration										■	■	■	-Cherry Harris -Estuary/Snohomish Mainstem
	Spawning											■	■	-Lower mid-Skykomish -Patterson -Pilchuck
	Fry emergence			■	■	■								-Quilceda-Allen -Raging
	Juvenile rearing				■	■	■	■						-Skykomish Mainstem -Snoqualmie North -Snoqualmie South
	Juvenile outmigration				■	■	■	■						-Sultan -Upper Skykomish -Woods
Pink (odd)	Upstream migration								■	■	■			-Cherry Harris -Estuary/Snohomish Mainstem
	Spawning										■	■	■	-Lower mid-Skykomish -Patterson -Pilchuck
	Fry emergence		■	■	■	■	■							-Quilceda-Allen -Raging
	Juvenile rearing		■	■	■	■	■	■						-Skykomish Mainstem -Snoqualmie North -Snoqualmie South
	Juvenile outmigration			■	■	■	■	■						-Sultan -Upper Skykomish -Woods

Species	Freshwater Life Phase	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Subbasin Presence
Pink (even)	Upstream migration													-Skykomish Mainstem
	Spawning													
	Fry emergence													
	Juvenile rearing													
	Juvenile outmigration													
Bull Trout	Upstream migration[4]													-Cherry Harris -Estuary/Snohomish Mainstem -Little Pilchuck -Lower mid-Skykomish -Patterson -Pilchuck -Quilceda-Allen -Raging -Skykomish Mainstem -Snoqualmie North -Snoqualmie South -Sultan -Upper Skykomish -Woods
	Spawning													
	Incubation[4]													
Coastal Cutthroat Trout[5]	Upstream migration													-Cherry Harris -Estuary/Snohomish Mainstem -Little Pilchuck -Lower mid-Skykomish -Patterson -Pilchuck -Quilceda-Allen -Raging -Skykomish Mainstem -Snoqualmie South -Sultan -Tulalip -Upper Skykomish -Upper Snoqualmie -Woods
	Spawning													
	Incubation													
	Juvenile rearing													
	Smolt outmigration													

Species	Freshwater Life Phase	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Subbasin Presence
Steelhead Trout (winter)	Upstream migration	■	■	■	■	■	■					■	■	-Cherry Harris -Estuary/Snohomish Mainstem -Little Pilchuck -Lower mid-Skykomish -Patterson -Pilchuck -Quilceda-Allen -Raging -Skykomish Mainstem -Snoqualmie North -Snoqualmie South -Sultan -Upper Skykomish -Woods
	Spawning			■	■	■	■							
	Incubation[6]				■	■	■	■						
	Juvenile rearing	■	■	■	■	■	■	■	■	■	■	■	■	
	Smolt outmigration[6]			■	■	■	■							
Steelhead Trout (summer)	Upstream migration					■	■	■	■	■	■			-Cherry Harris -Estuary/Snohomish Mainstem -Little Pilchuck -Lower mid-Skykomish -Patterson -Pilchuck -Quilceda-Allen -Raging -Skykomish Mainstem -Snoqualmie North -Snoqualmie South -Sultan -Upper Skykomish -Woods
	Spawning			■	■	■	■							
	Incubation[6]				■	■	■	■						
	Juvenile rearing	■	■	■	■	■	■	■	■	■	■	■	■	
	Smolt outmigration[6]			■	■	■	■							
Rainbow Trout[7]	Spawning			■	■	■	■							-Lower mid-Skykomish -Pilchuck -Skykomish Mainstem -Snoqualmie South
	Incubation				■	■	■	■	■					-Sultan -Tulalip -Upper Skykomish -Upper Snoqualmie

NOTES:

1. Observed sockeye are likely stray adults per the habitat limiting factors report. Information on sockeye life history specifically within the Snohomish watershed is either unavailable or extremely limited. Sockeye life history patterns for the Puget Sound Region were used within this report (Gustafson et al, 1997).
2. Snohomish watershed has individuals that rear within the basin for a full year (Haring, 2002)
3. Information on Coho incubation and outmigration timing specifically within the Snohomish watershed is unavailable. Coho incubation and outmigration timing for the adjacent WRIA 8 Region were used within this report (Kerwin, 2001)
4. Information on bull trout incubation and migration timing specifically within the Snohomish watershed is either unavailable or extremely limited. Bull trout life history patterns for the Puget Sound Region were used within this report (King County, 2000).
5. Information on coastal cutthroat trout life history specifically within the Snohomish watershed is either unavailable or extremely limited. Coastal cutthroat trout life history patterns for the Puget Sound Region were used within this report (Johnson et al, 1999).
6. Information on steelhead incubation and migration timing specifically within the Snohomish watershed is unavailable. Steelhead incubation and out-migration timing for the Puget Sound Region were used within this report (Blanton et al, 2011).
7. Information on rainbow trout life history specifically with the Snohomish watershed is unavailable. Rainbow trout life history patterns for the Puget Sound Region were used within this report (Blanton et al, 2011).

2.1.4 Limiting Factors for Salmon

[Comment 4: WDFW, Salmon Recovery LE, and Snoqualmie Watershed Forum representatives should review this section for accuracy.]

~~Several~~ Many tributaries provide spawning and rearing habitat for salmon species. Some of the major and minor tributaries in the Snohomish basin that provide spawning and rearing habitat for salmonids often experience low streamflows during critical migration and spawning times. ~~These streams often experience low streamflows during critical migration and spawning time~~. In addition, levees, dams and other flood control measures have further limited habitat along primary watershed rivers and tributaries. The quality and quantity of spawning and rearing habitat, water quality, including water temperature, adult fish passage barriers, low streamflows, hatchery management, and harvest all affect local salmon populations (Snohomish County 2005).

Habitat conditions within WRIA 7 were abstracted from the 2002 Washington State Conservation Commission Salmonid Habitat Limiting Factors Analysis (Haring, 2002). WRIA 7 includes approximately 25 miles of marine shorelines and 720 miles of streams that support anadromous salmon and trout populations. Stream systems within WRIA 7 range from pristine to highly degraded aquatic habitat. The watershed is characterized by a wide range of activities and impacts including residential development, commercial forestry, agriculture, wilderness, and urbanization. The Salmonid Habitat Limiting Factors Analysis (Haring, 2002) lists the following habitat limiting factors within WRIA 7:

- Fish habitat access
- Floodplain modifications
- Channel conditions
- Substrate conditions
- Riparian conditions
- Water quality
- Water quantity
- Lakes
- Biological processes

The Snohomish River Basin Salmon Conservation Plan (Snohomish County 2005) also identifies rearing habitat as a limiting factor for Chinook juveniles.

2.2 Watershed Planning in WRIA 7

Citizens and local, state, federal, and tribal governments have collaborated on watershed and water resource management issues in WRIA 7 for decades. A brief summary of broad watershed planning efforts as they relate to the past, present, and future water availability in the Snohomish Watershed is provided (in Section 2.2.1).

Commented [AP30]: Snoqualmie Tribe change

Commented [AP31R30]: Tulalip: Several' is a significant understatement of the range of habitat of salmon and the level to which they are impacted by overallocation of water rights, degradation of stream habitat and other anthropomorphic changes

Commented [AP32]: Snoqualmie Watershed Forum: The first two sentences are a bit incomplete. Consider combining and say: "Some of the major and minor tributaries in the Snohomish basin that provide spawning and rearing habitat for salmonids often experience low streamflows during critical migration and spawning times." Also in this paragraph, mention that the Salmon Plan calls out rearing habitat as limiting for Chinook juveniles.

Commented [AP33]: James Kraft (WWT): Include other forms of predation like cormorants and seals coming up river, if applicable. Seems like a lot of the scientific information on limiting factors is very old (10-20 years ago), does this reflect the best available science?

Commented [JI(34R33]: Committee input requested.

Commented [AP35]: James Kraft (WWT): Lots of planning but no comment on implementation or effectiveness of those plans.

Commented [JI(36R35]: Committee input requested

2.2.1 Other Planning Efforts in WRIA 7

The history of collaborative planning and shared priorities has supported the success of the watershed restoration and enhancement plan development in WRIA 7. This watershed plan builds on many of the past efforts to further develop comprehensive plans for the entire watershed. For example, the Snohomish-Stillaguamish Local Integrating Organization (LIO) developed an ecosystem recovery plan, as part of the Action Agenda for Puget Sound Recovery. The planning process to develop an ecosystem recovery plan is community based with engagement by local, state and federal agencies. The approach is holistic, addressing everything from salmon to orca recovery, stormwater runoff, and farmland and forest conservation. The Snohomish-Stillaguamish LIO has engaged the community in a collaborative planning process to help understand priorities and support the health and sustainability of the watershed.

The Snohomish Basin Salmon Recovery Forum (Snohomish Forum) is the lead entity coordinating salmon recovery efforts in WRIA 7. In 2005, the Snohomish Forum developed the *Snohomish River Basin Salmon Conservation Plan* (Salmon Plan) (Snohomish County 2005). The Snohomish Basin Salmon Recovery Forum also developed the *Snohomish Basin Protection Plan* in 2015 to identify protection strategies that prevent the degradation of hydrologic processes that support salmon or salmon habitat. Appendix B of the Protection Plan is an adopted addendum to the 2005 Salmon Plan (Snohomish Basin Salmon Recovery Forum 2015). The Snohomish Forum is currently planning a chapter update to the Salmon Plan.

The Snoqualmie Watershed Forum also coordinates among stakeholders and Tribes to support implementation of the Salmon Plan. The Snoqualmie Watershed Forum was formed in 1998 and is a partnership between the Snoqualmie Tribe, the Tulalip Tribes, King County, the cities of Duvall, Carnation, North Bend and Snoqualmie, and the Town of Skykomish. These entities have an interlocal agreement to work together on watershed issues and coordinate implementation of water resource and habitat projects in the Snoqualmie and South Fork Skykomish watersheds (King County 2020).

Coordinated Water System Plans (CWSPs) are mandated by the Public Water System Coordination Act of 1977. King County passed ordinances ratifying four CWSPs (East King County, Skyway, South King County, and Vashon). Water purveyors within northern and eastern Snohomish County updated their CWSP in 2010. These plans ensure that water system service areas are consistent with local growth management plans and development policies. The location of new homes in relation to and within designated retail water system service areas and related policies determine if connection to a water system is available, or the new homes will need to rely on an alternative water source, most likely a new permit-exempt domestic well~~s~~. Within their designated retail service area(s), water purveyors are given first right of refusal for new connections. The purveyor may decline to provide service if water cannot be made available in a 'reasonable and timely' manner. However, it is not uncommon ~~can be the case~~ that a new permit-exempt well is drilled without making any inquiries with the county or with the local water system.

Commented [AP37]: Snohomish CD: Wondering in 2.2.1 "Other watershed planning efforts" if it warrants discussion of the Farm Fish Flood Effort, or SLS, Ag Resiliency Plan, or current Ag Strategy King County is working on…all of which could conflict OR support things in this document. OR something on FFF agreement in 2.2.2?

Commented [JI(38R37]: Committee input requested

Commented [AP39]: Snoqualmie Watershed Forum: Snohomish County is the Lead Entity for Chinook recovery in WRIA 7, and they convene the Snohomish Basin Salmon Recovery Forum to do a number of items related to implementing and updating the salmon conservation plan. See the web site: https://snohomishcountywa.gov/1128/Forum-Roles-Activities

Commented [JI(40R39]: Committee input requested

Commented [AP41]: Arlington change

Commented [AP42]: MBAKS: I had a Snohomish County member express that this issue about without making inquiries to the County ot Purveyor has been fixed. Is this language needed?

Commented [JI(43R42]: Committee Input Requested

Commented [AP44]: Arlington change

[Comment 5: County representatives should review the previous paragraph section for accuracy.]

2.2.2 Coordination with Existing Plans

Throughout the development of this watershed plan, Ecology streamflow restoration staff have engaged with staff from the Snohomish-Stillaguamish LIO, the Snohomish Basin Salmon Recovery Forum, the Snoqualmie Watershed Forum, and the Puget Sound Partnership, providing briefings on the streamflow restoration law, scope of the watershed plan, and plan development status updates. Throughout the planning process, the WRIA 7 Committee has coordinated closely with the Snohomish Basin Salmon Recovery Forum and the Snoqualmie Watershed Forum. Both entities participated actively on the WRIA 7 Committee as ex-officio members and identified opportunities to align the Committee's project list with the *Snohomish Basin Salmon Conservation Plan* and the *Snohomish Basin Protection Plan*.

Snohomish County and King County planning staff contributed to the plan development to ensure consistency with the counties' Comprehensive Plans. The Comprehensive Plans set policy for development, housing, public services and facilities, and environmentally sensitive areas, among other topics. The Comprehensive Plans identify Snohomish and King Counties' urban growth areas, set forth standards for urban and rural development, and provide the basis for zoning districts.

Commented [AP45]: Will Stelle: The committee intends that this plan requires projects and actions which will advance the water resource requirements of these parallel and more comprehensive recovery plans.

Commented [JI(46R45]: Committee Input Requested

2.3 Description of the Watershed – Geology, Hydrogeology, Hydrology, and Streamflow

2.3.1 Geologic Setting

Understanding the geologic setting of WRIA 7 facilitates characterization of surface and groundwater flow through the watershed. The relationships between surface water flow and deeper groundwater are important to understanding how to manage surface water resources and can be helpful in identifying strategies to offset the impacts of pumping from permit-exempt wells.

Within WRIA 7, bedrock forms mountain ranges and uplands and generally consists of igneous and sedimentary rocks. Within drainages and lowland areas, bedrock is overlain by glacial and alluvial sediments. A minimum of four major glaciations covered the lower portion of the watershed during the Pleistocene Epoch (about 11,700 years to 2.5 MA), the most recent occurrence being the Vashon Stade of the Frasier Glaciation (Jones 1952). The present topography and drainage network in WRIA 7 was shaped during the advance and retreat of the Vashon ice sheet. These processes resulted in glacially-derived ridges and lakes linked by drainage channels (Booth and Goldstein 1994). Pleistocene-age glacial and interglacial processes resulted in the deposition of a complex assemblage of sedimentary deposits in lowland areas. These glacial deposits consist of glacial till, recessional and advance outwash, and glaciolacustrine deposits. Glacial till deposits generally consist of dense, silty sand with

gravel and silt lenses. Outwash deposits generally consist of sand and gravel with locally abundant wood debris and peat. Glaciolacustrine deposits generally consist of silt and clay. This sequence of glacial deposits exceeds 1,500 feet in thickness within the lower portions of the watershed (Vaccaro, Hansen, and Jones 1998).

Recent alluvial deposits are generally associated with channel and overbank deposits from the modern Snoqualmie, Skykomish, and Snohomish Rivers and their tributaries. These sediments generally consist of stratified silt, sand, gravel, with minor clay (DNR 2020).

2.3.2 Hydrogeologic Setting

Groundwater within WRIA 7 primarily occurs within: (1) relatively coarse-grained glacial and alluvial aquifers overlying bedrock; and (2) primary and secondary porosity within bedrock aquifers. The U.S. Geological Survey identified six hydrogeologic units within the sequence of Puget Sound glacial and alluvial sediments within WRIA 7. The hydrogeologic units typically alternate between aquifer units and semi-confining to confining layers (aquitards which lack sufficiently permeability to form aquifers) (Vaccaro, Hansen, and Jones 1998).

Within the upper portion of the watershed, glacial and alluvial sediments occur within the Snohomish River and Skykomish River valleys and drainages associated with area tributaries (DNR 2020). Glacial and alluvial sediments are widespread within the lower portion of the watershed. Glacial and alluvial aquifers are generally unconfined (under water-table conditions) except where overlain by low permeability confining layers (generally till or glaciolacustrine deposits) (Vaccaro, Hansen, and Jones 1998). Transmissivity (a hydraulic property related to the rate of groundwater flow through an aquifer) and storativity (a hydraulic property related to the ability of an aquifer to store/release water) of these aquifers vary significantly with depositional environment and are generally the highest in outwash sands and gravels and lowest in fine-grained alluvial deposits (Vaccaro, Hansen, and Jones 1998). Glacial and alluvial aquifers are characterized by a shallow depth to the groundwater table and, where applicable, a direct hydraulic connection with adjacent surface water (Vaccaro, Hansen, and Jones 1998).

Bedrock aquifers underly the entire watershed. However, within the lower portions of the watershed, glacial and alluvial sediments are frequently hundreds of feet thick and bedrock aquifers are seldom targeted by water supply wells. Thickness of the glacial and alluvial hydrogeologic units described above are generally thin to the east within WRIA 7. Much of the watershed southeast of Bellevue is underlaid by relatively shallow and frequently outcropping bedrock. Therefore, bedrock aquifers increase in importance, from a water supply perspective, within the upper portions of the watershed.

Bedrock aquifers are of relatively low transmissivity and storativity. Wells completed within bedrock aquifers typically do not have high enough capacities for municipal use. However, they can be valuable aquifers for residential water uses, and in specific areas are an important target aquifer for permit-exempt wells.

Commented [AP47]: Snoqualmie Watershed Forum: References Bellevue, which is in WRIA 8 - should this say "south and east of Monroe" instead? Please make sure this paragraph makes sense in terms of WRIA 7.

Commented [JI(48R47]: Technical Consultants are addressing this comment.

Recharge to glacial, alluvial, and bedrock aquifers within WRIA 7 is primarily associated with precipitation, applied irrigation, septic systems, leakage from surface water within losing reaches (where streamflow infiltrates to groundwater), and through leakage from adjacent aquifers. Watershed aquifers discharge to water supply wells, adjacent aquifers, gaining reaches of streams, and Puget Sound. Summer base flows in WRIA 7 rivers and tributaries are sustained by groundwater (baseflow) on most of the lower-elevation tributaries.

Regionally, groundwater flow direction within watershed aquifers generally parallels the westerly slope of the Cascade Range, although groundwater flow in shallow aquifers is generally influenced by surface topography and streamflow within the watershed and is directed to the northwest. This groundwater flow paradigm is complicated throughout the watershed by aquifer boundaries, aquifer heterogeneities, topography, the influence of gaining and losing stream reaches, well pumping, and other factors.

2.3.3 Hydrology and Streamflow

Most WRIA 7 rivers and tributaries are located in a snowmelt transition region where the rivers are fed by both snowmelt and rainfall, however there are a few streams in the lower portions of the watershed that are predominantly rain-fed. Within low elevation portions of the watershed, mean annual precipitation ranges from about 30 to 40 inches per year. Mean annual precipitation increases with topographic elevation and can exceed 120 inches within the Cascade Range (Western Regional Climate Center 2020). Most precipitation occurs during the late fall and winter. Precipitation is lowest during the summer when water demands are highest. During these low-flow periods, streamflow is highly dependent upon groundwater inflow (baseflow).

Anticipated future climate impacts will result in continued loss of snow and glacial volumes in the Cascade Range, combined with rising temperatures and changes in precipitation. Earlier spring snowmelt, lower snowpack, increased evaporative losses, and warmer and drier summer conditions will intensify summer drought conditions and low flow issues in WRIA 7. These climate impacts are expected to drive changes in seasonal streamflows, increasing winter flooding, while intensifying summer low flow conditions. For the Skykomish River, climate modeling predicts average minimum flows to be 18 percent lower (range: -22 to -8 percent) by the 2080s for a moderate warming scenario, relative to 1970 to 1999 (Mauger et al. 2015). For the Snohomish River, climate modeling predicts average minimum flows to be 26 percent lower (range: -33 to -17 percent) by the 2080s for a moderate warming scenario, relative to 1970 to 1999 (Mauger et al. 2015). Mauger et. al. (2015) did not predict average minimum flows for other rivers within the watershed, including the Snoqualmie River.

Streamflow conditions within primary WRIA 7 rivers are summarized by the following (USGS 2020):

- USGS stream gage 12150800 (Snohomish River near Monroe): At this location, mean daily discharge ranges from 2,920 cfs in August to 13,300 cfs in January.

Commented [AP49]: Arlington: Chapter 2, and section 2.3.3 in particular, is void of any reference to WAC 173-507, the Snohomish (WRIA 7) Instream Flow Rule and its effect on creating water rights belonging to the river. It is silent with regard to minimium instream flows established by the Rule, as it also is regarding closures of certain WRIA 7 subbasins to any new beneficial uses of water. Regardless of the language in the bill passed by the Legislature, or of the language of 90.94 RCW, the decision handed down by the Hirst court does not simply suggest that streamflows should be helped or enhanced or that the effects of permit-exempt wells should be mitigated or offset. It requires that these impacts be evaluated just as any other basin stakeholder desiring to put water to a genuine beneficial use. 90.94 RCW attempts to handle this by authorizing (allowing) permit-exempt wells to create these impairments, and to handle the Court's concerns through a publicly funded mitigation program.

Commented [JI(50R49]: Committee Input Requested

Commented [AP51]: MBAKS: Wouldn't rising temperatures and precipitation be an anticipated climate impact and it not be "combined" with them?

Commented [JI(52R51]: Technical Consultants are addressing this comment.

Commented [AP53]: Tulalip: Use of mean flows is not terribly informative; use of exceedence flows - 10-25% exceedence for low flow conditions allows for quick assessment of what flow is most likely to be exceeded in a given year. The discussion about climate change can be related to the exceedance flows - the likelihood that base flows will be greatly impacted by climate change makes the likelihood of meeting baseflow targets much lower than the currently calculated exceedance flows much lower. It would be informative to include - where you have them - MIFs where set, exceedance flows for same gauge - include climate change impacts by showing the range of flows that would be achieved at the -15 - -30% range. This way, by looking at a table - the reader can quickly assess that MIFs are 1) not being met 2) are typically set higher than base flow exceedances 3) how climate change will impact meeting instream flows / exceedance flows

Commented [JI(54R53]: Committee Input Requested Technical consultants are reviewing this comment.

Commented [AP55]: Arlington: The magnitude of the impact of PEWs should be described somewhere in the WRIA 7 Plan in order to demonstrate the corresponding magnitude of the Court's intent in the Hirst decision. To help establish this, for the mainstem Snohomish River (corresponds to the entire WRIA 7), identify that the mean annual discharge (near Monroe) is 9,500 cfs, with daily discharge ranging from 2,920 cfs in August, to 13,500 cfs in January. When describing the cumulative impact of 20 years of new permit-exempt wells (from 2018 to 2038), describe that on an annual basis, with all other factors constant, the mean annual flow in 2038 will be about 9, 499 cfs, or a ...

Commented [JI(56R55]: Committee Input Requested Technical consultants are reviewing this comment.

- USGS stream gage 12149000 (Snoqualmie River near Carnation): Mean daily discharge ranges from 1,070 cfs in August to 5,310 cfs in December.
- USGS stream gage 12134500 (Skykomish River near Gold Bar): Mean daily discharge of ranges from 1,300 cfs in August and September to 6,750 cfs in May.

Several factors contribute to streamflow: snowpack and rate of melt, rainfall, surface water runoff, and groundwater discharge. In addition to environmental factors, surface water withdrawals and groundwater pumping from wells hydraulic continuity with surface water affect streamflow. Water use from new permit-exempt domestic wells represents only a very small portion of all water use and factors affecting streamflow in the watershed.

Commented [AP57]: Arlington change

Chapter Three: Subbasin Delineation

3.1 Introduction

Water Resource Inventory Areas (WRIAs) are large watershed areas formalized under the Washington Administrative Code for the purpose of administrative management and planning. WRIAs encompass multiple landscapes, hydrogeologic regimes, levels of development, and variable natural resources. To allow meaningful analysis of the relationship between new consumptive use and offsets per Ecology's Final NEB Guidance,[2] the WRIA 7 Committee divided WRIA 7 into suitably sized subbasins. This was helpful in describing the location and timing of projected new consumptive water use, the location and timing of impacts to instream resources, and the necessary scope, scale, and anticipated benefits of projects. In some instances, subbasins may not correspond with hydrologic or geologic basin delineations (e.g. watershed divides) (Ecology 2019).

3.2 Approach to Develop Subbasins

Consistent with the Final NEB Guidance, which defines subbasins as geographic subareas within a WRIA, equivalent to the words "same basin or tributary" as used in RCW 90.94.020(4)(b) and RCW 90.94.030 (3)(b), the WRIA 7 Committee divided WRIA 7 into 16 subbasins for purposes of assessing consumptive use and project offsets.[3] The Committee based their subbasin delineation on existing subwatershed units and interim growth projections developed by

[2] "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." (Ecology 2019).

[3] This is consistent with Final NEB Guidance that defines subbasins as a geographic subarea within a WRIA. A subbasin is equivalent to the words "same basin or tributary" as used in RCW 90.94.020(4)(b).

Snohomish County and King County. The Committee then applied the following guiding principles to delineate subbasins:

- Use U.S. Geological Survey hydrologic unit code subwatershed (HUC-12) boundaries in the Snohomish County portion of the watershed (USGS 2013, 2016);
- Use King County drainage basin boundaries in the King County portion of the watershed (King County 2018);
- Combine HUC-12s and King County drainage basins with lower projected growth of new homes using PE wells;
- Keep distinct subbasins for HUC-12s and King County drainage basins with higher projected growth of new homes using PE wells;
- Align subbasins with Protection Planning Units identified in the Snohomish Basin Protection Plan as closely as possible (Snohomish Basin Salmon Recovery Forum 2015);
- Consider important salmon habitat and potential location of offset projects and actions;
- Consider streams with known low flow issues; and
- Consider streams with year-round closures[4].

The Committee divided WRIA 7 into 16 subbasins, as described in Section 3.3. A more detailed description of the subbasin delineation is in the technical memo available in Appendix E. The technical memo also describes a few other adjustments the WRIA 7 Committee made to align the subbasins with relevant planning boundaries.

3.3 WRIA 7 Subbasins

The WRIA 7 subbasin delineations are shown on Figure 2 and summarized below in Table 4:

Table 4: WRIA 7 Subbasins

Subbasin Name	Primary Rivers and Tributaries	County
Tulalip	Streams draining directly to Puget Sound, including Tulalip Creek	Snohomish County
Quilceda-Allen	Allen Creek and Quilceda Creek	Snohomish County
Estuary/Snohomish Mainstem	Snohomish River, Evans Creek, French Creek, and streams draining directly to Puget Sound between the	Snohomish County

[4] Streams closed year-round to further consumptive appropriation as identified in WAC 173-507-030 (2).

Commented [AP58]: Arlington: I am sorely disappointed that the only reference to WAC 173-507 (the Snohomish (WRIA 7) Instream Flow Rule) in the Plan (at least in the main body of the Plan) is as a footnote under subbasin description. This is not just unfortunate, it is fundamentally wrong.

Commented [JI(59R58]: Committee Input Requested

Commented [AP60]: Snoqualmie Watershed Forum: Several subbasins are in both Snohomish and King County, but are listed as only in King County in the table, including Snoqualmie North, Snoqualmie South and Cherry-Harris.

Commented [AP61R60]: Tulalip: Table 4 - use a * to indicate sub basins containing streams with known low flow issues and ** to indicate sub basins containing streams with year round closures

Commented [JI(62R60]: Snoqualmie Watershed Forum: Technical Consultants are addressing this comment.

Tulalip: Committee Input Requested

Subbasin Name	Primary Rivers and Tributaries	County
	City of Mukilteo and the City of Everett	
Little Pilchuck	Little Pilchuck Creek	Snohomish County
Pilchuck	Upper and Lower Pilchuck River	Snohomish County
Woods	Woods Creek	Snohomish County
Sultan	Upper, Middle and Lower Sultan River	Snohomish County
Lower Mid-Skykomish	Wallace River and Olney Creek	Snohomish and King County
Skykomish Mainstem	Skykomish River	Snohomish and King County
Upper Skykomish	South Fork and North Fork Skykomish River tributaries, including Foss River, Miller River, Tye River, South Fork Skykomish River, Beckler River, Rapid River, Upper Beckler River, Lower South Fork Skykomish River, Lower North Fork Skykomish River, Middle North Fork Skykomish River, and Upper North Fork Skykomish River	Snohomish and King County
Cherry-Harris	Cherry Creek and Harris Creek	King County
Snoqualmie North	Northern half of the Snoqualmie River Mainstem drainage basin, Tuck Creek, Cathcart drainages, and Ames Lake	King County
Snoqualmie South	South Fork Tolt, North Fork Tolt, and Lower Tolt River tributaries, Tokul Creek, Griffen Creek, and the southern half of the Snoqualmie River Mainstem drainage basin	King County
Patterson	Patterson Creek	King County

Subbasin Name	Primary Rivers and Tributaries	County
Raging	Raging River	King County
Upper Snoqualmie	North, Middle, and South Fork Snoqualmie River	King County

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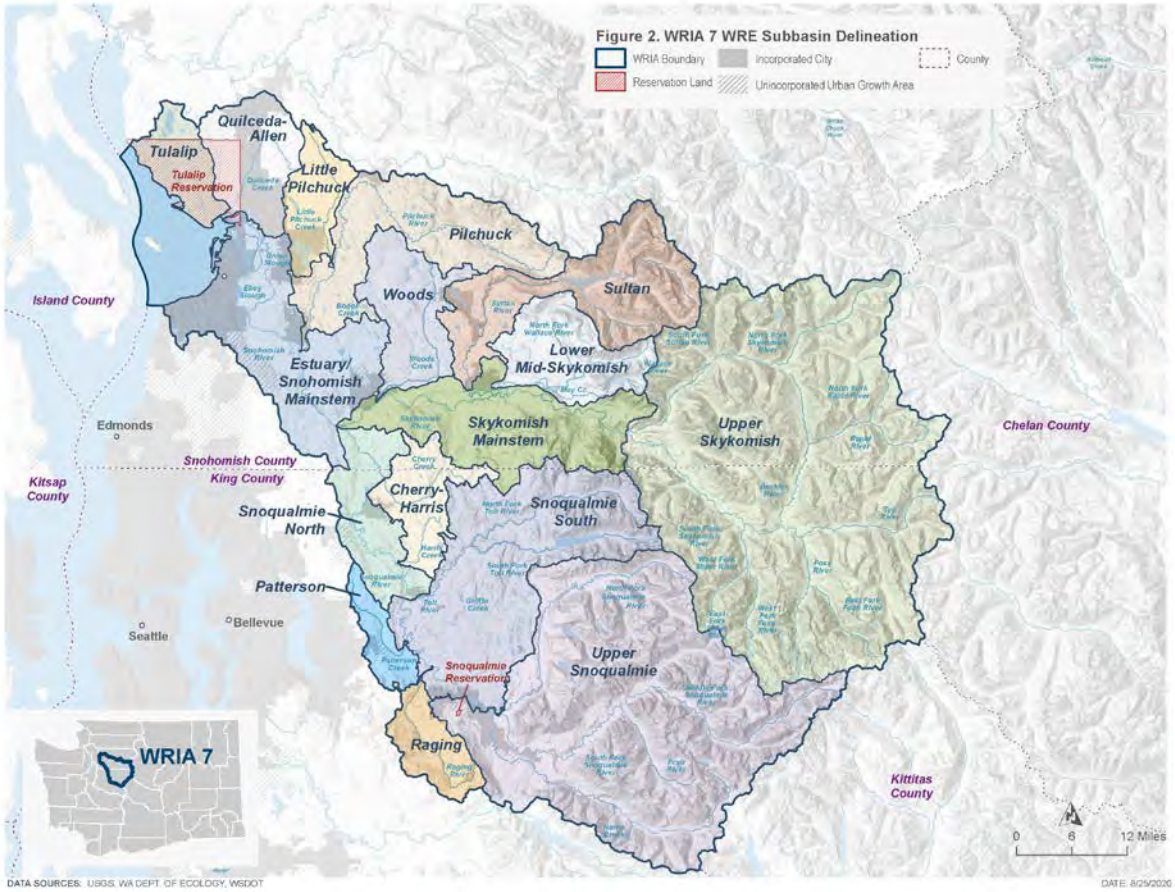

Figure 2: WRIA 7 WRE Subbasin Delineation

Chapter Four: New Consumptive Water Use Impacts

4.1 Introduction to Consumptive Use

The Streamflow Restoration law requires watershed plans to include "estimates of the cumulative consumptive water use impacts over the subsequent twenty years, including withdrawals exempt from permitting under RCW 90.44.050" (RCW 90.94.030(3)(e)). The Final NEB Guidance states that, "watershed plans must include a new consumptive water use estimate for each subbasin, and the technical basis for such estimate" (pg. 7). This chapter provides the WRIA 7 Committee's projections of new domestic permit exempt well connections (hereafter referred to as PE wells) and their associated consumptive use for the 20-year planning horizon. [5] This chapter summarizes information from the technical memos (Appendices F and G) prepared for, and reviewed by, the WRIA 7 Committee.

4.2 Projection of Permit-Exempt Well Connections (2018 – 2038)

The WRIA 7 Committee projects 3,389 PE wells over the planning horizon. Most of these wells are likely to be installed in the following subbasins: Tulalip, Quilceda-Allen, Estuary/Snohomish Mainstem, and Snoqualmie North.

The WRIA 7 Committee developed a method that they agreed was appropriate to project the number of new PE wells over the planning horizon in WRIA 7, in order to estimate new consumptive water use. This method, referred to as the PE well projection method, is based on recommendations from Appendix A of Ecology's Final NEB Guidance (Ecology 2019). The following sections provide the 20-year projections of new PE wells for each subbasin within WRIA 7, the methods used to develop the projections (PE well projection method), and uncertainties associated with the projections.

4.2.1 Permit-Exempt Well Connections Projection by Subbasin

This WRIA 7 watershed plan compiles the Snohomish County and King County PE well projection data at both the WRIA scale and by subbasin. The projection for new PE wells in WRIA 7 by subbasin is shown in Table 5 and Figure 3.

[5] New consumptive water use in this document is from projected new homes connected to permit-exempt domestic wells associated with building permits issued during the planning horizon. Generally, new homes will be associated with wells drilled during the planning horizon. However, new uses could occur where new homes are added to existing wells serving group systems under RCW 90.44.050. In this document the well use discussed refers to both these types of new well use. PE wells may be used to supply houses, and in some cases other Equivalent Residential Units (ERUs) such as small apartments. For the purposes of this document, the terms "house" or "home" refer to any permit-exempt domestic groundwater use, including other ERUs.

Table 5: Number of PE Wells Projected between 2018 and 2038 for the WRIA 7 Subbasins

Subbasins	King County	Snohomish County	UGAs	Total PE Wells per Subbasin
Tulalip	--	468	0	468
Quilceda-Allen	--	330	8	338
Estuary/Snohomish Mainstem	--	322	9	331
Little Pilchuck	--	289	5	294
Pilchuck	--	278	2	280
Woods	--	224	0	224
Sultan	--	53	2	55
Lower Mid-Skykomish	--	60	0	60
Skykomish Mainstem	0	183	2	185
Upper Skykomish	48	53	2	103
Cherry-Harris	200	11	3	214
Snoqualmie North	240	98	0	338
Snoqualmie South	169	0	0	169
Patterson	104	--	0	104
Raging	73	--	2	75
Upper Snoqualmie	146	--	5	151
Totals	**980**	**2,369**	**40**	**3,389**

The total projection for WRIA 7 is 3,389 new PE wells. King County projects approximately 980 new PE wells over the planning horizon within WRIA 7 portions of unincorporated King County. Snohomish County projects approximately 2,369 new PE wells over the planning horizon within WRIA 7 portions of unincorporated Snohomish County (including a projection of 35 PE wells on tribal owned lands provided by Tulalip Tribes). The King and Snohomish County methods do not account for potential PE wells in cities or Urban Growth Areas (UGAs) so the WRIA 7 Committee completed an analysis of potential new PE wells within the UGAs and projected 40 new PE wells (UGA Well Log Spot Check).

4.2.2 Methodology

The WRIA 7 Committee gave deference to each County for identifying the most appropriate method of projecting PE wells within their jurisdiction. The WRIA 7 PE well projection method included using King and Snohomish Counties historical building data to predict potential PE well

growth assuming the rate and general location of past growth will continue over the 20-year planning horizon. Using past building permits to predict future growth is one of Ecology's recommended methods (Ecology 2019). Due to data availability, which differed for the two counties, King and Snohomish County used different methods to estimate the number of homes that would be served by community water systems and municipalities and remove those from the PE well growth estimates. Snohomish County considered distance to existing water lines, whereas King County considered historical rates of connection to water service within water service area boundaries[6]. King and Snohomish Counties completed their analyses in-house and the methods are described in detail in Appendix F.

The WRIA 7 Committee also evaluated potential PE wells within the UGAs using data from Ecology's Well Report Viewer database.

King County completed a PE Well Potential Assessment which identified potential parcels where development could occur within rural King County. Snohomish County completed a similar assessment which they have referred to as a Rural Capacity Analysis. The PE Well Potential Assessment and Rural Capacity Analysis results were used to assess whether a subbasin (as identified by the Committee) has the capacity to accommodate the number of PE wells projected over the 20-year planning horizon.

All methods are summarized in the sections below. The WRIA 7 Growth Projections Technical Memorandum provides a more detailed description of the analysis and methods used by both counties (Appendix F).

King County PE Well Projection Methodology

King County used historical residential building permit and parcel data from 2000 through 2017 to project the number of new PE wells for the planning horizon in unincorporated King County (referred to as the past trends analysis). This data set considers economic and building trends over an 18-year period and the method assumes that past trends will continue.

King County calculated the number of new PE wells over the planning horizon using the following steps:

1. Gather historical building permit and parcel data (2000–2017) for new residential structures[7].
2. Assess the total number of permits and average number of permits per year for WRIA 7.

[6] Water service area boundaries include areas currently served by existing water lines and may also include areas not yet served by water lines. King County used historic rates of connection to water service to predict future rates of connection because King County does not have County-wide information on the location of water lines.

[7] King County used the time period 2000 through 2017 because those data were available. The building permit data for 2000 through 2017 includes both periods of high growth and periods of low growth. King County compared these data with information from the Vision 2040 regional plan and population data and is confident in using the average of this time period to project into the future.

3. Link building permit and parcel data to determine water source for each building permit/parcel and separate into public, private, and other water source categories. Consider a building permit with water source listed as "private" as a PE well.
4. Calculate the number and percentage of building permits for each type of water source (public, private, or other) inside and outside water services areas, by subbasin, and for the WRIA overall.

The WRIA 7 Committee used the King County past trends analysis to develop PE well projections by subbasin using the following steps:

5. Calculate the projected number of PE wells per year for each subbasin by multiplying the average number of building permits per year by the percentage of building permits per subbasin, and percentage of building permits using a private water source (well) per subbasin.
6. Multiply the projected number of PE wells per year per subbasin by 20 to calculate the total of PE wells projected over the 20-year planning horizon for each subbasin.
7. Add 6% to 20-year PE well projection per subbasin to account for gaps in the building permit and parcel data (6% error is based on the percentage of building permits with "other" as the water source).
8. Tabulate the total PE wells projected over the 20-year planning horizon, including the 6% error, for each subbasin and sum to get the total of PE wells projected over the 20-year planning horizon in rural unincorporated King County.

Snohomish County PE Well Projection Methodology

Snohomish County developed three PE well projection scenarios based on development trends and population projections, described in Appendix F. The WRIA 7 Committee chose to use the scenario that reviewed past development trends within WRIA 7 to estimate the number and location of potential new homes over the planning horizon (referred to as the past trends analysis).

Snohomish County used a different method than King County for their past trends analysis. They used a GIS model to identify areas where homes are likely to connect to water service, based on proximity to existing water distribution lines (referred to as public water service areas). Areas that were not proximal to existing water distribution lines were assumed to be served by a PE well (referred to as PE well areas)[8]. Snohomish County used this spatial model, in combination with analysis of year-built data from 2008-2018 for recently built single-family residences, to develop PE well projections. The method assumes that past trends will continue,

[8] PE well areas are more than 100' from a water main for homes that are not part of a subdivision and more than ¼ mile from a water main for homes that are part of a subdivision. See Snohomish County Growth Projections and Rural Capacity Analysis Methods in Appendix F for additional information.

that water lines now are representative of water lines in the future, and that homes built proximal to water lines as they exist now will connect to public water service and not to PE wells.

Commented [AP63]: Snoqualmie change

Snohomish County calculated the number of new PE wells over the planning horizon using the following steps:

1. Gather year-built data for single-family residences (i.e. housing units or HUs) built between 2008–2018.
2. Assign HUs to "public water service areas" or "PE well areas" based on the distance to existing water mains. Assume HUs in "PE well areas" will use a PE well for the water source.
3. Estimate the number of HUs per subbasin for each type of water source (public water service or PE well) and calculate the percentage of HUs per subbasin for each type of water source.
4. Calculate the average number of HUs per year (2008-2018) and multiply by 20 to calculate the estimated total of HUs projected over the 20-year planning horizon for rural unincorporated Snohomish County.
5. Apply HU projections to WRIA 7 subbasins based on the past percentage of growth per subbasin and past percentage of HU for each type of water source per subbasin.
6. Tabulate the total PE wells projected over the 20-year planning horizon for each subbasin and sum to get the total of PE wells projected over the 20-year planning horizon in rural unincorporated Snohomish County.

Urban Growth Area PE Well Projection Methodology

The King County and Snohomish County PE well projection methods do not account for potential PE wells within cities or UGAs. However, early in the PE well projection planning process, the WRIA 7 Committee recommended looking at the potential for PE well growth within the incorporated and unincorporated UGAs using data from Ecology's Well Report Viewer database (referred to as the UGA well log spot check).

The general method included using Ecology's Well Report Viewer database (1998–2018) to query water wells with characteristics of a domestic well[9] within UGAs. The Committee randomly reviewed a subset of the water well reports and calculated the number and percentage of each type of well (domestic, irrigation, other and incorrect) located within the UGAs. They then multiplied the percentage of wells identified as domestic (assumed to be PE wells) by the total number of wells located within UGAs to estimate the number of PE wells installed over the past 20-year period. The Committee also cross-checked the physical address of the wells with the UGA boundaries to determine which subbasin the domestic wells were

[9] Ecology's complete Well Report Viewer database was filtered for water wells 6 to 8 inches in diameter and greater than 30 feet deep, which are typical dimensions and depths for domestic wells. Ecology does not have the ability to filter for permit-exempt domestic wells.

located in. The Committee used the total number of domestic wells per subbasin over the past 20 years to project the number of PE wells located within the UGAs over the planning horizon for each WRIA 7 subbasin. A more detailed methodology is included in Appendix F.

King County PE Well Potential Assessment

King County completed an assessment of parcels available for future residential development in unincorporated King County (referred to as the PE well potential assessment).

King County used screening criteria to identify parcels with potential for future residential development by subbasin. The total number of parcels and dwelling units[10] (DUs) per subbasin were determined and labeled as inside or outside the water district service boundaries. King County then projected the water source for each parcel (public water or PE well) based on historic rates of connection to water service because the County does not have county-wide information on the location of water lines. The WRIA 7 Committee compared the 20-year PE well projection to the PE well potential assessment. In areas where the number of projected PE wells exceeded the potential parcels available, the Committee reallocated those PE wells to the nearest subbasin with parcel capacity and similar growth patterns. The WRIA 7 Committee reallocated 22 projected PE wells from the Upper Snoqualmie subbasin to the Snoqualmie South subbasin in the King County portion of WRIA 7. A more detailed methodology and list of assumptions is included in Appendix F.

Snohomish County Rural Capacity Analysis

Snohomish County completed a Rural Capacity Analysis in 2011 that resulted in an assigned future residential development capacity for each parcel in the rural area. Snohomish County updated their 2011 analysis to determine capacity to accommodate the 20-year PE well projection at the WRIA and subbasin level.

Snohomish County used screening criteria to identify parcels with potential for future residential development by subbasin. For each parcel, Snohomish County calculated residential development capacity based on development status, parcel size, density, and other attributes. The County assigned parcels to "public water service areas" or "PE well areas" per the past trends analysis method and aggregated the residential development capacity by subbasin and water source. Snohomish County compared the 20-year PE well projection with the rural capacity analysis and calculated the shortfall or surplus of available parcels to be sourced by PE wells. There were no areas in Snohomish County where the number of projected PE wells exceeded the potential parcels available. A more detailed methodology and list of assumptions is included in Appendix F.

[10] A dwelling unit is a rough estimate of subdivision potential based on parcel size and zoning (e.g. a 22-acre parcel zoned RA-5 is assumed to have 4 dwelling units).

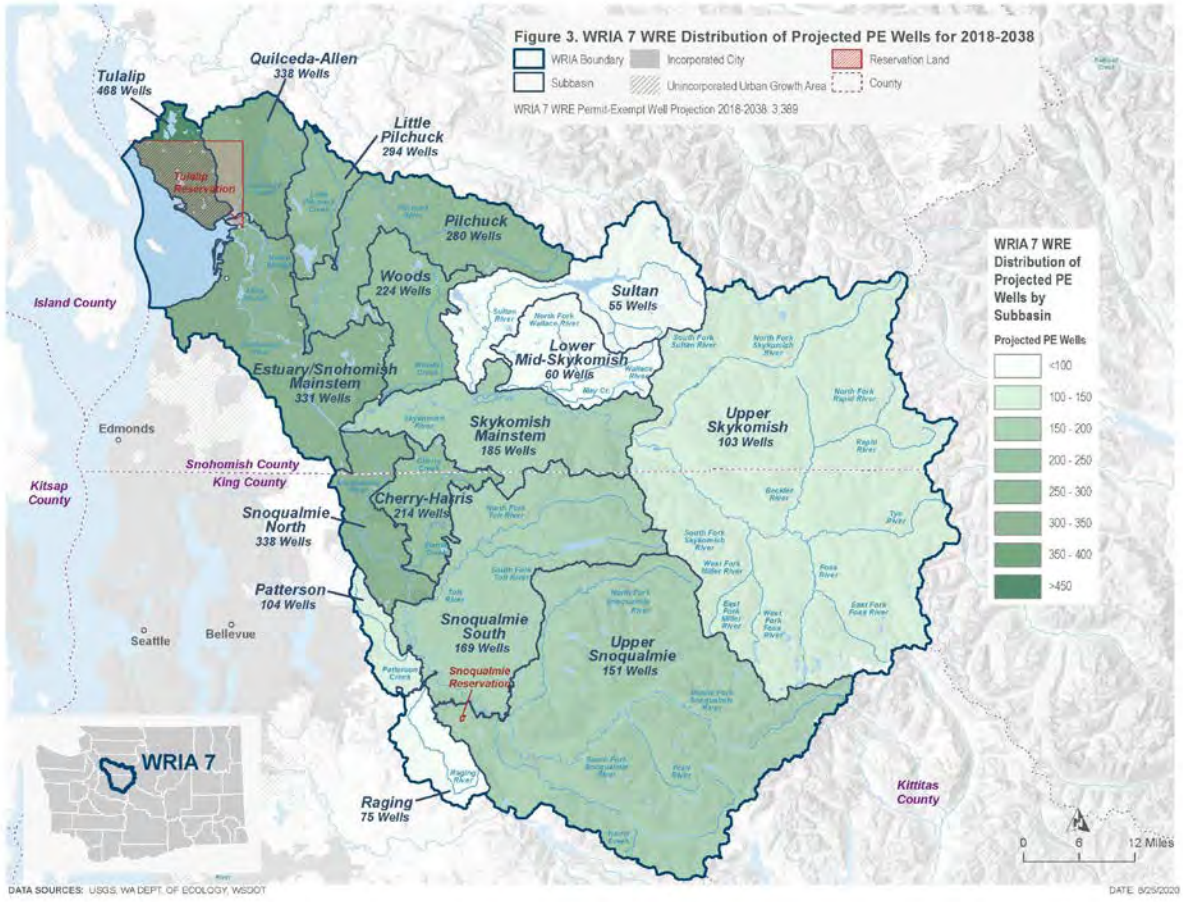

Figure 3: WRIA 7 WRE Distribution of Projected PE Wells for 2018 - 2038

4.3 Impacts of New Consumptive Water Use

The WRIA 7 Committee used the 20-year projection of new PE wells for WRIA 7 (3,389) to estimate the consumptive water use that this watershed plan must address and offset. The WRIA 7 Committee estimates 797.4 acre-feet per year (1.10 cfs) of new consumptive water use in WRIA 7.

[Comment 6: If the Committee identifies an offset target that is higher than the consumptive use estimate in order to address uncertainty, both the consumptive use estimate and offset target will be described in this chapter.]

This section includes an overview of the methods used by the WRIA 7 Committee to estimate new consumptive water use (consumptive use) and an overview of the anticipated impacts of new consumptive use in WRIA 7 over the planning horizon. The WRIA 7 Consumptive Use Estimates Technical Memorandum provides a more detailed description of the analysis and alternative scenarios considered (Appendix G.)

4.3.1 Methods to Estimate Indoor and Outdoor Consumptive Water Use

Indoor water use patterns differ from outdoor water use. Indoor use is generally constant throughout the year, while outdoor use occurs primarily in the summer months. Also, the portion of water that is consumptive varies for indoor and outdoor water use. Appendix A of the Final NEB Guidance describes a method (referred to as the Irrigated Area Method) which assumes average indoor use per person per day, and reviews aerial imagery to provide a basis to estimate irrigated area of outdoor lawn and garden areas. The Irrigated Area Method accounts for indoor and outdoor consumptive use variances by using separate approaches to estimate indoor and outdoor consumptive use.

To develop the consumptive use estimate, the WRIA 7 Committee used the Irrigated Area Method and relied on assumptions for indoor use and outdoor use from Appendix A of the Final NEB Guidance (Ecology 2019). This chapter provides a summary of the technical memo which is available in Appendix G.

Consistent with the Final NEB guidance (Appendix B, pg. 25), for the purposes of calculating an estimate of consumptive use, the Committee assumed impacts from consumptive use on surface water are steady-state, meaning impacts to the stream from pumping do not change over time. This assumption is based on the wide distribution of future well locations and depths across varying hydrogeological conditions, and because empirical data to support the assumption is not locally available. The Committee discussed that assuming steady-state may decrease the estimated consumptive use impact during the base flow season, but agreed the methods in the NEB guidance were sufficiently protective of the resource.

Commented [AP64]: Tulalip: impact of wells pumping in steady state - specifically point out that assuming steady state decreases the estimate of impact during base flow season

The WRIA 7 Committee looked at other methods for estimating consumptive use including 1) assuming one home with the legal maximum 0.5-acre irrigated lawn area per PE well and 2) the

legal withdrawal limit of 950 gallons per day.[11] While ~~T~~the Committee assumed that neither method is likely to ~~would~~ provide an accurate depiction of future water use in the watershed, the scenarios were used as points of comparison to what was projected as described above. ~~but~~ ~~T~~the results are provided in the technical memo in Appendix G.

Commented [AP65]: Snoqualmie Tribe change

New Indoor Consumptive Water Use

Indoor water use refers to the water that households use in kitchens, bathrooms, and laundry (USGS, 2012). The WRIA 7 Committee used the Irrigated Area Method and Ecology's recommended assumptions for indoor daily water use per person, local data to estimate the average number of people per household, and applied Ecology's recommended consumptive use factor to estimate new indoor consumptive water use (Ecology 2019). The assumptions the WRIA 7 Committee used to estimate household consumptive indoor water use are:

- 60 gallons per day (gpd) per person.
- 2.73 and 2.75 persons per household assumed for rural portions of King and Snohomish County, respectively. For areas spanning both counties, a weighted value was estimated based on the number of projected PE wells in each County.
- 10% of indoor use is consumptively used (or a consumptive use factor (CUF) of 0.10), based on the assumption that homes on PE wells are served by onsite sewage systems. Onsite sewage systems return most wastewater back to the immediate water environment; a fraction of that water is lost to the atmosphere through evaporation in the drainfield.

The equation used to estimate household consumptive indoor water use is:

60 gpd x 2.73 to 2.75 people per house x 365 days x .10 CUF

This results in an annual aggregated average of 0.0184 AF[12] (0.000025 cfs[13]) indoor consumptive water use per day per well.

New Outdoor Consumptive Water Use

Most outdoor water is used to irrigate lawns, gardens, and landscaping. To a lesser extent, households use outdoor water for car and pet washing, exterior home maintenance, pools, and other water-based activities. Water from outdoor use does not enter onsite sewage systems, but instead typically infiltrates into the ground or is lost to the atmosphere through evapotranspiration (Ecology, 2019).

[11] Legal withdrawal limits from PE wells in WRIA 7 are defined in RCW: "an applicant may obtain approval for a withdrawal exempt from permitting under RCW 90.44.050 for domestic use only, with a maximum annual average withdrawal of nine hundred fifty gallons per day per connection" RCW 90.94.030(4)(a)(vi)(B)

[12] Acre-Foot is a unit of volume for water equal to a sheet of water one acre in area and one foot in depth. It is equal to 325,851 gallons of water. 1 acre-foot per year is equal to 893 gallons per day.

[13] Cubic feet per second (CFS) is a rate of the flow in streams and rivers. It is equal to a volume of water one foot high and one foot wide flowing a distance of one foot in one second. 1 cubic foot per second is equal to 646,317 gallons per day.

The WRIA 7 Committee used aerial imagery to measure the irrigated areas of 393 randomly selected parcels in the 16 WRIA 7 subbasins to develop an average outdoor irrigated area per subbasin. Parcels used for the irrigated footprint analysis were selected based on recent (2006-2017) building permits for new single-family residential homes not served by public water. There were nearly 1,600 permits in WRIA 7 meeting these criteria. A minimum 20-parcel sample per subbasin was targeted as a statistically representative sample size and to ensure that the sample mean is representative over the WRIA. The average irrigated area for 393 randomly selected parcels, when aggregated across the 16 subbasin, was 0.20 acres per parcel.

The WRIA 7 Committee used the following assumptions, recommended in Appendix A of the NEB Guidance, to estimate outdoor consumptive water use:

- The amount of water needed to maintain a lawn varies by subbasin due to varying temperature and precipitation across the watershed. The Committee used Washington Irrigation Guide (WAIG) (NRCS-USDA 1997) stations Everett, Monroe, and Snoqualmie Falls to develop a weighted average crop irrigation requirement (IR) for turf grass in each subbasin (the WRIA Average IR is 10.66 inches). This value represents the amount of water needed to maintain a green lawn.
- The irrigation application efficiency (AE) used for WRIA 7 was the Ecology-recommended value of 75%. This increases the amount of water used to meet the crop's irrigation requirement.
- Consumptive use factor (CUF) of 0.8, reflecting 80% consumption for outdoor use. This means 20% of outdoor water is returned to the immediate water environment.
- Outdoor irrigated area per subbasin based on the irrigated footprint analysis: 0.20 acres per PE well.

10.66 IR (inches) ÷ 12 (inches per foot) ÷ 0.75 AE x 0.20 (acres) x 0.80 CUF

First, water loss is accounted for by multiplying the crop irrigation requirement by the application efficiency. Next, the total water depth used to maintain turf is multiplied by the area which is irrigated. Finally, the volume of water is multiplied by 80 percent to produce the outdoor consumptive water use. To convert the equation from inches to acre-feet, divide the result by 12.

The outdoor consumptive use varies by subbasin due to different irrigation requirements across the watershed. The WRIA average consumptive water use per PE well is 0.24 AF per year (0.000331 cfs). This is an average for the year; however, the Committee expects that more water use will occur in the summer than in the other months.

4.4 Summary of Uncertainties

[Comment 7: If the Committee identifies an offset target that is higher than the consumptive use estimate in order to address uncertainty, the offset target and how it addresses uncertainty will be described here.]

Commented [AP66]: James Kraft (WWT): Acknowledge that these estimates don't address uncertainties of climate migration.

Commented [AP67R66]: Will Stelle: This section only addresses uncertainties associated with the estimation of consumptive uses. It does not address uncertainties associated with project effects, implementation, changing precipitation patternsn, trends in agricultural/industrial/municipal water uses, regulatory responses to future water supply failures, etc. This section should be so notued, and these other plan-related uncertainties.

Commented [JI(68R66]: Committee Input Requested.

The methods described above in Section 4.2 for projecting new PE wells include a number of uncertainties, which were ~~addressed~~ identified by the WRIA 7 Committee. The Committee recognized uncertainties as inherent to the planning process and addressed uncertainties where feasible. The uncertainties are shared here to provide transparency in the planning process and deliberations of the Committee, and to provide context for monitoring and adaptive management.

Historical data on the number and location of PE wells within WRIA 7 was not available to inform PE well projections. Therefore, the WRIA 7 Committee relied on building permit data, and agreed on assumptions about the water source, in order to estimate the numbers of past and future PE wells. Projections in Snohomish County assume that homes built within 1,000 feet of an existing water line will connect to public water service, but this is a somewhat arbitrary assumption. The assumptions were not ground-truthed and may have yielded imprecise and/or inaccurate results.

Another example of uncertainty is that the counties projected new PE wells within unincorporated areas and omitted PE wells installed within city limits, including PE wells installed for lawn watering purposes. Although most cities require new homes to connect to water systems, some allow exceptions if a connection is not available in a timely and reasonable manner (for instance, if a home is more than 200 feet from a water line)~~, or allow a home connected to a water system to install a PE well for lawn watering~~. The WRIA 7 Committee attempted to address this uncertainty by including a projection for new PE wells within the UGAs that was based on PE well construction rates derived from available data for YEAR X to YEAR Y.

Both counties relied on historical data and assumed that these historical building trends will continue into the future. However, future building trends may not mirror historical building trends. Water service areas and water lines are expected to continue to grow and expand at an unknown rate and in unknown conditions. Water line data was not readily available in King County, so the WRIA 7 Committee was not able to compare actual water lines with the historical data to see if and how the water service has expanded. While water line data was readily available in Snohomish County, the WRIA 7 Committee identified that Seven Lakes Water System, within the Tulalip and Quilceda Subbasins, does not currently have the ability to legally expand service new customers. To address this uncertainty, the Committee assumed that future homes within the Seven Lakes Water Service Area in the Tulalip and Quilceda subbasins will use PE wells (see details in Appendix F).

Counties and cities generally enact policies intended to direct growth to urban areas (with access to public water service) to preserve rural and resource lands and protect critical areas, however, private property rights continue to allow landowners to build homes in rural areas. Additionally, uncertain economic and social factors, including the COVID-19 pandemic and increasing ability to telework, will affect the Committee's predictions in unknown ways and may result in greater rural growth than was predicted based on past trends.

RCW 90.94 requires counties to collect fees for new homes that rely on PE wells and provide a report and portion of those fees to Ecology. King and Snohomish Counties shared information

Commented [AP69]: Snoqualmie Tribe change

Commented [AP70]: Snoqualmie Tribe: Additionally, projections in Snohomish County assume that homes built within 1000 feet of an existing water line will connect to public water service, but this is a somewhat arbitrary assumption.

Commented [JI(71R70]: Committee Input Requested

Commented [AP72]: Arlington change

Commented [AP73]: Tulalip: Could we rely on well drillers to report these PE wells

Commented [JI(74R73]: Committee Input Requested

Commented [AP75]: Arlington: Regarding "or allow a home connected to a water system to install a PE well for lawn watering", this is not a common occurrence for new well construction. Delete, or cite examples.

Commented [AP76]: Snoqualmie Tribe change

Commented [JI(77R76]: Technical consultants are addressing this comment.

Commented [AP78]: Arlington: It is absolutely not true and is certainly misleading to report to the Legislature and basin stakeholders that Seven Lakes Water System "does not currently have the ability to expand service [sic] new customers". The issue is that, when Seven Lakes applied for additional ground water rights to serve both new and existing customers in their service area, which includes numerous undeveloped rural parcels, and all of which would discharge wastewater through septic systems (just like PE wells), Ecology found that no water was available in the corresponding sub-basin(s) for further appropriation from the (assumed) one to three additional wells. Yet this plan promotes 468 PE wells in the same vicinity without consideration of Ecology's earlier, presumably well-vetted decision. As of this review, the committee has neither identified adequate water offset projects, nor habitat projects to satisfy NEB criteria in this subbasin. With reference to chapter 1, line 111, of the draft plan, I do not find this systematic or logical. Ecology should re-evaluate its prior decisions and determine how to best serve the Seven Lakes' water service area using the existing Group A water utility.

Commented [JI(79R78]: Committee Input Requested

on the fees collected since those requirements went into effect in January of 2018. King County reported 20 building permits with PE wells identified as the water source within the WRIA 7 portion of unincorporated King County between January 2018 and June 2020. Snohomish County reported 94 building permits with PE wells identified as the water source within the WRIA 7 portion of unincorporated Snohomish County between January 2018 and June 2020. The number of new wells reported by King and Snohomish Counties average 46 new PE wells per year compared to 169 PE wells per year projected by the WRIA 7 Committee.

The methods described in section 4.3.1 contain a number of uncertainties and limitations. Measurement of consumptive water use in any setting is difficult, and it is virtually impossible for residential groundwater use, which must account for both indoor and outdoor use. PE wells are generally unmetered[14], so supply to each home is usually unknown, let alone the amount that is consumed versus infiltrated to the groundwater system. Therefore, the WRIA 7 Committee was limited to estimating consumptive use based on projections of future growth, local patterns and trends in water use, and generally accepted and reasonable assumptions.

The WRIA 7 Committee discussed these uncertainties and limitations and recognized that there is a range of water use across the watershed and individual PE well owners. The Committee assumed that the estimates produced by the methods described above resulted in a reasonable projected consumptive water use for the WRIA.

The outdoor consumptive use calculation contains a high level of uncertainty. In aerial photos used to calculate average irrigated area, many parcels did not demonstrate a clear-cut distinction between irrigated and non-irrigated lawns and other landscaped areas. It appears that many homeowners may irrigate enough to keep lawns alive but not lush (or comparable to commercial turf grass/golf course green). The WRIA 7 Committee attempted to address uncertainty and ensured consistency by applying conservative methods that err on the side of a higher irrigated area and having one GIS analyst evaluate all of the selected parcels in the WRIA. Assumptions for the aerial imagery analysis are described in detail in Appendix G.

Other factors of uncertainty in the outdoor consumptive use calculation are the assumptions about irrigation amounts and irrigation efficiencies. The calculation assumes that homeowners water their lawns and gardens at the rate needed for commercial turf grass (e.g., watering at rates that meet crop irrigation requirements per the WAIG). The irrigated area analysis demonstrated that many homeowners may irrigate their lawns enough to keep the grass alive through the dry summers, but not at the levels that commercial turf grass requires. The method also assumes that residential pop-up sprinkler systems irrigate the lawns with an efficiency of 75%. In reality, households apply water to their lawns and gardens in many different ways, some more or less efficient than pop-up sprinklers. The WRIA 7 Committee discussed these uncertainties and scenarios and recognized that there is a range of water use across the watershed and individual PE well owners.

Commented [AP80]: Tulalip: Committee members pointed out that requiring meters or having meters on a voluntary basis would allow for monitoring of a subset of wells

Commented [AP81]: Tulalip: Another uncertainty is the apportionment of consumptive use by season - while we accounted for irrigation / low flow season with higher consumptive use estimates, the portion of consumption during critical low flow is not specifically tallied. Since we are focusing water offsets on critical low flow period, adding a column to the CU to show how much water is used per sub basin during irrigation might make sense

Commented [JI(82R81]: Committee Input Requested. Technical consultants are reviewing this comment.

[14] The Committee has included a policy recommendation in Chapter 6, which recommends implementation of a voluntary metering pilot program. Such a program would allow for monitoring a subset of PE wells to increase understanding of actual water use.

The consumptive use estimate assumes that current rural residential landscaping practices and outdoor water use will continue over the 20-year planning horizon. Because of uncertainty inherent in estimating growth patterns, domestic PE well pumping rates, and potential changes in outdoor watering practices, potentially related to climate change, the WRIA 7 Committee determined that the conservative assumptions used to estimate consumptive use based on the Irrigated Area Method, and assumptions for outdoor water use in particular, are justified.

To further address uncertainty and have a point of comparison, the Committee developed two additional consumptive use scenarios. One additional scenario assumed one home with the legal maximum 0.5-acre irrigated lawn area per PE well and the second additional scenario assumed each PE well withdrew the legal limit of 950 gallons per day. The Committee also compared the Irrigated Area method to local water purveyor data, taking into consideration several ~~factors~~assumptions: customers connected to public water supply are incentivized to conserve water, in order to reduce their water bill, and purveyor data represents total water use (not consumptive use) and does not separate indoor and outdoor water use to account for different consumptive use factors, and water purveyors serve areas that are more dense and urban, with smaller lots and smaller irrigated footprints, on average, than rural areas where most new PE wells are expected to be constructed. These analyses can be found in Appendix G.

[To be included if appropriate]: The WRIA 7 Committee also included plan implementation and adaptive management recommendations to address uncertainties related to the consumptive use estimate and project implementation (see Chapter 6).

4.5 Summary of Consumptive Use Estimates

The total consumptive use estimate for WRIA 7 is 797.4 AF per year (1.10 cfs). The total consumptive use estimate for WRIA 7 is the number of PE wells projected by subbasin (see section 4.2) multiplied by the total indoor and outdoor consumptive use per PE well. Table 6 summarizes the estimated indoor and outdoor consumptive use by subbasin for the irrigated area method. The highest consumptive use is expected to occur in the subbasin with the largest irrigated area per PE well and the most anticipated new PE wells, as presented in Figure 4.

Table 6: Estimated Indoor and Outdoor Consumptive Use by Subbasin

Subbasin	Projected PE wells	Average lawn size (acres)	Indoor CU per well (AF/year)	Outdoor CU per well (AF/year)	Total CU/year per well (AF/year)	Total CU 2018-2038 (AF/year)
Tulalip	468	0.09	0.0185	0.11	0.12	58.1
Quilceda-Allen	338	0.15	0.0185	0.17	0.18	62.1
Estuary/Snohomish Mainstem	331	0.29	0.0185	0.33	0.35	115.8
Little Pilchuck	294	0.2	0.0185	0.22	0.24	69.5
Pilchuck	280	0.37	0.0185	0.38	0.40	111.0

Commented [AP83]: Snoqualmie Tribe change

Commented [AP84]: Arlington change

Commented [AP85]: Snoqualmie Tribe change

Commented [AP86]: Arlington: Although phrases in the Plan such as those in lines 936-942 are not contested, including "customers connected to public water supply are incentivized to conserve water", and "purveyor data represents total water use (not consumptive use)", etc., they are also not universally accepted by all committee members. A more thorough documentation might balance the incentivized, reduced use of public water supplies in rural areas through monthly invoicing, with the often greater water pressures provided by distributed water systems that could lead to incidental over-use. Many PE wells are shallow in order to balance the cost of well construction with the water demands of a single family, thus limiting the drawdown of groundwater available to the well. In addition, many rural areas with aquifers influenced by glacial till or bedrock provide very low yields—and on occasion no yields in dry summers—such that landowners with PE wells would not engage in water uses that could be considered wasteful. A more thorough consumptive use analysis would also refer to the net positive impact of the foreign flows of water by water utilities into various subbasins from sources outside those subbasins. Many public water utilities serve customers in these areas whose residences utilize septic systems to handle wastewater, resulting in a net inflow of water to subbasins that is not evaluated in this plan.

Commented [JI(87R86]: Committee Input Requested

Commented [AP88]: Snoqualmie Tribe: Table 6: Can we re-order it from highest to lowest total CU?

Commented [JI(89R88]: Technical consultants are addressing this comment.

Subbasin	Projected PE wells	Average lawn size (acres)	Indoor CU per well (AF/year)	Outdoor CU per well (AF/year)	Total CU/year per well (AF/year)	Total CU 2018-2038 (AF/year)
Woods	224	0.12	0.0185	0.12	0.14	31.5
Sultan	55	0.11	0.0185	0.10	0.12	6.5
Lower Mid-Skykomish	60	0.14	0.0185	0.13	0.15	8.8
Skykomish Mainstem	185	0.16	0.0185	0.16	0.17	32.1
Upper Skykomish	103	0.05	0.0184	0.04	0.06	6.0
Cherry-Harris	214	0.16	0.0184	0.17	0.19	40.4
Snoqualmie North	338	0.21	0.0184	0.24	0.26	87.4
Snoqualmie South	169	0.21	0.0183	0.22	0.24	40.3
Patterson	104	0.41	0.0183	0.51	0.53	55.0
Raging	75	0.43	0.0183	0.50	0.52	38.8
Upper Snoqualmie	151	0.23	0.0183	0.21	0.23	34.2
WRIA 7 Aggregated	3,389	0.20	0.00184	0.22	0.24	797.4

Note: Values in table have been rounded.

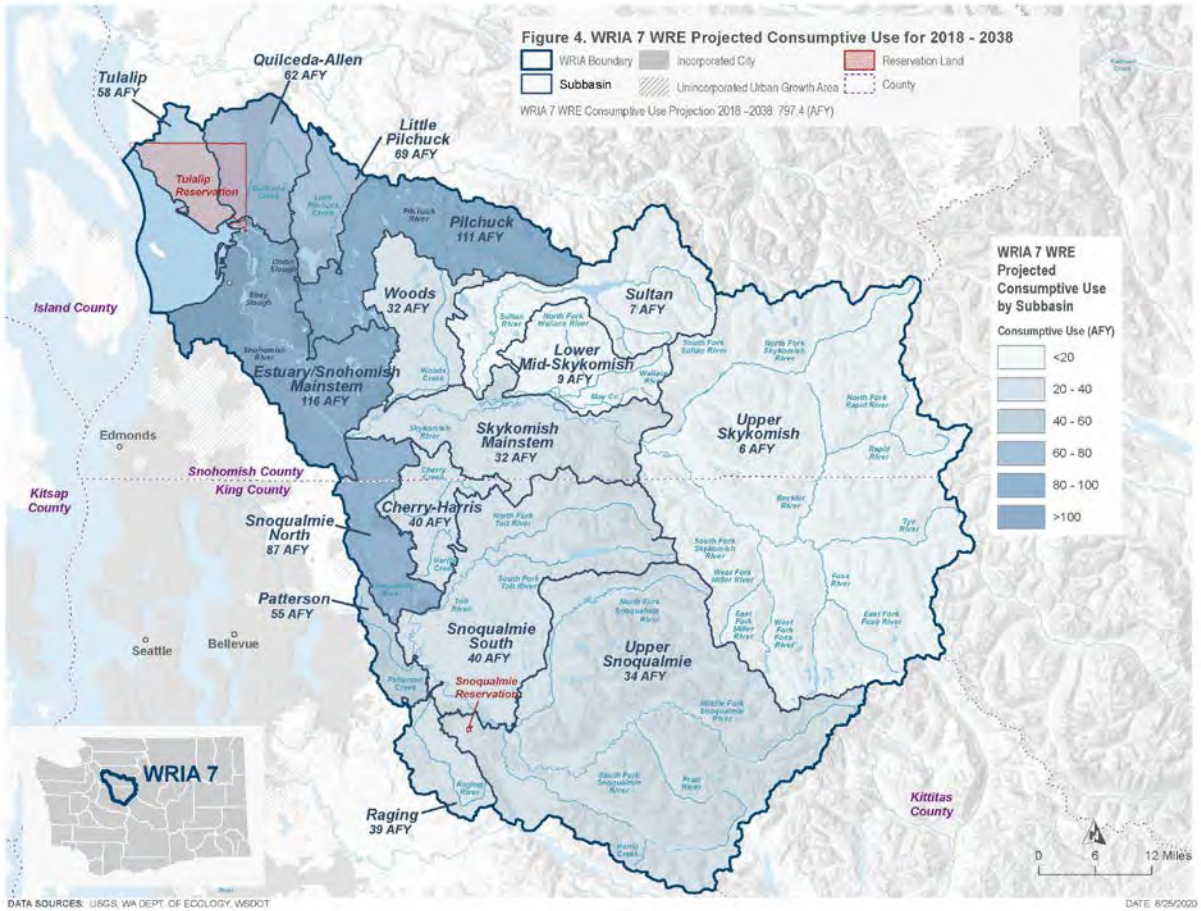

Figure 4: WRIA 7 WRE Projected Consumptive Use for 2018 - 2038

Commented [AP90]: Arlington: The range of colors used to classify consumptive use, when underlain by the hillshading, do not provide a clear distinction between the six volumetric consumption classes being used. Please modify to clearly convey the range of consumptive use magnitudes across the subbasins.

Commented [JI(91R90]: Technical consultants are addressing this comment.

Chapter Five: Projects and Actions

[Comment 8: The WRIA 7 Committee is still finalizing the list of projects and actions that will be included in the watershed plan. The following section is an outline of what will be included in the chapter.]

5.1 Description and Assessment

This Chapter addresses water offset projects and habitat improvement projects as identified by the WRIA 7 Committee. This introduction should include a short summary of how the list was developed and organized by the committee, and any special considerations that went into project identification and development.

5.2 Projects

Overview - Provide an overview of the organization of the project list (e.g. tiers, sequence, priority). Describe how the WRIA 7 Committee chose the projects (alignment with salmon recovery priorities, readiness to proceed, etc.) and whether there is any prioritizing or tiering of projects for certainty or future funding and implementation.

Tables - Include 2 Project Tables in this section – one table for offsets and one table for habitat projects (see example tables below).

5.2.1 Offset Projects

Summaries - Provide summary paragraph from each project and reference additional project information (Appendix H). Each project summary should include the offset and/or habitat benefits, location, stream reaches and species benefitting.

Address likelihood that the project benefits will occur.

Table 7: WRIA 7 Offset Projects

Project Number	Project Name	Project Type and Brief Description	Subbasin(s)	Water Offset (AF/year)	Additional Benefits	Project Sponsor	Optional Elements (cost, tier, readiness to proceed, priority)
Reference project number unique to the plan	Example project Name	Water Right Acquisition: A few sentences describing the project. More detail can be provided in an appendix.	Patterson	XX AF	A few sentences describing other benefits e.g. water temperature.		

Commented [AP92]: Everett: Adaptive management (AM) does not work without monitoring data. We should be requiring project sponsors to include a monitoring plan as part of their project budget. This is what we are required to do with our wetland enhancement projects. And this cost should be part of the state funding of the offset projects. Based on past experience, a separate AM will NOT get funded or implemented. And this cost should be part of the state funding of the offset projects. This is neither an approvable or implementable approach.

Commented [JI(93R92]: Committee Input Requested

Commented [AP94]: Will Stelle: We strongly recommend communicating directly with the water right holders about the content of the draft plan prior to a final review and vote. We feel a lack of communication is very likely to jeopardize the success of an acquisition which the plan relies on for offset quantity. Given the importance of this professional courtesy as Ecology and the committee purport to quantity their water rights, if prior adequate notice and engagement with the landowner has not occurred, it may affect WWT's interest in affirming the final plan.

Commented [JI(95R94]: Committee Input Requested

Project Number	Project Name	Project Type and Brief Description	Subbasin(s)	Water Offset (AF/year)	Additional Benefits	Project Sponsor	Optional Elements (cost, tier, readiness to proceed, priority)
	Example Project Name 2	Reservoir Modification: A few sentences describing the project. More detail can be provided in an appendix.	South Prairie Creek	XX AF	A few sentences describing other benefits e.g. water temperature.		
				Subtotal by Subbasin			
WRIA 7 TOTAL WATER OFFSET				Cumulative from above			
WRIA 7 Consumptive Use Estimate				797.4 AFY			

5.2.2 Habitat Projects

Include summary information for habitat projects in a table and/or short paragraphs. Longer project descriptions will be included in an appendix.

Table 8: WRIA 7 Habitat Projects

Project Number	Project Name	Description	Subbasin(s)	Ecological Benefits	Project Sponsor	Optional elements (cost, tier, readiness to proceed, priority)
Reference to project number unique to the plan	Example Levee Setback Project	A few sentences describing the project. More detail can be provided in an appendix.	Woods Creek	Restoration of XX acres of floodplain, flood hazard reduction		Planner and committee identify which additional columns are needed

Commented [AP96]: Will Stelle: We recommend that the plan and table estimate the water resource benefits expected from these habitat projects, either qualitative or where possible quantitative, underscoring that this is a water resources plan for the WRIA. Ecological benefits is fine but insufficient. Same comment on 985 and Appendix B.

Commented [JI(97R96]: Committee Input Requested. See Table 7 in NEB Evaluation.

Project Number	Project Name	Description	Subbasin(s)	Ecological Benefits	Project Sponsor	Optional elements (cost, tier, readiness to proceed, priority)
	List all habitat projects here by subbasin					

5.3 Project Implementation Summary

This section should include a general summary of the projects and actions, as required by the legislation and recommended by the NEB guidance. The project list should include details about specific projects, but this section provides an overall summary.

5.3.1 Summary of Projects and Benefits

Place holder

5.3.2 Cost Estimate for Offsetting PE Well Consumptive Use

Place holder

5.3.3 Certainty of Implementation

Place holder

Chapter Six: Policy Recommendations, Adaptive Management, and Implementation

6.1 Policy and Regulatory Recommendations

[Comment 10: Policy and regulatory recommendations are optional elements of the watershed plan. The following proposals were submitted by policy leads for consideration by the WRIA 7 Committee and have been summarized by the facilitation team and/or policy leads for inclusion in the draft watershed plan. Committee members should thoroughly review the proposed policy recommendations and flag any serious concerns. The Committee has not yet indicated full support to include each of the following policy proposals in the watershed plan. Policy proposals that are not supported by the full Committee will not be included in the final plan.]

The Streamflow Restoration law lists optional elements committees may consider including in the watershed plan to manage water resources for the WRIA or a portion of the WRIA (RCW 90.94.030(3)(f)). The WRIA 7 Committee included what they have termed "policy and regulatory recommendations" in the watershed plan to show support for programs, policies, and regulatory actions that would contribute to the goal of streamflow restoration. When similar concepts arose from multiple Watershed Restoration and Enhancement Committees, the WRIA 7 Committee coordinated with those other Committees to put forward common language for inclusion in the watershed plans, when appropriate. Coordination also occurred for jurisdictions that cross multiple watersheds. All projects and actions the WRIA 7 Committee intended to count toward the required consumptive use offset or Net Ecological Benefit are included in Chapter 5: Projects and Actions.[15]

As required by the NEB Guidance, the WRIA 7 Committee prepared the watershed plan with implementation in mind. However, as articulated in the Streamflow Restoration Policy and Interpretive Statement (POL-2094), "RCW 90.94.020 and 90.94.030 do not create an obligation on any party to ensure that plans, or projects and actions in those plans or associated with rulemaking, are implemented."

[To be included when appropriate] The WRIA 7 Committee initially identified a list of potential policy and regulatory recommendations. After iterative rounds of discussion, the Committee narrowed the recommendations in this section to those that both supported the goal of streamflow restoration and had the support of the full Committee. Committee members identified as the implementing entity for each recommendation are committed to investigating the feasibility of the recommendation. The identification and listing of these policy and

[15] "New regulations or amendments to existing regulations adopted after January 19, 2018, enacted to contribute to the restoration or enhancement of streamflows may count towards the required consumptive use offset and/or providing NEB." Streamflow Restoration Policy and Interpretive Statement, POL-2094

regulatory recommendations is directly from the WRIA 7 Committee members and is not endorsed or opposed by Ecology.

The WRIA 7 Committee supports the following recommendations:

[Comment 11: The following proposals were submitted by policy leads for consideration by the WRIA 7 Committee and have been summarized by the facilitation team and/or policy leads for inclusion in the draft watershed plan. The Committee has not yet indicated full support to include each proposal in the WRE Plan.]

1. Well reporting upgrades

Proposed implementing entity:

Ecology

Recommendation:

Change the Ecology well tracking system in the following ways, in order to efficiently and transparently track the number and location of permit-exempt wells in use:

- Implement a web-based well report form that mimics the current well report forms, and that uploads directly to Ecology's database with Ecology verification;
- Require coordinates (latitude and longitude) of wells on well report forms, and implement an intuitive web tool for well drillers which automatically provides the Public Lands Survey (PLS) location and coordinates for a new well;
- Identify permit-exempt wells on well report forms; and
- Provide Well ID Tag numbers to older wells, and associate well decommissioning, replacement, or other well activities with the Well ID Tag.

Commented [AP98]: MBAKS: Is there a good process to accomplish tagging old wells? Interested in how this can be done.

Commented [JI(99R98]: Input from policy lead?

Purpose:

Directly and efficiently address identified shortcomings in Ecology's existing well tracking database and reporting protocols. Accurate tracking of the locations and features of permit-exempt wells will support the WRIA 7 Committee's desire to engage in monitoring and adaptive management after adoption of the watershed plan.

Funding sources:

Leverage existing resources and efforts currently underway through the Ecology Well Construction Technical Advisory Group (TAG) and other departmental means. Additional funding from the Washington State Legislature or local permitting fees to increase capacity for Ecology to verify well reports may aid in implementing this recommendation in a timely manner.

Additional information or resources:

Ecology's well report location accuracy studies
[Note: we will add a link to this resource later]

2. Encourage conservation through connections to public water

Proposed implementing entities:

County and city planning departments; public utilities and other water purveyors; Ecology; Department of Health.

Recommendation:

- Adopt and implement consistent and coordinated policies that reduce dependence on water use from PE wells and promote timely and reasonable connections to municipal and regional water supplies.
- Water purveyors and county/city land use planners explore opportunities to extend water distribution systems further into their individual service areas, particularly where rapid rural growth is anticipated.
- Develop cost-benefit analysis and fiscal implications to (1) fund programs to support connections to public water systems and (2) gain political support.

Purpose:

Reduce uncertainty about future streamflow and aquifer impacts from PE wells. Encourage state/local policies and funding to support streamflow objectives within the watershed plan. Demonstrate the WRIA 7 Committee's endorsement of encouraging conservation through promoting connections to public water systems, provided that all provisions of GMA continue to be followed, and that rural growth is not accelerated through the extension of water lines into rural areas, thereby unintentionally counteracting potential benefits of conversation with impacts from increased rural development.

Funding sources:

Fees collected through local permitting processes; pass-through fees associated with well maintenance services collected by service providers; state or local rate increases or taxes.

Additional information or resources:

[Policy lead can add links here if desired or delete]

3. Development and use of reclaimed water to address the impact of permit-exempt wells

[Comment 12: Any recommendation for Ecology to undergo rulemaking is at the discretion of Director. Ecology would balance its available resources with potential other Program rulemaking efforts statewide. Rulemaking is a public process to develop new or amend/repeal existing rule language and input from all entities is considered equally. Ecology cannot guarantee the outcome of a rulemaking process]

Proposed implementing entities:

Washington State Legislature; Ecology.

Recommendation:

Enact and promulgate state laws, rules, and regulations that encourage the development and use of reclaimed water, for ~~example~~the purpose of:

Commented [AP100]: MBAKS: We want to make sure any connection policy the WREC recommends still complies with and follows being both "timely and reasonable." We would like to language added at the end of point one to say "Adopt and implement consistent and coordinated policies that reduce dependence on

Commented [AP101]: Snoqualmie Tribe change

- Offsetting the impact of or providing an alternative to permit exempt wells using reclaimed water;
- ~~Integrate reclaimed water into regional water quality and water quantity planning.~~
- Facilitating enhanced reclaimed water treatment to enable its use for streamflow restoration projects;
- Facilitating the development of streamflow restoration projects that use appropriately treated reclaimed water;
- Encouraging developers to integrate rainwater and/or reclaimed water into their projects for the purpose of avoiding or limiting use of a permit-exempt well;
- Encouraging partnership with the local water purveyors, where appropriate.
- ~~Reduce risks and disincentives in the Trust Water Rights Program for water right holders willing to switch to reclaimed water.~~
- ~~Address public concerns and enhance public education regarding the health and safety of reclaimed water and wastewater treatment.~~
- ~~Encourage the development of streamflow restoration projects that use reclaimed water.~~
- ~~Encourage developers to integrate rainwater and/or reclaimed water into their projects~~

Formatted: Font: +Body (Calibri), Font color: Auto

Commented [AP102]: James Kraft (WWT): Name the risks and disincentives

Purpose:

Offset water that would otherwise be diverted from the finite supply in rivers and streams due to permit-exempt wells. ~~Preserve natural high-quality instream flow.~~ Reduce the amount of treated wastewater discharged into receiving water bodies. Create water supply options as an alternative or to offset permit exempt wells while enhancing resiliency ~~and enhance resiliency~~ against drought and climate change.

Funding sources:

If Ecology does not have capacity to support the work to integrate this proposal into the RCW and WAC with existing staffing and resources, the WRIA 7 Committee recommends the Washington State Legislature provide funding for this purpose.

~~If Ecology does not have capacity do this work with existing staffing and resources, the WRIA 7 Committee recommends the Washington State Legislature provide additional funding.~~

Commented [AP103]: Seattle: New language was provided to Ingria that was previously reviewed and accepted by JH, KCTY

Additional information or resources:

[Policy lead can add links here if desired or delete]

Commented [AP104]: Will Stelle: WWT may be a possible resource for reclaimed water projects.

4. Voluntary permit exempt well metering program

Proposed implementing entity:

Ecology; King and/or Snohomish Counties; King and/or Snohomish Conservation Districts.

Recommendation:

Pilot a voluntary five-year program in one or more WRIA 7 subbasins to meter permit-exempt wells (indoor and outdoor residential use). Supplement the voluntary metering program with a robust education and community engagement program about water consumption and conservation.

Purpose:

Increase confidence in assumptions made regarding the average water use of individual PE well users to inform the adaptive management process and future water management and planning efforts. Data could inform (1) growth policies and patterns, (2) where to target incentives and education/outreach programs, and (3) where to place resources across subbasins to help improve streamflow, water levels, and temperature.

Funding sources:

General operation or appropriated funds from (1) the state, (2) counties, and/or (3) conservation districts related to water, habitat ~~preservation~~ restoration (salmon recovery), or housing. Environmental grants.

Commented [AP105]: King County: >essentially pilot metering policy funding sentence says habitat "preservation" and should say "restoration", as these are habitat restoration projects, not preservation projects. I sent the same to Gretchen where I saw how this was similarly stated in the WRIA 8 Plan (attached).

Additional information or resources:

[Policy lead can add links here if desired or delete]

[Comment 13: Policy recommendations 5 and 6 were developed through a cross-WRIA workgroup and were tailored to WRIA 7 by the WRIA 7 policy lead.]

5. Water conservation education & incentives program

Proposed implementing entity:

Ecology and counties; with support from conservation districts and non-governmental organizations.

Recommendation:

Ecology partners with counties and conservation districts to develop and implement outreach and incentives programs that encourage rural landowners with PE wells to (1) reduce their indoor and outdoor water use through water conservation best practices; and (2) comply with drought and other water use restrictions.

Purpose:

Raise awareness of the impacts PE well water usage has on (1) groundwater levels and (2) the connection to streams and rivers. Supplement water offset and restoration projects, especially in subbasins critical for fish and where water offsets were difficult to find.

Funding sources:

Potential funding sources could include: new funding from Washington State Legislature; grants (e.g., Ecology's Streamflow Restoration Grant Program); allocation of Ecology resources; fees associated with new PE wells; contributions from local governments and tribes; part of county or conservation district ongoing education, outreach and incentive program.

Additional information or resources:

[Policy lead can add links here if desired or delete]

6. Statewide mandatory water conservation measures in unincorporated areas of the state during drought

[Comment 14: Any recommendation for Ecology to undergo rulemaking is at the discretion of Director. Ecology would balance its available resources with potential other Program rulemaking efforts statewide. Rulemaking is a public process to develop new or amend/repeal existing rule language and input from all entities is considered equally. Ecology cannot guarantee the outcome of a rulemaking process]

Proposed implementing entity:

Washington State Legislature, Ecology, or counties.

Recommendation:

- Consider implementing mandatory water conservation measures for PE well users in unincorporated areas of the state during drought events. Measures would focus on limiting outdoor water use, with exemptions for growing food or for those participating in a Fire Adapted Community ~~FireWise~~ program. Washington State Legislature could require Ecology or counties to implement water conservation policies.
- Ecology could write a rule to require water conservation measures.
- County councils could pass ordinances encouraging water conservation, and/or mandating water conservation to the extent such mandates are lawful.~~and commissions could pass ordinances mandating water conservation~~.

Purpose:

Reduce water usage from PE well users during drought. Reduce impacts on streamflows from PE well users and support net ecological benefit goals. Increase climate change resilience.

Funding sources:

Potential funding sources could include new funding from Washington State Legislature; allocation of existing Ecology resources; fees associated with new PE wells.

Additional information or resources:

https://www.nfpa.org/-/media/Files/Public-Education/Resources/Safety-tip-sheets/WildfireRiskReductionSafetyTips.pdf

[Comment 15: Recommendation 7 was developed by the City of Arlington and was not discussed at the cross-WRIA policy group. Please provide your comments on this proposal in the comment tracker.]

7. Correction of impediments to sustainable watershed restoration and streamflow enhancement

[Comment 16: Any recommendation for Ecology to undergo rulemaking is at the discretion of Director. Ecology would balance its available resources with potential other Program

Commented [AP106]: Seattle: How is drought or "drought event" defined? When Ecology declares drought?

Commented [JI(107R106]: Committee Input Requested

Commented [JI(108R106]: Thresholds for drought conditions are defined in statute by the Washington State Legislature and in regulations (WAC 173-166 WAC). The determination requires a consideration of hydrologic and climate conditions and their potential impacts, in consultation with state and federal experts in hydrology and water supply forecasting.

"Drought conditions" are water supply conditions where a geographical area or a significant part of a geographical area is receiving, or is projected to receive, less than seventy-five percent of normal water supply as the result of natural conditions and the deficiency causes, or is expected to cause, undue hardship to water users within that area.

Commented [AP109]: Snohomish CD: "Fire Adapted Community program" is more current language than; do they need a fire adapted plan from DNR or Conservation District or other entity to qualify for this exemption?

Commented [JI(110R109]: Committee Input Requested

Commented [AP111]: King County: County scope of authority for passing "ordinances mandating water conservation" is limited. Attempting to exercise of such authority could conflict with individual constitutional rights and with Ecology's administrative authorities over state waters, water rights, and drought conditions. Accordingly, this bullet point should be revised to reflect the limitation of County authority ... perhaps "County councils could pass ordinances encouraging water conservation, and/or mandating water conservation to the extent such mandates are lawful."

Commented [AP112]: Everett: I was surprised by your comments about Policy 7 that it may be outside our scope. I thought our objective was to seek ways to reduce the impact of Exempt Wells. Policy 7 was intended to point out there is a way to reduce the impact of EWs by enabling the import of water to high density EW areas thereby obviating the groundwater withdrawals in the first place.

Commented [AP113R112]: MBAKS will not be able to support this policy proposal. The premise of the recommendation revolves around asking the legislature to fix regulatory "loopholes" in state water law. The example used is that the current law "involving permit-exempt wells that ...

Commented [JI(114R112]: SVWID: This policy appears to address the issue that the WREC has been formed by statute to address. My concern is that the inclusion of this policy undermines the work of the WREC. Much work has ...

Commented [JI(115R112]: Committee Input Requested

Commented [JI(116R112]: Ecology may not be able to support the proposal as written. As worded, the policy recommendation implies that a successful plan would require action on the part of the legislature. This policy recommendation should be framed as a recommendation. ...

rulemaking efforts statewide. Rulemaking is a public process to develop new or amend/repeal existing rule language and input from all entities is considered equally. Ecology cannot guarantee the outcome of a rulemaking process]

Proposed implementing entities:

Legislature

Recommendation:

The WRIA 7 WREC watershed Plan has been successfully conceived for the 20-year planning horizon ending in 2028 because of the steadfast effort of its highly diverse membership. However, development of water-for-water offsets by the Committee for the 3,389 projected new wells in WRIA 7 by 2038 required the discontinuation of other necessary and perfectly appropriate beneficial uses of water that will only become increasingly difficult to obtain after 2038. In addition, the Committee felt obligated to recognize the construction of PE wells in areas where the State has previously specifically found that no additional water was available for appropriation of any new beneficial uses. Therefore, the WRIA 7 WREC Committee appeals to the Legislature that successful, long-term implementation of the watershed plan process identified in 90.94 RCW—and consistency with the intent of the Hirst Court's decision—will require the Legislature to specifically close regulatory loopholes associated with PE wells, and increase reliance on regulated utilities for integrated water management using basin water budgets. It must begin to overhaul water-related RCW in serial or segmented fashion to: ~~However, it is heartily agreed and resolved that successful implementation of the watershed plan will require the Legislature to specifically close regulatory loopholes and increase reliance on regulated utilities for integrated water management using basin water budgets. It must begin to overhaul RCW in serial or segmented fashion to~~:

- Increase reliance on public utilities for water supplies
- Decrease difficulties utilities have for securing water supplies
- Reduce the impacts ~~proliferation~~ of permit exempt wells that are truly unnecessary
- Align exemptions to water right permitting (e.g., as for individual domestic wells) with the whole of Washington water law
- Revise its regulatory schema with a generous influx of integrated systems considerations such as: continuum of surface and groundwater flows; reconsideration of consumptive and non-consumptive use definitions; recycling and reuse; etc.

Purpose:

The policy lobbies the Legislature to prevent consumptive water impacts from exempt wells, particularly by closing several loopholes observed by the Committee that served as impediments to completion of the Plan. One example is current law involving permit-exempt wells that allows the proliferation of permit-exempt wells in areas where Ecology and other basin stakeholders have found no water exists to be appropriated. The policy identifies that water management via more readily regulated utilities is preferred over the third-party (i.e.,

Commented [AP117]: Arlington: Clarification of a critically important policy is needed. Replace the paragraph in lines 1237 to 1242 with the following revised text: "The WRIA 7 WREC watershed Plan has been successfully conceived for the 20-year horizon ending in 2038 because of the steadfast effort of its highly diverse membership. However, development of water-for-water offsets by the Committee for the 3,389 projected new wells in WRIA 7 by 2038 required the discontinuation of other necessary and perfectly appropriate beneficial uses of water that will only become increasingly difficult to obtain after 2038. In addition, the Committee felt obligated (or bound or stuck) to recognize (or allow) the construction of PE wells in areas where the State has previously specifically found that no additional water was available for appropriation of any new beneficial uses. Therefore, the WRIA 7 WREC Committee appeals to the Legislature that successful, long-term implementation of the watershed plan process identified in 90.94 RCW—and consistency with the intent of the Hirst Court's decision—will require the Legislature to specifically close regulatory loopholes associated with PE wells, and increase reliance on regulated utilities for integrated water management using basin water budgets. It must begin to overhaul water-related RCW in serial or segmented fashion to:"

Commented [AP118R117]: Snoqualmie Watershed Forum: Policy 7, Correction of impediments to sustainable restoration and streamflow enhancement is too vague as written. It would be great if the lead could not only describe the outcomes of this policy recommendation, but what are the specific RCWs that need to be overhauled and how? Having lists after the words "such as" isn't quite specific enough.

Commented [AP119]: Snoqualmie Tribe: Delete "Decrease difficulties utilities have for securing water supplies"--might be able to edit this, but need more info and context on why this is needed and how it will support streamflow.

Commented [JI(120R119]: Committee Input Requested

Commented [AP121]: Arlington: Clarification of a critically important policy is needed. Avoid the word "proliferation" and edit the bullet to read: • Reduce the impacts of PE wells that are truly unnecessary

Commented [AP122]: Snoqualmie Tribe: This statement is hard to understand.

Commented [JI(123R122]: Input from Policy Lead requested.

Committee-based) mitigation of exempt well impacts through selective reduction of others' legal, beneficial uses of water.

Funding Sources:

Would be identified by legislature.

Additional information or resources:

[Policy lead can add links here if desired or delete]

6.2 Adaptive Management

Draft 20200930

Comment: This adaptive management section was added on September 30th and was not included in the draft plan, which only included an outline of the adaptive management section. Comments below are comments Committee members provided to the adaptive management by September 28. The adaptive management section below was developed by the facilitation team and a subset of committee members, taking into consideration feedback from the Committee's September 10 meeting. Some of the adaptive management recommendations included in this section are policy recommendations that the WRIA 7 Committee believes will specifically support adaptive management of the watershed plan.

The WRIA 7 Committee supports an adaptive management process for implementation of the WRIA 7 watershed plan. Adaptive management is defined in the Net Ecological Benefit Guidance as "an interactive 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. Adaptive management will help address uncertainty and increase assurance of achieving plan objectives by identifying and integrating additional information, data, and research (including that related to climate change impacts on hydrology) that may assist with future design and implementation of projects. It will also support the improved coordination of water resources noted in Section 1.1. To the extent possible, each of the recommendations put forth by the committee includes a funding mechanism. Some of the adaptive management recommendations included in this section are policy recommendations that the WRIA 7 Committee believes will specifically support adaptive management of the watershed plan.

6.2.1 Existing Challenges

- Our global climate is changing. While the effects of climate change over the 20-year life of this Plan cannot be precisely known, shifts in climatic conditions will influence the hydrologic regime in the watershed and will impact instream flows. Rainfall, snowmelt, and evapotranspiration have been identified as the primary mechanisms driving changes in groundwater storage. These mechanisms will be affected by a changing climate. Air and water temperatures will increase

Commented [JI(124]: Seattle: Adaptive management is an important component to this plan necessary for its success that requires funding to ensure the success of implementation. It is currently being developed and reviewed separately.

Commented [JI(125R124]: WWT: There was some interest from WWT leadership in supporting a policy that in event of plan failure, basins will be closed. Would other committee members support this policy?

Committee Input Requested

Commented [JI(126]: Will Stelle: Challenges: lack of clear implementation obligations or responsibilities applicable to plan participants or other state or local authorities. Lack of integration of plan commitments to existing systems governing land and water uses. Lack of adequate funding.

Committee Input Requested

and summer streamflows will be reduced. Groundwater pumping and indirect effects of irrigation and land use changes will impact groundwater resources and the availability for future water supply and instream flows. The Committee recognizes that a successful plan must acknowledge that climate is changing and include a mechanism to ensure that the statutory requirements to offset water withdrawals by new permit exempt wells and provide net ecological benefit will be met under future climatic conditions.

- Projects identified in the plan are expected to increase groundwater storage and augment instream flows as they are implemented and provide aquatic habitat benefits, but without significant investment in further detailed feasibility studies and identification of project sponsors, many projects remain highly conceptual.
- There is some uncertainty that offset and habitat projects will continue to function as designed, and generate streamflow benefit to offset PE well consumptive use and NEB under a changing climate. Additionally, it will be critical to ensure that accrued streamflow and net ecological benefits are not negated by other withdrawals or activities. This concern has not been addressed by the Plan.
- The adaptive management provisions of this plan should assist with identifying the importance of monitoring and assessing the validity of the estimated offset projections as the plan is implemented to determine whether projects are functioning as designed and as hydrologic conditions change over time to allow for course corrections where needed; however, current policy does not allow for projects to be added after the plan is finalized and approved, nor is it clear who "owns" the implementation and adaptive management of the plan. It is also unclear who pays or ensures projects are implemented if projects are not funded through the competitive funding source allocated by the State.
- [Note: This section will be deleted if the Committee includes thresholds/triggers suggested below] Defining precise thresholds and trigger points for course correction or identifying an adequate response to adaptively manage when thresholds are reached is desired by the Committee, but may be beyond the capacity of the committee and plan development timeline.
- The Committee identified uncertainties associated with the PE well projection. One of these uncertainties is that the methods used to generate the PE well projection assumes that in the 2018-2038 period, growth and irrigation practices will mirror past trends and practices. New PE wells and irrigation patterns require monitoring to determine if the number of new PE wells and associated consumptive use exceeds the volume that was forecast for purposes of the Plan.
- This watershed plan is narrow in scope and is not intended to address all water uses or related issues within the watershed. The Committee has engaged in collective learning about water resources through this planning effort. This collective knowledge could be applied through a broader regional water supply planning effort. If a more comprehensive approach is developed to improve- coordination of water resources for both instream and out of stream uses that result in improvements in WRIA 7 watershed

Commented [JI(127]: Committee Input Requested. Could add ambiguity to whether Committee considers plan meets NEB.

health, the Committee will support development of a similarly collaborative and comprehensive planning process. It is expected that the planning process would need to expand to include representatives of all relevant entities in order to address all water resource needs, ensure sustained cooperation, and ultimately improved streamflow.

To address the above challenges, the WRIA 7 Committee recommends the following implementation, monitoring, and adaptive management strategies, and for each proposes an implementing entity, roles and responsibilities, funding mechanisms, and resulting actions.

6.2.2 Implementation Recommendations

The Committee developed the following implementation recommendations to address the challenges identified above. [To be included as appropriate]: The recommendations in this section have the full support of the Committee. Committee members identified as the implementing entity for each recommendation committed to investigating the feasibility of the recommendation.

The WRIA 7 Committee supports the following:

1. Funding for Adaptive Management

The WRIA 7 Watershed Restoration and Enhancement Committee recommends that the legislature provide funding and a structure to monitor plan implementation (including tracking of new permit exempt wells and project implementation by subbasin) and develop a process to adaptively manage implementation if offsets and Net Ecological Benefit are not being met as envisioned by the Watershed Restoration and Enhancement Plan.

2. Additional Funding for Project Implementation

The WRIA 7 Watershed Restoration and Enhancement Committee recommends that Department of Ecology (Ecology) track the funds requested against available capital funding for the annual Streamflow Grant Program by WRIA and across the state, and revise grant guidance to prioritize projects in approved watershed plans or request additional funds from the legislature, if needed, to fully implement the offset and NEB projects identified in each watershed plan or rulemaking process under RCW 90.94.020 and RCW 90.94.030.

3. Adding projects to the plan

The WRIA 7 Watershed Restoration and Enhancement Committee recommends that the legislature allow Ecology to accept, review, and approve addendums to the Plan. Addendums may include the addition of new projects, such as the prospective projects and actions identified in Chapter 5, which may be further developed during the 20-year planning horizon. Addendums may also include changes to adaptive management or implementation reporting. All addendums would require justification and approval by the full Committee as part of an adaptive management process.

4. Implement a Process and Program for Tracking PE Wells and Project Implementation

The WRIA 7 Watershed Restoration and Enhancement 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.) develop grant funding opportunities and track associated costs, and 3.) provide a template for adaptively managing emergent streamflow 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 & Wildlife (WDFW) in collaboration with Ecology, and RCO. 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*). The Committee recommends that tracking and reporting be completed XX.

Additional Information or Resources:

WDFW proposed project tracking supplement

5. Continue monitoring of streamflow and groundwater levels

This Watershed Restoration and Enhancement Plan is one of many water resource management efforts underway in WRIA 7. Understanding the status and trends of streamflow in the basin will assist with adaptively managing this plan. The Committee understands that neither the impact of individual projects nor new permit exempt wells would be tracked through monitoring streamflow or groundwater levels, but the Committee believes that monitoring assists with an overall understanding of the hydrology in the basin.

The Committee recommends that agencies with current or planned gauging stations and groundwater monitoring programs continue funding and/or seek supplemental funding sources to ensure that monitoring continues and the data is publicly available. This includes counties, Ecology, USGS, and other relevant entities. The committee would support the development of a clearinghouse so that external reports, data and links to hydrological and hydrogeological data is easier to find and use. The development of widespread groundwater elevation tracking across the WRIA would help monitor trends.

Additional Information or Resources:

Existing streamflow and groundwater monitoring

6. Continue studies that improve understanding of WRIA 7 hydrology

The Committee supports the continuation or initiation of research, models, and additional datasets that provide regional, basin-wide and site-specific information to better understand the hydrology of WRIA 7 and inform the adaptive management of the plan (examples may include the recent Snoqualmie Indian Tribe's forest gap study, UW Climate Impacts Group Research, Snoqualmie Indian Tribe/EPA VELMA modeling, NMFS/NOAA monitoring and hydrology-fish life cycle modeling, King County water quality monitoring, and others).

7. Monitor projects for effectiveness

The Committee supports project sponsors incorporating project effectiveness monitoring into the cost and implementation of offset projects to ensure that projects continue to function as designed, and generate streamflow benefit to offset PE well consumptive use under a changing climate.

Table 6.2.2 Recommended Implementation Actions (to be reviewed by Committee)

Action	Responsible entity/frequency	Funding considerations
Track building permits issued with permit-exempt wells, implemented projects and a summary of each by subbasin	Counties/annually WDFW, Ecology /biennially	County costs funded by new PE Well permit fees[16] ECY and WDFW may need additional funding to maintain the Salmon Recovery Portal and report to Committee
Monitor streamflow and groundwater levels	Various (USGS, Ecology, Counties, etc)	External entities fund and implement these programs. Committee support may be helpful in communicating the importance and ensuring continuation of these efforts.

[16] RCW 90.94.030 (4)(a)(A) requires that, "an applicant shall pay a fee of five hundred dollars to the permitting authority," and RCW 90.94.030(4)(a)(iv) requires that local jurisdictions "Annually transmit to the department three hundred fifty dollars of each fee collected under this subsection."

Continue studies that improve understanding of WRIA 7 hydrology	Various (University of Washington, Counties, Tribes, NGOs, etc)	These studies will require additional and new funding outside the Streamflow Grant process. Committee support may be helpful in securing outside funds.
Monitor projects to determine effectiveness of streamflow benefits	Project sponsors	Most projects in Chapter 5 do not include effectiveness monitoring details or associated costs. As projects are proposed, sponsors should build effectiveness monitoring into the design and budget requests of projects – particularly for certain offset projects, such as MAR or new reservoir creation that have not been implemented in WRIA 7 for streamflow benefits in the past.

Commented [JI(128]: Committee Input Requested: Call out these types of projects, or include table of specific projects that the Committee would like to see effectiveness monitoring occur for

6.2.3 Adaptive Management Recommendations

1. Adaptive management process and roles

The Committee recommends that Ecology convene the Committee every other year to review and discuss updated information on plan implementation. The Committee anticipates reviewing information on the location and number of new PE wells and the status and outcomes of project implementation, as identified in this watershed plan. The Committee may meet more frequently if it determines that triggers/thresholds are being met (see Table 6.2.3 for details). The Committee recommends that, if a Committee member identifies that a trigger/threshold may be met, they can request that Ecology convene the Committee.

2. Triggers for Reconvening the Committee to Adaptively Manage the Plan

The Committee recommends the following events that should trigger the reconvening of the group:

- If for any subbasin, the credibly estimated quantity of offset created by new projects divided by the quantity of new consumptive use (based on the calculated average CUE for that subbasin multiplied by the number of new PE wells) reaches 0.6 or lower, AND, there have not been any other significant NEB projects implemented in that subbasin.

- Ideally, climate uncertainties are built into project design and evaluation, but additional environmental triggers such as drought, wildfires, temperature increases or other factors that may lead to additional withdrawals or alter how projects function and become a trigger that calls for a convening of the committee.
- Changes to GMA or other land use planning that changes the densities planned in areas that would affect assumptions about number of PE wells.
- If no projects in the plan have received streamflow restoration grants in the first two years after plan adoption.

3. Evaluate the Accuracy of PE well and Consumptive Use Projections at a Subbasin Scale

The Committee recommends evaluating the cumulative number of PE wells each calendar year tracked by both King and Snohomish County annually between January 2018 and December 2038 to identify how trends compare to projections. The Committee recommends evaluating the cumulative number of PE wells in relation to the status of projects implemented in WRIA 7. The Committee recommends this information is developed in a report biennially by Ecology and WDFW, as identified in recommendation 4 above. The Committee also recommends reviewing results of the voluntary metering pilot identified in Section 6.1 to identify whether assumptions in the consumptive use projection should be changed.

4. Additional actions the Committee proposes to take to adaptively manage the watershed plan

Expand or focus conservation and outreach programs in subbasins exceeding or nearing a threshold; contact project sponsors to encourage project development and implementation in subbasins exceeding or nearing a threshold; seek outside funding for project implementation; draft letters of support for Streamflow Grant proposals; identify additional offset projects for Streamflow grant program; suggest revisions to Stream Restoration Grant Guidance.

Table 6.3.1 Recommended Adaptive Management Process [Requesting input from Committee members]

Action	Entity/Frequency	Committee role	Funding considerations
Review and update progress	Ecology + Committee /at least once every 5	Committee reviews status of PE wells, status of projects; presentations on	Ecology staff time will be required. Ecology may need

	years or at other defined trigger points	projects, effectiveness monitoring, new science and research in basin; develop recommendations for policy or projects in response.	additional support from RCO, WDFW and project sponsors to develop summary report and distribute or convene a meeting if the Committee deems it necessary.

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Chapter Seven: Net Ecological Benefit

[Comment 17: Chapter Seven (Net Ecological Benefit) is optional but recommended by Ecology's Final NEB Guidance. The WRIA 7 Committee has not yet agreed on whether to include Chapter Seven. Below is a template for the chapter, for the Committee's consideration.]

Commented [AP129]: Snoqualmie Watershed Forum: I am in support of including the NEB chapter if committee members are in agreement.

Commented [AP130R129]: Seattle: NEB is an important chapter that should be included in the plan. At this time the chapter is too drafty to provide a thorough review

Commented [JI(131R129]: Committee will discuss at October meeting.

7.1 Water Offsets

- Compare the total WRIA offset to the total WRIA consumptive use estimate
- Compare the total WRIA offset to the safety factor/offset target if applicable.
- Determine if the watershed plan has succeeded in offsetting the impacts at the WRIA level.
- State how these projects provide additional benefits to instream resources beyond those necessary to offset the impacts from new consumptive water use within the WRIA boundary.
- State how adaptive management provides additional certainty, if applicable.
- Include a clear statement of the planning group's finding that the combined components of the watershed plan do or do not achieve a NEB.

Table 9: Summary of WRIA 7 Water Offset Projects

Project Number	Project Name	Project Short Description (one sentence)	Subbasin	Estimated Water Offset Benefits (AF/YR)	Project Included in Offset Calculations/NEB Analysis
1	Project A		A	50	No
2	Project B		A	160	Yes
3	Project C		B	150	Yes

[NOTE: Some projects that are in the plan may be very general and the Committee can decide not to count them toward net ecological benefit, e.g. a project to encourage PE well users to connect to water service]

Table 10: Subbasin Water Offset Totals Compared to Permit-Exempt Well Consumptive Use Impacts

Subbasin	Offset Project Totals (AF/YR)	Permit-Exempt Well Consumptive Use (AF/YR)	Difference (AF/YR)
A	210	170	**40**
B	150	152	**-2**
C	0	50	**-50**

Subbasin	Offset Project Totals (AF/YR)	Permit-Exempt Well Consumptive Use (AF/YR)	Difference (AF/YR)
D	165	97	**68**
All	140		**140**
TOTAL	**665**	**469**	**196**

7.2 Habitat Benefits

- Summarize types of projects and anticipated benefits and limiting factors addressed.
- Summarize the distribution of projects among the subbasins and the streams that will benefit.
- State how these projects provide additional benefits to instream resources beyond those necessary to offset the impacts from new consumptive water use within the WRIA boundary.

Commented [AP132]: Snohomish CD: Will look forward to commenting on this chapter once it is written. Snohomish CD is particularly interested in seeing language about habitat projects restoring hydrologic processes and habitat-creating processes, and building ecosystem resilience for the benefit of instream flows.

Commented [AP133]: Will Stelle: WWT strongly supports these water resource-related estimates for habitat projects.

Commented [JI(134R133]: Committee Input Requested

Table 11. Summary of WRIA 7 Habitat Improvement Projects

Project Number	Project Name	Project Short Description (one sentence)	Subbasin	River Miles Benefitted	Other Benefits with Quantifiable Metric (e.g. structures per mile)	Limiting Factor(s) Addressed	Project Included in NEB Analysis
1			A				
7			B				
8			C				
9			C				
10			D				

7.3 Adaptive Management and Policy Recommendations

- If applicable, reference Chapter 6 and how that increases certainty of achieving NEB.

7.4 NEB Evaluation Findings

- Include a clear statement of the Committee's finding that the combined components of the watershed plan do or do not achieve a NEB. For example: "The WRIA X Committee finds that this watershed plan achieves a net ecological benefit, as required by RCW 90.94.030 and defined by the Final NEB Guidance (Ecology 2019)."

Commented [AP135]: Will Stelle: Drafting the NEB component of the plan deserves substantial work and discussion. The NEB segment might house the more ambitious water resource-related objectives for the WRIA which extend well beyond consumptive uses of new PEs, and reaching to water supply reliability for people, fish and the environment.

Commented [JI(136R135]: Committee will discuss at October meeting.

Appendices

Appendix A – References

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Appendix B – Glossary

AE	Application Efficiency
AFY	Acre-Feet per Year
CFS	Cubic Feet per Second
CU	Consumptive Use
CUF	Consumptive Use Factor
GPD	Gallons per Day
GIS	Geographic Information System
IR	Irrigation Requirements
LID	Low Impact Development
LIO	Local Integrating Organization
MAR	Managed Aquifer Recharge
NEB	Net Ecological Benefit
PE	Permit-Exempt
RCW	Revised Code of Washington
WDFW	Washington Department of Fish and Wildlife
WRIA	Water Resource Inventory Areas

Acre-feet (AF): A unit of volume equal to the volume of a sheet of water one acre in area and one foot in depth. (USGS)

Adaptive Management: 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. (NEB)

Annual Average Withdrawal: RCW 90.94.030 (4)(a)(vi)(B) refers to the amount of water allowed for withdrawal per connection as the annual average withdrawal. As an example, a homeowner could withdraw 4,000 gallons on a summer day, so long as they did not do so often enough that their annual average exceeds the 950 gpd.

Beaver Dam Analogue (BDA): BDAs are man-made structures designed to mimic the form and function of a natural beaver dam. They can be used to increase the probability of successful beaver translocation and function as a simple, cost-effective, non-intrusive approach to stream restoration. (From Anabranch Solutions)

Critical Flow Period: The time period of low streamflow (generally described in bi-monthly or monthly time steps) that has the greatest likelihood to negatively impact the survival and recovery of threatened or endangered salmonids or other fish species targeted by the planning group. The planning group should discuss with Ecology, local tribal and WDFW biologists to determine the critical flow period in those reaches under the planning group's evaluation. (NEB)

Cubic feet per second (CFS): A rate of the flow in streams and rivers. It is equal to a volume of water one foot high and one foot wide flowing a distance of one foot in one second (about the size of one archive file box or a basketball). (USGS)

Domestic Use: In the context of Chapter 90.94 RCW, "domestic use" and the withdrawal limits from permit-exempt domestic wells include both indoor and outdoor household uses, and watering of a lawn and noncommercial garden. (NEB)

ESSB 6091: In January 2018, the Legislature passed Engrossed Substitute Senate Bill (ESSB) 6091 in response to the Hirst decision. In the Whatcom County vs. Hirst, Futurewise, et al. decision (often referred to as the "Hirst decision"), the court ruled that the county failed to comply with the Growth Management Act requirements to protect water resources. The ruling required the county to make an independent decision about legal water availability. ESSB 6091 addresses the court's decision by allowing landowners to obtain a building permit for a new home relying on a permit-exempt well. ESSB 6091 is codified as Chapter 90.94 RCW. (ECY)

Evolutionarily Significant Unit (ESU): A population of organisms that is considered distinct for purposes of conservation. For Puget Sound Chinook, the ESU includes naturally spawned Chinook salmon originating from rivers flowing into Puget Sound from the Elwha River (inclusive) eastward, including rivers in Hood Canal, South Sound, North Sound and the Strait of Georgia. Also, Chinook salmon from 26 artificial propagation programs. (NOAA)

Foster Pilots and Foster Task Force: To address the impacts of the 2015 Foster decision, Chapter 90.94 RCW established a Task Force on Water Resource Mitigation and authorized the Department of Ecology to issue permit decisions for up to five water mitigation pilot projects. These pilot projects will address issues such as the treatment of surface water and groundwater appropriations and include management strategies to monitor how these appropriations affect instream flows and fish habitats. The joint legislative Task Force will (1) review the treatment of surface water and groundwater appropriations as they relate to instream flows and fish habitat, (2) develop and recommend a mitigation sequencing process and scoring system to address such appropriations, and (3) review the Washington Supreme Court decision in Foster v. Department of Ecology. The Task Force is responsible for overseeing the five pilot projects. (ECY)

Four Year Work Plans: Four year plans are developed by salmon recovery lead entities in Puget Sound to describe each lead entity's accomplishments during the previous year, to identify the current status of recovery actions, any changes in recovery strategies, and to propose future actions anticipated over the next four years. Regional experts conduct technical and policy reviews of each watershed's four-year work plan update to evaluate the consistency and appropriate sequencing of actions with the Puget Sound Salmon Recovery Plan. (Partnership)

Gallons per day (GPD): An expression of the average rate of domestic and commercial water use. 1 million gallons per day is equivalent to 1.547 cubic feet per second.

Group A public water systems: Group A water systems have 15 or more service connections or serve 25 or more people per day. Chapter 246-290 WAC (Group A Public Water Supplies), outlines the purpose, applicability, enforcement, and other policies related to Group A water systems. (WAC)

Group B public water systems: Group B public water systems serve fewer than 15 connections and fewer than 25 people per day. Chapter 246-291 WAC (Group B Public Water Systems), outlines the purpose, applicability, enforcement, and other policies related to Group B water systems. (WAC)

Growth Management Act (GMA): Passed by the Washington Legislature and enacted in 1990, this act guides planning for growth and development in Washington State. The act requires local governments in fast growing and densely populated counties to develop, adopt, and periodically update comprehensive plans.

Home**:** A general term referring to any house, household, or other Equivalent Residential Unit. (Policy and Interpretive Statement)

Hydrologic Unit Code (HUC): Hydrologic unit codes refer to the USGS's division and sub-division of the watersheds into successively smaller hydrologic units. The units are classified into four levels: regions, sub-regions, accounting units, and cataloging units, and are arranged within each other from the largest geographic area to the smallest. Each unit is classified by a unit

code (HUC) composed of two to eight digits based on the four levels of the classification in the hydrologic unit system (two-digit units are largest, and eight digits are smallest). (USGS)

Impact: For the purpose of streamflow restoration planning, impact is the same as new consumptive water use (see definition below). As provided in Ecology WR POL 2094 "Though the statute requires the offset of 'consumptive impacts to instream flows associated with permit-exempt domestic water use' (RCW 90.94.020(4)(b)) and 90.94.030(3)(b)), watershed plans should address the consumptive use of new permit-exempt domestic well withdrawals. Ecology recommends consumptive use as a surrogate for consumptive impact to eliminate the need for detailed hydrogeologic modeling, which is costly and unlikely feasible to complete within the limited planning timeframes provided in chapter 90.94 RCW. " (NEB)

Instream Flows and Instream Flow Rule (IFR): Instream flows are a specific flow level measured at a specific location in a given stream. Seasonal changes cause natural stream flows to vary throughout the year, so instream flows usually vary from month to month rather that one flow rate year-round. State law requires that enough water in streams to protect and preserve instream resources and uses. The Department of Ecology sets flow levels in administrative rules. Once instream flow levels are established in a rule, they serve as a water right for the stream and the resources that depend on it. Instream flow rules do not affect pre-existing, or senior, water rights; rather, they protect the river from future withdrawals. Once an instream flow rule is established, the Department of Ecology may not issue water rights that would impair the instream flow level. (ECY)

Instream Resources Protection Program (IRPP): The IRPP was initiated by the Department of Ecology in September 1978 with the purpose of developing and adopting instream resource protection measures for Water Resource Inventory Areas (WRIAs) (see definition below) in Western Washington as authorized in the Water Resources Act of 1971 (RCW 90.54), and in accordance with the Water Resources Management Program (WAC 175-500).

Instream Resources: Fish and related aquatic resources. (NEB)

Large woody debris (LWD): LWD refers to the fallen trees, logs and stumps, root wads, and piles of branches along the edges of streams, rivers, lakes and Puget Sound. Wood helps stabilize shorelines and provides vital habitat for salmon and other aquatic life. Preserving the debris along shorelines is important for keeping aquatic ecosystems healthy and improving the survival of native salmon. (King County)

Lead Entities (LE): Lead Entities are local, citizen-based organizations in Puget Sound that coordinate salmon recovery strategies in their local watershed. Lead entities work with local and state agencies, tribes, citizens, and other community groups to adaptively manage their local salmon recovery chapters and ensure recovery actions are implemented. (Partnership)

Listed Species: Before a species can receive the protection provided by the Endangered Species Act (ESA), it must first be added to the federal lists of endangered and threatened wildlife and

plants. The List of Endangered and Threatened Wildlife (50 CFR 17.11) and the List of Endangered and Threatened Plants (50 CFR 17.12) contain the names of all species that have been determined by the U.S. Fish and Wildlife Service (Service) or the National Marine Fisheries Service (for most marine life) to be in the greatest need of federal protection. A species is added to the list when it is determined to be endangered or threatened because of any of the following factors: the present or threatened destruction, modification, or curtailment of its habitat or range; overutilization for commercial, recreational, scientific, or educational purposes; disease or predation; the inadequacy of existing regulatory mechanisms; or other natural or manmade factors affecting its survival. (USFWS)

Local Integrating Organizations (LIO): Local Integrating Organizations are local forums in Puget Sound that collaboratively work to develop, coordinate, and implement strategies and actions that contribute to the protection and recovery of the local ecosystem. Funded and supported by the Puget Sound Partnership, the LIOs are recognized as the local expert bodies for ecosystem recovery in nine unique ecosystems across Puget Sound. (Partnership)

Low Impact Development (LID): Low Impact Development (LID) is a stormwater and land-use management strategy that tries to mimic natural hydrologic conditions by emphasizing techniques including conservation, use of on-site natural features, site planning, and distributed stormwater best management practices (BMPs) integrated into a project design. (ECY)

Managed Aquifer Recharge (MAR): Managed aquifer recharge projects involve the addition of water to an aquifer through infiltration basins, injection wells, or other methods. The stored water can then be used to benefit stream flows, especially during critical flow periods. (NEB)

National Pollutant Discharge Elimination System (NPDES): The NPDES permit program addresses water pollution by regulating point sources that discharge pollutants to waters of the United States. Created by the Clean Water Act in 1972, the EPA authorizes state governments to perform many permitting, administrative, and enforcement aspects of the program. (EPA)

Net Ecological Benefit (NEB): Net Ecological Benefit is a term used in ESSB 6091 as a standard that watershed plans (see below for definition) must meet. The outcome that is anticipated to occur through implementation of projects and actions in a plan to yield offsets that exceed impacts within: a) the planning horizon; and, b) the relevant WRIA boundary. See *Final Guidance for Determining Net Ecological Benefit - Guid-2094 Water Resources Program Guidance.* (NEB)

Net Ecological Benefit Determination: Occurs solely upon Ecology's conclusion after its review of a watershed plan submitted to Ecology by appropriate procedures, that the plan does or does not achieves a NEB as defined in the Net Ecological Benefit guidance. The Director of Ecology will issue the results of that review and the NEB determination in the form of an order. (NEB)

Net Ecological Benefit Evaluation: A planning group's demonstration, using NEB Guidance and as reflected in their watershed plan, that their plan has or has not achieved a NEB. (NEB)

New Consumptive Water Use: The consumptive water use from the permit-exempt domestic groundwater withdrawals estimated to be initiated within the planning horizon. For the purpose of RCW 90.94, consumptive water use is considered water that is evaporated, transpired, consumed by humans, or otherwise removed from an immediate water environment due to the use of new permit-exempt domestic wells. (NEB)

Office of Financial Management (OFM): OFM is a Washington state agency that develops official state and local population estimates and projections for use in local growth management planning. (OFM)

Offset: The anticipated ability of a project or action to counterbalance some amount of the new consumptive water use over the planning horizon. Offsets need to continue beyond the planning horizon for as long as new well pumping continues. (NEB)

Permit exempt wells: The Groundwater Code (RCW 90.44), identified four "small withdrawals" of groundwater as exempt from the permitting process. Permit-exempt groundwater wells often provide water where a community supply is not available, serving single homes, small developments, irrigation of small lawns and gardens, industry, and stock watering.

Permit-exempt uses: Groundwater permit exemptions allow four small uses of groundwater without a water right permit: domestic uses of less than 5,000 gallons per day, industrial uses of less than 5,000 gallons per day, irrigation of a lawn or non-commercial garden, a half-acre or less in size, or stock water. Although exempt groundwater withdrawals don't require a water right permit, they are always subject to state water law. (ECY)

Planning groups: A general term that refers to either initiating governments, in consultation with the planning unit, preparing a watershed plan update required by Chapter 90.94.020 RCW, or a watershed restoration and enhancement committee preparing a plan required by Chapter 90.94.030 RCW. (NEB)

Planning Horizon: The 20-year period beginning on January 19, 2018 and ending on January 18, 2038, over which new consumptive water use by permit-exempt domestic withdrawals within a WRIA must be addressed, based on the requirements set forth in Chapter 90.94 RCW. (NEB)

Projects and Actions: General terms describing any activities in watershed plans to offset impacts from new consumptive water use and/or contribute to NEB. (NEB)

Puget Sound Acquisition and Restoration (PSAR) fund: This fund supports projects that recover salmon and protect and recover salmon habitat in Puget Sound. The state legislature appropriates money for PSAR every 2 years in the Capital Budget. PSAR is co-managed by the

Puget Sound Partnership and the Recreation and Conservation Office, and local entities identify and propose PSAR projects. (Partnership)

Puget Sound Partnership (Partnership): The Puget Sound Partnership is the state agency leading the region's collective effort to restore and protect Puget Sound and its watersheds. The organization brings together hundreds of partners to mobilize partner action around a common agenda, advance Sound investments, and advance priority actions by supporting partners. (Partnership)

Puget Sound Regional Council (PSRC): PSRC develops policies and coordinates decisions about regional growth, transportation and economic development planning within King, Pierce, Snohomish and Kitsap counties. (PSRC)

RCW 90.03 (Water Code): This chapter outlines the role of the Department of Ecology in regulating and controlling the waters within the state. The code describes policies surrounding surface water and groundwater uses, the process of determining water rights, compliance measures and civil penalties, and various legal procedures.

RCW 90.44 (Groundwater Regulations): RCW 90.44 details regulations and policies concerning groundwater use in Washington State, and declares that public groundwaters belong to the public and are subject to appropriation for beneficial use under the terms of the chapter. The rights to appropriate surface waters of the state are not affected by the provisions of this chapter.

RCW 90.54 (Groundwater permit exemption): This code states that any withdrawal of public groundwaters after June 6, 1945 must have an associated water right from the Department of Ecology. However, any withdrawal of public groundwaters for stock-watering purposes, or for the watering of a lawn or of a noncommercial garden not exceeding one-half acre in area, or for single or group domestic uses in an amount not exceeding five thousand gallons a day, or for an industrial purpose in an amount not exceeding five thousand gallons a day, is exempt from the provisions of this section and does not need a water right.

RCW 90.82 (Watershed Planning): Watershed Planning was passed in 1997 with the purpose of developing a more thorough and cooperative method of determining what the current water resource situation is in each water resource inventory area of the state and to provide local citizens with the maximum possible input concerning their goals and objectives for water resource management and development.

RCW 90.94 (Streamflow Restoration): This chapter of the Revised Code of Washington codifies ESSB 6091, including watershed planning efforts, streamflow restoration funding program and the joint legislative task force on water resource mitigation and mitigation pilot projects (Foster task force and pilot projects).

Reasonable Assurance: Explicit statement(s) in a watershed plan that the plan's content is realistic regarding the outcomes anticipated by the plan, and that the plan content is supported with scientifically rigorous documentation of the methods, assumptions, data, and implementation considerations used by the planning group. (NEB)

Revised Code of Washington (RCW): The revised code is a compilation of all permanent laws now in force for the state of Washington. The RCWs are organized by subject area into Titles, Chapters, and Sections.

Salmon Recovery Funding Board (SRFB): Pronounced "surfboard", this state and federal board provides grants to protect and restore salmon habitat. Administered by a 10-member State Board that includes five governor-appointed citizens and five natural resource agency directors, the board brings together the experiences and viewpoints of citizens and the major state natural resource agencies. For watersheds planning under Section 203, the Department of Ecology will submit final draft WRE Plans not adopted by the prescribed deadline to SRFB for a technical review (RCO and Policy and Interpretive Statement).

Section 202 or Section 020: Refers to Section 202 of ESSB 6091 or Section 020 of RCW 90.94 respectively. The code provides policies and requirements for new domestic groundwater withdrawals exempt from permitting with a potential impact on a closed water body and potential impairment to an instream flow. This section includes WRIAs 1, 11, 22, 23, 49, 59 and 55, are required to update watershed plans completed under RCW 90.82 and to limit new permit-exempt withdrawals to 3000 gpd annual average.

Section 203 or Section 030: Refers to Section 203 of ESSB 6091 or Section 030 of RCW 90.94 respectively. The section details the role of WRE committees and WRE plans (see definitions below) in ensuring the protection and enhancement of instream resources and watershed functions. This section includes WRIAs 7, 8, 9, 10, 12, 13, 14 and 15. New permit-exempt withdrawals are limited to 950 gpd annual average.

SEPA and SEPA Review: SEPA is the State Environmental Policy Act. SEPA identifies and analyzes environmental impacts associated with governmental decisions. These decisions may be related to issuing permits for private projects, constructing public facilitates, or adopting regulations, policies, and plans. SEPA review is a process which helps agency decision-makers, applications, and the public understand how the entire proposal will affect the environment. These reviews are necessary prior to Ecology adopting a plan or plan update and may be completed by Ecology or by a local government. (Ecology)

Subbasins: A geographic subarea within a WRIA, equivalent to the words "same basin or tributary" as used in RCW 90.94.020(4)(b) and RCW 90.94.030 (3)(b). In some instances, subbasins may not correspond with hydrologic or geologic basin delineations (e.g. watershed divides). (NEB)

Trust Water Right Program: The program allows the Department of Ecology to hold water rights for future uses without the risk of relinquishment. Water rights held in trust contribute to streamflows and groundwater recharge, while retaining their original priority date. Ecology uses the Trust Water Right Program to manage acquisitions and accept temporary donations. The program provides flexibility to enhance flows, bank or temporarily donate water rights. (ECY)

Urban Growth Area (UGA): UGAs are unincorporated areas outside of city limits where urban growth is encouraged. Each city that is located in a GMA fully-planning county includes an urban growth area where the city can grow into through annexation. An urban growth area may include more than a single city. An urban growth area may include territory that is located outside of a city in some cases. Urban growth areas are under county jurisdiction until they are annexed or incorporated as a city. Zoning in UGAs generally reflect the city zoning, and public utilities and roads are generally built to city standards with the expectation that when annexed, the UGA will transition seamlessly into the urban fabric. Areas outside of the UGA are generally considered rural. UGA boundaries are reviewed and sometimes adjusted during periodic comprehensive plan updates. UGAs are further defined in RCW 36.70.

WAC 173-566 (Streamflow Restoration Funding Rule): On June 25, 2019 the Department of Ecology adopted this rule for funding projects under RCW 90.94. This rule establishes processes and criteria for prioritizing and approving grants consistent with legislative intent, thus making Ecology's funding decision and contracting more transparent, consistent, and defensible.

Washington Administrative Code (WAC): The WAC contains the current and permanent rules and regulations of state agencies. It is arranged by agency and new editions are published every two years. (Washington State Legislature)

Washington Department of Ecology (DOE/ECY): The Washington State Department of Ecology is an environmental regulatory agency for the State of Washington. The department administers laws and regulations pertaining to the areas of water quality, water rights and water resources, shoreline management, toxics clean-up, nuclear and hazardous waste, and air quality.

Washington Department of Fish and Wildlife (WDFW): An agency dedicated to preserving, protecting, and perpetuating the state's fish, wildlife, and ecosystems while providing sustainable fish and wildlife recreational and commercial opportunities. Headquartered in Olympia, the department maintains six regional offices and manages dozens of wildlife areas around the state, offering fishing, hunting, wildlife viewing, and other recreational opportunities for the residents of Washington. With the tribes, WDFW is a co-manager of the state salmon fishery. (WDFW)

Washington Department of Natural Resources (WADNR or DNR): The department manages over 3,000,000 acres of forest, range, agricultural, and commercial lands in the U.S. state of Washington. The DNR also manages 2,600,000 acres of aquatic areas which include shorelines,

tidelands, lands under Puget Sound and the coast, and navigable lakes and rivers. Part of the DNR's management responsibility includes monitoring of mining cleanup, environmental restoration, providing scientific information about earthquakes, landslides, and ecologically sensitive areas. (WADNR)

Water Resources (WR): The Water Resources program at Department of Ecology supports sustainable water resources management to meet the present and future water needs of people and the natural environment, in partnership with Washington communities. (ECY)

Water Resources Advisory Committee (WRAC): Established in 1996, the Water Resources Advisory Committee is a forum for issues related to water resource management in Washington State. This stakeholder group is comprised of 40 people representing state agencies, local governments, water utilities, tribes, environmental groups, consultants, law firms, and other water stakeholders. (ECY)

Watershed Plan: A general term that refers to either: a watershed plan update prepared by a WRIA's initiating governments, in collaboration with the WRIA's planning unit, per RCW 90.94.020; or a watershed restoration and enhancement plan prepared by a watershed restoration and enhancement committee, per RCW 90.94.030. This term does not refer to RCW 90.82.020(6). (NEB)

Watershed Restoration and Enhancement Plan (WRE Plan): The Watershed Restoration and Enhancement Plan is directed by Section 203 of ESSB 6091 and requires that by June 30, 2021, the Department of Ecology will prepare and adopt a watershed restoration and enhancement plan for WRIAs 7, 8, 9, 10, 12, 13, 14 and 15, in collaboration with the watershed restoration and enhancement committee. The plan should, at a minimum, offset the consumptive impact of new permit-exempt domestic water use, but may also include recommendations for projects and actions that will measure, protect, and enhance instream resources that support the recovery of threatened and endangered salmonids. Prior to adoption of an updated plan, Department of Ecology must determine that the actions in the plan will result in a "net ecological benefit" to instream resources in the WRIA. The planning group may recommend out-of-kind projects to help achieve this standard.

WRIA: Water Resource Inventory Area. WRIAs are also called basins or watersheds. There are 62 across the state and each are assigned a number and name. They were defined in 1979 for the purpose of monitoring water availability. A complete map is available here: https://ecology.wa.gov/Water-Shorelines/Water-supply/Water-availability/Watershed-look-up

Appendix C – Committee Roster

- Ingria Jones, Stacy Vynne McKinstry (alternate); *Washington State Department of Ecology*
- Daryl Williams, Anne Savery (alternate); *Tulalip Tribes*
- Matt Baerwalde, Cindy Spiry (alternate); *Snoqualmie Indian Tribe*
- Denise DiSanto, Janne Kaje (alternate); *King County*
- Terri Strandberg, Ann Bylin (alternate); *Snohomish County*
- Cynthia Krass, Erin Ericson (alternate); *Snoqualmie Valley WID*
- Brant Wood, Keith Binkley (alternate); *Snohomish PUD*
- Kirk Lakey, Jamie Bails (alternate); *Washington Department of Fish and Wildlife*
- Emily Dick, Will Stelle (alternate); *Washington Water Trust*
- Bobbi Lindemulder, Kristin Marshall (alternate); *Snohomish Conservation District*
- Dylan Sluder, Mike Pattison (alternate); *Master Builders Association of King and Snohomish Counties*
- Mike Wolanek, Josh Grandlienard (alternate); *City of Arlington*
- Amanda Smeller; *City of Carnation*
- Michael Remington, Jennifer Knaplund (alternate); *City of Duvall*
- Jim Miller, Souheil Nasr (alternate); *City of Everett*
- Richard Norris, Denise Beaston (alternate); *City of Gold Bar*
- Kim Peterson, Norm Johnson (alternate); *Town of Index*
- Dave Leviton, Jon Stevens (alternate); *City of Lake Stevens*
- Matthew Eyer, Karen Latimer (alternate); *City of Marysville*
- Megan Darrow, Jordan Ottow (alternate); *City of Monroe*
- Jamie Burrell; *City of North Bend*
- Glen Pickus, Brooke Eidem (alternate); *City of Snohomish*
- Steve Nelson, Andy Dunn (alternate); *City of Snoqualmie*
- Elissa Ostergaard, Cory Zyla (alternate); *Snoqualmie Watershed Forum-Ex officio member*
- Paul Faulds, Elizabeth Ablow (alternate); *City of Seattle-Ex officio member*
- Morgan Ruff, Gretchen Glaub (alternate); *Snohomish Basin Salmon Recovery Forum-Ex officio member*

Appendix D – Operating Principles

Appendix E – Subbasin Delineation Memo

Appendix F – Growth Projections Memo

Appendix G – Consumptive Use Memo

Appendix H – Projects

To be included when ready. It is anticipated that Appendix H will include detailed project descriptions.

Discussion Guide: Plan Approval Timeline

Purpose of Discussion

The purpose of the discussion is to review the committee's timeline constraints and understand the committee's timeline preferred path and to finalize the draft plan and distribute the final plan for local review.

Background

In early August, the Chair distributed a timeline for Fall 2020 to accommodate thorough review and vetting by all entities before a vote on the final plan. An updated timeline (see below) provides additional detail for developing remaining elements of the plan. As noted in the document, the timeline is fluid and dates may change or additional meetings may be scheduled, as needed. The Chair and Facilitation Team will adaptively manage this timeline throughout the process based on the time needed to complete the plan and comments received on the draft and final plan. **The Chair is requesting committee feedback on the current timeline, in order to identify where adjustments may be needed and tradeoffs can be made.**

The Ecology Memo on Timeline and Expectations for Watershed Restoration and Enhancement Plan Development, Review and Committee Approval provides information on the plan development and review process. The memo communicated that February 1, 2021 is the target date for the chair, on behalf of the committee, to submit an approved plan to Ecology. While this date is not required by statute, Ecology believes it maximizes the likelihood for an adopted plan.

The expectation is that all comments on the draft watershed plan will be discussed during Committee meetings and that all edits will be incorporated during the review of the draft plan. From August 2020 through Q1 2021, the committee will need to complete the steps:

1. Review and revise the draft plan.
2. Committee meetings to address revisions.
3. Committee meetings to finalize project list and NEB evaluation (as needed).
4. Committee interim approval of the plan for distribution to local decision makers (as needed).
5. Distribution of final plan to local decision-makers that require review/approval.
6. Committee meeting for final approval of the plan. All Committee members (including cities caucus members) are expected to attend the meeting to vote on the final plan.

Committee members shared that their internal review processes could take upwards of 3 months. Committee members' detailed responses to the WRE Plan Local Approval Process form are compiled into a table and posted on box. Each entity must identify its own review process to determine how committee members will vote on the final plan.

The Chair and Facilitation team seek to build consensus along the way to minimize the number of issues that arise during the review of the final plan. The expectation is that Committee members and appropriate decision makers will thoroughly review and provide feedback on the plan components as they are developed and during the draft plan review. All comments on the plan components, draft plan, and final plan will be reviewed and addressed during Committee meetings.

Considerations:

- A clear timeline helps committee members to schedule review of the plan with decision-makers.
- The chair and facilitator strongly recommend the committee reaches interim approval to distribute the draft plan. Under the current timeline, this would occur at the November 12 Committee meeting.
- The chair will not seek comments on the final plan after the local review process is initiated. If committee members identify fatal flaws with the final plan that would affect their ability to approve, the chair and facilitator will work with the committee to determine time needed for a second-round review by local decision-making bodies and reschedule the vote on approval of the final plan. Fatal flaws identified after the local review process is initiated could jeopardize final approval of the plan.
- Additional meetings can be scheduled, if needed, to address comments on plan elements that are currently under development.
- Based on local review processes, 3 months are needed for local review of the final plan.
- Most entities have expressed that review of the plan cannot occur during the holidays (December). The current timeline has November 30th as the date to initiate local review process, which does not align well with the holidays.
- The chair anticipates that the committee will miss the February 1 target date to submit the final plan to Ecology. Ecology cannot guarantee review of plans after this date; plans that are received after the February 1 target date will be reviewed on a first-come, first-serve basis.
- Chapter 5 (projects and Chapter 7 (NEB) have not yet been reviewed by the Committee.

Full draft plan: Compiled draft Chapter 1-6 of the plan and Chapter 7, if applicable. Opportunity for Committee member comments (red flag review) & Committee discussion of comments.

Final plan: Compiled final plan Chapter 1-6 and Chapter 7, if applicable. No comments requested & substantive changes discouraged.

Options for Committee Consideration

1. **Keep to the current timeline and seek approval at the November 12 meeting to distribute the final plan November 30th.**

Potential reasons to support this option: The current timeline includes 3 months for local review. While it misses the February 1 target date, the plan (if approved) would be submitted to Ecology March 15. This increases the chance that Ecology will have sufficient time to thoroughly review the plan.

Potential reasons to oppose this option*:* There will be limited time for Committee members to review remaining components of the plan, including Chapter 5 (projects) and Chapter 7 (NEB – if the committee decides to include). The short timeline may necessitate additional meetings of the full committee or among individual committee members to reach consensus.

2. **Adjust the timeline to allow for additional time for Committee review of remaining components of the plan. This would lead to initiating local review in late December and 1) submitting the approved plan to Ecology later (end of March/early April) and/or 2) shortening the local review process.**

Potential reasons to support this option: This would allow additional time for committee members to review remaining components of the plan. This would also allow additional time for consensus building.

Potential reasons to oppose this option: If the local review period is pushed into December, the final plan (if approved) would be submitted to Ecology in April or May. This decreases the chance that Ecology will have sufficient time to thoroughly review the plan. Adjusting the timeline may cause challenges in December, when most entities are on holiday. Entities may not be able to guarantee a shorter review timeline.

Questions for committee discussion

- Do Committee members prefer time to review a full draft of the plan (all chapters in one document), prior to sending the final plan out for local review? If so, how long is needed to review and note any fatal flaws on a full draft?
- If red flag issues arise for members, does the committee support additional meetings to address them and finalize the plan prior to local review?
- How do you propose we build a timeline that balances committee review, local approval and Ecology review with the time remaining?

NOTE: This timeline was developed by the WRIA 7 WREC Chair and Facilitator based on where the WRIA 7 Committee is in the planning process, what is left to accomplish and the known timelines for entity review. It is not a formal Ecology timeline. THIS TIMELINE IS SUBJECT TO CHANGE AND BEING ADAPTIVELY MANAGED AS NEEDED.

Date	Who	Task
Summer and Fall 2020	Committee	Review plan chapters as they are completed.
June 17	Chair	Send draft chapters 1-3
	Committee	Committee members review and comment by July 3.
August 13	Committee	Committee Meeting • Discuss comments on draft chapters 1-3 • Finalize any elements of plan not included in initial draft
August 27	Chair	Send draft plan. • Revised chapters 1-3 • Chapter 4 (growth projections and consumptive use) • Chapter 5 outline (projects) • Chapter 6 draft (policy) & outline (adaptive management) • Chapter 7 outline (NEB)
September 10	Committee	Committee Meeting • Discuss comments received to plan to date. • Finalize any elements of plan not included in initial draft

Date	Who	Task
September 28	Committee	Due date for comments on draft plan.
Week of September 28	Technical Consultants; Chair	Compile all comments received.
October 8	Committee	Committee Meeting • Discuss all comments on draft plan. • Finalize any elements of plan not included in initial draft
Week of October 12	Committee	Incorporate draft plan revisions.
October 15	Chair	Distribute draft Chapter 5 (projects). *two week turnaround
October 30	Chair & Committee	Committee: Comments due on draft Chapter 5 (projects) Chair: Distribute draft Chapter 7 (NEB) Note: this assumes Committee decides to develop Chapter 7
November 9	Committee	Comments due on draft Chapter 7 (NEB) *one week turnaround
November 12	Committee	Committee Meeting: • Discuss comments on draft Chapter 5 (projects). • Discuss comments on draft Chapter 7 (NEB), if developed & decide whether to include Chapter 7 in the Plan.
Committee input requested on remainder of the timeline		
Week of November 30	Chair	Distribute final plan to Committee members. • Committee members to initiate local review process.
November 30 – March 1	Committee	LOCAL REVIEW OF FINAL PLAN • No Committee meetings planned; no further changes anticipated after October 12
February 1	Committee	Target date to submit final plan to Ecology – *the chair anticipates the WRIA 7 Committee will miss the February 1 Target Date*
Week of March 1	Committee	Deadline for local approval of Final Plan.
March 11	Committee	Special Committee Meeting to Vote on the Final Plan • Vote on approval of final plan (all voting committee members must approve the plan before it's submitted)
March 15	Chair	Submit final plan to Ecology (*plans that are received after the February 1 target date will be reviewed on a first-come, first-serve basis)*
June 30	Ecology	Director of Ecology will decide on plan adoption

Discussion Guide: NEB Evaluation in Plan

Purpose of Discussion

The purpose of the discussion is to decide whether the committee would like to include an NEB evaluation within the WRIA 7 watershed plan, and if so, what that evaluation should include.

Background

Ecology is required to complete an evaluation of each plan to determine whether it meets NEB (Net Ecological Benefit). To meet the NEB threshold, plans must demonstrate that offsets exceed projected consumptive use from new permit-exempt domestic groundwater withdrawals over the planning horizon.

Committees have the option of including an NEB evaluation within the plan. If they choose to include it Ecology will give considerable deference to the planning groups to decide what NEB means for their watershed.

In the NEB guidance, Ecology recommends a process for Committees to complete NEB evaluations. The steps are:

- Compare consumptive water use to water offsets at the WRIA scale.
- Compare consumptive water use to offsets within each subbasin.
- Identify the projects and actions that go beyond the needed offset in order to achieve NEB
- Include a clear statement that the Committee finds that the combined components of the plan do or do not achieve a net ecological benefit.
- If desired, include adaptive management (optional).

Planning groups may choose not to include a NEB evaluation. Ecology will review plans that do not include a NEB evaluation, as well as any plans that include a NEB evaluation that does not meet the standards described in this guidance. However, without this information and technical foundation, Ecology will not have benefit of the knowledge, insights, and expertise of partners and stakeholders. Consequently, Ecology will review any such plan with considerably less deference than plans that include NEB evaluations that meet the standards described in the guidance.

The committee had an initial discussion at the September 10 meeting on including an NEB evaluation in the plan. The following pros and cons were identified by committee member:

- **Pros for including NEB evaluation section:**
  - Better chance Ecology will approve the plan.
  - Focused time on evaluating overall ecological impact of plan.
  - Good exercise to go through to build confidence in plan, regardless of whether it is included.
  - Gives more credibility to the ecological benefits of plan.
  - Opportunity to reconsider small offset credits for habitat projects if falling short.
- **Cons for including NEB evaluation section:**
  - Could create institutional drag on approval process.
  - Time commitment.

Options for Committee Consideration

1. **Include a NEB evaluation within the plan, following the steps outlined above.**

Potential reasons to support this option: Ecology will review your plan with considerable deference in light of the knowledge, insights, and expertise of the partners and stakeholders who influenced the preparation of their plan. A watershed plan that includes a NEB evaluation based on this guidance significantly contributes to the reasonable assurances that the offsets and NEB within the plan will occur.

Potential reasons to oppose this option*:* It may take time and effort for our committee to conduct this evaluation and to reach consensus on including a statement that the committee finds that the combined components of the plan achieve NEB.

2. **Include a NEB evaluation within the plan but diverge from the steps outlined above.**

   Potential reasons to support this option: This allows a committee to create their own framework for an analysis without being bound to Ecology's steps.

   Potential reasons to oppose this option*:* It will take time and effort for a committee to agree on a revised framework, complete the work, and reach consensus on the evaluation. The Committee may need to adjust the current plan approval timeline. Adding additional components or deviating from the steps will complicate Ecology's NEB evaluation and may result in less deference to the plan's evaluation.

3. **Do not include a NEB evaluation within the plan and leave it to Ecology to do this evaluation.**

   Potential reasons to support this option: If a committee can reach agreement on the other components of the plan but can't reach an agreement on a NEB evaluation, this is a viable option to still reach local approval of the plan. Not including the NEB evaluation will save time and effort and allow the committee to complete other plan elements and keep to the current plan approval timeline.

   Potential reasons to oppose this option*:* Without this information and technical foundation, Ecology will not have benefit of the knowledge, insights, and expertise of partners and stakeholders. Consequently, Ecology will review the plan with less deference than plans that include NEB evaluations that meet the standards described in the guidance.

Questions for committee discussion

- Do you want to include an NEB evaluation with the plan?
- If so, do you agree that it should follow the steps outlined in the NEB Guidance?
- If so, do you support the Project Subgroup working with the technical consultant team to develop a draft Chapter 7?

Next Steps

- If the Committee decides to include a NEB evaluation, Ingria will work with the technical consultant team (and Project Subgroup, if applicable) to draft Chapter 7 of the watershed plan.