AGENDA

Snohomish (WRIA 7)
Watershed Restoration and Enhancement Committee meeting
August 13, 2020 | 12:30pm – 3:30pm WRIA 7 Committee Webpage

Location	Committee Chair	Handouts (electronic)
WebEx Meeting Link +1-415-655-0001 US Toll +1-206-207-1700 United States Toll (Seattle) Access code: 133 930 3617	Ingria Jones Ingria.Jones@ecy.wa.gov (425) 466-6005	Draft June Meeting Summary Project Development Tracking Project Descriptions Draft policy chapter template Comments on WRE Plan Chapter 1-3

Introductions and Standing Business

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

- Introductions
- Review agenda
- Approve June meeting summary
- Updates
    - Streamflow restoration grants

Projects

12:45 p.m. | 1 hr 15 minutes | Chair, GeoEngineers, Facilitator & Committee |Questions and Discussion

- Objective: Determine committee support for including water offset and habitat projects in the plan and status update on projects still under discussion
    - Share Project Subgroup recommendations for water offset projects and ask for Committee support for including those projects in the plan
    - Status update on other water offset projects still in development
    - Share Project Subgroup recommendations for habitat projects and ask for Committee support for including those projects in the plan

Break

Adaptive Management

2:10 p.m. | 15 minutes | Facilitator & Committee |Questions and Discussion

- Objective: Identify path forward to write adaptive management chapter of the plan
    - Recap adaptive management discussions and current proposals
    - Proposed process for drafting adaptive management chapter

Policy Recommendations

2:25 p.m. | 20 minutes | Facilitator & Committee |Discussion

- Objective: Discuss path forward to write policy chapter of the plan
    - Recap of policy July 8 policy subgroup meeting
    - Discuss process for drafting the policy chapter and share policy chapter template

WRE Plan

2:45 p.m. | 25 minutes | Chair, Facilitator & Committee |Presentation, Questions and Discussion

- Objective: Share comments received and get Committee guidance on how to address comments
    - Revisit plan elements and status summary
    - Approval timeline and plan chapter review

Public Comment

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

Next Steps and Action Items

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

- Next WRIA 7 Project Subgroup meeting: Wednesday, August 26, WebEx
- Next WRIA 7 Committee meeting: Thursday, September 10, WebEx

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
June 11, 2020 | 12:30 p.m. - 3:30 p.m. WRIA 7 Committee Webpage

Location
Webex

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

Handouts
Draft April Meeting Summary
WRE Plan Approval Timeline
Water Right Acquisition Project – Lower Pilchuck Example
Water Offset Project Development Tracking
WDFW Water Offset from Habitat Projects letter

Attendance

Committee Representatives and Alternates *

Ingria Jones *(WA Dept. of Ecology)*
Stacy Vynne McKinstry *(alternate-WA Dept. of Ecology)*
Daryl Williams *(Tulalip Tribes)*
Matt Baerwalde *(Snoqualmie Indian Tribe)*
Denise Di Santo *(King County)*
Cynthia Krass *(Snoqualmie Valley WID)*
Brant Wood *(Snohomish PUD)*
Keith Binkley *(alternate - Snohomish PUD)*
Kirk Lakey *(WA Dept. of Fish & Wildlife)*
Lindsey Desmul *(alternate - WA Dept. of Fish & Wildlife)*
Emily Dick *(Washington Water Trust)*
Bobbi Lindemulder *(Snohomish Conservation District)*
Linda Lyshall *(alternate - Snohomish Conservation District)*
Dylan Sluder *(MBA of King and Snohomish Counties)*
Mike Wolanek *(City of Arlington)*
Michael Remington *(City of Duvall)*
Jim Miller *(City of Everett)*
Matthew Eyer *(City of Marysville)*
Jamie Burrell *(City of North Bend)*
Elissa Ostergaard *(Snoqualmie Watershed Forum ex-officio)*
Elizabeth Ablow *(City of Seattle ex-officio)*
Steve Nelson *(City of Snoqualmie)*
Terri Strandberg *(Snohomish County)*
Brooke Eidem *(alternate - City of Snohomish)*
Cory Zyla *(alternate - Snoqualmie Watershed Forum ex-officio)*
Rich Norris *(City of Gold Bar)*
Ann Bylin *(alternate - Snohomish County)*

Committee Representatives and Alternates in Not Attendance*

City of Lake Stevens
Snohomish Basin Salmon Recovery Forum (*ex-officio*)
City of Carnation
Town of Index
City of Monroe

Other Attendees

Susan O'Neil *(ESA) (facilitator)*
Angela Pietschmann *(Cascadia) (info manager)*
Joe Hovenkotter *(King County)*
Stephanie Potts *(WA Dept. of Ecology)*
John Covert *(WA Dept. of Ecology)*
Paulina Levy *(WA Dept. of Ecology)*
Kevin Lee (*WA Dept. of Fish & Wildlife*)
Bridget August (*GeoEngineers*)
Yorik Stevens-Wajda (*Snohomish County*)
Ann Harie (*Snoqualmie Indian Tribe*)

Introductions and standing business

Susan welcomed the group, began introductions, and reviewed the agenda. *No revisions to the agenda. The April meeting summary was approved without further changes.*

Ecology updates:

- **COVID-19**: At this time, Ecology does not anticipate any extension to WREC deadlines and have been instructed by program management to continue with meetings. Planning deadlines were set by the legislature and Ecology is not planning to put forward agency request legislation to request an extension. Chairs and program managers are tracking participation (please let Ingria know of any changes to capacity to participate). Snohomish Forum is unable to participate at this time.
- The **2020 Streamflow Restoration Grant** application period closed April 30, 2020. Ecology received 63 applications from across the state (six projects from WRIA 7), which are now under review. Ecology anticipates the final list of grant awards will be ready in September. Ingria emailed out a summary of applications received.
- **WRIA 1 Rule**: On May 27, 2020, Ecology adopted a rule amendment for chapter 173-501 WAC. The adopted rule was developed considering the feedback received on the preliminary and proposed drafts of the rule. Ecology's responses to comments received during the draft comment period are available in the Concise Explanatory Statement (CES). The CES, as well as other supporting documents, are also available on Ecology's website. If you have any questions please contact Kasey Cykler, Streamflow Restoration Rulemaking and Policy Lead, at Kasey.Cykler@ecy.wa.gov or (360) 255-4386, or Annie Sawabini, Rulemaking Lead, at Annie.Sawabini@ecy.wa.gov or (360) 407-6878.

Timeline for Plan Development & Approval

Susan recapped topics from the April 9th committee meeting and provided a big picture overview of the committee's progress to date. Ingria provided a target timeline for plan development and approval, based on target dates for draft plan, final plan, and accommodating committee member local review process:

- 08/14/20 – Ecology distributes draft plan for Committee review.
- 02/01/21 – Committee submits final approved plan to Ecology. Ecology will begin its review of the plan and NEB determination following submission of the plan by the committee.
- 06/30/21 –Ecology will complete its review and decision on whether or not to adopt the plan by the statutory deadline of June 30, 2021.

This timeline provides about four weeks for draft plan review and about 13 weeks for final plan review and approval by local decision makers (timeline does not provide time for revisions after the final plan is submitted to Ecology). Ecology's expectation is that Committee members and decision makers will thoroughly review and provide feedback on plan components as they are developed. All comments will be reviewed and addressed during Committee meetings.

Ecology assumes the draft plan distributed in August will have some gaps (e.g., projects chapter, NEB chapter, and policy chapter may still be under development). While entities review the draft plan, the Committee will work to finalize these components and discuss comments on the draft plan.

Resources:

- WRE Plan Approval Timeline
- WREC Member Approval Process Table
- Meeting slides (6-11)

Discussion:

Matt Baerwalde (Snoqualmie Indian Tribe) expressed concern with the proposed timeline, requesting that Ecology yield more time for committee review and approval. Matt noted the current timeline may not leave sufficient time for tribal council review of draft plan components, and noted that he requested Ecology ask the legislature for more time when COVID-19 hit.

- Daryl Williams (Tulalip Tribes) also expressed concern about the limited time after the comment deadline for the draft and release of the final plan for approval. If there are major concerns from individual entities, there may not be enough time to make appropriate changes.
    - Matt Baerwalde shares this concern.
    - Denise Di Santo (King County) shares this concern as not all entities are able to fully participate in the process due to COVID-19 impacts on staff (posing a risk that the plan will not be approved by the full committee).
- Emily Dick (Washington Water Trust) noted it is hard to tell where the committee will need more time and supports using adaptive management to push things out if needed.
- The committee will strive to meet proposed timeline while building consensus.
    - The timeline was developed based on the target dates for the draft plan and final plan. October 12, 2020 – January 18, 2021 are planned for local review processes.
    - Ecology is reviewing eight plans and wants to provide committees with assurance that their plans will be reviewed by the deadline (if received by February 1, 2021). This timeline does not preclude Ecology from reviewing plans received after February 1. Ecology will do everything we can to review locally approved plans that are received after February 1,but cannot guarantee they will complete their full review by June 30, 2021.

Water rights acquisitions

Ecology worked with Washington Water Trust (WWT) to finalize a list of 15 water rights to develop project profiles for, which can serve as project descriptions if the Committee chooses to include these projects in the Plan. Emily Dick (WWT) provided an overview of these projects and an example project profile for Lower Pilchuck 11. WWT will develop a final report by June 30, 2020 with the (1) 15 project profiles; (2) memo on methodology; and (3) an outreach toolkit to establish the appropriate and strategic entity to approach specific water right holders.

Ecology has capacity to pick up where the WWT work leaves off and continue preliminary investigation and possible outreach on a limited set of water rights to support their further development for inclusion in the plan.

The City of Arlington expressed interest in selling their airport well municipal water rights to support water offset for the Plan. These water rights could provide up to 320 acre-feet and 780 gallons per minute. Ecology has also been doing an initial review of commercial and industrial water rights in WRIA 7 to see if additional opportunities arise for our planning process. Ingria will provide an update on these at a future meeting.

Resources:

- Water right acquisition project – Lower Pilchuck example
- Meeting slides (12-25)

Discussion:

- Bobbi Lindemulder (Snohomish Conservation District) expressed concern with including water rights in the committee's plan without first reaching out to the landowners to gauge willingness and notify them that their rights will be included in the plan.
    - WWT's outreach toolkit will include direction and tools for conducting outreach but their contract and timeline do not allow for implementing outreach by the end of June.
    - If the committee selects a few rights to move forward, Ecology and committee members may be able to provide support.
- Cynthia Krass (Snoqualmie Valley WID) noted the level of uncertainty around water rights (e.g., history of beneficial use, landowner willingness to sell). In general, landowners are not interested in selling water rights. She would be uncomfortable counting on water rights in plan without some amount of certainty / cursory outreach to those landowners.
- Emily Dick (WWT) agrees that water rights acquisitions are more likely if conversations with landowners happen before the plan is released publicly.
- Cynthia suggested incorporating estimates of likelihood based on WWT's experience.
    - The committee and project subgroup can consider this. Ecology's NEB guidance includes suggestions for tiering the plan's project list. 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.
- Brant Wood (Snohomish PUD) asked whether the outreach toolkit will include the estimated value (in dollars) of the water right to facilitate conversations with landowners.
    - It can take a significant amount of time to evaluate and negotiate these prices; not able to include in toolkit.
    - Emily noted that offers for water rights often happen after conversations with a willing seller.

Non-acquisition water offset projects

GeoEngineers developed a three-phase workplan for developing water offset projects:

- Initial identification
- Prioritization and further analysis
- Development of project descriptions (1-2-page project description) for projects included in Plan (a separate template for habitat projects will be shared soon)

GeoEngineers has created a tool to track which projects are being developed and who is leading the project development. GeoEngineers will use the water offset project description template to share project information with committee and discuss with the project subgroup. The project subgroup will recommend projects for consideration by Committee for inclusion in the plan. Bridget August (GeoEngineers) and Ingria summarized the committee's non-acquisition water offset projects:

Project Type	Projects	Status / Updates
Water storage and retiming	SVWID Small-Scale Storage Study	The most promising constructed storage sites identified were in closed basins, but projects that were originally considered as "natural storage" are being examined for their ability to become controlled storage. The three sites identified all feed Cherry Creek, which is not closed year-round.
	SVWID Comprehensive Storage Study	Anchor QEA working this spring to develop a ranked list of potential sites; results coming by end of June. Anticipate holding a meeting to discuss results and see if any may be a good fit for including in the Plan.

Project Type	Projects	Status / Updates
	Snohomish CD Small Farm Water Storage Pilot	Snohomish CD received streamflow restoration funding to identify and implement two pilot water storage projects. They are still in the process of selecting sites. Snohomish CD can present to both the project subgroup and the committee once opportunities are identified.
	Ecology identified MAR sites	John Covert identified seven possible sites in WRIA 7 on public land. GeoEngineers reaching out to City of North Bend, WA State Parks, DNR and WDFW to gauge interest.
	Snoqualmie ASR Project	The City of Snoqualmie applied for streamflow restoration funding for an Aquifer Storage and Recovery project to take surface water and inject it into the aquifer for streamflow benefit and water supply for the City. They are interested in proposing this project for the WRIA 7 project list. Aspect Consulting is providing the technical services for this project and are working on filling out a project description for the project subgroup to discuss.
Stormwater	Stormwater projects - conceptual	The Conservation District is talking with the consultants about some highly conceptual ideas to see if there are opportunities to improve upland stormwater management to achieve streamflow and agriculture resilience benefits.
	Quilceda stormwater project (Enhancing Streamflow in the Allen/Quilceda Sub-Basin)	Snohomish CD has identified locations to retrofit existing stormwater ponds near Marysville to add infiltration and LID/paving. Also looking at rainwater capture and reuse for rural area just east of Marysville, infiltration retrofits for existing undersized stormwater ponds, and LID/paving retrofits along SR529 corridor. The CD applied for streamflow restoration funding for this project.
	Little Bear stormwater projects	Project is located in the WRIA 8 surface water boundary but provides groundwater benefits to WRIA 7. Project came from Little Bear Creek plan.
Modification of existing reservoir operations	Lake Shoecraft	Changing the outlet operations at the lake could provide water offset benefits and benefits to Tulalip Tribe's hatchery. Consultants have gathered some information from Tulalip Tribes about the project and are optimistic about the benefits of changing the outlet operations at the lake. Reaching out to the Hatchery manager and contact at Lake Shoecraft.
	Lake Stevens outlet modification	City of Lake Stevens is wrapping up a high-level alternatives analysis that shows promise for modified outlet control to modulate lake levels and increase summer lake level and outflows. Project would potentially help provide better management of lake levels to increase summer lake levels/outflows.
	Lake Margaret	SVWID looking into potential project to improve lake level operations at Lake Margaret to provide water offset benefit.
	Sultan Reservoir and/or Tolt Reservoir	Low priority (see April 9 meeting summary for details).

Project Type	Projects	Status / Updates
Water right source switches	City of Sultan seasonal source switch	City of Sultan currently has an intertie with Everett to use in summer for peak demand. Gauging Sultan's interest in purchasing Everett water in the summer, instead of using their Lake 16 water to provide a seasonal benefit to Cascade Creek.
	Discussion of drain tiles or remnant oxbow ponds	No projects identified to date.
Conservation & efficiency	No projects identified	At the April Project Subgroup meeting, John Covert shared considerations for conservation and efficiency projects, including challenges with counting these as water offset projects with certainty. Explained why acquisition of the "saved water" from efficiency upgrades is particularly challenging. There are currently no projects that fit this category within the inventory.
Streamflow augmentation	Streamflow augmentation using existing water rights	Working with the Snohomish PUD and City of Everett to (1) determine the location of existing transmission lines with respect to permit exempt well growth areas and priority streams; and (2) then identify potential parcels where an augmentation site could be constructed.
Other	Decommission groundwater wells	King County applied for streamflow restoration for a project to decommission groundwater wells. Anticipate about 17 properties in WRIA 7, but not yet identified. There may be potential for small water offset, but more discussion is needed.

Resources:

- Water offset project development tracking tool
- Template for project descriptions - Water Offset
- Meeting slides (26-46)

Discussion:

- Matt Baerwalde (Snoqualmie Indian Tribe) noted that for stormwater projects to count towards offset, the project needs convincing information about how they benefit streamflow.
    - Bridget August (GeoEngineers) explained that the technical consultants have reviewed the Little Bear stormwater projects in detail and modeling work was previously conducted.
    - Denise Di Santo supports looking at stormwater retrofit projects that contribute to benefits for streamflow. The project subgroup should review to ensure that these projects won't negatively impact water quality (i.e., by increasing temperatures / introducing other contaminants).
- Denise Di Santo (King County) noted that the County is looking into the Ecology-identified MAR site in King County (Three Forks Park) to determine whether there are development restrictions. Hydrologic modeling will have to show that these projects have connectivity / streamflow retiming potential.

WDFW water offset from habitat projects letter

Kirk Lakey (Washington Department of Fish & Wildlife – WDFW) provided an overview of the letter WDFW submitted to all committees regarding water offset from habitat projects. WDFW emphasizes support for inclusion of these projects in the plan to meet NEB but does not support accounting for

offset values. See letter linked below for additional details. It is up to the committee to decide how they want to move forward and consider the other members' voices in doing so.

Resources:

- WDFW water offset from habitat projects letter

Discussion:

- Bobbi Lindemulder (Snohomish Conservation District) asked whether the committee can use the methodology GeoEngineers developed to estimate water offset for habitat projects.
    - Ingria Jones (Ecology) noted the intent of the methodology GeoEngineers developed was to have a conservative way to identify water offset benefits from habitat projects.
    - Kirk Lakey explained that from WDFW's perspective, GeoEngineers' calculations are a fairly simplified approach to a complex issue. The estimates generated may not accurately reflect real life situations.
- Daryl Williams (Tulalip Tribes) noted that habitat projects that do not have long-term maintenance and funding can be somewhat effective in the early years after implementation but lose effectiveness over time. The same concern applies to stormwater projects where the amount of water seeping into groundwater reduces over time.
- Denise Di Santo (King County) emphasized that water is needed in stream during critical low flow periods. Timing is a key piece of whether these projects will be beneficial / provide offset.

Policy recommendations

The policy leads identified at the April 9 Committee meeting met in May to discuss their policy recommendations. Susan shared a template with the leads to help structure the proposals. Ecology is developing the structure for the chapter where each of the policy and adaptive management recommendations that the committee agrees on will be included.

At the November meeting, the Committee expressed an interest in addressing adaptive management in the Plan and the need for ongoing monitoring to ensure that projects are implemented. Both of the proposals below were shared across the eight WRE Committees and provide a potential way to coordinate a high-level adaptive management recommendation:

- WDFW has proposed an approach for tracking project monitoring. Tristan Weiss is part of the WDFW streamflow restoration team in Olympia and developed the proposal on project tracking that DFW shared across the Committees.
- Proposal to coordinate a high-level adaptive management recommendation across Committees (led by facilitation team).

Resources:

- Link to policy proposals on Box
- Link to adaptive management proposals on Box
- Meeting slides (52-65)

Discussion:

- Matt Baerwalde (Snoqualmie Indian Tribe) presented the following proposals:
    - Conservation policy statement
    - Increase water service connection and well decommissioning
    - Well log database changes
- Joe Hovenkotter (King County) presented a proposal to enable Ecology to fully and comprehensively administer state water laws.

- Bobbi Lindemulder presented a multi-WRIA proposal for outreach and education to permit-exempt well owners.
- Other proposals include:
    - Denise Di Santo – (Voluntary) metering of permit exempt wells. Work underway.
    - Jim Miller – Consider imported water from other subbasins. Sent to projects subgroup for consideration.
    - Mike Wolanek – Align permitting under a One Water program. Work underway.

There was limited time for Committee discussion of the proposals presented.

- Susan asked the committee how they would like to proceed with policy and adaptive management recommendations:

Approach	Red dots (do not support)	Green dots (support)
Consider and approve each proposal individually as they are ready	9	1
Bring forward a single package of policies at a later meeting	1	5
Send out a survey or other offline method	0	8
Combine all non-project recommendations as a draft chapter and ask for feedback	1	4
Other: Continue to check committee approval to "flag" trickier ones--treat these individually--combine easy ones into package	0	5

Public comment

There was no public comment.

Action Items for Committee Members

- Review Chapters 1-3 and provide feedback via comment tracker by July 3.
- Notify Ingria if you anticipate changes in your capacity to participate on committee, or your capacity to vet committee decisions with relevant colleagues at your entity.

Action Items for Technical Consultants and Ecology

- Bridget to reach out to Kirk Lakey about real estate contact at WDFW (MAR sites).
- GeoEngineers team to share more information on Little Bear stormwater projects and continue to develop additional details and water offset estimates for non-acquisition water offset projects.
- WWT to finalize 15 water right project profiles, report, and outreach plan.

Next Steps

- Next WRIA 7 **Committee** meeting: Thursday, July 9 (webex)
- Next **Project Subgroup** meeting: Wednesday, June 24 (2:00PM – 4:00PM)

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 projects and gathered information on several additional projects. Preliminary project descriptions include project status, location, nearest affected water body, mileage of affected river or stream reaches, potential benefits, etc. 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 has capacity to develop up to 15 habitat project descriptions for WRIA 7, drawing from existing information. Committee members and project sponsors are strongly encouraged to assist in development of habitat project descriptions where possible, and in reviewing project descriptions developed by GeoEngineers for accuracy and up-to-date information.

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 will be conducted to fill critical gaps in preliminary water offset project descriptions.

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 2 - Project Subgroup recommends 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 2 – Project Subgroup recommends inclusion in the Plan	GeoEngineers, **Tulalip Tribes and DFW**	link
Quilceda-Allen	Lochaven Source Switch	Water right acquisition	29-42 AFY	Phase 2 - Project Subgroup recommends inclusion in the Plan	Ecology and **PUD**	link
Pilchuck	Lower Pilchuck 1	Water Right Acquisition	2.8 AFY	Phase 2 - Project Subgroup recommends inclusion in the Plan	**WWT**	link
Pilchuck	Lower Pilchuck 11	Water Right Acquisition	2.09 AFY	Phase 2 - Project Subgroup recommends inclusion in the Plan	**WWT**	link
Snoqualmie South	Raging River 1	Water right acquisition	126 AFY	Phase 2 - Project Subgroup recommends inclusion in the Plan	**WWT**	link
Patterson	Patterson 1	Water right acquisition	27.9 AFY	Phase 2 - Project Subgroup recommends inclusion in the Plan	**WWT**	link
Patterson	Patterson 4	Water right acquisition	71.6 AFY	Phase 2 - Project Subgroup recommends inclusion in the Plan	**WWT**	link
Quilceda-Allen	Arlington water right acquisition	Water right acquisition	TBD	Phase 2– Waiting for groundwater boundary analysis	Ecology and **Arlington**	
Snoqualmie South	Three Forks Park MAR	Water storage and retiming – MAR	~307 AFY	Phase 2 Project Subgroup discussed; remaining questions about offset estimate	GeoEngineers	link
Upper Snoqualmie	Middle Fork MAR	Water storage and retiming – MAR	~198 AFY	Phase 2 Project Subgroup discussed; remaining questions about offset estimate	GeoEngineers	link
Upper Snoqualmie	NF 5700 MAR	Water storage and retiming – MAR	~307 AFY	Phase 2 Project Subgroup discussed; remaining questions about offset estimate	GeoEngineers	link
Upper Snoqualmie	North Bend MAR	Water storage and retiming – MAR	~ 198 AFY	Phase 2 Project Subgroup discussed; remaining questions about offset estimate	GeoEngineers	link
Snoqualmie North	Stillwater MAR	Water storage and retiming – MAR	~198 AFY	Phase 2 Project Subgroup discussed; remaining questions about offset estimate	GeoEngineers	link
Snoqualmie North[1]	Little Bear Stormwater	Stormwater	~27 AFY	Phase 2 - Project Subgroup discussed; remaining questions about offset estimate	**Snohomish County** and GeoEngineers	link

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

Subbasin	Project Name	Project Type	Water Offset Estimate (AF/YR)	Status[1]	Project Development lead	Box Link
Quilceda-Allen	Quilceda stormwater project*	Stormwater	2.1 - 21 AFY/pond 0.6-7 AFY/depave	Phase 2 - Project Subgroup discussed; remaining questions about offset estimate	**Snohomish Conservation District**	link
Various	May Creek-Startup-Gold Bar Source Switch	Water right acquisition	~410 AFY	Phase 2 - Project Subgroup discussed; concerns raised	GeoEngineers	link
Skykomish Mainstem	Sultan Source Switch	Water right acquisition	~590 AFY	Phase 2 – Project Subgroup discussions underway	GeoEngineers	link
Unkown	Decommission Groundwater Wells and Related Infrastructure*	PE well decommissioning	TBD	Phase 1 – Project Subgroup not yet discussed	**King County**	
Various	SVWID Comprehensive Storage Study	Storage – various types	TBD	Phase 1 – Project Subgroup discussions underway	**Snoqualmie Valley WID**	
Woods/Pilchuck/Lower-Mid Skykomish	Snohomish CD Small Farm Water Storage Pilot	Storage	TBD	Phase 1 – Project Subgroup not yet discussed; specific sites not yet identified	**Snohomish CD**	
Various	SVWID Small-Scale Storage Study	Storage –various types	TBD	Phase 1– Project Subgroup discussed; concerns raised	**Snoqualmie Valley WID**	
Pilchuck-Woods	Stormwater projects near ag. land in Pilchuck/Woods Creek/French Creek area	Stormwater	TBD	Phase 1– Project Subgroup not yet discussed; specific sites not yet identified	GeoEngineers and **Snohomish CD**	
Sultan	Spada Reservoir Release	Reservoir Release	TBD	Phase 0 – Committee determined this project was low priority.	N/A	
Snoqualmie South	Tolt Reservoir Release	Reservoir Release	TBD	Phase 0 –Committee determined this project was low priority.	N/A	
Total Offset Potential			**~3,060 AFY**			
Offset Potential (Projects Recommended by Project Subgroup)			**~822 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
Quilceda-Allen	Coho Creek Relocation and Enhancement Project(2018-0400) = (07-USR-064)	Riparian	Restore fish habitat along 650 feet of Coho Creek, a type 3 tributary to Quilceda Creek. Tulalip Tribes propose to relocate and restore stream habitat conditions along approximately 650 feet of Coho Creek (WRIA #07- 0048), a type 3 tributary to Quilceda Creek, on the Tulalip Reservation.	Project Subgroup recommends inclusion in the Plan	GeoEngineers	
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.	Project Subgroup recommends inclusion in the Plan	GeoEngineers	
Raging	Lower Raging River Floodplain Reconnection (07-MPR-196)	Floodplain	Remove up to 1500 feet of levee and revetment along the lower Raging River.	Project Subgroup recommends inclusion in the Plan	GeoEngineers	
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.	Project Subgroup recommends inclusion in the Plan	GeoEngineers	
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.	Project Subgroup recommends inclusion in the Plan	GeoEngineers	

Subbasin	Project Name	Project Type	Brief Description	Status	Project Development Lead	Box 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.	Project Subgroup recommends inclusion in the Plan	GeoEngineers	
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.	Project Subgroup recommends inclusion in the Plan.	**Snohomish CD**	
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.	Project Subgroup recommends 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.	Project Subgroup recommends 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.	Project Subgroup recommends inclusion in the Plan.	**Snohomish PUD**	

Subbasin	Project Name	Project Type	Brief Description	Status	Project Development Lead	Box Link
Upper Skykomish	Lower 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.	Project Subgroup recommends inclusion in the Plan.	**King County**	

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.

Preliminary Project Description
Lake Stevens Outlet Modification

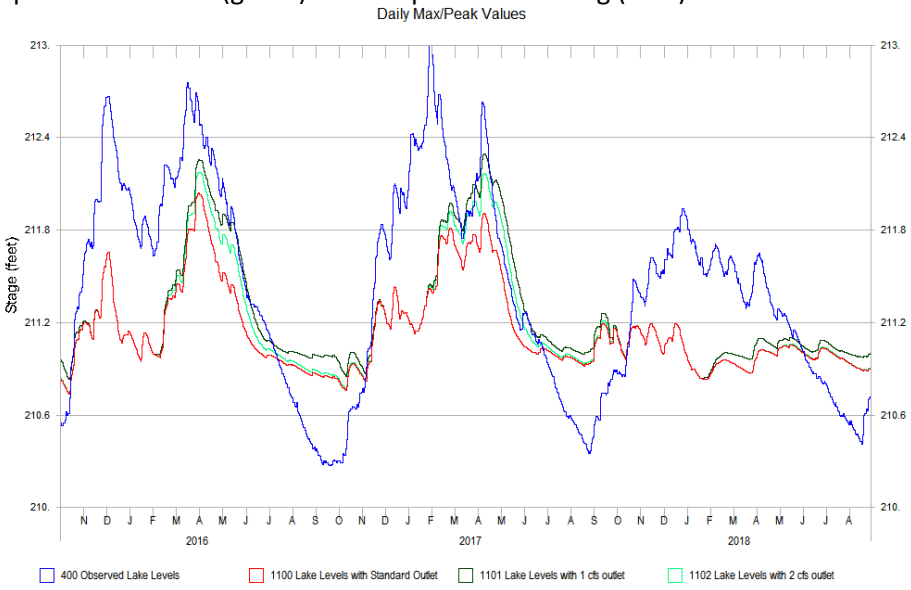
July 9, 2020

Project Status:
This project is in early analysis stage. The City of Lake Stevens conducted a preliminary hydrologic/hydraulic modeling analysis to evaluate potential benefits of outlet modifications.

1. Project Name
Lake Stevens Outlet Structure & Management Revision

2. Narrative Description
A weir in the Lake Stevens outlet channel serves to manage the elevation in Lake Stevens to maximize flood storage availability in the winter and maintain summer flows in the channel while keeping lake elevations high for summer recreation. A review of lake management data and historic lake elevations indicate that the weir may not be functioning as intended and modifications should be made to improve functionality and summer base flows for fish.

3. Quantitative or qualitative assessment of how the project will function, including anticipated offset benefits, if applicable. Show how offset volume(s) were estimated.
Based on preliminary modeling, modification of the weir structure and operations could increase summer (July-October) lake levels by as much about half a foot. This would provide approximately 500 acre-feet of additional summer storage and increased streamflow releases for the 1,000-acre lake. Proposed lake levels (green) are compared to existing (blue) for 2016-2018 in the plot below.



4. Conceptual-level map and drawings of the project and location.


Lake Steven Outlet Channel
Catherine Creek
Approximate location of weir


SR 92 Granite Falls Hwy
Vernon Rd
Lake Stevens Rd
S Davies Rd
Machias
20th St SE
Sunnyside Blvd
Lundeen Pkwy
SR 9
N Machias Rd
Lake Stevens
Watershed
Public Access Point
Rivers & Streams
Watershed Boundary
0 1,000 2,000 4,000
Feet
Snohomish County
PUBLIC WORKS

5. Description of the anticipated spatial distribution of likely benefits.

Additional summer flow in Lake Stevens outlet channel and Catherine Creek and potential winter flood reduction around Lake Stevens.

6. Performance goals and measures.

Lake level, downstream stream flow.

7. Descriptions of the species, life stages and specific ecosystem structure, composition, or function addressed.

The Lake Stevens outlet stream is listed as being used by coho salmon, cutthroat trout, steelhead, and bull trout by various sources (WDFW 2019, USFWS 2019, SalmonScape 2019). Kokanee are also present in the lake and inflowing tributaries and may use the outlet channel as well. Of these salmonid fish species, coho salmon and cutthroat trout are expected to make the most and the most frequent use of the ditch-like outlet stream channel along North Lakeshore Drive and Hartford Drive extending downstream from the lake. Steelhead and bull trout use may occasionally occur, but their use is anticipated to be infrequent.

8. Identification of anticipated support and barriers to completion.

The City of Lake Stevens is the project proponent and sponsor. Additional support is anticipated from lakeside residents, Sound Salmon Solutions, Snohomish County Conservation District and the City's legislative delegation. We also anticipate support from several regulatory agencies including WDFW and Ecology. Regulatory barriers to completion could be the United States Army Corps of Engineers and Department of Archaeology and Historic Preservation (DAHP).

9. Potential budget and O&M costs.

Preliminary cost estimate: $1.4 million

10. Anticipated durability and resiliency.

The proposed outlet control facility will likely be a reinforced concrete weir wall system with corrosion resistant adjustable and possibly automated weir(s) and gate(s). The facility will be designed for decades of use with adjustability for climate change.

11. Project sponsor(s) (if identified) and readiness to proceed/implement.

City of Lake Stevens

12. Documentation of sources, methods, and assumptions.

Refer to:

Davido Consulting Group, Inc., 2020. Lake Stevens Outlet Study Technical Memorandum. Seattle, WA.

Preliminary Project Description
Lake Shoecraft Outlet Modification

July 7, 2020

Project Status:
This project is still in the concept stage. The Tulalip Tribes, who operate the downstream hatchery, and Washington Department of Fish & Wildlife (WDFW), who operates the lake outlet, are strong proponents of the project.

1. Project Name
Lake Shoecraft Outlet Modification

2. Narrative Description
Lake Shoecraft is a 133-acre lake located in the Tulalip Plateau west of Arlington. The lake outlet is currently controlled by a weir with removable stop logs (8-inch height per log). Boards are removed in the winter to pass higher flows and prevent flooding and installed in the summer to increase storage and maintain lake levels. An adjustable slide-gate weir has been proposed to replace the stop logs to add more flexibility in outlet control. This would benefit the downstream Bernie Kai-Kai Gobin Hatchery by allowing higher releases to be targeted to align with hatchery needs, which vary from year to year. Spring and summer releases could be more tightly controlled to maintain higher lake levels and allow more consistent streamflow releases through the summer.

The hatchery has not actively managed the lake level control structure for purposes of maximizing water supply. Changing the structure to create a finer level of control over the lake level presents opportunities for the hatchery to increase management of lake levels to improve water supply – effectively treating Lake Shoecraft as a reservoir. Exploring the hydraulic connection between Lakes Goodwin and Shoecraft will be necessary to understand if the lake outlet control is the hydraulic control for both lakes. If that is the case, the storage in Lake Goodwin could be managed as well.

The Tribes, WDFW and the Lake Shoecraft Association have a MOA for lake level control at Lake Shoecraft. The origination of the MOA was to allow the Tribes to protect the water supply on the West Fork of Tulalip Creek from being altered without warning by the LHSA. Communication with the Association is limited to requests for adding or subtracting a stop board in the lake level control structure a few times per year. Due diligence is needed to understand LSHA criteria for making requests and determining the acceptable range of lake elevations.

3. Quantitative or qualitative assessment of how the project will function, including anticipated offset benefits, if applicable. Show how offset volume(s) were estimated.
There has been no analysis conducted yet for this project. Very roughly, the volume of water stored behind an 8-inch stop board is 28.6 million gallons (88 acre-feet) (total supply of water for 3 days running hatchery at 7,000 gpm). By changing the style of weir to a sliding gate that could be raised or lowered in smaller increments, the Hatchery could have greater control over the amount of water stored and released.

Actively managing the lake level, in coordination with the Lake Shoecraft Homeowners' Association (LSHA), could provide a wider range of flow control of West Fork Tulalip Creek to the Tribes' hatchery. As the project develops, Tulalip envisions being able to manage lake elevation within an acceptable range throughout the year to maximize downstream benefits at the hatchery.

A preliminary study for a similar outlet modification on Lake Stevens found that an adjustable outlet could modulate lake levels throughout the year and increase summer levels by as much as half a foot compared to an existing stop log weir. If a similar benefit could be achieved for Lake Shoecraft, that would provide a 62.5 acre-foot increase in summer storage. Site specific investigations are needed to determine more accurate estimates. Additional study could also determine if water temperature benefits could be realized by drawing water from a lower elevation in the lake, although it is assumed the lake stratifies at some point in the summer.

4. Conceptual-level map and drawings of the project and location.

Lake Shoecraft is situated north of the Tulalip Indian Reservation. It is hydraulically connected to Lake Goodwin and both lakes flow into West Fork Tulalip Creek. The lake outlet is located near the southwest corner of the lake. The Tulalip hatchery is south of Lake Shoecraft on Tulalip Creek. Vicinity maps are provided at the end of this document.

5. Description of the anticipated spatial distribution of likely benefits.

The project is anticipated to increase late spring flow in West Fork Tulalip Creek and provide ability to manage streamflows to support the Tulalip salmon hatchery.

6. Performance goals and measures.

Lake level, weir gate setting, lake discharge, hatchery flows.

Snohomish County has collected continuous lake level data since 2016. There is a staff gauge at the lake outlet control, and Tulalip pays for a stream gauge on the West Fork Tulalip Creek.

7. Descriptions of the species, life stages and specific ecosystem structure, composition, or function addressed.

The Tulalip Tribes raise summer/fall Chinook, coho, and chum at the hatchery. Adult salmon return to the hatchery facilitie,s and each species is reared from egg stage to the appropriate life stage for release. Chinook are reared from September to June, coho for approximately 18 months from October over a year to the following May/June, and chum are reared from November to April or May.

The hatchery was originally designed with a water reuse system due to anticipated water shortages due to environmental limitations. As hatchery marking requirements increased, the Tribes' have been holding fish for longer, juggling space and increasing water reuse with limited ability to purify water prior to passing it over fish a second time. Additionally, climatic shifts in precipitation duration, timing and intensity have altered the availability of water during the rearing cycle. Dry late winters or early springs lead to critical water shortages and water quality issues at the time when the highest biomass is held at the hatchery.

8. Identification of anticipated support and barriers to completion.

The Tulalip Tribes and WDFW are strong supporters of the project. WDFW owns the outlet structure and access to the outlet structure; Tulalip Tribes manages the downstream hatchery. The current weir is managed in cooperation between WDFW, citizen representatives, and Tulalip Tribes. The lake is surrounded by residential land use, so buy-in from lakeside homeowners and citizens currently

cooperating on weir management will also be important. Analysis will be needed to demonstrate ability to manage year-round lake levels without increasing winter flood risk. The lake levels in Lake Shoecraft are not adjudicated and there is no reservoir permit or accompanying beneficial use permit for use of water in the lake that would be potential barriers.

9. Potential budget and O&M costs.

WDFW is responsible for maintenance of the weir. Additional O&M regarding lake level monitoring and release schedules are to be determined.

10. Anticipated durability and resiliency.

To be determined. The current weir will need dam boards replaced in the next year due to deterioration that allows leakage. A stainless steel slide-gate weir would likely be significantly more durable than wood stop logs, though annual operation costs for an adaptively managed outlet may be higher. Replacing with a new outlet would provide greater control over lake levels that would create benefits to the Tribes' hatchery program as well as to LHSA members.

11. Project sponsor(s) (if identified) and readiness to proceed/implement.

Tulalip Tribes and WDFW are potential project sponsors. Additional analysis is needed on project feasibility.

12. Documentation of sources, methods, and assumptions.

Snohomish County. https://snohomishcountywa.gov/5391/Shoecraft
Snohomish County, 2020. Lake Shoecraft 2020 Health Report.
https://snohomishcountywa.gov/DocumentCenter/View/63184/Shoecraft_2020?bidId=

Lake Shoecraft vicinity. Blue triangle denotes outlet location.

Hatchery location, south-southeast of Lake Shoecraft

WRIA 7 – DRAFT Project Description
Lochaven Source Switch

July 21, 2020

Project Name
Lochaven Source Switch

WRIA 7 WRE Subbasin
Pilchuck

Water Offset
~29 to 42 acre-feet per year (AF/yr)

Project Status:
This project is in the conceptual development stage. The WRIA 7 Watershed Restoration and Enhancement Committee (WREC) is in the process of defining the components that would be required to facilitate a source switch for the community of Lochaven Estates, as well as degree of interest from required entities.

Narrative Description
The community of Lochaven Estates (also referred to as Lochsloy) is located approximately two miles northeast of the City of Lake Stevens, Washington. The 83-home community is situated between State Route 92 (Granite Falls Highway) and the Pilchuck River. The Washington State Department of Health (DOH) indicates that the Lochaven Water System serves a residential population of 225 people with 83 calculated connections (DOH 2020). The community's water source is a shallow (23 feet deep) dug groundwater production well installed in 1968 with a capacity of 200 gallons per minute (gpm) (DOH 2020). The well is located in the southwest quarter of the southwest quarter of Section 27, Township 30 North, Range 6 East in the WRIA 7 delineated Pilchuck subbasin.

The completion depth of the Lochaven Water System groundwater well suggests hydraulic connection with the Pilchuck River is possible. The project concept described herein generally involves retirement of the water right associated with the Lochaven Estates community as a basis for increasing flows within the Pilchuck River and downstream areas. Water supply for this community would be transitioned to the Snohomish PUD system. The Snohomish PUD sources its water from the City of Everett system. The City of Everett primarily sources its water from Spada Lake. Existing Snohomish PUD transmission lines border the community to the west and north.

Quantitative or qualitative assessment of how the project will function, including anticipated offset benefits, if applicable. Show how offset volume(s) were estimated.
The Lochaven Water System's water right consists of the following:

Groundwater Certificate G1-*09986CWRIS – Issued to Evergreen Group No. 3 on August 5, 1971. This certificate specifies an instantaneous quantity (Qi) of 100 gpm and an annual quantity (Qa) of 42 acre-feet per year (AF/yr).

According to the Lochaven Water System Water Use Efficiency Reports, the water system's total annual water use during the period from 2010 to 2019 averaged 9,562,481 gallons per year (29 AF/yr) (DOH 2020).

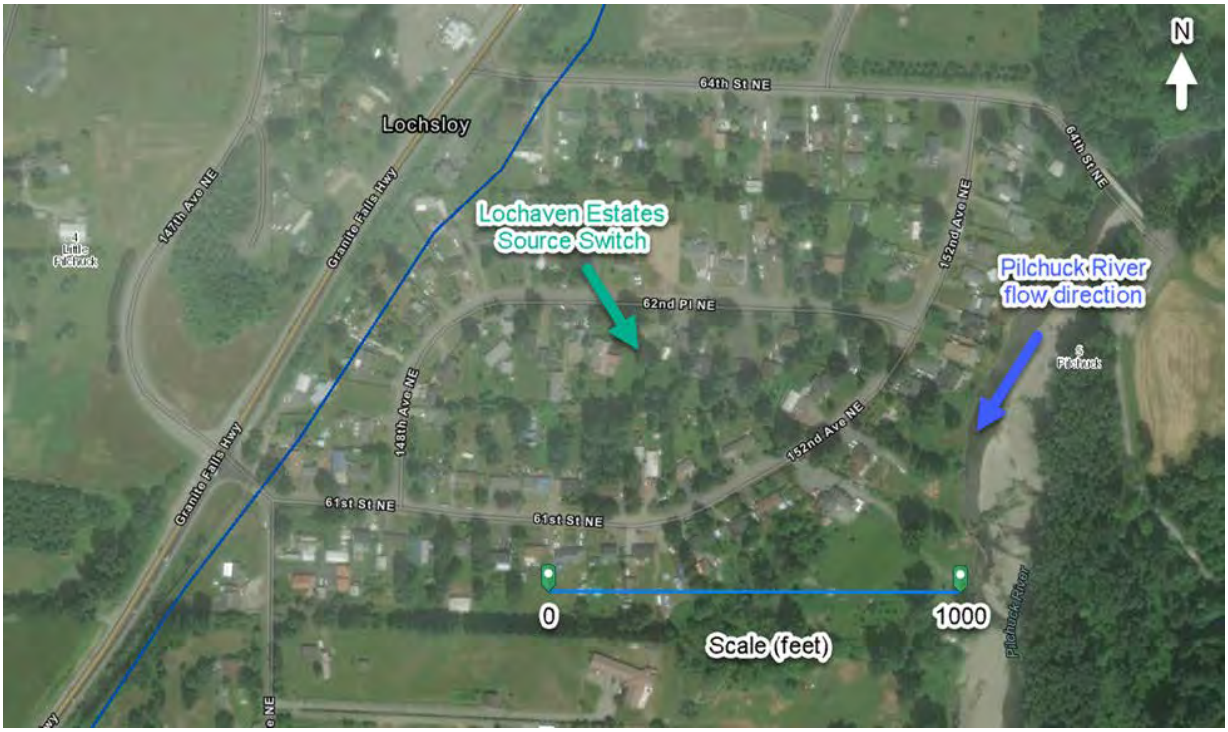
This project is centered around the cessation of withdrawal from an aquifer in hydraulic connection with the Pilchuck River and a commensurate increase in water obtained from the Snohomish PUD. Based on historic water use and full cessation of the Lochaven Estates water right, we estimate that the project offset to the Pilchuck River would be on the order of 29 to 42 AF/yr.

This estimate assumes that groundwater production from the water system is terminated as a result of this project. The estimate also assumes 100 percent streamflow depletion (that is, the amount of water removed from the Skykomish River as a result of pumping is equivalent to the pumping volume). This estimate is also based on the full amount listed on the water right certificates and would need to be evaluated if this project moves forward.

The reduction in groundwater withdrawal from the water system would presumably require the City of Everett to increase their diversion from Spada Lake to supply this community. It is unclear to what extent this potential increase in diversion from Spada Lake would reduce discharge from Spada Lake to the Sultan River. Everett has inchoate rights that can satisfy this projected volume.

Conceptual-level map and drawings of the project and location.

The site location is shown below.



Description of the anticipated spatial distribution of likely benefits.

The project is expected to provide streamflow benefits in the Pilchuck River and downstream areas.

Performance goals and measures.

The performance goals are to increase streamflow within the Pilchuck River by terminating the pumping of near-river groundwater for water supply. Performance can be directly measured by the quantity of water obtained by the water system from the Snohomish PUD and the reduction in groundwater pumping by the Lochaven Water System.

Descriptions of the species, life stages and specific ecosystem structure, composition, or function addressed.

The Pilchuck subbasin is inhabited by Chinook, Sockeye, Coho, Chum, Pink, Steelhead, Bull Trout, coastal Cutthroat Trout and rainbow trout (WDFW 2020a and 2020b). Chinook, Steelhead and Bull Trout are priority species, protected by the U.S. Endangered Species Act.

Identification of anticipated support and barriers to completion.

This project is believed to be in alignment with the goals of the Streamflow Restoration Act. Source switch projects are one of the identified project types that could address the new consumptive water use and achievement of Net Ecological Benefit (NEB).

Barriers to completion include the following:

- Identification of a project sponsor.
- Potential reluctance from Lochaven Water System leadership to release their water right and/or control of their water supply.
- Potential reluctance from Lochaven Estates residents to a possible increase in water rates.

Potential budget and O&M costs.

To be determined.

Anticipated durability and resiliency.

The project has identified a viable, long-term water source for the Lochaven Estates community. As such, the project is expected to be durable.

Project sponsor(s) (if identified) and readiness to proceed/implement.

A project sponsor has not yet been identified.

Documentation of sources, methods, and assumptions.

Geoengineers, Inc. (GeoEngineers). 2020. WRIA 7 Consumptive Use Estimates – Final Draft. Technical memorandum prepared for Washington State Department of Ecology. January 2020.

Washington State Department of Fish and Wildlife (WDFW). 2020a. Salmonscape Mapping of Fish Distribution. http://apps.wdfw.wa.gov/salmonscape/

WDFW. 2020b. Statewide Washington Integrated Fish Distribution (SWIFD). http://geo.wa.gov/datasets/4ed1382bad264555b018cc8c934f1c01_0

Washington State Department of Health. 2020. Division of Environmental Health Office of Drinking Water, Sentry Internet Home Page. https://fortress.wa.gov/doh/eh/portal/odw/si/Intro.aspx

WRIA 7 Project Opportunity Profile – Lower Pilchuck 1

Project Summary

FLOW BENEFIT: Additional .07 cfs in miles 23 Pilchuck River, 13 miles Snohomish River[6]

PRIORITY SUBBASIN: Pilchuck

ESTIMATED OFFSET: 2.8 AFY consumptive[7]

PRIORITY DATE(S): 11/14/1991

INSTREAM FLOW RULE (1979): There is an instream flow established in the Pilchuck River[8]

ESA LISTED FISH: Spring, Summer and Fall Chinook (threatened), Winter and Summer Steelhead (threatened), Bull Trout (threatened), Coho (species of concern)

OUTREACH STATUS: Interested

Project Description

The Lower Pilchuck 1 water right was included in the WRIA 7 water rights analysis by Ecology request. The water right has been temporarily donated and held in the Trust Water Rights Program since 2012. The water right purpose of use is domestic group supply and the place of use is located south of the City of Granite Falls. The users served by the water right in trust, now receive water from a larger purveyor under a different water right. Washington Water Trust has had initial phone conversations with the water right holder who has expressed interest in selling if offered fair market value and transaction costs were covered. The current trust water donation expires in 2023. There may be an opportunity for acquisition, yet in prioritizing projects and transaction development costs, it is important to note the relative small consumptive use quantity of the water right as well as the seniority.

Watershed

The place of use for this water right is located in the Pilchuck River sub-basin at approximately river mile 23, near the border of Woods Creek sub-basin. The Pilchuck River has an instream flow in this

[6] Dependent on hydraulic continuity
[7] Estimate based on water right quantities and WREC domestic use protocol as explained further below
[8] WAC 173-507

downstream reach, and low flow has been cited as a limiting factor in the Pilchuck sub-basin by several local salmon recovery efforts and by WREC committee members.

Land Use & Ownership

According to the Snohomish County Assessor, the current land uses within the place of use are listed as Single Family Residence and Vacant, and the land is zoned as Rural Residential-5 (1 DU/5 Acres). The trust water donation application indicates that 9 homes and 32 individuals were previously served by this water right. The land within Lower Pilchuck 1 is a domestic water right and significant irrigation would not be anticipated. For that reason, irrigation delineations have not been included in this project profile. In addition, the water right has been in the Trust Water Rights Program since 2012 and any identified irrigation in the place of use since that date is unrelated to this water right.

Water Right

Table 5: Current Water Rights

Document Type	Qa	Qi	Priority Date	Purpose of Use	WR Acres	Source
Trust Water Temporary Donation	5.4 afy	33 gpm	11/14/1991	Multiple Domestic		Groundwater

These quantities only reflect what is shown on the water right document, and do not represent any beneficial use assessment by Ecology.

Water Right History:

A water right application was submitted to Ecology in 1991 to request the use of 33 gpm, between two wells, for 10 domestic connections. Ecology issued a ROE in 1994 clarifying that only one well was necessary to serve this water right and a maximum of 9 domestic connections could be served. The ROE also authorized an annual quantity of 5.4 acre-feet in addition to an instantaneous quantity of 33 gpm. A permit was issued in 1994 with the ROE quantities listed. A Proof of Appropriation was completed in 1995 and the certificate was issued in the same year. The domestic water needs covered under this water right were transferred to a larger water purveyor in October 2011. The larger purveyor's water rights and water source were sufficient to cover these additional domestic uses. The water right holder donated this water right to the Trust Water Rights Program in October 2012.

Well Information:

Using the well tag provided in the Trust Water Donation Application, and Ecology's well database, the well log for the source of this water right was accessible. The well was drilled in 2003 to a depth of 24.6' with a diameter of 36" and static level of 19.3'.

Metering Records:

Metering records were not available in the Ecology Water Resources Explorer database or from Ecology. In the Temporary Donation Application, the applicant did include documentation of water use of as much as 3.78 afy in 2009.

Conclusion

This project was identified by Ecology as a potential acquisition opportunity. Its status as a temporary donation in the Trust Water Rights Program may signal potential willingness to sell this water right which has been confirmed with initial conversations with the water right holder.. Ecology has reviewed and quantified the water right through a ROE and some documentation provided by the donation applicant suggest uses of up to 3.78 afy. Relinquishment may be a concern based on documentation attached to the Trust Water donation application. It is unclear if this water right would qualify as a municipal water right pursuant to RCW 90.03.015(4)(a) but it appears to be put to continuous beneficial use. If this was deemed a municipal water right, the WREC could determine to use the perfected quantity (based on records, 3.78 afy), consumptive quantity (assumed 2.8 afy) or water right quantity (5.4 afy) for an offset. The water right had a development schedule stretching from 1994 until May 2004, which may account for some low uses in early years. It would be challenging to use this water right as a consumptive use offset since it is junior to the instream flow established in the Pilchuck River.

Irrigation delineations were not conducted as a part of this project profile due to the water right purpose (domestic) and status (temporary donation). WWT utilized the annual quantity listed on the water right and WREC-established consumptive use protocols to estimate the potential consumptive use quantity that may be available to serve as an offset. WREC domestic consumptive use estimates assume that each 60 gpd/per person is used indoors. The trust water donation application states that 32 people utilized the water right. Applying the WREC assumption results in an assumed 2.15 afy for indoor use (60 gpd x 32 people= 1,920 gpd or 2.15 afy). The remainder of the water right annual quantity is assumed to be for outdoor watering (5.4-2.15= 3.25 afy outdoor use). Consumptive use rates of 10% indoor use and 80% outdoor use are applied to the respective indoor and outdoor quantities, and a total consumptive use estimate totals 2.8 afy.

- Based on the water right document which authorized 5.4 afy for domestic supply and applying assumptions used in the WREC domestic consumptive use estimates[9] for 32 individuals, 2.8 afy consumptive use is the estimated quantity available for acquisition.[10]

The Lower Pilchuck 1 water right has a priority date of 11/14/1991, which is junior to the establishment of the Snohomish Basin Instream Resources Protection Program (Instream Flow Rule) in 1979. This water right does not have instream flow provisions included in the ROE.

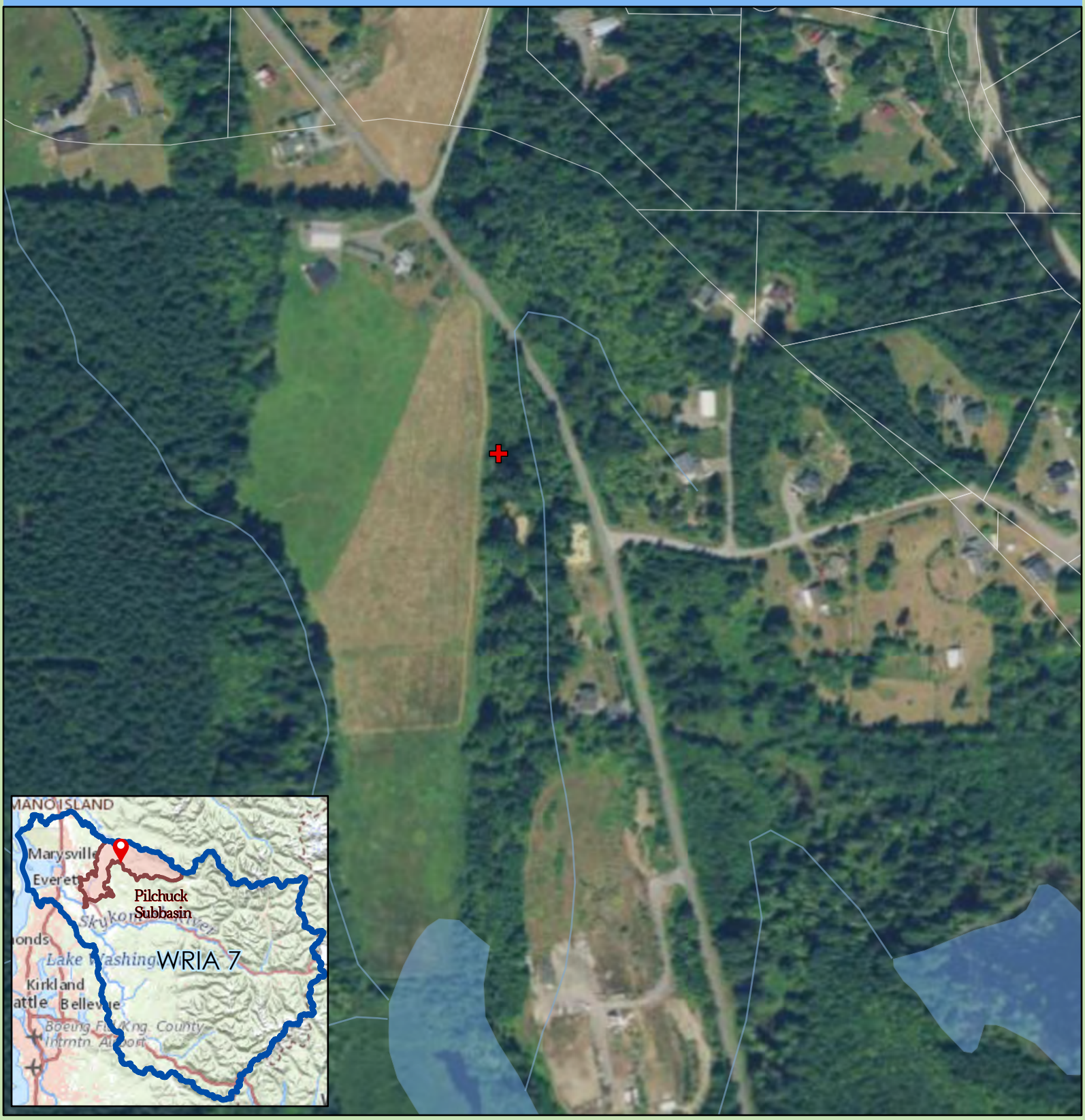
[9] Estimate based on water right quantities and WREC domestic use protocol as explained in "Conclusions"

[10] This is only an estimate of consumptive use quantity. An extent and validity determination by Ecology would be required to determine the actual quantity available for acquisition.

WASHINGTON WATER TRUST

WRIA 7 WATER RIGHTS ASSESSMENT

Lower Pilchuck 1



LEGEND

Point of Diversion

Landowner Parcels

0 0.05 0.1 0.2 Miles

N

Data Sources: NAIP Aerial Imagery, USDA-FSA Aerial Photography Field Office, 2019. Water Rights Data, Geographic Water Information System (GWIS), Department of Ecology, 2020.

WRIA 7 Project Opportunity Profile – Lower Pilchuck 11

Project Summary

FLOW BENEFIT: Additional 0.13 cfs in 5.5 miles of Pilchuck River tributaries (Flowing Lake, Panther Creek, Dubuque Creek), 6.5 miles of Pilchuck River, 13 miles Snohomish River

PRIORITY SUBBASIN: Pilchuck

ESTIMATED OFFSET: 2.09 AFY consumptive[16]

PRIORITY DATE(S): 07/23/1947

INSTREAM FLOW RULE (1979): There is an instream flow established in the Pilchuck River[17]

ESA LISTED FISH: Spring, Summer and Fall Chinook (threatened), Winter and Summer Steelhead (threatened), Bull Trout (threatened), Coho (species of concern)

OUTREACH STATUS: None

Project Description

The Lower Pilchuck 11 water right was included in the WRIA 7 water rights analysis by Ecology request. The land, and underlying the water right, was previously used for a golf course, closed in 2013 according to online news sources. The property is located northeast of the City of Snohomish. The parcels that comprise the property have been under the same family ownership since 1946. Since the golf course closed, Ecology has received metering records that indicate water use on the property has continued although the purpose is unknown. The property change of use may provide an opportunity for water rights acquisition. The water right holder has had a history of litigation with Washington State surrounding this water right and may be reluctant to engage in a transaction with the state. To our knowledge, there has been no outreach to the water right holder by any entity, at this time.

Watershed

[16]Estimate is based on 2 acres authorized on water right documents. Delineations may not reflect actual management practices of watering only tees and greens on the golf course.

[17] WAC 173-507

Flowing Lake is a part of the Pilchuck River sub-basin. Flowing Lake drains into Panther Creek which flows into Dubuque Creek, which joins the Pilchuck River at RM 6.5. The Pilchuck River has an instream flow established in this downstream reach and low flow is cited as a limiting factor in the Pilchuck sub-basin by several local salmon recovery efforts and by WREC committee members.

Land Use & Ownership

According to Snohomish County Assessor, the current land use is listed as Open Space General and is zoned as Rural 5-acre. The same family has owned the land appurtenant to Lower Pilchuck 11 since the water right certificate was issued. The landowner and water right holder manage 2 adjacent parcels totaling 79.03 acres previously a golf course. A review to the WSDA 2019 Agricultural Land Use map identifies no crop type on the property. Irrigation delineation indicates that as much as 61.8 acres were irrigated in 2013. Delineation acreage on this property may not reflect practices of irrigating only golf course tees and greens.

Table 10: Delineated irrigation in each year (2013, 2015, 2017, 2019)

Year	Total Irrigated Acres (Med/High Confidence)
2013	61.8
2015	0.0
2017	0.0
2019	1.0

Water Right

Table 11: Current Water Rights

Document Type	Qa	Qi	Priority Date	Purpose of Use	WR Acres	Source
Superseding Certificate	2.6 afy	.13 cfs	7/23/1947	Irrigation	2	Flowing Lake

These quantities only reflect what is shown on the water right document, and do not represent any beneficial use assessment by Ecology.

Water Right History:

The original certificate was issued for the development of a family owned resort and golf course. This water right has a priority date of 7/23/1947, listed purpose of use as domestic supply, with .185 cfs identified as the Qi and an unquantified Qa. The water right holder submitted a change application with

Ecology requesting: a change of purpose, place, and diversion of the original water right in 1995. The water right holder requested that .02 cfs and 2.6 afy of the original water right be changed to provide irrigation on 2 acres of a 77-acre golf course. An ROE was issued and the change was approved later in 1995, creating a new child water right for irrigation with .02 cfs and 2.6 afy and the original parent certificate remaining with .165 cfs and unquantified Qa. In 1997, the water right holder submitted an additional change application, to change the remaining quantity listed on the original parent water right (.165 cfs, unlisted afy) for the purpose of irrigation on the golf course. Based on this application, an ROE was issued in 2004 and the change was approved. The ROE resulted in the combination of the two irrigation rights for the golf course into a superseding certificate with a total quantity of .13 cfs and 2.6 afy, and that water use be metered. It is worth noting that the ROE found that .035 cfs of the original water right had not been perfected, and was excluded from the superseding certificate. The water is diverted via a pump from Flowing Lake.

Metering Records:

Metering records are available in the Ecology Water Resources Explorer database for some irrigation seasons 1997-2004. WWT requested and received additional metering records from Ecology that indicate water use from 2004-2015 and 2018, with as much as 2.399 afy of water use was reported in the last 5 years.

Conclusion

This project was identified by Ecology as a potential acquisition opportunity. The previous land use was a golf course, which ceased operations in 2013, making the water potentially available for acquisition. Historical litigation between the water right holder and Washington State surrounding this water right may be a barrier to willingness to engage in a transaction with the state. Ecology has reviewed and quantified the water right through 2 change applications and ROEs and metering records are available from 1997-2018. These metering records provide one of the data sources identified by *Ecology Guidance Document 1210-DETERMINING IRRIGATION EFFICIENCY AND CONSUMPTIVE USE-* to demonstrate historical beneficial use of a water right when a change is sought to that right.

Although metering records exist for this water right, they were inconsistently reported to Ecology. Relinquishment may be a concern based on recent meter reporting and the closure of the golf course. Four years of delineations were undertaken (2013, 2015, 2017, 2019) which indicate areas as great as 61.8 acres irrigated. Based on our knowledge of the irrigation management, only watering greens and tees, it is likely that delineations would not identify irrigated areas to that granularity. Due to inconsistency in meter records and delineations, WWT utilized the acreage listed on the water right to estimate the potential consumptive use quantity that may be available to serve as an offset. Since the property use is known, golf course, an estimate is developed based on the pasture water duty (11.12 inches) found in the

Washington Irrigation Guide (Sedro Wooley station, Appendix A) and irrigation method assumed to be sprinkler (75% irrigation efficiency, 10% application efficiency).

- Based on the water right document which authorized 2 acres of irrigation (on a 77 acre golf course) and assuming pasture and sprinkler irrigation, 2.09 afy consumptive is the estimated quantity available for acquisition.[18]

The Lower Pilchuck 11 water right has a priority date of 7/23/1947, which is senior to the establishment of the Snohomish Basin Instream Resources Protection Program (Instream Flow Rule) in 1979. This water right does not have instream flow provisions included in the ROE.

18 Estimate is based on 2 acres authorized irrigation on water right documents. Delineations may not reflect be actual management practices of watering only tees and greens on the golf course. This is only an estimate of consumptive use quantity. An extent and validity determination by Ecology would be required to determine the actual quantity available for acquisition.

WASHINGTON WATER TRUST

WRIA 7 WATER RIGHTS ASSESSMENT

Lower Pilchuck 11

LEGEND

- Place of Use*
- Point of Diversion*
- Irrigated Area
- Landowner Parcels

* Unmapped Water Rights. Locations estimated based on water right documents.

0 0.07 0.15 0.3 Miles

N

Data Source: NAIP Aerial Imagery, USDA-FSA Aerial Photography Field Office, 2013.

WRIA 7 Project Opportunity Profile – Raging River 1

Project Summary

FLOW BENEFIT: Estimated additional 0.29 cfs at the confluence of the Raging River and Snoqualmie Rivers, 33 miles in Snoqualmie River, and 21 miles in Snohomish River[41]

PRIORITY SUBBASIN: Raging

ESTIMATED OFFSET: 126 AFY consumptive

PRIORITY DATE(S): 01/22/1992, 1/1/1910 claimed

INSTREAM FLOW RULE (1979): There is a surface water closure established in the Raging River and an instream flow in the Snoqualmie River[42]

ESA LISTED FISH: Spring, Summer and Fall Chinook (threatened), Winter and Summer Steelhead (threatened), Bull Trout (threatened), Coho (species of concern)

OUTREACH STATUS: Interested

Project Description

The Raging River 1 water rights were included in the WRIA 7 water rights analysis by Ecology request. The three water rights related to Raging River 1 have overlapping places of use. There appear to be two different land managements in the places of use, a golf course and a retired campground, the latter of which is owned by a public entity. Initial conversations with the public entity indicate a willingness to consider water acquisition. The property is located southeast of Fall City, WA. There appears to be historic beneficial use related to this water right primarily on the golf course. If use was confirmed with further evidence and validated by Ecology, an acquisition of the water right(s) could contribute to WREC offsets. There may be an opportunity for water rights acquisition since the campground is no longer operating. Barriers to acquisition may be the certificate's junior water right status, lack of beneficial use records, or transactional cost related to small water consumptive use quantities available. To our knowledge, there has been no outreach to the water right holder by any entity at this time.

[41] Dependent on hydraulic continuity
[42] WAC 173-507

Watershed

The Raging River flows into the Snoqualmie River which joins the Snohomish River. Raging River has a surface water closure, and low flow is cited as a limiting factor in the Raging River sub-basin by several local salmon recovery efforts and by WREC committee members.

Although this project is located at the confluence of the Raging and Snoqualmie Rivers, conversation with Snoqualmie Tribes suggested that the Raging River can be flow limited in this reach as well, prohibiting fish from migrating upstream to thermal refuges. It is worth noting that the Raging River 1 certificate, is junior to Raging River surface water closure and was issued under the assumption that there was no hydraulic continuity with Raging River. If this assumption of hydraulic discontinuity was maintained, Raging River would not benefit from an acquisition of the certificate water rights.

Land Use & Ownership

According to the King County Assessor, the current land uses are listed as Golf Course and Vacant, and the land is zoned Urban Reserve (1 DU/5 Acres). A review of the WSDA 2019 Agricultural Land Use map identifies turf grass as the crop type on the property with sprinkler as the estimated irrigation method. According to an impacts report found in Water Rights Tracking System, the land was a farm from 1921 through 1991, and then converted into a 9-hole golf course. Irrigation delineation indicates that as much as 104.9 acres were irrigated in 2013. Precisely delineating acreage may be challenging due to the granularity of irrigation application on the golf course (irrigating 3 acres of greens/tees amidst ~80 acre golf course), and due to uses listed on the long form claim. The uses listed as domestic, commercial-campground and stockwater would not be fully represented by irrigation delineations.

Table 28: Delineated irrigation in each year (2013, 2015, 2017, 2019)

Year	Total Irrigated Acres (Med/High Confidence)
2013	104.9
2015	0.8
2017	0.8
2019	100.0

Water Right

Table 29: Current Water Rights

Document Type	Qa	Qi	Priority Date	Purpose of Use	WR Acres	Source
Certificate	60 afy	80 gpm	1/22/1992	Irrigation		Groundwater

Short Form Claim				Domestic, Stockwater		Groundwater
Long Form Claim	60 afy	50 gpm	1/1/1910	Domestic, Commercial-Campground, Stockwater		Groundwater

These quantities only reflect what is shown on the water right document, and do not represent any beneficial use assessment by Ecology.

Water Right History:

There are three water rights related to Raging River 1. In 1974, two separate landowners submitted groundwater claims to water use with a partially overlapping place of use. One was a short form claim only listing domestic and stockwater uses. The other was a long form claim which asserted quantities of 60 afy and 50 gpm for domestic, commercial-campground, and stockwater, with a first use prior to 1910.

In 1992 another landowner submitted an application for 80 gpm and 180 afy of water to be withdrawn from a well for irrigation on approximately 3 of a total 84 acres during irrigation season. Ecology completed an ROE in 1995 and denied the request due to hydraulic continuity with Raging River, a closed surface water body. Although there are no records in the Ecology Water Rights Tracking System in regards to an appeal, it is presumed that the landowner appealed the decision as a permit was issued in 1997. The permit allowed for 80 gpm and 60 afy to be withdrawn for irrigation provided the Snoqualmie instream flows are met. There are several reports included in the water right certificate file, which state there is no hydraulic continuity with Raging River such as a Predicted Water Quality Impacts report and aquifer tests data. A proof of appropriation was completed in 1997 and Ecology issued the water right certificate. The interruptible water right certificate permitted 80 gpm and 60 afy from a well for irrigation, subject to the instream flows in Snoqualmie River.

The water rights listed in Raging River 1 appear to be non-additive based on different listed uses and locations. There is another water right certificate related to the golf course which was excluded from this analysis as its place of use neither overlapped with the Raging River sub-basin priority area, nor the place of use of the retired campground, a directed priority by Ecology. If a water rights acquisition involving the golf course were considered, it would be advised to include this additional water right in future work, which authorized diversion from the Snoqualmie River of .86 cfs and 60 afy for irrigation on 30 acres and is junior to the instream flow.

Well Information:

Using a map search on Ecology's well database, one presumed well log for the source of this water right was accessible. This well log indicates that the well was decommissioned in 2011 but was originally 15'

deep, with a static level of 7'. Based on conversations with the public entity, this well is believed to be associated with the retired campground. An additional well log, found in documentation attached to the certificate records, states a well was drilled in 1993 to a depth of 120' with a diameter of 8" and static level of 18'.

Metering Records:

Metering records were not available in the Ecology Water Resources Explorer database and a request to Ecology found no records.

Conclusion

This project was identified by Ecology as a potential acquisition opportunity. A portion of the place of use includes the recently closed campground, making the water potentially available for acquisition. A golf course, also within water right places of use, may represent an opportunity to acquire a water offset. A significant barrier to the acquisition is the junior status of the certificated water right. Other potential barriers are willing sellers and beneficial use records. Ecology has reviewed and quantified the water right through a ROE.

No metering records exist for this water right. Relinquishment may be a concern based on lack of meter records and the closure of the campground. Four years of irrigation delineations were undertaken (2013, 2015, 2017, 2019) which indicate areas as great as 104.9 acres irrigated. Delineation acreage may be challenging on this property related to the granularity of irrigation application on the golf course (irrigating only 3 acres of greens/tees amidst ~80 acre golf course), overlaying water rights with unlisted quantities, and due to uses listed on the long form claim. The uses listed as domestic, commercial-campground and stockwater would not be fully represented by irrigation delineations. Due to a lack of other water use or management data, the delineated acreage was utilized to estimate the potential consumptive use quantity that may be available to serve as an offset. An estimate is developed based on the pasture water duty (12.72 inches) found in the Washington Irrigation Guide (Snoqualmie Falls station, Appendix A) and irrigation method assumed to be sprinkler (75% irrigation efficiency, 10% application efficiency). It is recommended that if this project was developed further, this estimate be refined.

- Based on the 104.9 delineated irrigated acres and assuming pasture and sprinkler irrigation, 126 afy consumptive is the estimated quantity available for acquisition.[43]

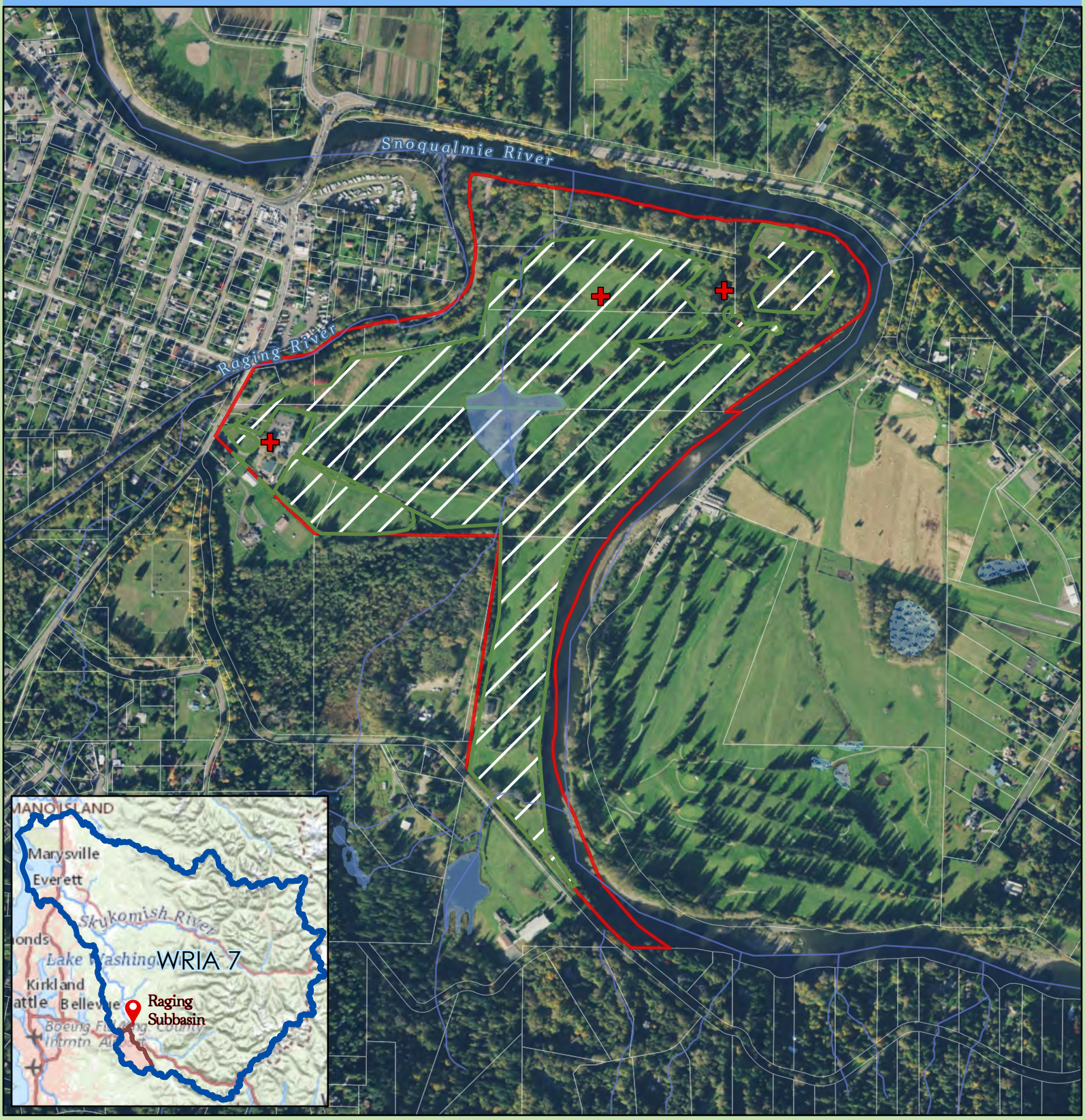
43 This is only an estimate of consumptive use quantity. An extent and validity determination by Ecology would be required to determine the actual quantity available for acquisition.

The Raging River 1 water rights have listed priority dates of 1/1/1910 (claimed) and 1/22/1992 (certificated) which are respectively senior and junior to the establishment of the Snohomish Basin Instream Resources Protection Program (Instream Flow Rule) in 1979. The certificate related to Raging River 1 does have instream flow provisions included in the ROE.

WASHINGTON WATER TRUST

WRIA 7 WATER RIGHTS ASSESSMENT

Raging River 1



LEGEND

- Place of Use
- Irrigated Area
- Points of Diversion
- Landowner Parcels

0 0.13 0.25 0.5 Miles

N

Data Sources: NAIP Aerial Imagery, USDA-FSA Aerial Photography Field Office, 2019. Water Rights Data, Geographic Water Information System (GWIS), Department of Ecology, 2020.

WRIA 7 Project Opportunity Profile – Patterson 1

Project Summary

FLOW BENEFIT: Estimated additional 0.53 cfs 9.7 miles in Patterson Creek, 29.5 miles in Snoqualmie River, and 21 miles in Snohomish River[19]

PRIORITY SUBBASIN: Patterson

ESTIMATED OFFSET: 29.7 AFY consumptive

PRIORITY DATE(S): 05/11/1964, 04/06/1972 claimed

INSTREAM FLOW RULE (1979): There is a surface water closure established in Patterson Creek[20]

ESA LISTED FISH: Spring, Summer and Fall Chinook (threatened), Winter and Summer Steelhead (threatened), Bull Trout (threatened), Coho (species of concern)

OUTREACH STATUS: None

Project Description

Patterson 1 was included in the WRIA 7 water rights analysis due to the prioritization factors identified in the WREC (priority sub-basins, etc.). Patterson 1 is located on Union Hill northwest of the City of Carnation. There appears to be historic beneficial use related to this water right. If use was confirmed with further evidence and validated by Ecology, an acquisition of the water right(s) could contribute to WREC offsets. A barrier to acquisition may be the ability for the owner to change their land use, public or political opposition to change in land use, or multiple landowners within the place of use. The majority of irrigated area is found on 2 parcels under the same ownership. To our knowledge, there has been no outreach to the water right holder by any entity at this time.

Watershed

Patterson Creek flows into the Snoqualmie River and then the Snohomish River. Patterson Creek has a surface water closure, and low flow is cited as a limiting factor in the Patterson sub-basin by several local salmon recovery efforts and by WREC committee members. It is worth noting that the place of use of

[19] Dependent on hydraulic continuity
[20] WAC 173-507

Patterson 1 spans the Patterson and Snoqualmie sub-basins and benefit would have to be refined relative to hydraulic continuity of the wells.

Land Use & Ownership

According to the King County Assessor, the current land uses are listed as Farm, Single Family and Vacant, and the land is zoned as Urban Reserve (1 DU/5 Acres) and Residential (1 DU/Acre). A review of the WSDA 2019 Agricultural Land Use map, identifies pasture as the crop type on the property. Irrigation delineation indicates that as much as 24.7 acres were irrigated in 2019. There are 11 parcels within the place of use but the majority of irrigation occurs on 2 parcels under the same ownership. According to the King County Assessor, those 2 parcels are operated as an equestrian center. There is a pond on the property, which may be used to propagate fish as listed on the certificate. Direct engagement with the water right holder, will be add to better understanding of water use of other purposes of the water rights, domestic, fish propagation and stockwater.

Table 12: Delineated irrigation in each year (2013, 2015, 2017, 2019)

Year	Total Irrigated Acres (Med/High Confidence)
2013	24.2
2015	1.7
2017	2.1
2019	24.7

Water Right

Table 13: Current Water Rights

Document Type	Qa	Qi	Priority Date	Purpose of Use	WR Acres	Source
Certificate	64 afy	40 gpm	5/11/1964	Fish Propagation		Ground waters of Infiltration Trench
Long Form Claim	110 afy	200 gpm	4/6/1972	Domestic, Stock, Irrigation	12	Groundwater

These quantities only reflect what is shown on the water right document, and do not represent any beneficial use assessment by Ecology.

Water Right History:

There are two water rights with overlapping places of use related to Patterson 1, a certificate and a claim. The Patterson 1 water rights appear to be non-additive based on different listed uses. In 1964, a landowner submitted an application for 200 gpm of water to be withdrawn from a well and infiltration trench for domestic supply, fish propagation, and irrigation. Ecology completed an ROE and issued a permit in 1964 stating 200 gpm and 110 afy may be withdrawn from a well and infiltration pond for irrigation, domestic supply and fish propagation. A proof of appropriation was completed in 1965 only for the point of withdrawal of the infiltration trench and purpose of use, fish propagation. Ecology issued the water right certificate for the appropriated uses. The certificate permits 40 gpm and 64 afy from in infiltration trench for fish propagation. The same landowner submitted a long form claim in 1972 for the use of 200 gpm and 110 afy from a well for domestic, stock, and irrigation of 12 acres as early as 1942.

Well Information:

Using a map search on Ecology's well database, four well logs and 2 decommissioned well logs were identified as potentially related to this project, by correlating the names on the well logs which reflected current ownership and names on water rights documents. Three of the well logs list domestic as the proposed use and one lists irrigation. The irrigation well was drilled in 2010, 91' deep, a diameter of 6", with a static level of 0'. All well logs are listed as exempt, which indicates they are either incorrectly characterized or unrelated to the water rights. One of the decommission logs has been matched with a well log, but the other three records are not reconciled. The wells have a range of depths from 9' to 920'. One log references well deepening and decommission simultaneously. The record is unclear but suggests a difficulty in obtaining a reliable groundwater source on the property.

The water right certificate of Patterson 1 is withdrawn from a well filled from a natural spring and is used to fill a 100' x 60' and 4' deep dug pond (named "infiltration trench" on certificate documents). An additional unsigned well log was found in documentation attached to the certificate which states a well was dug "25 years ago" (estimated 1941) to a depth of ~8' with a diameter of 30". Based on this information it is possible that one of the well decommission logs found in the Ecology well log database is related to this dug well, and if so, was decommissioned in 2018.

Metering Records:

Metering records were not available in the Ecology Water Resources Explorer database and a request to Ecology found no records.

Conclusion

This project was identified as a potential acquisition opportunity by WREC approved prioritization factors. Barriers to acquisition may be willing sellers, multiple landowners within the place of use, records

of beneficial use and change in land use. There appears to be historic beneficial use related to this water right. If use was confirmed with further evidence and validated by Ecology, an acquisition of the water right(s) could contribute to WREC offsets, although extent and validity determinations will be more challenging related to claims.

No metering records exist for this water right. Relinquishment may be a concern based on lack of beneficial use records. Although it is possible that the difference of estimated irrigated acres between years analyzed maybe explained based the result of the timing of the aerial photograph, specific water use practices or from sufficient causes for non-use (RCW 90.14.140). These details would be better understood through direct conversation with the water user. Four years of irrigation delineations were undertaken (2013, 2015, 2017, 2019) which indicate areas as great as 24.7 acres irrigated. WWT utilized the delineated acreage to estimate the potential consumptive use quantity that may be available to serve as an offset. An estimate is developed based on the pasture water duty (12.72 inches) found in the Washington Irrigation Guide (Snoqualmie Falls station, Appendix A) and irrigation method assumed to be sprinkler (75% irrigation efficiency, 10% application efficiency). Delineations would not fully represent domestic, fish propagation, or stock uses and it is recommended that if this project was pursued that further information be collected from the landowner to refine these estimates.

- Based on the 24.7 delineated acres and assuming pasture and sprinkler irrigation, 29.7 afy consumptive is the estimated quantity available for acquisition.[21]

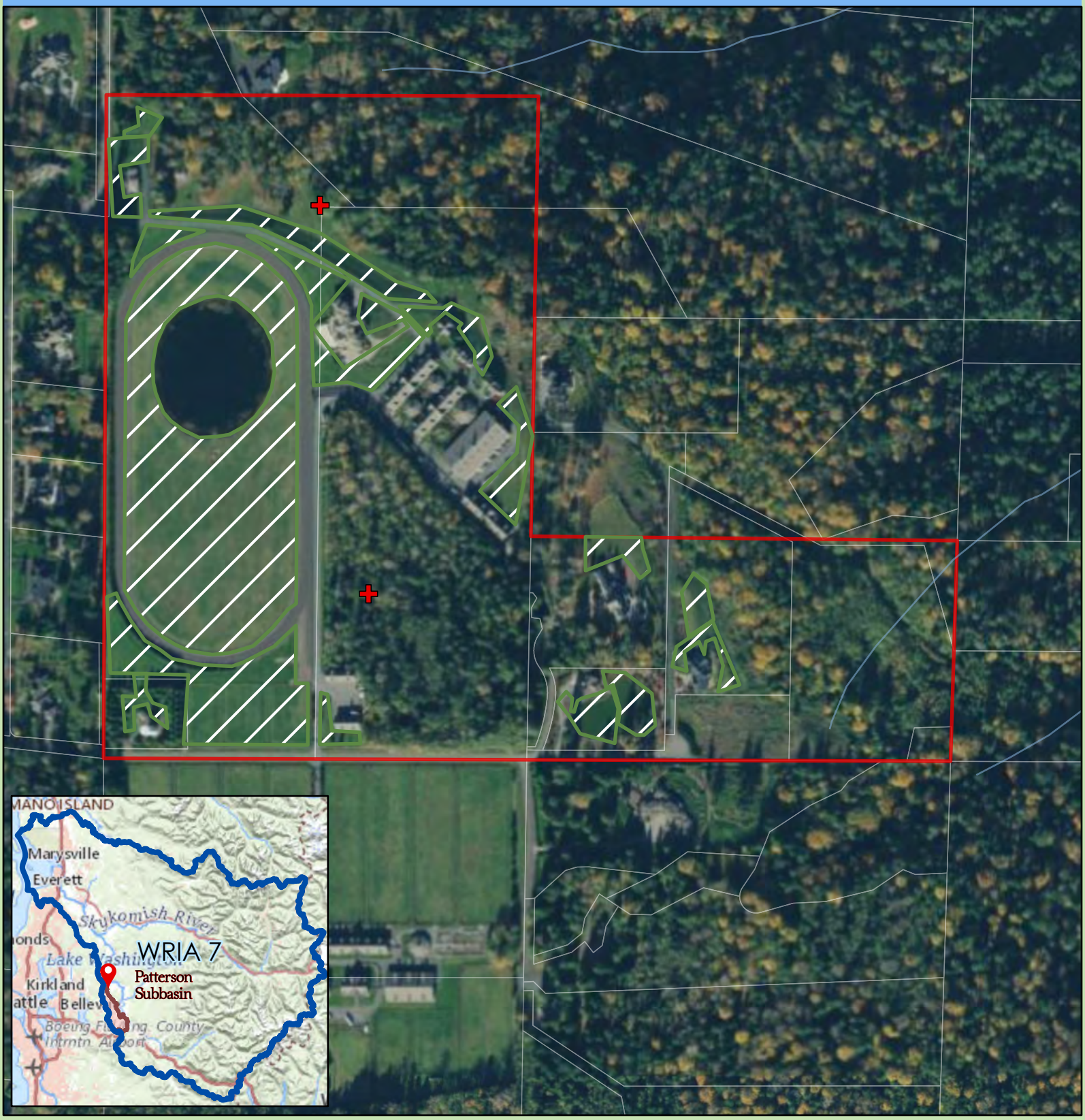
The Patterson 1 water right has priority dates of 4/6/1942 (claimed) and 5/11/1964 (certificated), which are both senior to the establishment of the Snohomish Basin Instream Resources Protection Program (Instream Flow Rule) in 1979. This water right certificate does not have instream flow provisions included in the ROE.

21 This is only an estimate of consumptive use quantity. An extent and validity determination by Ecology would be required to determine the actual quantity available for acquisition.

WASHINGTON WATER TRUST

WRIA 7 WATER RIGHTS ASSESSMENT

Patterson 1



LEGEND

- Place of Use
- Irrigated Area
- Point of Diversion
- Landowner Parcels

0 0.05 0.1 0.2 Miles

N

Data Sources: NAIP Aerial Imagery, USDA-FSA Aerial Photography Field Office, 2019. Water Rights Data, Geographic Water Information System (GWIS), Department of Ecology, 2020.

WRIA 7 Project Opportunity Profile – Patterson 4

Project Summary

FLOW BENEFIT: Estimated additional 0.56 cfs 2.2 miles in Patterson Creek, 29.5 miles in Snoqualmie River, and 21 miles in Snohomish River[22]

PRIORITY SUBBASIN: Patterson

ESTIMATED OFFSET: 71.6 AFY consumptive

PRIORITY DATE(S): 07/31/1939, 07/14/1939, 11/08/1946

INSTREAM FLOW RULE (1979): There is a surface water closure established in Patterson Creek[23]

ESA LISTED FISH: Spring, Summer and Fall Chinook (threatened), Winter and Summer Steelhead (threatened), Bull Trout (threatened), Coho (species of concern)

OUTREACH STATUS: None

Project Description

Patterson 4 was included in the WRIA 7 water rights analysis due to the prioritization factors identified in the WREC (priority sub-basins, etc.). Patterson 4 is located northwest of Fall City, WA. There appears to be historic beneficial use related to this water right. If use was confirmed with further evidence and validated by Ecology, an acquisition of the water right(s) could contribute to WREC offsets. A barrier to acquisition may be the ability of the owner to change their land use, public or political opposition to change in land use, or hydraulic continuity of streamflow benefits. To our knowledge, there has been no outreach to the water right holder by any entity at this time.

Watershed

Patterson Creek flows into the Snoqualmie River which joins the Snohomish River. Patterson Creek has a surface water closure, and low flow is cited as a limiting factor in the Patterson sub-basin by several local salmon recovery efforts and by WREC committee members.

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[22] Dependent on hydraulic continuity

[23] WAC 173-507

Land Use & Ownership

According to the King County Assessor, the current land uses are listed as Golf Course, Single Family, Reserve/Wilderness and Vacant, and the land is zoned as City Incorporated, Rural Area-5 (1 DU/5 Acres), Rural Area-10 (1 DU/ 10 Acres), and Residential-1 (1 DU/Acre). A review of the WSDA 2019 Agricultural Land Use map, identifies turf grass as the crop type on the property with sprinkler as the estimated irrigation type. Irrigation delineation indicates that as much as 24.7 acres were irrigated in 2019. There are well over 50 parcels within the place of use, but the irrigation occurs on 5 parcels under the same ownership operated as a golf course. The property previously operated as a farm according to water rights documents.

Table 14: Delineated irrigation in each year (2013, 2015, 2017, 2019)

Year	Total Irrigated Acres (Med/High Confidence)
2013	59.6
2015	59.2
2017	54.1
2019	59.4

Water Right

Table 15: Current Water Rights

Document Type	Qa	Qi	Priority Date	Purpose of Use	WR Acres	Source
Certificate	45 afy	92 gpm	7/31/1939	Irrigation	100	Groundwater
Certificate	87.8 afy	250 gpm	7/14/1939	Irrigation	100	Groundwater
Certificate	23 afy	46 gpm	11/8/1946	Irrigation	100	Groundwater

These quantities only reflect what is shown on the water right document, and do not represent any beneficial use assessment by Ecology.

Water Right History:

There are three water right certificates related to Patterson 4. The Patterson 4 water rights are non-additive and limited to a maximum irrigation of 100 acres with 250 gpm and 86.8 afy of water. These certificates were the result of change applications to four previous water rights appurtenant to the Patterson 4 place of use, with withdrawal points on Canyon Creek, Patterson Creek, and springs referred

to as “Old” and “New Water Works”. The four water sources were collectively used for irrigation of the property and domestic supply through a variety of recorded irrigation managements and capacities since at least 1942 and through 1998. The landowner took several actions in the 1980s to improve the flow and fish migration in Canyon Creek. When planning the development of a future golf course within the property, the landowner determined that the existing surface water rights must be transitioned to an alternative water source with less impact on the fisheries in Canyon Creek. In an effort to establish new sources of water for the golf course, the landowner submitted three change applications in regards to the existing water rights. The change applications were approved and resulted in: 1) transfer of beneficially used water to three new groundwater rights for irrigation, 2) relinquishment of unused water, and 3) transfer of beneficially used water to the state for instream benefit. The permitting history for each change application are outlined below:

In 1998, the landowner submitted a change application to change the diversion of an existing certificate from an unnamed spring tributary to Patterson Creek referred to as “Old Water Works” to three groundwater wells. Ecology completed an ROE in 1999, acknowledging groundwater and surface water continuity and the points of diversion were considered the same source of public water. The ROE states that the appropriative portion of the water right, 46 gpm and 23 afy for irrigation of 100 acres, is eligible for a change. The relinquished quantity (.58 cfs) was formally relinquished by the landowner and a superseding permit was issued with the beneficially used quantities (46 gpm and 23 afy for 100 acres irrigation) later in 1999. In 2009, the landowner completed the proof of appropriation and Ecology issued a certificate for the appropriated uses in 2010. In what appears to be a clerical error, the certificate quantities were inadvertently switched with one of the other related change applications, resulting in a higher certificated quantity than listed on the permit. The certificate permits 92 gpm and 46 afy from a well for irrigation on 100 acres and maintained the original priority date of 7/31/1939.

In 1997, the landowner submitted a change application to change the diversion of an existing certificate from a Canyon Creek to three groundwater wells. Ecology completed an ROE in 1998, acknowledging groundwater and surface water continuity and the points of diversion were considered the same source of public water. The ROE states that the appropriated portion of the water right, 262 gpm and 147 afy for irrigation of 100 acres, is eligible for a change. The landowner formally relinquished 1.32 cfs of water. Ecology issued the superseding permit with the beneficially used quantities (262 gpm and 147 afy for 100 acres irrigation) later in 1999. The landowner submitted proof of appropriation in 2009 with a slightly reduced quantity and Ecology issued a certificate in 2010 for 250 gpm and 87.8 afy, withdrawn from a well for irrigation on 100 acres with the original priority date of 7/14/1939.

In 1997, the landowner submitted an application to change the diversion of an existing certificate from Patterson Creek to three groundwater wells. Ecology completed an ROE in 1999, acknowledging groundwater and surface water continuity and the points of diversion were considered the same source of public water. The ROE states that the appropriated portion of the water right, 92 gpm and 45 afy for irrigation of 100 acres, was eligible for a change. The landowner formerly relinquished 0.16 cfs and a

superseding permit was issued for 2 gpm and 45 afy for 100 acres irrigation. The landowner completed a proof of appropriation in 2009 and Ecology issued a certificate for the appropriated uses in 2010. The certificate quantities appear to have been switched, a clerical error, with one of the other related change applications, resulting in a lower certificated quantity than listed on the permit. The certificate permits 46 gpm and 23 afy withdrawn from a well for irrigation on 100 acres with the original priority date of 11/8/1946.

Well Information:

Well information for the three groundwater right sources was found in the ROE. One well was drilled in 1995 to a depth of 504 feet, 10"diameter, and static water level at 6'. Another was drilled in 1996 to a depth of 581', 16" diameter, and static water level at 10'. The third well was drilled in 1996 to a depth of 482', 16" diameter, and static water level at 4+ feet.

Using a map search on Ecology's well database, eight well reports were identified as potentially related to this project as names on the well logs reflected current ownership and water rights documents. Five of the well reports were related to resource protection wells while four were related to test wells. All wells were drilled between 1994 and 1999. No records were found in Ecology's well log database related to the groundwater wells being used for these irrigation water rights.

Metering Records:

Metering records were not available in the Ecology Water Resources Explorer database and a request to Ecology NW region metering staff found no records. There were metering records included in the proof of appropriations for all three water rights. The meter records showed meter readings from 2005-2009 with as much as 76.2 afy of use.

Conclusion

This project was identified as a potential acquisition opportunity by WREC approved prioritization factors. Barriers to acquisition may be willing sellers, multiple landowners within the place of use, and change in land use. These water rights have already transferred significant portions to the Trust Water Rights Program and may not have flexibility to part with additional water rights. According to water rights documentation, there were many historical conflicts between County zoning efforts and the landowner in the change of land use on this property which may affect willingness to engage in a project tied to rural well growth management. Yet, the landowner has also previously engaged in water rights transactions for environmental benefit, which may signal the willingness for another transaction. There appears to be historic beneficial use related to this water right. If use was confirmed with further evidence and validated by Ecology, an acquisition of the water right(s) could contribute to WREC offsets. Ecology has reviewed and quantified these water rights through 3 change applications and ROEs and metering

records are available from 2005-2009. These metering records provide one of the data sources identified by *Ecology Guidance Document 1210-DETERMINING IRRIGATION EFFICIENCY AND CONSUMPTIVE USE-* to demonstrate historical beneficial use of a water right when a change is sought to that right.

Although metering records exist for this water right, there are no records after the certificates were issued. Relinquishment may be a concern based on lack of contemporary meter records. Four years of irrigation delineations were undertaken (2013, 2015, 2017, 2019) which indicate areas as great as 59.6 acres irrigated. WWT utilized the delineated 59.6 to estimate the potential consumptive use quantity that may be available to serve as an offset. Since the property use is known, golf course, an estimate is developed based on the pasture water duty (12.72 inches) found in the Washington Irrigation Guide (Snoqualmie Falls station, Appendix A) and irrigation method assumed to be sprinkler (75% irrigation efficiency, 10% application efficiency).

- Based on the 59.6 delineated acres and assuming pasture and sprinkler irrigation, 71.6 afy consumptive is the estimated quantity available for acquisition.[24]

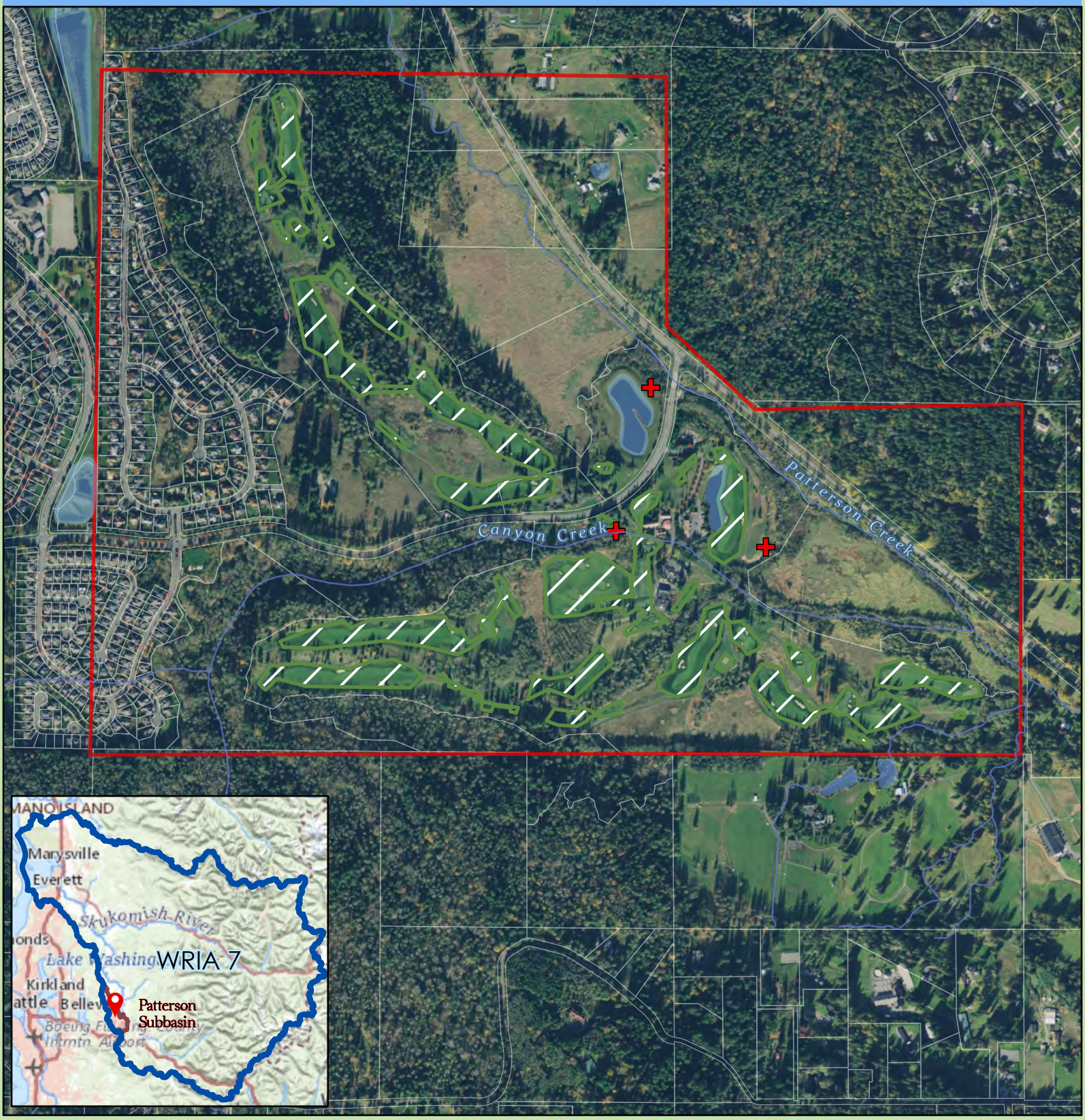
The Patterson 4 water rights have priority dates of 11/8/1946, 7/14/1939 and 7/31/1939 which are all senior to the establishment of the Snohomish Basin Instream Resources Protection Program (Instream Flow Rule) in 1979. These water rights do not have instream flow provisions included in their ROEs.

24 This is only an estimate of consumptive use quantity. An extent and validity determination by Ecology would be required to determine the actual quantity available for acquisition.

WASHINGTON WATER TRUST

WRIA 7 WATER RIGHTS ASSESSMENT

Patterson 4



LEGEND

- Place of Use
- Irrigated Area
- Points of Diversion
- Landowner Parcels

0 0.15 0.3 0.6 Miles

N

Data Sources: NAIP Aerial Imagery, USDA-FSA Aerial Photography Field Office, 2019. Water Rights Data, Geographic Water Information System (GWIS), Department of Ecology, 2020.

6.1 Policy and Regulatory Recommendations

The Streamflow Restoration law lists optional elements committees may consider including in the plan to manage water resources for the WRIA or a portion of the WRIA (RCW 90.94.030(3)(f)). The WRIA [X] Committee included what they have termed "policy and regulatory recommendations" in the 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 [X] 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 [X] Committee intended to count toward the required consumptive use offset or Net Ecological Benefit are included in Chapter 5: Projects and Actions.[1]

As required by the NEB Guidance, the WRIA [X] Committee prepared the 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."

[add option paragraph about the goals that informed the development of this chapter and the process for deciding on policies]

The WRIA [X] 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 regulatory recommendations is directly from the WRIA X Committee members and is not endorsed or opposed by Ecology.

The WRIA [X] Committee supports the following recommendations:

Policy Recommendation #1 Name

Proposed implementing entity: [who is expected to implement the policy?]

Recommendation: [what is the recommendation? short description]

Purpose: ["why" sentence to justify the policy rec. State the goal/purpose/desired outcome of the policy. Something that communicates up front what problem this is intended to solve and its relationship to 90.94. Short but clear description]

Funding source: [Identify the funding source: new funding request or use existing resources.]

Additional information or resources (if applicable): [provide links to Committee webpage, reference the appendix, or other resources]

[1] "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

[the following policy recommendation is included as an example of the format. The policy language is not up to date and has not been agreed to by the WREC]

Track the number and location of permit-exempt wells

Proposed implementing entity: Department of Ecology

Recommendation: Change Department of Ecology's well tracking system in the following ways, in order to track the number and location of permit-exempt wells in use:

- Collect latitude and longitude of wells on well report forms;
- Identify permit-exempt wells on well log form; and
- Provide Well ID Tag numbers to older wells, and associate well decommissioning, replacement, or other well activities with the Well ID Tag.

Purpose: Accurate tracking of the locations and features of permit-exempt wells will support the WRIA [X] Committee's desire to engage in monitoring and adaptive management after plan adoption.

Funding source: If Ecology does not have capacity do this work with existing staffing and resources, the Committee recommends the legislature provide additional funding.