

Workshop Summary Notes

Prepared by Veda Environmental

WA State Department of Transportation (WSDOT)

SR 20 Skagit River O'Brian Reach Floodplain Feasibility Study

Stakeholder Workshop #1

11/29/22 6-8 PM

Workshop Objectives

Participants will gain an understanding of and/or share input on:

- Study goals, objectives, location, and timeline
- Team members and their roles and responsibilities
- Results of initial assessment of floodplain processes and habitat conditions
- Process for developing alternatives and evaluation criteria
- Ongoing and future engagement opportunities
- Observations of current and past floodplain and habitat conditions
- Project alternatives evaluation criteria that will be used in the study

Participants

See Appendix A.

Meeting Summary

Welcome and Introductions

Jenni Dykstra, WSDOT; Hilary Wilkinson, Veda

The study team introduced themselves and welcomed everyone to the workshop. Poll #1. Participants were given a poll on their connection to the SR 20 Skagit River O'Brian Reach.

Hilary Wilkinson reviewed the agenda including:

- Study overview, goals, objectives, timeline
- Existing floodplain and fish habitat conditions (technical assessments)
- Review criteria actions for evaluating the design alternatives/potential actions.
- Next steps

Study – Overview and Status

Jenni Dykstra, WSDOT; Jen O’Neal, NSD; Hilary Wilkinson, Veda

Jenni Dykstra, WSDOT

The study location is the O’Brian Reach of the Skagit River (River mile 72-74). The SR20 Skagit Erosion site is milepost 100.7-101.

Jenni gave background on the project including the damage to and closure of SR 20 during November 2017 flooding and Nov 2021 flooding. There is a long history of damage to SR20 in this stretch dating back to 1970, 1995, and throughout the 2000s. In 2024, WSDOT constructed the dolotimber revetment along SR20.

Frequent highway repairs can damage fish habitat. WSDOT’s Chronic Environmental Deficiencies (CED) Program focuses on long-term repairs to address flooding and erosion; better for fish; creative approach using nature-based solutions. 59 CED projects have been constructed to date.

Due to high conservation interest in the Skagit Basin and land in conservation in the reach, WSDOT recognized an opportunity to enhance existing side channels in the Skagit River floodplain to improve habitat while also reducing flooding and erosion risk to SR20. WSDOT has used this approach in three other CED projects, including I-82 Yakima River, SR207 Nason Creek, and SR970 Teanaway River.

WSDOT is limited in its use of transportation funds and saw the SRFB grant as an opportunity to explore the feasibility of a floodplain restoration approach and network with potential partners. WSDOT was awarded \$232,700 in grant funds in 2021 for this feasibility study. Additional contributions have come from WSDOT (\$16,000) and Seattle City Light (\$25,000) to fund the study.

Jen O’Neal, NSD

Jen shared information on the study goals, including

- Assess floodplain connectivity and channel processes.
- Determine if there are feasible actions to reduce issues with SR 20/flooding, benefit habitat, and at least remain neutral/acceptable to landowners and stakeholders.

This work ties into the Puget Sound Salmon Recovery Plan and NOAA’s ESA Recovery Plan for Puget Sound Steelhead.

Study timeline

The feasibility study began in late 2021 with study planning and initial outreach and data collection. In mid to late 2022, existing conditions were assessed in three areas: geomorphic, hydraulic and habitat. This is the first of two stakeholder workshops. Following tonight’s workshop, the study team will review and revise the modelling results and develop design concepts/potential actions to evaluate against the design criteria. At the second stakeholder meeting #2 (Spring 2023), the study team will share the proposed design alternatives and an evaluation of these alternatives using the criteria.

Hilary Wilkinson, Veda Environmental

Hilary shared that outreach to-date has included specific landowner outreach to those adjacent to the site, and targeted letters to landowners in the floodplain. Additionally, there is a project website and listserv. We met with institutional landowners in the study reach.

In terms of invitations for this workshop, WSDOT sent 150 postcards to all resident landowners between Rockport and Marblemount near the study reach.

There will be a second stakeholder workshop in Spring 2023.

Poll #2. Participants were given a second poll on their reason for attending this workshop.

Overview of existing floodplain and fish habitat conditions

Jen O'Neal and Shawn Higgins, Natural Systems Designs

Shawn Higgins, Natural Systems Designs

Shawn shared that three main technical Assessments that have been done to date and include:

- Geomorphic Characterization
- Hydraulic Model Development and Analysis
- Habitat Quantification

Geomorphic Characterization

The study team started compiling existing information and older studies. Then, the team visited the study area to make visual observations and conduct field work. Digital maps of the floodplain were compiled using GIS (Geographic Information Systems). Shawn shared aerial images, LIDAR (topography) images to show current and historic (relic) channels. This LIDAR data was used in the hydraulic modelling.

There was a significant change in the river morphology between 1915 and 1944 (perhaps during the large 1921 floods). Imagery helps to track the river over time. The river meander bend has been shifting about 18ft/year from 1944-2022.

Just upstream, the channel has shifted around a newly established island. Today, there is a beaver pond in the channel to the north. The left bank between Illabot Creek and Rocky Creek has been eroding.

Takeaways:

- This is a dynamic reach resulting in a shortening and straightening of the river channel over time.
- The goal of the study is to understand connectivity between the mainstem and side channels.; identify opportunities for connectivity and habitat.

Hydraulic Model Development

Shawn explained that the study team has used a computer model to simulate 2-dimensional flow. It uses hydrology from US Geological Survey (USGS) gauges on the mainstem Skagit River, Illabot Creek, Rocky Creek, and O'Brian Creek.

The model was run for a range of flow (from summer low flows to 100-year flood events). The model can be validated (ground-truthed) against known flows at specific USGS gauges.

The model output can provide information on side channel connectivity, flood and erosion risk, and habitat quantification. The model provides a framework for evaluating conceptual design opportunities (future work).

Shawn showed visuals from the model at different flow velocities (e.g., different cubic feet per second, or cfs). Patterns of inundation across the floodplain change at different cfs.

Habitat Quantification

Jen O'Neal shared areas of key habitat in the existing side channel and off channel habitat, including:

- Illabot side channels
- Illabot constructed channel
- Slough at RM 73
- Hoopers Slough
- Unnamed chute side channel
- Dolotimber Side Channel
- Powerline Pond

There is also important Mainstem Habitat along the right bank at Bullers channel and against the revetment. Generally, the mainstem is dominated by fast water.

Habitat Suitability Modeling was done using inputs (depth, velocity, substrate size, and instream cover) to determine how the habitat quality changes for spawning and rearing habitat. The model can be validated (ground-truthed) with observations of juvenile Chinook and steelhead use in the areas that were modelled.

Whiteboard exercise

Hilary posed the following question to the group:

- *Please share personal observations of changes in and around your property, including (but not limited to)*
 - *Impacts from flooding (land lost, etc.)*
 - *Bank/shoreline conditions*
 - *Habitat conditions*

Responses:

- A participant shared that they have lost hundreds of feet of land due to flooding and that the river has been moving dramatically.

Developing and evaluating design alternatives

Jen O'Neal and Tim Abbe, NSD

Jen shared the two goals for the feasibility study:

- Assess floodplain connectivity and channel processes
- Determine if there are feasible actions to reduce issues with SR 20/flooding, benefit habitat, and at least remain neutral/acceptable to landowners and stakeholders

Two (2) Action Alternatives and one (1) No Action Alternative will be considered. The study team will rely on input from stakeholders and key partners and specific criteria to evaluate the alternatives. This is also known as “evaluation criteria” or “design criteria”. Potential action types include channel excavation, engineered log jams (ELJ), large woody debris (LWD) placement, and plantings.

To evaluate the potential actions, 14 design or “evaluation” criteria have been identified in three categories:

1. Infrastructure
2. Biology
3. Other

See Table 1. Evaluation/Design Criteria.

Table 1. Evaluation/Design Criteria

Category		Study Objective (EVALUATION or DESIGN CRITERIA)
<i>Infrastructure</i>	1	Reduce Flood Risk to SR 20
	2	Reduce Erosion Risk to SR 20
	3	Does not increase flood or erosion risk to Adjacent Property and Infrastructure
	4	Minimize Effects on Private Property
	5	Does not reduce the potential effectiveness of the Barnaby Project downstream
<i>Biological</i>	6	Benefits Multiple Species
	7	Increase Summer Rearing Habitat
	8	Increase Winter Refuge Habitat
	9	Does not reduce quality of other valuable Habitat Types
	10	Wildlife Effects
<i>Other</i>	11	Cost and Ease of Construction
	12	Aesthetics
	13	Minimize Effects on Recreation
	14	Realize Benefits quickly

Questions:

Q: What are the potential funding sources for the potential actions?

A: Jenni Dykstra, WSDOT- There is not currently funding for design or construction of a project. The current effort is a feasibility study to develop and evaluate potential options. The feasibility study will inform potential actions and WSDOT will look for partners and funding sources if/when a potential feasible action has been identified.

Q: Any considerations for the Seattle City Light relicensing?

A: The study team is tracking the relicensing effort and understands that it will need to be considered as the study progresses. We don't know what the outcomes of the relicensing will be yet, but we are tracking the process and will incorporate what we know when we can.

Q: It will take time to get to project phase. What is the timeline for potential actions?

A: Jenni Dykstra, WSDOT- It would be quite a few years out. If there is a feasible alternative, it would take several years to coordinate with partners, request and obtain funding, and design and construct it. Obtaining the grant to fund the feasibility study itself took 1.5 years and tends to be time-consuming.

Q: If flows are redirected and the flows impact county roads (specifically Rockport-Cascade Road) who will pay for that? Are impacts to other county roads being considered?

A: Shawn Higgins, NSD- Damage to other roads ways is a design criterion (#3 adjacent infrastructure) and the project would be ranked low for that criterion, which would impact not be considered feasible.

Whiteboard exercise

Hilary led an exercise to provide feedback on the 14 design criteria. This was done by category, starting with Infrastructure, Biological, and then Other. Participants were encouraged to review the existing criteria and add anything that they feel is missing.

Input on Infrastructure criteria:

- Cost is a consideration.
 - *Response: This will be covered in the category titled Other.*
- Damage to other roadways
- Perceived risk is a criterion for evaluation.
- For SRFB funded projects, WSDOT needs to make sure that the project is not only geared toward alleviating impacts to infrastructure. Benefits to habitat and ecology will have to be demonstrated. Reducing risk to infrastructure is not enough.
 - *Response (Cygnia Rapp, Tim Abbe, Jenni Dykstra): As a SRFB funded project, the benefits to habitat and ecology as the highest priority are required under the rules of the grant. From WSDOT's perspective we believe reducing risks to WSDOT infrastructure align and are not in conflict with maximizing habitat and ecological values. It is a precedent for WSDOT to pursue a study of this nature. If the preferred alternative cannot achieve the objective of reducing hazards to WSDOT infrastructure, then we will defer to a co-manager to implement Phase 2 of the design and construction. The community will still have the benefit of the study.*
 - *This project has multiple benefits, and you need to consider impacts on adjacent infrastructure to successfully implement a restoration project. This is a CED site, and CED program objectives are to improve fish habitat; This study is not only funded with a SRFB grant. WSDOT's CED program has also committed significant funds and resources to the study.*
 - A participant emphasized their support of the efforts of WSDOT and wants to be on the same page with how to frame this project for funding.
 - This seems like a multiple benefits project, so would need multiple funding sources, not just habitat.

- At one point DOT had been talking about rerouting the river through Cascadian Farm Since it looks like the channel is migrating west and south. Would that make that idea less viable?
 - *Cygnia Rapp: WSDOT has no proposal to reroute the river through Cascadia Farm.*
- Has moving the highway been considered?
 - *The current highway is at the northern margin of the valley.*

Input on Biological criteria:

- Why do the criteria differentiate ‘summer rearing’ and ‘winter refuge’? Could these be habitats in other seasons?
 - *Response: (Jen O’Neal) This is a good point, and these could be more generic. Refuge is important during high flow conditions, which often happen during the winter but could occur any time of year.*
- For SRFB funded projects, benefit to habitat/ecology will have to be demonstrated.
- For habitat type, clarify that it incorporates diversity and quality.
- How do we evaluate reconnecting floodplains when spread out the water. Consider connectivity and potential to isolate fish.
 - *Shawn Higgins, NSD: There are seasonal channels that provide important habitat in some flows and go dry in other flows.*
 - *Tim Abbe, NSD: Fish take advantage of high flow for more habitat and have evolved to migrate as flows decrease. Some areas have a groundwater connection, which sustain fish even when there is no surface water connection.*
- A participant expressed concern with using the DFW/DOE criteria to assess habitat value and offered to work with Jen and team offline to understand what other approaches they will be taking.

Input on Other criteria:

- Duration of project and benefits, and cost (*from infrastructure discussion*).
- Collaboration/coordination with other nearby habitat and infrastructure projects.

Next steps and opportunities to participate

Jen O’Neal, NSD and Hilary Wilkinson, Veda

Jen O’Neal, NSD

Jen described the next steps of the study team following the workshop:

- Make changes to the modelling based on tonight’s questions.
- Review and edit the evaluation criteria based on community input.
- Identify potential actions/ design alternatives and weigh them against the evaluation criteria.
- Share this further work with stakeholders at Workshop #2 (Spring 2023)

Hilary Wilkinson, Veda

There are several ways to stay involved.

- The study team will capture this workshop in a meeting summary and answer any lingering questions. The summary will be shared with the stakeholder email list and posted on the website.
- Participants are encouraged to use the website and sign up for the listserv to stay updated on the study. Please share this with neighbors, colleagues, and anyone else who you think would be interested.
- Workshop #2 will be held in the spring to coincide with the second phase of technical work.

Jenni Dykstra, WSDOT

Jenni thanked everyone for coming and sharing their thoughts and questions.

Meeting Adjourned.

Q: A participant stayed on and asked about how the word went out to landowners and residents. He noted that there would have been others that would have attended

- *Hilary Wilkinson, Veda Environmental- There is a stakeholder list of about 80 people; several announcements went out to the emails of individuals on this list. Veda has been working to get the word out and expand the reach of messages. Any help is appreciated. She encouraged the participant to reach out directly after the meeting.*
- *Jenni Dykstra, WSDOT- Two weeks prior to the workshop, 150 postcards were sent to all resident landowners near the study area between Rockport and Marblemount.*

Additional Points and Clarifications:

- WSDOT has invested in this feasibility study to determine if restoring the floodplain and improving habitat conditions for endangered salmon could reduce flood risk to WSDOT infrastructure. If the study results show that flood risk to WSDOT infrastructure *cannot* be reduced, the study will be completed, and no further project action will be taken by WSDOT.
- However, WSDOT will share the study results broadly with entities interested in pursuing habitat improvement and climate resiliency work. The study results will help inform these efforts and are therefore valuable to the community.
- In terms of the study funding source (salmon recovery), it is important to ensure that salmon habitat benefits are given highest priority on the actions that are evaluated.
- If WSDOT pursues SRFB funding for project design or construction, benefits to the floodplain and salmon habitat would be demonstrated, and funding would come from multiple funding sources.

APPENDIX A. Participant List

	Last Name	First Name	Affiliation (if applicable)
1	Abbe	Tim	Natural Systems Design
2	Brocksmith	Richard	Skagit Watershed Council
3	Carlstad	Cynthia	Barnaby Reach Project
4	Colton	Tim	Rodale Institute
5	Damitio	Chris	WSDOT
6	Derenne	Emily	Skagit County
7	Dykstra	Jenni	WSDOT
8	Hallock	Dave	
9	Harris	Meg	Veda Environmental
10	Hartson	Rick	Upper Skagit Indian Tribe
11	Higgins	Shawn	NSD
12	Humphries	Robert	WSDOT
13	Kanzler	Susan	WSDOT
14	McBride	Aundrea	Skagit Watershed Council
15	McGown	Tara	
16	Moore	Denton	
17	Moore	Jessica	
18	O'Neal	Jen	Natural Systems Design
19	Rapp	Cygnia	WSDOT
20	Reaves	Marcus	WDFW
21	Schwartz	Anne	
22	Seaforth	Kayla	Skagit Land Trust
23	Sippel	Gary	
24	Stafford	Howard	
25	Wahl	Colin	Skagit River Systems Cooperative
26	Wilkinson	Hilary	Veda Environmental