Contact Information

2025 Upper Columbia Regional Project Pre-Application

* Pre-applications (SRFB & Monitoring) due March 12, 2025 (COB)

*Complete SRFB applications due in PRISM April 18, 2025 (COB)

*Complete Monitoring applications due in PRISM May 1, 2025 (COB)

*Revised SRFB proposals due in PRISM May 27, 2025 (COB)

*Final revised SRFB & Monitoring applications due in PRISM June 23, 2025 (noon)

Project Title	Goodwin Side Channel Implementation
Sponsor	Cascade Fisheries
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Project Summary

Please provide a description or summary of the proposed project, including project goals. The goal of the project should be to solve identified problems by addressing the root causes. Then clearly state the desired future condition.

This proposal is to implement a river restoration project, the Goodwin Side Channel, which is located on the Wenatchee River RM 11.2 - 11.5. The project will address the highest priority limiting factors in the Wenatchee River - Ollala Canyon 01 Reach including Cover-Wood, Off-Channel/Side Channel, Riparian Canopy, Temperature-Rearing, and Floodplain Connectivity. Implementation of this project will improve summer and winter rearing for ESA-listed spring chinook and steelhead, as well as summer chinook and coho. The stated project goals are:
1. Improve rearing habitat in the side channel by increasing connection to groundwater;
2. Enhance the floodplain and side channel habitat functions through improved surface water connection with the river while taking advantage of the benefits provided by groundwater inflow;
3. Promote native woody vegetation cover throughout the floodplain by planting where current non-native, invasive reed canary grass patches exist and preserve existing mature native riparian forest;
4. increase large woody material cover and habitat complexity.

What are the project objectives? Objectives support and refine biological goals, breaking them down into small steps. Objectives are specific, quantifiable actions the project will complete to achieve the stated goal. Each objective should be SMART (Specific, Measurable, Achievable, Relevant, and Time-bound). Note: This exact question is included in the PRISM application. Example format: The project seeks to address [specify limiting factor(s)] for [limiting life stage(s)] by [specific actions proposed] to create an estimated [include specific target metrics, as described below] upon implementation in [estimated year].

The project will achieve the following objectives upon implementation:
1. Create approximately 1,450 linear feet of new of side channels. New side channels will have a surface water connection with the Wenatchee River at and above the 50% exceedance interval (1,810 CFS).
2. Enhance approximately 1,150 of existing side channel habitat. Existing will have a surface water connection with the Wenatchee River at and above the 50% exceedance interval (1,810 CFS).
3. Install 82 Wood Habitat Structures (WHS), including two in the mainstem Wenatchee, to improve salmon habitat complexity and cover and to promote geomorphic processes that form and maintain habitat.
4. Install 1 rock inlet structure to promote side channel inlet longevity and promote safe river recreation.
5. Create 35 groundwater connected pools within the floodplain side channels. These pools will be connected to groundwater year-round. They will provide cooler water rearing habitat in the summer and warmer water rearing habitat in the winter.
6. Remove 1 levee to install the new side channel and to improve surface water connectivity to an existing riverine wetland.
7. Increase floodplain inundation 2,850% (from 0.02 acres to 0.64 acres) at the 50% exceedance flow (1,810 CFS)
8. Increase floodplain inundation 70% (from 4.44 acres to 7.50 acres) at the 1.5 year recurrence interval (15,400 CFS)
9. Restore and expand wetland and riparian vegetation communities by planting 3.9 acres in native species.

Budget Request

Values MAY be duplicative and do not have to equal TOTAL anticipated budget in pre-application.

Anticipated Request - SRFB (standard round)	500,000
Tributary Committee - Anticipated or Actual	500,000
Anticipated or Actual Other Funding	1,100,000
Anticipated TOTAL Budget	2,100,000

Other Funding Source(s), please note if funding is anticipated or actual.

BPA - verbally committed

Project Location

Briefly describe the location of the project	This project will occur on the left bank floodplain of the Wenatchee River starting at RM 11.15 and ending at RM 11.5
Latitude (decimal degrees)	47.529739
Longitude (decimal degrees)	-120.498091

Project subbasin	Wenatchee
Wenatchee Assessment Unit(s)	Wenatchee River-Ollala Canyon
Does the proposed project span multiple assessment units?	No
Reach(es) Name	Ollala 01
Identify the reach(es) priority/ reach ranking. Note: If the project involves work in multiple reaches, select "Multiple" and include details in the text box that will appear below. Please reference the Prioritization Web Map: https://prioritization.ucsrb.org/.	Rank 3

Project Information

1. What species will the project benefit?	Spring Chinook Steelhead Summer Chinook coho
2. Select the project's objectives and the associated tracking metrics	Instream Habitat (Includes Floodplain & Off-Channel Reconnection) Riparian Habitat
Instream Habitat: Reporting Code	Miles of off-channel stream created or connected Acres of channel/off-channel connected or added Number of structures placed in channel Pools created through channel structure placement
Riparian Habitat: Reporting Code	Total riparian acres treated
4. Does this project already exist in Salmon Recovery Portal or PRISM?	No
5. Has this project been submitted previously for funding through the SRFB and/or other process(es)?	No
6. What category is the project?	Restoration

Is the project eligible for Riparian Funding? No

Design and Restoration Proposals

7. What project phase(s) are proposed for completion? Construction

8. Is your project within a completed (or soon-to-be completed) Reach Assessment or other type of assessment (e.g., Rapid Site Assessment, other)? Lower Wenatchee Reach Assessment

9. Which limiting factors does the project propose to address? Cover - Wood; Off-Channel - Floodplain; Off-Channel - Side-Channels; Pool Quantity & Quality; Riparian - Canopy Cover; Temperature - Rearing

10. Which life stages will the proposed project address? Summer Rearing; Winter Rearing

11. Freshwater Benefits - Describe how your project will improve survival, capacity and/or distribution for target species at the reach scale?

Significant human infrastructure including the Burlington Northern railroad, Highway 2, fruit orchards, homes, and towns along the lower Wenatchee River have severely impaired instream and off-channel habitat (TetraTech 2017). In Reach 5 of the Wenatchee River, where this proposal is located, 54% of the floodplain is disconnected, and there is 0% off-channel habitat. The surrounding reaches are similarly limited: Reach 4 has 66% floodplain disconnected and 4% off channel habitat, while Reach 6 has 62% of floodplain disconnected and 0% off-channel habitat.
The lower Wenatchee is a Major Spawning Area for steelhead, foraging and overwintering habitat for bull trout, a spawning and rearing area for summer Chinook, and migration corridor for sockeye, spring Chinook, summer chinook, coho, steelhead, and bull trout (Table 1) (ibid) (Andonaegui 2001). Juveniles of all three ESA-listed species rear in the lower Wenatchee.

The Goodwin Side Channel (GSC) falls within the Wenatchee River Ollala 01 reach of the Wenatchee River – Ollala Canyon Assessment Unit within the Upper Columbia Salmon Recovery Region's prioritization scheme. This Assessment Unit is listed as a tier 1 priority for Steelhead restoration. At the reach scale, winter rearing is listed as a high priority life stage for both spring chinook and steelhead, while summer rearing is a medium priority life stage for steelhead. The highest-ranking limiting factors for this reach that are addressed by this project are cover-wood, off-channel/side-channel habitat, Riparian canopy cover, and Temperature-rearing, and the second highest ranking limiting factor is floodplain connectivity.

A 15-month assessment of the Goodwin Side Channel (GSC) by Cascade Fisheries staff found the hydrology of the GSC is currently driven by groundwater for most of the year. The side channel is disconnected from Wenatchee River surface water when flows at the Monitor gage are less than 8000 CFS. Surface water levels within the side channel vary throughout the year independent of a surface water input and were strongly correlated with groundwater levels. Frequently, calculated groundwater and surface water elevations were the same for a monitoring well and the adjacent side channel.

Through implementation of this project we will increase the frequency and duration of the connectivity of the side channels to the Wenatchee River. The side channels are designed to be connected to the river at the 50% exceedance interval, which is 1,810 CFS. This will increase the accessibility of the side channel habitat by juvenile salmonids from about 36 days/year on average to about 180 days/year on average.

Importantly, the side channels will not be connected to the Wenatchee River during the hot summer months, but rather will be fed solely by cooler groundwater. During the important winter rearing months, the side channel will be periodically connected by surface water to the river, which will allow rearing fish into the side channels. Then as flows decrease the side channel will again be only connected to groundwater, which is slightly warmer and can provide a metabolic boost to growing juveniles. Habitat quality within the side channel itself will be vastly improved upon implementation of this project. The project will install numerous deep pools and WHS to provide excellent rearing habitat.

A surface water temperature logger installed by CF staff during the GSC Assessment provides important insights to the site potential of a shaded, groundwater-fed side channel. Dense willow (Salix spp.) and dogwood (Cornus sericea) vegetation shaded the area the temperature logger was installed, and surface water temperatures remained in the tolerable range for salmonids throughout the summer, with a maximum value of 17.5° C. By mid to late summer water temperatures in the mainstem Wenatchee were 5° C or more, hotter. These findings suggest that the groundwater-fed GSC, could be a cooler water haven for salmonids through the summer once adequate riparian vegetation is restored and established throughout.

12. Temporal Effect - Briefly describe how and to what extent the project would promote natural stream/watershed process consistent with the geomorphology of the stream?

Significant human infrastructure has severely impaired watershed processes and functions in the lower Wenatchee River. The natural and artificial confinement in this section of the river limit restoration opportunities and have resulted in a stable channel with limited connection to floodplains and off-channel habitat. The lower Wenatchee Reach Assessment identified the project area in the current proposal as the only geomorphically suitable restoration opportunity in Reach 5, and found that the opportunity “has good potential for improving off-channel habitat in a reach where it is very limited.” (TetraTech 2017)

Restoring floodplain connectivity can help improve natural watershed processes. A properly functioning floodplain acts as an extension of the alluvial aquifer, attenuating stream flows and energy as floodwaters disperse onto the floodplain and discharging stored water during drier months. Connected floodplains regulate stream flows, water temperature, and water quality. Floodplain groundwater discharge to streams provides cool water areas for rearing fish, and floodplain groundwater storage has also been shown to attenuate peak flows (Acreman et al. 2003). Implementation of this project will increase floodplain inundation 2850% at the 50% exceedance flow and 70% (over 3 acres) at the 1.5 year flow.

Side channels are naturally occurring features of a riverscape. However, they are frequently cut off from the river when the channel is artificially confined. Side channels and off-channel areas provide important rearing habitat for target fish species. Martens and Connolly (2014) found higher densities of salmonids in seasonally disconnected, partially connected, and fully connected side channels than in mainstem channels. This project will seek to improve the connection of the existing GSC, that is currently only connected to the mainstem for 36 days per year on average. This action will provide an immediate increase in habitat quantity, complexity, and diversity by reestablishing current mostly inaccessible and under-utilized habitat. Roni et al. (2002) found that projects involving reconnection of existing off-channel habitats had a higher probability of success than projects creating entirely new off-channel habitat. These types of restoration actions might be classified as full restoration because they restore natural processes (Beechie et al. 2010).

13. Temporal Effect - How long will it take for the project to achieve its intended response?

Less than or equal to 1 year | 1-10 years

14. Temporal Effect - How long will the restoration action and its benefits persist?

10-50 years | 50+ years

15. Temporal Effect - What level and/or interval of maintenance is anticipated? What is the plan for any anticipated maintenance?

The project is designed to be self maintaining through riverine/geomorphic processes. Newly installed riparian vegetation will require monitoring and maintenance for the first 3 - 5 years to ensure adequate

survival. Beyond this initial period, no long term maintenance is expected.

16. Methods - Briefly describe the potential (for design) or proposed restoration methods and how they will achieve project objectives.

1. Create approximately 1,450 linear feet of new of side channels to increase the quantity of rearing habitat in this reach. New side channels will have a surface water connection with the Wenatchee River at and above the 50% exceedance interval (1,810 CFS).
2. Enhance approximately 1,150 of existing side channel habitat to improve the quality and accessibility of rearing habitat in this reach. Existing will have a surface water connection with the Wenatchee River at and above the 50% exceedance interval (1,810 CFS).
3. Install 82 Wood Habitat Structures (WHS), including two in the mainstem Wenatchee, to improve salmon habitat complexity and cover and to promote geomorphic processes that form and maintain habitat.
4. Install 1 rock inlet structure to promote side channel inlet longevity and promote safe river recreation.
5. Create 35 groundwater connected pools within the floodplain side channels. These pools will be connected to groundwater year-round. They will provide cooler water rearing habitat in the summer and warmer water rearing habitat in the winter to improve rearing conditions for high priority life stages and species.
6. Remove 1 levee to install the new side channel and to improve surface water connectivity to an existing riverine wetland which increases floodplain inundation, improves watershed processes, and provides high flow refugia
7. Increase floodplain inundation 2,850% (from 0.02 acres to 0.64 acres) at the 50% exceedance flow (1,810 CFS) to increase floodplain inundation, improve watershed processes, and provide high flow refugia
8. Increase floodplain inundation 70% (from 4.44 acres to 7.50 acres) at the 1.5 year recurrence interval (15,400 CFS) to increase floodplain inundation, improve watershed processes, and provide high flow refugia
9. Restore and expand wetland and riparian vegetation communities by planting 3.9 acres in native species to improve riparian and floodplain function, improve side channel shading, provide nutrient and food input into the side channel, and provide a long-term, self-replacing source of woody material into the side channel.

Assessment Proposals

Protection Proposals

Monitoring Proposals

Project Risk and Economic Benefits

1. What is the landownership? WSDOT

2. Have you secured landowner participation in or acceptance for this project? Yes

Please explain

Yes, we have been working with WSDOT every step of they way. They have been actively reviewing designs and we have had several recent meetings with their staff to discuss access, traffic control and stormwater.

3. Describe any land owner requirements (e.g., design elements, right-of-ways, access agreements, liability waivers, etc.) and if/how they could affect the project

Cascade Fisheries will be required to get a general permit issued by WSDOT to implement the project. WSDOT will provide extensive review and will need to approve the final designs and traffic control plans prior to implementation. WSDOT review ensures that our project protects public safety and their infrastructure. Beyond specific design requirements and standards, there is no effect on the project.

4. Will the project raise potential concerns for interest groups (e.g., recreational users) or the community at large (including upstream/ downstream/ adjacent landowners)?

The Wenatchee River, specifically the section from Leavenworth to Cashmere, is an important river recreation resource for kayakers and rafters throughout the Northwest region. A thriving commercial rafting industry exists on multiple sections of the Wenatchee River, helping expose tens of thousands of people to river recreation every year. The project is located approximately 1,000 feet downstream from a popular river feature called Turkey Shoot (Figure 1). The feature consists of a wave hydraulic that attracts rafters and kayakers to surf and "playboat." Due to the highly recreated nature of this area, Cascade Fisheries hired a consultant to develop a technical memo that describes the hydrology and hydraulic conditions in the project reach, identify potential risks to river recreational users, and provide recommendations to minimize risk. As a result of this study, we altered our design and are now using a lower risk rock inlet structure at the upstream most side channel inlet, rather than a wood structure. We are also planning an extensive public outreach campaign to make river users aware of the project and view this as an opportunity to build support for salmon recovery projects.

The community at large will be slightly impacted as their will be periodic right lane closures of highway 2 during construction. However, the level of impact and concern should be minimal. Again, this is a good chance to conduct outreach and build awareness of salmon recovery efforts.

5. Who will have the responsibility to manage and maintain the project? What is the responsibility of current or future landowners?

Cascade Fisheries is responsible for managing and maintaining the project. WSDOT is responsible for all of their infrastructure.

6. Are other projects being proposed immediately upstream or downstream of worksite?

No

7. Please describe the risk of failure associated with this project.

There is a low overall risk of failure of this project. Extensive hydraulic modeling has assessed post-project hydraulic conditions under design flow conditions which have informed channel and floodplain design and assessed site performance in meeting Project objectives. All structures have been designed to withstand anticipated hydraulic forces from design flows. Suitable factors of safety (FOS) have been selected to reduce any uncertainty. Special care was taken in designing the side channel inlets. Under the 2-year event, shear stresses are predicted to increase slightly by ~1 lbf/ft2 at the inlet to the upper side channel and along the existing side channel where the geometry will be graded deeper and with greater longitudinal continuity. This change is expected to provide the necessary "flushing flows" needed to maintain sediment continuity through the side channels and avoid imbalanced deposition. Due to the relatively small flow splits, and the high degree of roughness within the side channels, the risk of the river avulsing through the side channel path is very low.

8. Is there any public outreach planned during and/or after implementation? Does the project build community support for salmon recovery efforts?

Extensive outreach to river recreation users will be conducted prior to, during, and after implementation. This is a fantastic opportunity to educate the public and river users of the benefits and hazards natural and man-made wood features create. This outreach is also an opportunity to educate river users of the project benefits and other important safety elements for recreating on rivers to de-emphasize the focus on large wood as the primary hazard source. Prior to project implementation CF will host events targeted to river recreation users. One event, planned for May of 2025, will be hosted by Colchuck Consignment, and takes advantage of an already existing and regularly scheduled whitewater group meeting. Another event, potentially hosted at WRI or a local brewery, is planned prior to this project's implementation. Prior to, during, and after implementation we will also post alerts and project updates to the American Whitewater webpage and local whitewater social media pages. Following implementation, informational outreach signage will be placed at the water access site adjacent to the Turkey Shoot play wave.

Prior to implementation general public outreach will be conducted to inform the public about period lane closures on Highway 2 during construction and to inform the public about the benefits of the project.

Outreach could include newspaper and radio interviews, and social media posts.

9. Does the project represent an opportunity for economic benefit? How much benefit does the project create for the dollars invested?

This project will provide a WA based contractor with a large construction contract. This contract is expected to support several crew including a foreman, 3-6 heavy equipment operators, 3-4 labors, and 2 truck divers. The local economy will benefit from the sales tax of the project. The project will also support a local design engineering firm, as well as all of the staff involved in project planning and implementation.

10. Describe any partnerships, their experience, and types of contributions supporting the project.

Cascade Fisheries has been working with WSDOT for years on this project. We have built a strong working relationship and have recently had multiple meetings to discuss the details of access, traffic control, and stormwater features. CF partnered with the HCP Tributary Committees and the BPA during the design portion of this project. Both entities were equal funders and both participated in design review helping to improve the project overall. BPA will be the lead federal agency for Section 106 cultural resource compliance and ESA compliance. CF partnered with the HCP Tributary Committees and the US BOR to complete the assessment phase of this project. The BOR completed the topographic survey to assist with the design phase. This in-kind contribution is estimated at $15,000. The BOR also committed $30,000 funding to CF staff to support the design development and the progression of this project.

Optional Section - Preparation for PRISM (SRFB applications only)

The following questions are identical to the questions RCO requires in the PRISM application for SRFB projects. If desired, sponsors can complete associated questions early and copy responses into PRISM during the "Complete Application" phase due on April 18, 2025.
*please note, this section is not applicable for Monitoring proposals

Do you want to review and/or pre-populate PRISM questions? No

Supporting Documents

Upper Columbia Process Guide 2025

SRFB Manual 18 (2025)

RCO Application Resources (2025)