



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
Primary Contact	Aaron Rosenblum
E-Mail Address	aaron@ccfeg.org

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 650,000

Anticipated or Actual Other Funding 1,100,000

Anticipated TOTAL Budget 2,250,000

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.

The proposed project will address identified habitat limiting factors for ESA-listed salmonid species and restore watershed processes and functions through creation of new and reactivation of former off-channel habitats, wetlands, and floodplain area, WHS construction, and by maintaining and expanding forested riparian areas. Increased availability off channel habitats and improved floodplain connectivity will increase summer and winter Spring Chinook and steelhead juvenile rearing habitat. Through improved floodplain connection to overbank flows, the project will also increase floodwater attenuation, recharge groundwater storage, and hydrologically improve wetland and riparian functions. These actions will provide increased in-stream cover and velocity refugia and increased length of edge habitat for juvenile salmonids, and an increased frequency of stable wood and potential for retention of mobile wood. Construction of WHS in the side channels and mainstem will create and maintain deep pool habitat with groundwater connection and woody cover.

Implementation of this project will improve wetland and floodplain habitat. Floodplain habitats are highly important for fish and wildlife, and this project will result an increase of 3.06 acres of inundated floodplain at the 1.5-year flow compared to existing conditions. Project implementation will encourage riparian vegetation rehabilitation along the edges of the new and existing side channels, and existing wetlands through both direct planting after construction and natural revegetation over time. Planting and revegetation efforts will be sustained through the creation and expansion of floodplain area with increased access to regular overbank flows as well as increased groundwater availability. The riparian vegetation will assist in creation of channel shade, cover, pool creation, hydraulic complexity, wood recruitment, gravel sorting and retention, and groundwater exchange. As more existing floodplain depressions become reconnected, it is anticipated that the surrounding lower floodplain areas will become wetter, again supporting more moisture tolerant riparian vegetation. The resulting floodplain/wetland mosaic will be structurally complex, providing a number of different habitat niches including breeding areas, escape, cover, and food production.

The project was designed and intended to be beneficial to Endangered Species Act-listed spring chinook, steelhead, and bull trout, as well as summer chinook and coho. The restored floodplain connection will have substantial benefits to ESA-listed salmonids, specifically, juveniles. Juveniles require slow, shallow water, such as that provided by engaged floodplains and riverine wetlands. During spring freshets and other high flow events, juveniles cannot tolerate the velocities and turbulence in the mainstem. Floodplain off-channel habitats provide them an important refuge. In the daytime, chinook and steelhead fry preferentially station over fine substrates with abundant vegetation cover, precisely the type of habitat found in the emergent riverine wetlands that will be made available to them through the implementation of this project. The WHS that will be installed as part of this project will provide essential cover, allowing juveniles to avoid predators that are on the hunt in the mainstem river. This project will provide an important functional lift to high priority life stages of ESA-listed salmonids in the Wenatchee River.

A total of 82 WHS will be installed through project implementation. WHS will maintain excavated pools in which adult salmonids can hold, and create tailouts at the downstream end of pools that would contribute to suitable spawning habitat in terms of water depth, velocity and substrate sizes. The pools and cover created by the WHS would also provide suitable rearing habitat for juvenile salmonids, provide food

resources such as aquatic insects for juvenile salmonids and other fish species. Pools would be maintained by the hydraulic conditions created by the WHS, which will concentrate flows and force scour in their proximity. The WHS would be wetted and provide cover for juvenile salmonids during a range of flow conditions including, low flow.

CF and our project engineer conducted a site visit to in April 2025 to detail what could be accomplished to maximize the retention of existing vegetation throughout the project area. Specifically in the spoils area, we came up with the following plan. A 12' wide access path will be cleared immediately adjacent to the WSDOT right-of-way at the toe of the highway embankment- this is the furthest possible location from the side channel and river. This clearing is necessary for construction access and material staging during construction, and will have the deepest fill of spoils. For all areas waterward of the 12" wide cleared access, only the understory will be cleared. Mature cottonwoods will be left in place, and spoils will be filled around them. This will allow for the cottonwoods to continue providing benefits to salmonids immediately post construction. In fact, burring the base of the cottonwood should promote root suckering and a-sexual revegetation of the project area. Additional key save trees throughout the project site have been identified. These plans were detailed in the virtual tour presentation.

This project will serve to offset the simplification of aquatic habitats, development of channel incision patterns due to infrastructure development, and disconnection of floodplain habitats resulting from historic actions within the project reach.

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).

Project elements and actions restore natural geomorphic processes and the large wood cycle at the project scale and are designed to address the current rate of channel incision, low diversity of stream substrates and in-channel habitats, lack of pools and cover, and increase the extent of the riparian forest community. The restoration of the Wenatchee River's hydrologic influence over its floodplain, resulting in changes in water depth and velocity across various existing and new wetland, side channel, and floodplain habitats at typically occurring river flows, will, over time, also support the development and expansion of wetland and riparian forest communities, restoration of the large wood cycle, and improve the floodplain's ability to provide water quality function along this portion of the creek. Over time, the project will result in a net benefit to aquatic resources by restoring the hydraulic and sediment transport processes that form and support a diversity of wetlands and waters in the project area. The project is designed to be self-sustaining through natural processes so that its benefits can be realized well into the future.

At the project scale the project has been designed for maximum longevity. The new side channel at the upper end of the project area was added to the design during the alternatives analysis phase for this exact reason. The new side channel will create redundancy, two side channel entrances, instead of one, which will allow the project to continue to function if one becomes filled in. Also, the new side channel entrance is at a more geomorphically stable location. At high flows, the river's momentum is aimed right at the upper side channel's entrance, which will help keep the upper end flushed of fine sediment. It is also located on a riffle in the mainstem river, which is coincident of locations where side channels naturally form via geomorphic processes. Both side channel openings have been widened to further promote annual flushing of fine sediments at high flows.

The hydrologic rehabilitation of existing wetlands and creation of new floodplain areas that may develop riverine wetland areas overtime within the project boundaries will provide a substantial increase to the hydrologic functions and values provided by the site. The implemented project will create an additional 3.06 acres of inundated floodplain-wetland mosaic at the 1.5-year flood event, representing a 70% increase. This additional acreage of inundated area following project implementation will provide ample space for overbank flood storage during high water events. Riverine floodplains and wetlands play an important role during floods because the plants act to slow water velocities and thereby erosive flows.

This reduction in velocity also spreads out the time of peak flows, thereby reducing the maximum flows. The woody trees and shrubs established as part of this project will magnify this improvement in flood flow reduction. This improved function is highly valuable to society as the sub-basin immediately down-gradient of the site has had surface flooding problems that resulted in damage to human or natural resources in the past. From a watershed scale perspective, floodwater attenuation is especially important in the lower Wenatchee where opportunities for improvement are severely limited by infrastructure and development.

Implementation of this project will provide a substantial increase to the water quality functions and values provided by the site. As stated earlier, under existing conditions there is limited overbank flows or floodplain engagement across the project site. Once new side channels are created, and woody and herbaceous wetland/riparian vegetation is established, the engaged floodplain will improve water quality by acting as a filter to trap sediments and associated pollutants. The plants, floodplain WHS, and floodplain roughness features will reduce water velocities causing sediments and pollutants to be deposited, thereby improving water quality. The riparian/wetland floodplain mosaic created by this project is close to the mouth of the Wenatchee River, and thus will have nearly the entire watershed as its contributing basin, providing the maximum potential for these areas to capture incoming pollutants from sources upstream. The Wenatchee River watershed has extensive agricultural and commercial timber harvest land use types, both of which are likely to increase the presence of pollutants in the river. The project area is located in the Wenatchee River, which has TMDLs for fecal coliform and Dissolved Oxygen and pH. The proposed project provides a substantial increase over existing conditions of site's ability to capture pollutants, providing an increased value to society.

The Wenatchee River is also listed by the Washington Department of Ecology as having a TMDL for temperature. The implementation of this project will result in a drastically increased connection between floodplains, side channels and riverine wetlands with the Wenatchee River. Overall, 7.5 acres of floodplain will be inundated at the annual high flow after the project is implemented. The resulting floodplain wetland mosaic will help to address temperature issues in downstream waters. Floodplain vegetation, once mature, will provide essential shade to the Wenatchee River and side channels, helping to reduce solar insulation and warming. An improved connection between the Wenatchee River and its floodplain will result in an increased amount of surface and groundwater storage and exchange within the floodplain. Water stored within the floodplain will remain cool and will be slowly released back into the river during the summer months providing an important moderating effect to the warming river water. The side channel itself will be entirely groundwater fed in the hot summer months and will act as an important climate refugia for juvenile ESA-listed salmonids.

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

10-25 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?

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 \(2025\)](#)

PROJECT: 25-1213 REST, GOODWIN SIDE CHANNEL IMPLEMENTATION

Sponsor: Cascade Col Fish Enhance Group Program: Salmon State Projects Status: Application Submitted

Parties to the Agreement

PRIMARY SPONSOR

Cascade Columbia Fisheries Enhancement Group

Address PO Box 3162

City Wenatchee **State** WA **Zip** 98807

Org Type Non-Gov-Reg Fisheries Enhance Group

Vendor # SWV0010742-00

UBI

Date Org created

Org Notes

[link to Organization profile](#)

✓ Org data updated (by Ameer Bahr 04/24/2025)

SECONDARY SPONSORS

No records to display

MANAGING AGENCY

Recreation and Conservation Office

LEAD ENTITY

Upper Columbia Salmon Rcy Bd L

QUESTIONS

#1: List project partners and their role and contribution to the project.

WSDOT is the landowner. We have built a strong working relationship with them 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 compliance and ESA compliance.

External Systems

SPONSOR ASSIGNED INFO

Sponsor-Assigned Project Number

Sponsor-Assigned Regions

LINK AN EXISTING SRP PROJECT

Unlink

25-1213, Goodwin Side Channel Implementation, Salmon :

Project Application Report - 25-1213

Project Contacts

Contact Name Primary Org	Project Role	Work Phone	Work Email
<u>Amee Bahr</u> Rec. and Conserv. Office	Project Manager	(360) 867-8585	Amee.Bahr@rco.wa.gov
<u>Doran Lower</u> Rec. and Conserv. Office	MAgy Fiscal Contact	(360) 902-3007	doran.lower@rco.wa.gov
<u>Aaron Rosenblum</u> Cascade Col Fish Enhance Group	Project Contact	(509) 630-4160	aaron@ccfeg.org
<u>Ariel Edwards</u> Upper Columbia Salmon Rcy Bd L	Lead Entity Contact	(208) 540-2691	ariel.edwards@ucsr.org

Worksites & Properties

- # **Worksite Name**
- #1 Gooddwin Side Channel

Restoration	Property Name
✓	WSDOT

Project Application Report - 25-1213

Worksite Map & Description

Worksite #1: Gooddwin Side Channel

WORKSITE ADDRESS

Street Address Undefined
City, State, Zip Cashmere WA 98815-1037

Worksite Details

Worksite #1: Gooddwin Side Channel

SITE ACCESS DIRECTIONS

From Wenatchee travel West on Hwy 2 to Hay Canyon rd. Park on Hay Canyon Rd, cross highway on foot, and proceed to work area

TARGETED ESU SPECIES

Species by ESU	Egg Present	Juvenile Present	Adult Present	Population Trend
Chinook-Upper Columbia River Spring, Wenatchee River, Endangered		✓	✓	Declining
Steelhead-Upper Columbia River, Wenatchee River, Threatened	✓	✓	✓	Declining

Reference or source used

UCSRB spawning maps. NOAA 2022 status review

TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Lamprey	

Questions

#1: Give street address or road name and mile post for this worksite if available.

MP 109 - MP 110

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Project Location

RELATED PROJECTS

Projects in PRISM

PRISM Number	Project Name	Program Name	Current Status	Relationship Type	Notes
22-1510 P	Goodwin Side Channel Design	Salmon State Projects	Wastebasket	Earlier Phase	

Related Project Notes

Questions

#1: Project location. Describe the geographic location, water bodies or habitat types, and the location of the project in the watershed, i.e. nearshore, tributary, main-stem, off-channel, etc.

This is an off-channel/floodplain habitat project located on the left bank of the Wenatchee River at RM 11.2 - 11.5

#2: How does this project fit within your regional recovery plan and/or local lead entity's strategy to restore or protect salmonid habitat? Cite section and page number.

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 are cover-wood and off-channel/side-channel habitat, and the second highest ranking limiting factor is floodplain connectivity.

<https://prioritization.ucsr.org/>

#3: Is this project part of a larger overall project?

No

#4: Is the project on State Owned Aquatic Lands? Please contact the Washington State Department of Natural Resources to make a determination. [Aquatic Districts and Managers](#)

Yes

Property Details

Property: WSDOT (Worksite #1: Goodwin Side Channel)

✓ Restoration

LANDOWNER

Name	Department of Transportation (WSDOT)
Address	PO Box 47300
City	Olympia
State	WA Zip 98504-7300
Type	State

CONTROL & TENURE

Instrument Type	Temp. Construction Permit
Timing	Proposed
Term Length	Fixed # of years
# Yrs	3
Expiration Date	
Note	

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Project Proposal

Project Description

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.

Project Questions

#1: Problem statement. What are the problems your project seeks to address? Include the source and scale of each problem. Describe the site, reach, and watershed conditions. Describe how those conditions impact salmon populations. Include current and historic factors important to understand the problems.

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 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)

The current habitat benefit of the existing side channel is limited by its infrequent surface water connection with the mainstem. From 2000-2020, the side channel was connected (at or above 8,000 CFS) for an average of only 36 days a year. This connection overwhelmingly occurred during spring freshet, and the side channel is inaccessible during the critical summer and winter rearing months. Winter rearing is identified as a high priority life stage for this reach for both spring chinook and steelhead. While designing this project we will seek to increase the frequency that salmonids can access this side-channel habitat, while being sure to maintain the cold-water benefit provided by groundwater in the late summer.

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 side channel, that is currently only connected to the mainstem for 36 days per year on average.

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#2: Describe the limiting factors, and/or ecological concerns, and limiting life stages (by fish species) that your project expects to address.

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 are cover-wood and off-channel/side-channel habitat, and the second highest ranking limiting factor is floodplain connectivity.

The proposed restoration project improves floodplain connectivity and frequency of fish access to the Goodwin Side Channel, which addresses the highest-ranking species, life stages, and limiting factors for this reach of the Wenatchee River.

#3: What are the 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. Include which species and life stages will benefit from the outcome, and the time of year the benefits will be realized. **Example Goals and Objectives**

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.

#4: What are the project objectives? Objectives support and refine biological goals, breaking them down into smaller 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). **Example Goals and Objectives**

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.

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#5: Scope of work and deliverables. Provide a detailed description of each project task/element. With each task/element, identify who will be responsible for each, what the deliverables will be, and the schedule for completion.

1. **Finalize final design and permitting** (November 2025 - May 2026): CF will be responsible for ensuring all necessary project permits and approvals are in place prior to construction. Permit applications will be submitted in the spring of 2024. Actions under this agreement would include agency coordination and final approval. CF will also work with design consultant Wolf Water Resources to produce stamped, construction ready designs during this time period. This task will also include coordination with project stakeholders including the landowner WSDOT.
2. **Construction Advertisement:** CF will work with W2r and project stakeholders to advertise a formal RFP process to hire a construction contractor. This process will include solicitation, a mandatory onsite pre-bid meeting, bid review, and contract signing.
3. **Construction Implementation:** CF will oversee construction of the project to ensure compliance with project design, specifications, and environmental compliance documentation.
4. **Maintenance:** As funding allows CF will maintain the site to ensure project success. This task includes maintenance for plantings, installing new plantings as needed. noxious weed control, and observation of changed conditions onsite.

#6: What are the assumptions and physical constraints that could impact whether you achieve your objectives? Assumptions and constrains are external conditions that are not under the direct control of the project, but directly impact the outcome of the project. These may include ecological and geomorphic factors, land use constraints, public acceptance of the project, delays, or other factors. How will you address these issues if they arise?

Assumptions, and constraints, including river recreation and access off of HWY 2, have been addressed through the design process. Our project addresses physical constraints and limitations at the site scale, but cannot address the large scale impacts to river process found throughout the lower Wenatchee River, as they are found throughout the lower 20 miles of river.

#7: How have lessons learned from completed projects or monitoring studies informed this project?

CF conducted an 18-assessment of the project area an collected data including groundwater levels; groundwater temperature, surface water levels, surface water temperature, fish use, and habitat. We have incorporated this information into our planning and the designs including: the spatial and temporal extent of the groundwater expression in the existing side channel and excavation required to improve that, the temporal extent of the current surface water connection, and current habitat conditions and fish use within the existing side channel.

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#8: Describe the alternatives considered and why the preferred was chosen.

Three design alternatives were developed that spanned a spectrum of design and implementation complexities and associated ecological benefits to the focal fish species. The design elements were additive from Alternative 1 through Alternative 3, where the simplest design elements were presented as part of Alternative 1, moderate design elements were presented as Alternative 2, and the more complex design elements were presented as Alternative 3. The three alternatives were evaluated through a semi-quantitative process by which key hydrologic, habitat-benefit, and constructability metrics were identified and formatted in a screening matrix. The anticipated responses of each metric to each alternative were described based on changes in site dimensions or quality. Each cell in the matrix was then assigned a "relative-ranking score" based on the anticipated benefit of that alternative's metric relative to existing conditions as either enhanced, neutral, or diminished.

The three alternative design concepts and their relative-scoring matrices were presented to the Tributary Committees and BPA for their review and selection of a preferred alternative. The reviewers raised questions regarding ecological benefits, long-term sustainability, sedimentation potential, boater safety, and construction costs. Cascade Fisheries with technical support from W2r worked collaboratively with the reviewers to select the preferred alternative. Cascade Fisheries and the reviewers ultimately selected Alternative 3 as the preferred alternative because it provides the greatest biological benefit and provides the highest likelihood of persisting long-term.

#9: How were stakeholders consulted in the development of this project? Identify the stakeholders, their concerns or feedback, and how those concerns were addressed.

The Wenatchee River, specifically the section from Leavenworth to Cashmere, is an important river recreation resource for kayakers and rafters throughout the Northwest region. The section of river that includes the project area supports a thriving commercial rafting industry, exposing tens of thousands of people to river recreation every year.

Knowing this, CF hired a consultant to produce a technical memorandum entitled "Goodwin Side Channel Habitat Restoration Project: Recreational User Impact Study". This memo provides an analysis of the potential impacts of the proposed river engineering project on recreational user groups. The assessment focuses on the hydraulics around the proposed feature, user groups who may be present, and hydrological conditions that may affect recreational activities. The preparation of the memo included interviews with local river recreationists, including both private citizens and river guides. Through this process we found that there is a river play wave upstream of the project area, and that at high flows, the river's momentum would carry river users from that wave towards the project area. As a result of the analysis and interviews, we changed the design of the inlet to the upstream most side channel - changing it from a wood habitat structure to a rock based inlet structure. The rock structure poses a much lower risk and perceived risk to the river user community. The technical memo is included in the attachments to this application.

#10: Does your project address or accommodate the anticipated effects of climate change?

Yes

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#10a: How will your project be climate resilient given future conditions?

Predictions of precipitation and temperature changes in the region indicate a decrease in snowpack as more precipitation will fall as rain (USGCRP 2017, Raymond and Rogers 2022), which will influence timing and magnitude of runoff, possibly shifting the seasonally high flows typical for May and June to earlier in the spring. The project has been designed to be resilient to predicted future conditions. The project will be designed to accommodate and function at predicted future hydrologic conditions, for example, the side channel inundation flow of 1800CFS (50% exceedance flow) will still be optimal under future conditions even if the exceedance percentage increases because flows below this will allow the Wenatchee River water to warm too quickly and potentially negate the cooling effect provided by the groundwater present in the project side channels. Project elements will be designed to be stable with future flood flow conditions in mind by including a minimum factor of safety of 2.

#10b: How will your project increase habitat and species adaptability?

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, providing an important thermal refuge in a location of the lower Wenatchee River that is already hot and predicted to get hotter.

#11: Describe the sponsor's experience managing this type of project. Describe other projects where the sponsor has successfully used a similar approach.

Cascade Fisheries has managed several large-scale habitat restoration projects. Recent examples include Merritt Oxbow Reconnection, Lower Peshastin Restoration, Peshastin 2.5, Chiwakum Creek Restoration, the Silver Side-Channel, and Hancock Springs Restoration.

#12: Will veterans (including the veterans conservation corps) be involved in the project? If yes, please describe.

No

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Restoration Supplemental

#1: What level of design (per Appendix D) have you completed? Please attach.

Preliminary

#1a: What level of design will be produced prior to construction?

Final

#2: Will (or did) a licensed professional engineer design the project?

Yes

#3: Does the project include measures to stabilize an eroding stream bank?

No

#4: Is the primary activity of the project invasive species removal?

No

#5: Is the primary activity of the project riparian planting?

No

#6: Describe the steps you will take to minimize the introduction of invasive species during construction and restoration. Consider how you will use un-infested materials and clean equipment entering and leaving the project area.

Invasive plant species including spotted knapweed, Siberian elm, reed canary grass are present within the project area. The project will follow conservation measures and BMPs described in the Aquatic Restoration Biological Opinion (ARBO II) and the HIP Programmatic to minimize the chance of weed species introduction. These measures include: 1) All equipment and vehicles used in the project should be clean of invasive plant seed and dirt (Weed Free) before entering National Forest Lands; 2) All materials such as gravel, rocks, etc. shall be free of invasive plant seed (Weed Free); and 3) Minimize soil disturbance and prevent damage to native vegetation, in and around project activity areas, to the extent possible consistent with project construction diagrams.

Eastern brook trout (*Salvelinus fontinalis*) may be present in the project area. Any brook trout encountered during stream dewatering and fish salvage activities will not be returned to the stream.

#7: Describe the long-term stewardship and maintenance obligations for the project.

Cascade Fisheries is responsible for stewarding and maintaining the project in the future. WSDOT is responsible for all of their infrastructure.

Restoration Metrics

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Worksite: Gooddwin Side Channel (#1)

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Miles of Stream and/or Shoreline Treated or Protected (C.0.b)	0.35
Project Identified In a Plan or Watershed Assessment (C.0.c)	Lower Wenatchee Reach Assessment (Terta Tech 2017) - project area 24
Priority in Recovery Plan	Project Area 24 is a Tier 1 project because it addresses the highest ranked limiting factors for the reach and benefits multiple high priority life stages. P.223 Appendix E
Type Of Monitoring (C.0.d.1)	Implementation Monitoring
Monitoring Location (C.0.d.2)	Downstream Onsite Upstream

INSTREAM HABITAT PROJECT

Total Miles Of Instream Habitat Treated (C.4.b)	0.35
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Channel reconfiguration and connectivity (C.4.c.1)

Total cost for Channel reconfiguration and connectivity	\$300,450
---	-----------

Type of change to channel configuration and connectivity (C.4.c.2)	Creation of Instream Pools Creation/Connection to Off-Channel Habitat Levee removal/Alteration
--	--

Miles of Stream Treated for channel reconfiguration and connectivity (C.4.c.3)	0.10
--	------

Miles of Off-Channel Stream Created or Connected (C.4.c.4)	0.10
--	------

Acres Of Channel/Off-Channel Connected Or Added (C.4.c.5)	0.7 Note: additional inundated acres at the 1.5 year flow over EC
---	---

Instream Pools Created/Added (C.4.c.6)	10
--	----

Channel structure placement (C.4.d.1)

Total cost for Channel structure placement	\$150,000
--	-----------

Material Used For Channel Structure (C.4.d.2)	Flood Fencing Logs Fastened Together (Logjam) Rocks/Boulders (Unanchored)
---	---

Miles of Stream Treated for channel structure placement (C.4.d.3)	0.10
---	------

Acres Of Streambed Treated for channel structure placement (C.4.d.4)	10
--	----

Pools Created through channel structure placement (C.4.d.5)	10
---	----

Number of structures placed in channel (C.4.d.7)	10
--	----

Plant removal/control (C.4.g.1)

Total cost for Plant removal/control	\$4,000
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Miles of Stream Treated for plant removal/control (C.4.g.3)	0.05
---	------

Acres of Streambed Treated for plant removal/control (C.4.g.4)	0.2
--	-----

Species Of Plants Removed/Controlled (C.4.g.2)	Spotted Knapweed, Siberian Elm, Reed Canary Grass
--	--

RIPARIAN HABITAT PROJECT

Total Riparian Miles Streambank Treated (C.5.b.1)	0.20
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Total Riparian Acres Treated (C.5.b.2)	0.5
--	-----

Planting (C.5.c.1)

Total cost for Planting	\$20,000
-------------------------	----------

Species Of Plants planted in riparian (C.5.c.2)	See plans
---	-----------

Acres Planted in riparian (C.5.c.3)	0.5
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Miles of streambank planted (C.5.c.4)	250
---------------------------------------	-----

Average Riparian Width	100
------------------------	-----

Site Potential Tree Height at 200 years (SPTH-200)	100
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WETLAND PROJECT

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Total Acres Of Wetland Area Treated (C.8.b)	0.2
---	-----

Wetland improvement/ restoration (C.8.e.1)

Total cost for Wetland improvement/ restoration	\$5,000
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Acres of wetland Improved/Restored (C.8.e.2)	0.6
--	-----

PERMITS

Obtain permits

Total cost to Obtain permits	\$1,000
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Number of permits required for implementation of project

ARCHITECTURAL & ENGINEERING

Architectural & Engineering (A&E)

Total cost for Architectural & Engineering (A&E)	\$17,000
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AGENCY INDIRECT COSTS

Agency Indirect

Total cost for Agency Indirect	\$2,550
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Overall Project Metrics

COMPLETION DATE

Projected date of completion

12/03/2029

Restoration Cost Estimates

Worksite #1: Gooddwin Side Channel

Category	Work Type	Estimated Cost	Note
Agency Indirect Costs	Agency Indirect	\$2,550	
Instream Habitat Project	Channel reconfiguration and connectivity (C.4.c.1)	\$300,450	
	Channel structure placement (C.4.d.1)	\$150,000	
	Plant removal/control (C.4.g.1)	\$4,000	
Permits	Obtain permits	\$1,000	
Riparian Habitat Project	Planting (C.5.c.1)	\$20,000	
Wetland Project	Wetland improvement/ restoration (C.8.e.1)	\$5,000	
	Subtotal:	\$483,000	
Admin, Architecture, and Engineering		\$17,000	
	Total Estimate For Worksite:	\$500,000	

Summary

Total Estimated Costs Without AA&E:	\$483,000
Total Estimated AA&E:	\$17,000
Total Estimated Restoration Costs:	\$500,000

Cost Summary

	Estimated Cost	Project %	Admin/AA&E %
<u>Restoration Costs</u>			
Restoration	\$483,000		
Admin, Architecture, and Engineering	\$17,000		3.54 %
SUBTOTAL	\$500,000	100.00 %	
Total Cost Estimate	\$500,000	100.00 %	

Funding Request and Match

FUNDING PROGRAM

Salmon State Projects	\$500,000	100.000000
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SPONSOR MATCH

Questions

#1: Explain how you determined the cost estimates

Cost estimate based on engineer's 60% design. Unit costs on this CE were developed by reviewing and incorporating actual bids received on other local projects of similar scope and scale. CF staff cost estimates are based our work and experience of other recent projects of similar scope and scale. CF staff salaries are expected to increase over time due to step increases and COLA adjustments.

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Other Funding

OTHER FUNDING DETAILS

Other Funds: Monetary Funding	Federal Grant	
Amount		\$1,100,000
Funding Organization		Bonneville Power Administration (BPA)
Grant Program		Upper Columbia Programmatic
Other Funds: Monetary Funding	Local Grant	
Amount		\$653,500
Funding Organization		HCP Tributary Committees
Grant Program		HCP Tributary Committees
Other Funding Detail Total:		\$1,753,500

Cultural Resources

Cultural Resource Areas

Worksite #1: Gooddwin Side Channel

Area: Uploaded APE

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

The project will include approximately 14,000 cubic yards (CY) of excavation at various locations throughout the project area to: remove an earthen soil berm, establish a new side channel of about 900 linear feet that will connect to the existing side channel, and excavate/grade the existing side channel to improve habitat and increase floodplain inundation and connectivity. Several engineered log jams (ELJ), wood habitat structures, and floodplain roughness structures will be installed to increase hydraulic diversity, sediment sorting, gravel retention, and maintain pools with cover. Three large ELJs will be installed within the mainstem Wenatchee River – one at each side channel entrance, and one at the side channel exit back into the river. These structures will require extensive excavation and ballast to install. Wood habitat structures will be installed along the length of the side channels. They will be smaller than the mainstem ELJs. Floodplain roughness structures will be installed on the margins of the Wenatchee River in the middle of the project site. They will consist of both harvested tree logs and live vegetation. Extensive riparian restoration will occur following earthwork. Plants will be installed with a combination of excavators, excavator mounted stinger, handheld gas powered auger, and handheld tools.

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Maximum grading depths are to about 10'. Equipment is expected to be power machinery potentially including an excavator, bulldozer, skid steer, log loader, haul trucks, etc. Details can be found on the plans.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

None for this project

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#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The project area is within the floodplain of the Wenatchee River. A man made feature referred to as the "bermed pond" exists within the project area. It is assumed to have been constructed when HWY 2 was built. It has no known current use.

#5: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?

Yes

#5a: List the agency that will be issuing the permit and the date you anticipate applying for and receiving the permit. Will the federal permit cover ALL proposed ground disturbing activities included in the project?

USACE, apply in April 2025, receive in Oct 2025

#6: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.

Yes

#6a: Please list the federal agency and funding sources.

BPA

#6b: Does the federal funding you are utilizing as match require you to receive state funding?

No

#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?

No

#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?

No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.

No

Area: Uploaded APE - staging

#1: Provide a description of the project actions at this worksite (acquisition, development and/or restoration activities that will occur as a part of this project)

This area to be used for staging. Expected use is parking of equipment, low boys, haul trucks, etc, not currently in use

#2: Describe all ground disturbing activities (length, width and depth of disturbance and equipment utilized) that will take place in the Area of Potential Effect (APE). Include the location of any construction staging or access roads associated with your project that will involve ground disturbance.

Maximum grading depths are to about 10'. Equipment is expected to be power machinery potentially including an excavator, bulldozer, skid steer, log loader, haul trucks, etc. Details can be found on the plans.

#3: Describe any planned ground disturbing pre-construction/restoration work. This includes geo-technical investigation, fencing, demolition, decommissioning roads, etc.

None for this project

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#4: Describe the existing project area conditions. The description should include existing conditions, current and historic land uses and previous excavation/fill (if depths and extent is known, please describe).

The project area is within the floodplain of the Wenatchee River. A man made feature referred to as the "bermed pond" exists within the project area. It is assumed to have been constructed when HWY 2 was built. It has no known current use.

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BPA

#6b: Does the federal funding you are utilizing as match require you to receive state funding?

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#7: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?
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#8: Is the worksite located within an existing park, wildlife refuge, natural area preserve, or other recreation or habitat site?
No

#9: Are there any structures over 45 years of age within this worksite? This includes structures such as buildings, tidegates, dikes, residential structures, bridges, rail grades, park infrastructure, etc.
No

Project Permits

Permits and Reviews	Issuing Organization	Applied Date	Received Date	Expiration Date	Permit #
Aquatic Lands Use Authorization	Dept of Nat. Res.				
Cultural Assessment [Section 106]	DAHP	11/04/2024	03/20/2025		DAHP Project 2024-11-0801
Endangered Species Act Compliance [ESA]	US Fish & Wildlife				
Hydraulics Project Approval [HPA]	Dept of Fish & Wildlife				
Nationwide Permit	Army Corps of Eng.				
Water Quality Certification [Section 401]	County/Dept of Ecy.				
Other Required Permits					

Note: Floodplain permit from Chelan County

Permit Questions

#1: Are you planning on using the federal permit streamlining process? **Limit 8**

No

due to presence of endangered spring chinook

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Attachments

Required Attachments

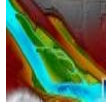
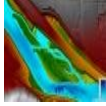
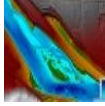
6 out of 6 done

- Applicant Resolution/Authorizations
- CCA Tribal Notification
- Cost Estimate
- Map: Restoration Worksite
- Photo
- RCO Fiscal Data Collection Sheet

- ✓
- ✓
- ✓
- ✓
- ✓
- ✓

PHOTOS (JPG, GIF)

Photos (JPG, GIF)
























666261 Primary # 666259 Secondary # 666254 # 666255 # 666256

PROJECT DOCUMENTS AND PHOTOS

Project Documents and Photos

Project Application Report - 25-1213

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
	05/27/2025	Application Document	RESPONSES TO RTT AND TRIB QUESTIONS_25-1213.docx	AaronR	RESPONSES TO RTT AND TRIB QUESTIONS_25-1213.docx, 670565	✓
	05/27/2025	Application Document	Goodwin-Side-Channel-Implementation_UC Regional app 052725.p	AaronR	Goodwin-Side-Channel-Implementation_UC Regional app 052725.pdf, 670564	✓
	05/13/2025	Application Document	Goodwin Side Channel Implementation-link to virtual tour pr	AaronR	Goodwin Side Channel Implementation-link to virtual tour presentation.docx, 669461	✓
	05/13/2025	RCO Fiscal Data Collection Sheet	FiscalDataCollectionSheet - Cascade Fisheries - 2025 sds.pdf	AaronR	FiscalDataCollectionSheet - Cascade Fisheries - 2025 sds.pdf, 669460	
	05/13/2025	Applicant Resolution/Authorizations	ApplicantAuthorizationResolution - Cascade Fisheries - 2025.	AaronR	ApplicantAuthorizationResolution - Cascade Fisheries - 2025.pdf, 669459	✓
	05/13/2025	Landowner acknowledgement form	SAL-LandownerAckForm - 25-1213_WSDOT.pdf	AaronR	SAL-LandownerAckForm - 25-1213_WSDOT.pdf, 669458	
	04/17/2025	Project Application Report	Project Application Report, 25-1213R (sub 04/17/25 10:55:04)	AaronR	Project Application Report - 25-1213 (submitted 04-17-2025_10-55-04).pdf, 666511	✓
	04/17/2025	Cost Estimate	25-1213 Goodwin Side Channel Implementaiton SAL-CostEstimate	AaronR	25-1213 Goodwin Side Channel Implementaiton SAL-CostEstimate.xlsx, 666510	✓
	04/16/2025	Preliminary design report	W2r_CascadeFish-GoodwinSC_60PctPermitDesRpt-DRAFT_20240927.p	AaronR	W2r_CascadeFish-GoodwinSC_60PctPermitDesRpt-DRAFT_20240927.pdf, 666427	✓
	04/16/2025	CCA Tribal Notification	Draft-CCA-TribalNotice.docx	AaronR	Draft-CCA-TribalNotice.docx, 666416	✓
	04/15/2025	Photo	DJI_0756.JPG	AaronR	DJI_0756.jpg, 666261	✓
	04/15/2025	Map: Restoration Worksite	HAWS_EC_georef_v3.pdf	AaronR	HAWS_EC_georef_v3.pdf, 666260	✓
	04/15/2025	Map: Restoration Worksite	Goodwin Side Channel Project Location.jpg	AaronR	Goodwin Side Channel Project Location.jpg, 666259	✓
	04/15/2025	Design document	Depth_PC_Shutoff_1810cfs.jpg	AaronR	Depth_PC_Shutoff_1810cfs.jpg, 666256	✓
	04/15/2025	Design document	Depth_PC_25%ex_4150cfs.jpg	AaronR	Depth_PC_25%ex_4150cfs.jpg, 666255	✓
	04/15/2025	Design document	Depth_PC_1.5yr_15440cfs.jpg	AaronR	Depth_PC_1.5yr_15440cfs.jpg, 666254	✓
	04/15/2025	Design document	GOODWIN-60%-20240926.pdf	AaronR	GOODWIN-60%-20240926.pdf, 666252	✓
	04/15/2025	Cultural Resources: Formal Consultation	APE_Goodwin Side Channel_WA2025012.pdf	AaronR	APE_Goodwin Side Channel_WA2025012.pdf, 666208	
	04/15/2025	Cultural Resources: Cultural Resources Survey	Goodwin Side Channel CRS Report.pdf	AaronR	Goodwin Side Channel CRS Report.pdf, 666207	
	04/15/2025	Cultural Resources: Section 106	Notification - Section 106 Complete.pdf	AaronR	Notification - Section 106 Complete.pdf, 666206	
	04/15/2025	Design document	Goodwin Side Channel - Recreational User Impact Study - 0726	AaronR	Goodwin Side Channel - Recreational User Impact Study - 07262024.pdf, 666169	✓

Application Status

Application Due Date: 06/23/2025

Status Name	Status Date	Submitted By	Submission Notes
Application Submitted	04/17/2025	Aaron Rosenblum	
Preapplication	04/02/2025		

I certify that to the best of my knowledge, the information in this application is true and correct. Further, all application requirements due on the application due date have been fully completed to the best of my ability. I understand that if this application is found to be incomplete, it will be rejected by RCO. I understand that I may be required to submit additional documents before evaluation or approval of this project and I agree to provide them. (Aaron Rosenblum, 04/17/2025)

Date of last change: 04/28/2025

Project Application Report - 25-1213

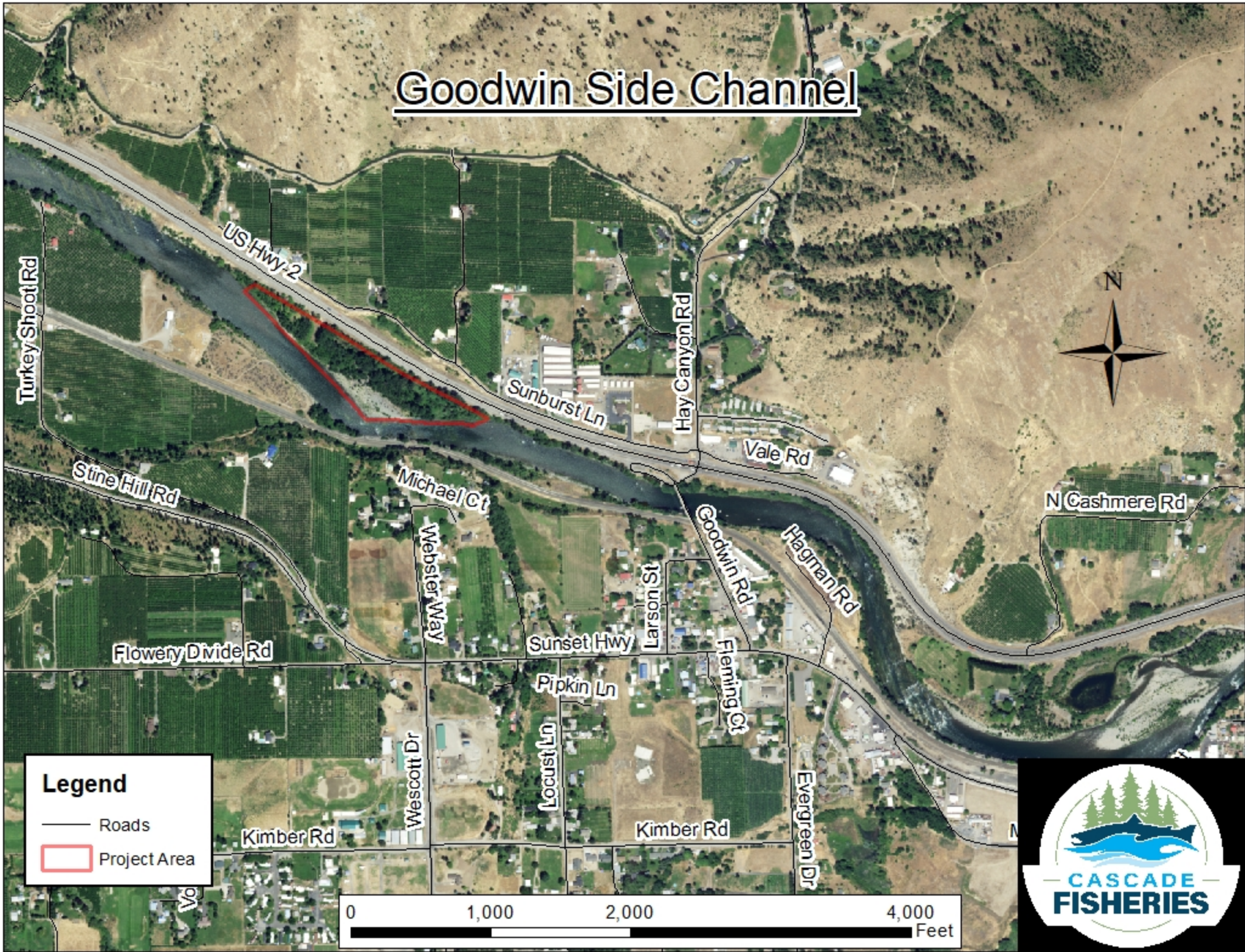
CUMULATIVE TOTALS

This sheet contains automatic calculations

Project Name	Goodwin Side Channel Implementation
SRFB #	25-1213
Sponsor	Cascade Fisheries

	OVERALL PROJECT Cost	GRANT REQUEST Amount	PRISM MATCH Amount	MATCH NOT IN PRISM Amount	Budget Check
<u>Sheet #1 Acquisition</u>					
Property Costs	\$ -	\$ -	\$ -	\$ -	0
Incidental Costs	\$ -	\$ -	\$ -	\$ -	0
Administrative Costs	\$ -	\$ -	\$ -	\$ -	0
Indirect Costs	\$ -	\$ -	\$ -	\$ -	
STotal	\$ -	\$ -	\$ -	\$ -	0
<u>Sheet #2 Design</u>					
Design Costs	\$ -	\$ -	\$ -	\$ -	
Indirect Costs	\$ -	\$ -	\$ -	\$ -	
STotal	\$ -	\$ -	\$ -	\$ -	0
<u>Sheet #3 Restoration</u>					
Construction Costs	\$ 2,202,550	\$ 483,000	\$ -	\$ 1,719,550	0
AA&E	\$ 17,000	\$ 17,000	\$ -	\$ -	0
Indirect Costs	\$ -	\$ -	\$ -	\$ -	
STotal	\$ 2,219,550	\$ 500,000	\$ -	\$ 1,719,550	0
Totals	\$ 2,219,550	\$ 500,000	\$ -	\$ 1,719,550	0

Goodwin Side Channel



Turkey Shoot Rd

US Hwy 2

Sunburst Ln

Hay Canyon Rd

Vale Rd

Stine Hill Rd

Michael Ct

N Cashmere Rd

Webster Way

Goodwin Rd

Hagman Rd

Flowery Divide Rd

Sunset Hwy

Larson St

Fleming Ct

Pipkin Ln

Locust Ln

Evergreen Dr

Kimber Rd

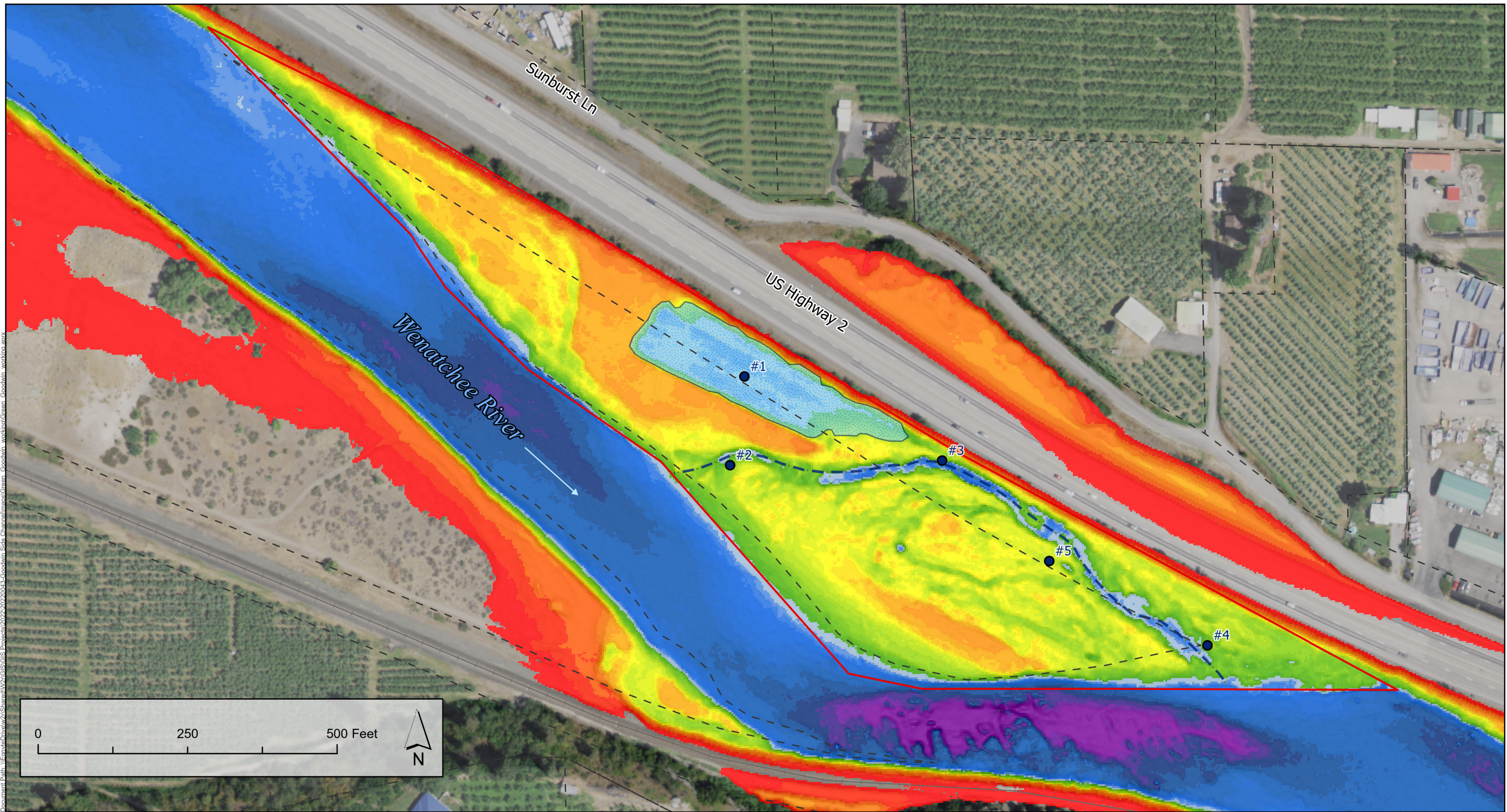
Wescott Dr

Kimber Rd

Legend

- Roads
- ▭ Project Area

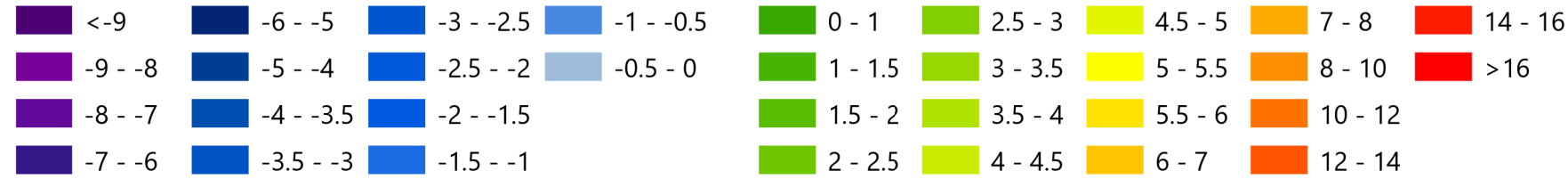




- Study area (11.4 acres)
- Railroad
- Piezometer location
- Tax lot
- Existing side channel
- Bermed pond

*Height-Above-Water-Surface (HAWS) contours show elevations relative to the water surface associated with the 1.5-year recurrence flood of 14,770 cfs. Topographic/bathymetric data from the 2022 Lidar.

Relative Elevation (ft)*



Goodwin Side Channel Restoration
HAWS Map





RESPONSES TO RTT AND TRIB QUESTIONS
GOODWIN SIDE CHANNEL IMPLEMENTATION

1. RTT thought the issue of where spoils would be placed and their impact on existing vegetation should be more thoroughly addressed. Although the current plan is likely the most cost-effective approach, the RTT encourages the sponsor to consider ways to reduce impacts to existing vegetation that provides habitat benefits to salmonids.

Answer: CF and our project engineer conducted a site visit to in April 2025 to detail what could be accomplished to maximize the retention of existing vegetation throughout the project area. Specifically in the spoils area, we came up with the following plan. A 12' wide access path will be cleared immediately adjacent to the WSDOT right-of-way at the toe of the highway embankment- this is the furthest possible location from the side channel and river. This clearing is necessary for construction access and material staging during construction, and will have the deepest fill of spoils. For all areas waterward of the 12" wide cleared access, only the understory will be cleared. Mature cottonwoods will be left in place, and spoils will be filled around them. This will allow for the cottonwoods to continue providing benefits to salmonids immediately post construction. In fact, burring the base of the cottonwood should promote root suckering and a-sexual revegetation of the project area. Additional key save trees throughout the project site have been identified. These plans were detailed in the virtual tour presentation.

2. RTT acknowledges the challenges of generating new off-channel habitat in a highly impacted river like the Wenatchee River but also wanted to highlight that the constructed side-channel may not greatly enhance the river's natural geomorphic dynamics. Within this vein, as we have learned from other similar projects, adaptive management efforts will likely be needed within 10 years of project completion.

Answer: We can only control dynamics at the project scale. At the project scale the project has been designed for maximum longevity. The new side channel at the upper end of the project area was added to the design during the alternatives analysis phase for this exact reason. The new side channel will create redundancy, two side channel entrances, instead of one, which will allow the project to continue to function if one becomes filled in. Also, the new side channel entrance is at a more geomorphically stable location. At high flows, the river's momentum is aimed right at the upper side channel's entrance, which will help keep the upper end flushed of fine sediment. It is also located on a riffle in the mainstem river, which is coincident of locations where side channels naturally form via geomorphic

processes. Both side channel openings have been widened to further promote annual flushing of fine sediments at high flows.

[Goodwin Side Channel Implementation_Virtual Tour.pptx](#)