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	Entiat 1D Habitat Enhancement Final Design
Sponsor	Chelan County Natural Resources Department
Primary Contact	Mike Kane
E-Mail Address	mike.kane@co.chelan.wa.us

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 is a final design phase project and includes design development, preparation of a basis of design report, hydraulic modeling and other elements as per Manual 18 Requirements. Additionally included is a CLOMR, wetland delineation and cultural resource surveys. Preliminary Designs were completed in December of 2024 in a SRFB funded effort.
Human impacts within the lower Entiat River have had a large and detrimental effect on instream habitat (re-routing, channelization, levee building, etc.). Due to existing conditions the river lacks the ability to readily create new habitat through natural processes alone. As a result of the confined river channel and limited floodplain habitats, the majority of habitat that historically existed on the lower Entiat River was instream habitat; therefore, re-establishing instream habitat is vitally important to salmon and steelhead (Reclamation 2012).
Goals: Improve side channel hydraulic connectivity and habitat quality for juvenile salmonids. Improve instream habitat for juvenile salmonids. Increase riparian buffer structure and function related to stream shading and large wood recruitment potential. Reduce instream water temperatures.
The desired future condition for this site is to enhance the existing functional attributes like large wood structures and perennial and seasonal side channels.

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].

Side channel connectivity-Objectives: Improve existing 920' of seasonal and perennial side channel features through the strategic construction of 9 ELJs to increase flow interaction and provide cover.
Instream habitat-Objective: Install 9 ELJs to provide cover, pool formation, and sediment sorting. Enhance hydraulic variability and provide instream cover along 1600' of the mainstem river.
Increase riparian buffer-Objective: Restore riparian mature riparian forested vegetation located within the 2-year floodplain or within 25 feet of the existing banks.
Reduce instream water temperatures-Objective: Increase main channel shade through riparian revegetation fill planting and long-term shading along 730' of the south bank. Increase hyporheic and floodplain flow storage and discharge through strategically constructing engineered log jams (ELJs) to deflect and increase flows into adjacent floodplain and gravel bar features along 1600' of mainstem and 920' of side channel habitat.

Budget Request

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

Anticipated Request - SRFB (standard round)	259,800
Anticipated TOTAL Budget	259,800

Project Location

Briefly describe the location of the project	This project is focused on Reach 1D between River Miles (RM) 4.3 – 4.8 of the Entiat River, bounded upstream by the Hanan-Detwiler diversion structure and downstream by Dinkelman Canyon Road bridge.
Latitude (decimal degrees)	47°40'24.08"N
Longitude (decimal degrees)	120°18'35.57"W
Project subbasin	Entiat
Entiat Assessment Unit(s)	Entiat River-Mills Creek
Does the proposed project span multiple assessment units?	No
Reach(es) Name	Entiat River Mills 05
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 2

Project Information

1. What species will the project benefit?

Spring Chinook | Steelhead | Bull Trout | Summer Chinook

2. Select the project's objectives and the associated tracking metrics

Design, Monitoring or Assessment

4. Does this project already exist in Salmon Recovery Portal or PRISM?

Yes

5. Has this project been submitted previously for funding through the SRFB and/or other process(es)?

Yes

Please explain which process(es) and how this proposal differs from the previous submission (e.g., different phase, modified scope, etc.)

It was previously submitted and funded through Preliminary Designs.

6. What category is the project?

Design

If applicable, what is the secondary project category?

N/A

Is the project eligible for Riparian Funding?

No

Design and Restoration Proposals

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

Final Design

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 Entiat Reach Assessment (BOR 2012)

9. Which limiting factors does the project propose to address?

Cover - Wood | Off-Channel - Floodplain | Off-Channel - Side-Channels | Pool Quantity & Quality | Riparian | Riparian - Canopy Cover | Riparian - Disturbance

10. Which life stages will the proposed project address?

Fry | Spawning and Incubation | 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?

The project will add 9 ELJ structures and associated pools thus increasing overall habitat capacity and distribution within the lower Entiat River. Polivka and Claeson (2020) found that restoration increased the habitat capacity of the reach at the scale of pools created by ELJ's.
Additionally, the strategic location of the ELJ's will enhance flows into side channel habitats, adding capacity by increasing the amount of wetted area. Some of the ELJ's are located within side channels, providing cover and improving survival. Over the long-term, fill-planting of forested clumps along the south shore will increase shading and provide relief to late summer in stream heating.

The Reach-based Ecosystem Indicators (REI) analysis (Reclamation 2012) found that within Lower Entiat River, water quality (temperature); habitat quality (large woody debris, pools, off-channel habitat), floodplain connectivity, and riparian vegetation were in an “at risk” condition due to historic anthropomorphic impacts, including floodplain development, bed armoring (embeddedness), and a lack of large wood recruitment potential.

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?

In 2012, Reclamation concluded that habitat restoration in the lower Entiat River “should be aimed at improving and enhancing those forms and processes that currently exist, rather than attempting to create wholly new conditions that may not be appropriate or sustainable” (Reclamation 2012). Human impacts within the lower Entiat River have had a large and detrimental effect on instream habitat. Due to existing conditions the river lacks the ability to readily create new habitat through natural processes alone. As a result of the confined river channel and limited floodplain habitats, the majority of habitat that historically existed on the lower Entiat River was instream habitat; therefore, re-establishing instream habitat is vitally important to salmon and steelhead (Reclamation 2012).
The project has limited ability to promote any large scale natural stream process, but the localized benefits of large wood structures and associated pools, flow partitioning and sediment sorting provides a significant improvement in habitat conditions on a reach scale.

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

1-10 years

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

50+ years

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

The project will be designed to minimize maintenance needs, however a monitoring plan will be developed as part of the Final Designs to identify maintenance needs for ELJ's and plantings. Typically, three years of plant maintenance is required to address potential issues and comply with permitting requirements, especially for disturbed areas associated with access, staging and construction. Maintenance can include watering, mulching, fill planting, and weeding in planted areas. ELJ's typically do not require maintenance, but Monitoring includes checking threaded rods and bolts and whether the ELJ is causing an unintended consequence like excessive erosion, full span channel blockage or other changes not anticipated. Annual maintenance would be anticipated for at least the first three years post-construction.

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

Currently, the Preliminary Design consists primarily of the construction of 9 ELJ's. This includes a reduction from earlier Concepts. The goals of the ELJs remain the same from the conceptual design; The deflector groups will provide cover, slow water down and increase pool habitat and be placed in sections

of the river that are deeper and slower, to have the most impact on river hydraulics and the maintain the scour pool that will be constructed. The smaller jams within the side channel will provide hydraulic complexity within the side channels and help form pools for resting areas while slowing down flows. Both types of jams include a scour pool that will be excavated in front of the structure to provide immediate pool habitat.
The ELJs will utilize rootwad posts with some installed at a batter angle. The ELJs will need to be excavated prior to post placement. Post elevations (10 ft below thalweg for the side channel ELJs, and 15 ft below thalweg for the deflector ELJs) were determined based on stability calculations. Rootwad posts are recommended to be used instead of piles due to the large cobbles within the streambed. For both the side channel and deflector ELJs, racking and slash material is placed particularly on the upstream end and flanks of the ELJ to provide complex instream cover. The structures are designed such that scour will not destabilize the structure. If scour occurs, the structure is intended to “self-settle”, essentially lowering the overall elevation of the structure in conjunction with scour; however the racking material at the front of the structure which is countersunk below the bed elevation should serve as a buffer against potential scour. The deflectors will include three bolted connections, at the final (top) layer of the ELJ with the large rootwads pinned to the rootwad posts. This is to prevent the top logs from floating away.

Assessment Proposals

Protection Proposals

Monitoring Proposals

Project Risk and Economic Benefits

1. What is the landownership?

The project is wholly within private lands except for the aquatic potion which is administered by Washington State Department of Natural Resources.

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

Yes

Please explain

We have been working with landowners through the Conceptual Design Process up to completion of the Preliminary Designs. Landowners preferred to wait until Spring to review and comment on the current Preliminary Designs. Thier acceptance will be secured during this SRFB process.

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

The two main landowners on the Left and Right Bank of the river are Agricultural owners and as such use the adjacent uplands for grazing. Riparian buffer widths have been reduced in the Preliminary Designs to reflect their interest in maintaining grazing land. Additionally, at least one of the owners has expressed concern about creating thick forested areas along the shoreline that could promote crown fires and work against fire fuel reduction efforts.

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

It is unlikely that the project will create concerns for river floaters which is mostly a small local group of kayakers that run during spring flows and a few local innertuber's that run during summer low flow. Sightlines are good in this area to minimize risk. Thier have been issues in the past with large wood structures being installed further upstream in the Entiat, but ELJ's in the lower Entiat have not been very controversial in the past.

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

Chelan County Natural Resources Department will assume responsibility for managing and maintaining the project. Landowners primary responsibility will be to continue to allow some access for design, monitoring and maintenance. Irrigation of riparian plants may become a landowner responsibility if they are interested, once we have installed and maintained the infrastructure.

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

Yes

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

NSD applied the basic risk evaluation method as outlined in the Bureau of Reclamation (Reclamation) Large Woody Material - Risk Based Design Guidelines (Reclamation 2014) to broadly assess risk to the public and property associated with ELJ elements of the project. The Risk Guidelines make use of two risk matrices which quantify risk associated with ELJ project elements: The Property Damage Risk Matrix, and the Public Safety Risk Matrix. The Matrices quantify general characteristics of the project reach, structure setting, recreational use, and channel characteristics to categorize risk to the public and property as a result of project actions. Ratings for risks associated with public safety concerns and potential property damages result in a low or high and low, moderate, or high risks, respectively (Reclamation 2014). The ratings then result in recommended factors of safety for horizontal and vertical loads which are then applied to ELJ design.
The evaluation resulted in a public safety risk rating of “low”, and a property damage risk rating of “moderate”. Per the RBDG, these risk factors correspond to a 25-year design event with factors of safety of 1.5 and 1.75 for sliding and buoyancy, respectively. Factors of safety for rotation and overturning were determined to be not applicable for all structure types and were not considered.

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

Public outreach to date has been limited to project updates during the Entiat Planning Unit Meetings held quarterly. These are well-attended by local Entiat River Corridor residents. Prior to starting work in the 1D Reach, Chelan County was approached by landowners and asked when we were going to do some work in this section of the river.
This project overlaps with prior projects completed by the county and others, including the HD Weir and includes landowners who have historically been very active in Watershed Planning and salmon recovery, the Citizen's Committee and even one contractor.
The project builds on existing support for salmon recovery and the recent opening of fishing seasons where some fishers use the HD Weir to fish on the lower Entiat is especially effective at building support.

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

This proposal is a good investment of public funds because it supports salmon recovery by improving and expanding habitat in a 1/2 mile long reach. Since there are primarily two landowners to work with, it simplifies coordination while maximizing project benefits in the 1D reach.

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

The Voluntary Stewardship Program and the Salmon Recovery Funding Board funded the initial phases of the project, including Preliminary Designs. The US Bureau of Reclamation has played an active role in funding reach assessments, project concepts and designs in the Entiat River and is providing funding for Chelan County staff to continue work on this project.
Tom Desgroseillier, with the WDFW Science Program, is very familiar with this reach from years of conducting side channel studies in the lower Entiat. He has graciously contributed his time by reviewing and providing comment on the Preliminary Designs and has agreed to meet with landowners onsite to discuss scientific research conducted in this reach as a way to advance coordination between State and local agencies and landowners.

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)

Monday, March 10, 2025

Contact Information

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

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

Project Title	Icicle Creek (Doctor Reach) Restoration Prelim Designs
Sponsor	Chelan County Natural Resource Department
Primary Contact	Bryan Maloney
E-Mail Address	bryan.maloney@co.chelan.wa.us

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.

The project goal is to restore habitat and processes in the Doctor Reach of Icicle Creek (RM 15 - RM 15.5), through addressing legacy impacts of relic infrastructure. This project will develop preliminary designs and permit applications to support project development.

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].

Project objectives are to design restoration treatments that will restore natural channel and floodplain processes. To do so, designs will include naturalizing a relic road through the floodplain, increasing quantities of functional large wood, increasing inundation frequency of the left-bank floodplain, and improving quality of mainstem habitat with increased cover, pool frequency, and substrate heterogeneity.

Upon implementation (anticipated in 2028), these habitat actions will benefit spawning and rearing Chinook salmon and steelhead.

Budget Request

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

Anticipated Request - SRFB (standard round)	212584
Tributary Committee - Anticipated or Actual	37515
Anticipated TOTAL Budget	250099

Project Location

Briefly describe the location of the project	Icicle Creek mainstem from RM 15 - RM 15.5, including left bank floodplain
Latitude (decimal degrees)	47.606982°
Longitude (decimal degrees)	-120.861425°
Project subbasin	Wenatchee
Wenatchee Assessment Unit(s)	Middle Icicle Creek
Does the proposed project span multiple assessment units?	No
Reach(es) Name	Icicle Creek Middle 05
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/.	Unranked (not a priority or missing data)

Project Information

1. What species will the project benefit?	Spring Chinook, Steelhead
2. Select the project's objectives and the associated tracking metrics	Design, Monitoring or Assessment
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?

Design

Is the project eligible for Riparian Funding?

No

Design and Restoration Proposals

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

Preliminary Design

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)?

Yes, Icicle Creek reach assessment that is currently being developed

9. Which limiting factors does the project propose to address?

Channel Stability
Coarse Substrate
Cover - Wood
Off-Channel - Floodplain
Off-Channel - Side-Channels
Pool Quantity & Quality

10. Which life stages will the proposed project address?

Fry
Holding and Maturation
Spawning and Incubation
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?

This project will address relic infrastructure, in order to restore habitat for Chinook salmon and steelhead. By addressing a mainstem reach and large river-left floodplain, this project will improve both spawning and rearing habitat. Project outcomes include increasing inundation frequency of the left-bank floodplain side channel, increasing habitat complexity (e.g., cover, substrate heterogeneity, pool abundance and quality) in mainstem Icicle Creek, encouraging channel migration, and naturalizing a former road grade that drains the floodplain.

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?

The project would promote natural stream processes through addressing the impacts of relic infrastructure. Due to a relic road cutting through the floodplain, most of the project reach has remained static for decades, even after the Doctor Creek landslide reset the channel upstream. The projects' restoration outcomes include increasing floodplain complexity, mainstem habitat complexity, pool frequency and depth, sediment heterogeneity, large wood frequency, cover, and channel migration rates.

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

1-10 years

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

50+ years

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

We anticipate minimal maintenance requirements for this project. The project will be designed to accommodate large streamflow events (Q100).

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

Designs will include proposed restoration methods such as:
engineered log jam installation to increase inundation frequency of the left-bank floodplain channel;
installation of wood and grading to naturalize the relic road crossing the left-bank floodplain;
rip-rap removal from the relic road;
and engineered log jam installation to increase complexity, pool frequency, substrate heterogeneity, cover, and encourage channel migration in Icicle Creek.

Assessment Proposals

Protection Proposals

Monitoring Proposals

Project Risk and Economic Benefits

1. What is the landownership?

US Forest Service

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

Yes

Please explain

This project has been funded through the conceptual design phase by the Washington Department of Ecology Office of Columbia River, allocated by the Icicle Work Group. The Forest Service is a critical member of the Icicle Work Group. Project status has been presented to the work group at a few stages. Additionally, the Forest Service provided design feedback on early concept designs, which have been revised to reflect the feedback received.

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

Designs will need to meet standards set in ARBO II, or otherwise entail additional analyses and consultation.

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 project will need to incorporate recreational use in the design process, in order to satisfy NEPA analyses.

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

As landowner, the US Forest Service would ultimately have long-term stewardship responsibilities. As the project will restore natural stream and floodplain processes, we anticipate minimal maintenance needs. Additionally, access to the project site will be limited after project implementation. An overgrown road

would likely be used for access during eventual project construction. As this access route would be rehabilitated following project implementation, we anticipate limited access to the project site after implementation.

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

Don't know

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

The risk of failure associated with this project is low. Designs will incorporate hydraulic modeling for large streamflows (Q100), in order to maintain enduring stability of restoration treatments. Additionally, there is no infrastructure immediately downstream of the project area.

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

Public outreach regularly occurs as a part of the Chelan County Natural Resource Department and Icicle Work Group programs. A public community outreach event was held in Leavenworth on February 2025 on Icicle Creek projects. These public outreach events will continue during the design phase and including project implementation.

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

Yes, the project represents an opportunity for specialized river restoration design work to occur from qualified firms. Additionally, eventual implementation would require contracting a qualified contractor through a competitive bidding process.

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

This project has been supported and funded through the conceptual phase by the Washington Department of Ecology Office of Columbia River, allocated by the Icicle Work Group. The Icicle Work Group incorporates many different stakeholders with varied interests in Icicle Creek, ranging from irrigation water providers, regulatory agencies, wilderness groups, land management agency, tribes, etc.

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)

Contact Information

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

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

Project Title	Wenatchee Entiat Beaver Project Low-Tech Restoration and Beaver Habitat Protection
Sponsor	Trout Unlimited
Primary Contact	Lisa Foster
E-Mail Address	lisa.foster@tu.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.

Trout Unlimited (TU) plans to restore approximately 0.75 miles of stream total across three different streams - Brush Creek, Tillicum Creek, and Indian Creek using Low-Tech Process-Based Restoration (LTPBR) techniques. TU will also work with local landowners on coexistence measures to allow beavers and the habitat they create to remain in place on 20 properties in Chelan and Douglas County watersheds. Habitat restoration and protection activities will maintain and increase quality pool habitat, arboreal shading, and water quality for salmonids in the Upper Columbia River Watershed.

Salmon- and steelhead-bearing stream habitat conditions in the Wenatchee and Entiat watersheds have been degraded by clear cut logging, road construction, over-grazing, stand replacing wildfire, and removal of beaver populations. Beavers were systematically extirpated from most of the United States during the 1800s and today are commonly perceived as a nuisance animal when their activities come into conflict with human land uses, often resulting in removal by lethal measures. Loss of beaver from regional watersheds reduces salmonid habitat capacity and productivity and diminishes the resilience of human communities with respect to flooding, drought, wildfire, and other natural phenomena that impact economies and ways of life. In all project sites, these impacts have resulted in degraded habitat with few pools, decreased complexity, and disconnected floodplains.

Using LTPBR techniques, Trout Unlimited and partners will address these habitat quality issues by increasing the density and spatial scale of the structural elements in the target stream systems, improving conditions for development of riparian vegetation, and aggrading stream beds to correct incision. Re-establishment of characteristic historic stream complexity will jump start natural processes to transition stream systems to improved ecological conditions with increased resilience to disturbance.

Beavers create, maintain, and improve habitat that supports survival, capacity and/or distribution of salmonid species by creating ponds that store cool water, create rearing habitat, aggrade incised streams, reconnect floodplains, and lower downstream turbidity. Trout Unlimited will protect and improve existing good quality salmonid habitat in streams throughout the Upper Columbia Watershed by working with landowners and public agencies to keep beavers in place using a variety of coexistence methods.

Desired future conditions will consist of three stream reaches and 20 coexistence sites with a network of stable, connected habitats with thriving native vegetation and beavers, improved water retention, and enhanced capacity to support fish and wildlife populations.

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 seeks to address in-stream habitat, riparian habitat, and temperature limiting factors for all life stages of steelhead, bull trout, and spring chinook, with a focus on rearing habitat by focusing on the following objectives:

Reconnect floodplains and improve riparian habitat across 0.75 miles of stream using LTPBR techniques.

Maintain and improve riparian habitat across 10-20 miles of stream by working with land managers to keep beavers in place

Monitor and maintain installed in-stream structures and coexistence structures throughout the life of the project

Implementation of the LTPBR project on Brush Creek will take place in 2026 and Tillicum and Indian Creeks will take place in 2027. Beaver Coexistence work will take place throughout the performance period.

Budget Request

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

Anticipated Request - SRFB (standard round)	463134.23
Anticipated TOTAL Budget	463,134.23

Project Location

Briefly describe the location of the project	Low-Tech Process-Based Restoration (LTPBR) projects will take place on Brush Creek (47.893230, -120.735871) in the Wenatchee River Watershed and Tillicum Creek (47.734183, -120.420323) and Indian Creek (47.731412, -120.438691) in the Entiat River Watershed. Beaver Coexistence work will take place in rivers and streams throughout Chelan and Douglas Counties. Latitude and longitude provided below are for the TU

base of operations at the Leavenworth National Fish Hatchery

Latitude (decimal degrees) 47.557828

Longitude (decimal degrees) -120.675780

Project subbasin Multiple Subbasins

Please explain why there are multiple subbasins

Brush Creek is in the Wenatchee subbasin and Tillicum and Indian Creeks are in the Entiat subbasin. Coexistence work will take place throughout the Wenatchee and Entiat subbasins and small tributaries to the Columbia in Douglas County.

Does the proposed project span multiple assessment units? Yes

List the additional assessment units directly impacted by this proposal. LTPBR work will take place within the Lower Chiwawa River and Tillicum Creek Assessment Units

Reach(es) Name LTPBR work will take place on Brush Creek 02, Tillicum Creek 02, Tillicum Creek 03, and Indian Creek 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/. Multiple reaches (provide details below)

Please detail the reach-ranking of the reaches below

Brush Creek 02, Tillicum Creek 02, Tillicum Creek 03, and Indian Creek 01 are all unranked.

Project Information

1. What species will the project benefit? Spring Chinook, Steelhead, Bull Trout

2. Select the project's objectives and the associated tracking metrics Instream Habitat (Includes Floodplain & Off-Channel Reconnection)

Instream Habitat: Reporting Code

- Total miles of instream habitat treated
- Number of beavers
- Number of structures placed in channel
- Pools created through channel structure placement

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

If applicable, what is the secondary project category?

N/A

Is the project eligible for Riparian Funding?

Yes

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)?

Unknown

9. Which limiting factors does the project propose to address?

Cover - Wood
Flow - Summer Base Flow
Off-Channel - Floodplain
Pool Quantity & Quality
Pools - Deep Pools
Riparian
Riparian - Canopy Cover
Riparian - Structure
Temperature - Adult Holding
Temperature - Rearing

10. Which life stages will the proposed project address?

Natal Rearing (Bull Trout)
Subadult Rearing (Bull Trout)
Fry
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?

This project will create new and protect and enhance existing pool habitat for rearing salmonids, create cold water refugia, increase invertebrate habitat, increase fry habitat, increase wood loading, and increase canopy cover in and around LTPBR project sites and beaver complexes. The project will also decrease downstream turbidity at these sites. Additionally, the project will address reduced base flow conditions and reconnect floodplains by impounding water and raising water tables. These actions will also increase canopy cover, decreasing stream temperatures by making water more available to riparian trees.

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?

The project will decrease incision, reconnect floodplains, raise water tables, and increase wood loading across 23 sites. The project will also protect naturally occurring beaver colonies and beaver dam

complexes which provide numerous benefits including restoring hydrological, geomorphic, ecological, and biological processes.

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

1-10 years

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

10-50 years

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

LTPBR projects will be maintained once per year for 5 years after implementation. Land managers with beaver will be contacted periodically to assess any coexistence needs and any coexistence devices will be maintained in cooperation with the land manager. In some cases, the land manager will handle maintenance and TU may assist periodically as needed.

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

Install LTPBR structures to restore 0.75milesof stream across 3 different streams. Work with landowners on 20 different sites to keep existing beaver colonies in place.

The project involves installation of beaver dam analogs and channel structure placement, as well as beaver coexistence, including but not limited to unanchored log placement, post-assisted log structures, and large woody materials. The project reaches in question have incised channels, disconnected floodplains, and low summer base flows. LTPBR structures can be installed and beaver can be maintained in place to correct these deficits by kicking off processes that support channel aggradation and floodplain reconnection, supporting riparian vegetation and decreasing stream temperatures by making water more available to riparian trees.

17. If the project is eligible and applying for Riparian Funding, does the project have in-stream components? If so, briefly describe those components, how they support riparian plant survival and/or natural regeneration, and why they are necessary for the success of the riparian habitat elements of the project.

N/A

Assessment Proposals

Protection Proposals

Monitoring Proposals

Project Risk and Economic Benefits

1. What is the landownership?

All low-tech process-based restoration activities will occur on United States Forest Service owned land. TU has current agreements with the Forest Service that authorize LTPBR and beaver coexistence projects. Coexistence work will be conducted on private and public land on an as-needed basis and WDFW Landowner Attestation Forms will be signed.

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

Yes

Please explain

TU operates on a Memorandum of Understanding with USFS and collaborates with them on all project planning. Coexistence work will be conducted on private and public land on an as-needed basis with interested landowners seeking TU out. On average, TU currently works with 10 landowners per year on beaver coexistence.

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

All LTPBR projects will take place in accordance with an existing Memorandum Of Understanding between Trout Unlimited and USFS. Project permitting and implementation is subject to USFS review and approval.

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

LTPBR projects are designed, planned, and implemented in communication with USFS. Infrastructure such as roads and culverts are taken into account and appropriate setbacks are observed.
Trout Unlimited provides valuable assistance to local landowners and land managers facing challenges with beavers, including falling orchard trees, causing flooding, damming culverts, and seeks coexistence solutions so that beaver can remain on sites where they provide valuable stream and habitat benefits while mitigating challenges.

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

TU will maintain all LTPBR projects. TU will work with land owners and managers to maintain any coexistence measures installed. Either the land owners/managers will maintain structures or TU will complete maintenance as needed.

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

No

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

LTPBR projects are designed to use natural stream processes to restore degraded conditions. Structures are installed in cohesive groupings and designed to work together. Any individual structure may blow out or may not impound water as expected. Even so, all structures add material to the stream and increase habitat complexity. The idea is to allow the stream system to make as many decisions as possible. If any one structure fails, it can be repaired at a relatively low cost, and other structures in the system can compensate for any loss in water storage and aggradation.

Beaver coexistence work is contingent on willing landowners. TU has a history of positive collaboration with landowners. Coexistence with beavers is a never-ending process that requires regular adaptive management in most cases. If coexistence is not an option, TU also operates a beaver relocation program. Beavers that must be removed because coexistence solutions cannot be found can be live-trapped and released in different streams where they can have positive habitat benefits.

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

For LTPBR projects, TU often works with community volunteers. TU also provides photos of and narratives about completed work to our regional communication team. The communications team writes blogs and social media posts about TU projects which are seen by a national audience.

For LTPBR projects, TU often works with community volunteers. TU also provides photos of and narratives about completed work to our regional communications team. The communications team writes blogs and social media posts about TU projects which are seen by a national audience.

TU regularly attends community events in Chelan and Douglas Counties to tell the community about important salmon recovery work and educate community members about beaver coexistence as well as the link between beavers and salmon recovery.

Beaver coexistence work requires a constant interface with local communities and working one on one with local landowners. Phone calls and site visits provide ample opportunity to educate community members about beaver coexistence and the importance of beavers on the landscape. Landowners are often eager to engage neighbors who are having conflicts with beavers, thus expanding the program's reach. This outreach and interest in beavers more generally provides opportunities to discuss the interrelated nature of beaver coexistence and salmon recovery with a diverse array of community members.

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

This project represents multiple opportunities for economic benefit. Implementation of LTPBR projects requires materials, including wooden posts purchased from local vendors and weave material which is often sourced from forest thinning projects carried out by local contractors. TU also often hires local contractors to carry out post-project maintenance.

TU provides a free service to landowners such as farmers facing costly infrastructure and agricultural damage from beavers on their property. TU is able to work with them to provide solutions which allow beavers to stay on site without causing damage to infrastructure and crops.

Trout Unlimited provides valuable assistance to local landowners and land managers facing challenges with beavers. TU works with landowners and managers to provide free coexistence services. Landowners or managers typically call TU to address beaver impacts like falling orchard trees, flooding, or damming culverts, among other impacts, potentially causing expensive damage. TU works to find coexistence solutions that allow beavers to remain onsite where they can continue providing ecosystem benefits. As such, this project turns a potential economic burden into a positive force for salmon habitat restoration.

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

TU is part of the Coordinated Resource Management (CRM) group. CRM partners collaborate to leverage their unique resources, expertise, and opportunities in pursuit of shared missions and values, with a focus on salmon recovery in and around Chelan County. This formal partnership allows TU to work with Cascadia Conservation District and Cascade Fisheries to complete LTPBR implementation. CRM crews will assist with on-site implementation.

TU works collaboratively with USFS to plan and authorize LTPBR implementation. USFS often provides technicians to assist with implementation.

Beaver coexistence is a requirement of the WDFW Beaver Relocation Program. TU is required to seek coexistence solutions prior to pursuing beaver relocation. WDFW, along with partners such as Methow Beaver Project, Beavers Northwest, and The Beaver Institute provide TU technical assistance as needed regarding challenging coexistence scenarios.

Trout Unlimited is further strengthened by partnerships with various Federal and State agencies that collaborate on project development, design, planning, permitting, and implementation. These agencies include:

Federal

US Bureau of Reclamation

US Forest Service

US Fish and Wildlife Service

National Resources and Conservation Service

Bureau of Land Management

State

WA Department of Fish and Wildlife

WA State Conservation Commission

Department of Ecology

Department of Natural Resources

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)

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	Assessment of 6PPD-q Contamination Risk from WSDOT Highways to Wentachee Basin Salmonids
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 seeks to characterize the risk of 6PPD-q contamination from Washington Department of Transportation (WSDOT) highways to salmonids in the Wenatchee Basin. 6PPD is a chemical added to tire rubber that slows down the weathering process. 6PPD reacts with ozone and transforms into 6PPD-quinone (6PPD-q). 6PPD-q is toxic to coho salmon at levels that are routinely observed in the environment. Though coho salmon have the lowest threshold of the salmonids for 6PPD-q, steelhead are also sensitive to this contaminant at higher concentrations. Approximately 34 miles of WSDOT highways occur in very close proximity rivers and streams in the Wenatchee Watershed. For this project stormwater features within these 34 miles will be identified and characterized. Characterization will include hydraulic modeling to describe runoff potential under different scenarios for each feature. A prioritization scheme will be developed to identify the highest risk stormwater features. Conformation sampling will occur at the highest risk features to confirm 6PPD-q levels in stormwater runoff. The project will result in a better understanding of the 6PPD-q toxicity risk to salmonids in the Wenatchee Watershed. The project will create a methodology that is repeatable and can be implemented throughout the Upper Columbia. The project addresses a Tier 1 MaDMC Data Gap (Data Gap ID #2.6).

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:
1. Identify all stormwater features within the approximately 34 miles of WSDOT highways that are adjacent to Wenatchee basin rivers and streams
2. Characterize each stormwater feature including attributes such as: area drained, distance from outfall to waterbody, ground surface from outfall to water body,
priority species present in receiving waterbody, flow of receiving waterbody during runoff events, etc.
3. Run hydraulic model for each stormwater feature to characterize potential of 6PPD-q reaching receiving waterbodies
4. Create a prioritized list identifying high, medium, and low risk stormwater features.
5. Conduct confirmation sampling at 5 high risk stormwater features during 3 runoff events to document 6PPD-q concentrations at the outfall.

Budget Request

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

Anticipated Request - SRFB (standard round)	75,000
Tributary Committee - Anticipated or Actual	150,000
Anticipated TOTAL Budget	225,000

Project Location

Briefly describe the location of the project	The project will occur over approximately 34 miles of river that are in close proximity to WSDOT highways in the Wenatchee Basin. This includes portions of the Wenatchee River, Peshastin Creek, and Nason Creek
Latitude (decimal degrees)	47.480057
Longitude (decimal degrees)	-120.389023
Project subbasin	Wenatchee
Wenatchee Assessment Unit(s)	Lower Nason Creek
Does the proposed project span multiple assessment units?	Yes
List the additional assessment units directly impacted by this proposal.	Upper Nason Creek; Wenatchee River - Nahahum, Wenatchee River - Ollala, Wenatchee River - Derby; Wenatchee River - Tumwater; Lower Peshastin; Upper Peshastin; Upper Nason

Reach(es) Name many

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 1 | Rank 2 | Rank 3

Multiple reaches (provide details below)

Project Information

1. What species will the project benefit?

Spring Chinook | Steelhead | Bull Trout

Summer Chinook | Coho

2. Select the project's objectives and the associated tracking metrics

Design, Monitoring or Assessment

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?

Assessment

Is the project eligible for Riparian Funding?

No

Design and Restoration Proposals

Assessment Proposals

7. What type of assessment are you proposing?

Assessment of stormwater and 6PPD-q contaminatin

8. Is the assessment identified on the MaDMC monitoring and data gaps list?

Yes

9. Describe how the assessment fills a regional priority and where that priority is identified.

This topic is identified as a Tier 1 data gap in the Upper Columbia MaDMC data gap list

10. Methods - What methods will you use in your assessment and how will they achieve your stated objective(s)?

We are working with an experienced consulting firm that has completed this type of work previously and has extensive experience with 6PPD-q specifically. Methods will be adapted from previous work and are summarized here:

A simple GIS exercise can be conducted to identify potential problem locations, ie where the highway is in

close proximity to the river. WSDOT can provide a spreadsheet with stormwater feature attributes and locations. These features will be field verified. Additional attributes about each stormwater feature will be collected in the field as well. Hydraulic modeling using standard practices will be completed under different rain event magnitudes and seasons. A prioritization scheme will be developed from the data acquired in previous steps to create a ranked list of highest to lowest risk stormwater features. Five of the highest features will be sampled during three runoff events to verfiy 6PPD-q levels.

11. Will a design result from the project? Yes

12. If yes, what level of design (e.g. conceptual, preliminary, final)? What proportion of your budget will support design? 10

13. Briefly describe why SRFB funds are necessary, rather than other sources of funding.

A combination of SRFB and other funding sources are proposed. Matching funds will lessen the overall financial requirement of any one funder. 6PPD-q effects SRFB (ESA-listed) species including steelhead, and to a lesser degree spring chinook.

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

We have discussed the project with regional WSDOT staff and they are excited and supportive. They said that WSDOT headquarters in Olympia is interested in the results.

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

A right of entry agreement will be required which will include safety measures and will require proof of liability insurance.

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

Not likely to raise concern from interest groups or the public at large.

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

Cascade Fisheries will manage the project. WSDOT may choose to correct high risk stormwater features in the future but will not be required to.

6. Are other projects being proposed immediately upstream or downstream of worksite? Don't know

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

There is a low risk of failure for this assessment project. We will work with an experienced consultant to deliver a high quality result.

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

6PPD-q is in the news and the public's eye right now. Taking a proactive approach to better understanding the problem will be view favorably in the community and will build public support for the project. Presentations of the methods and results following the project will be valuable, especially to other project sponsors around the state.

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

6PPD-q is highly toxic to coho salmon and steelhead. This fish are prized among sportfisherman, who would travel long distances and pump lots of dollars into the local economy if a fishing season were to open for them. These species also provide significant economic and cultural value to our local tribes. The project will support two staff at CF and staff at a WA based environmental consulting firm.

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

We are partnering with WSDOT on this project. CF has two existing projects occurring with WSDOT. We have a high quality working relationship with their regional staff. WSDOT will provide staff time and data on existing stormwater features.

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)

Contact Information

2025 Upper Columbia Regional Project Pre-Application

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

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*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	Wenatchee RM 3.25-4.5 Feasibility and Conceptual Design
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.

The project will create a conceptual design for a habitat enhancement project on the lower Wenatchee River from RM 3.25-4.5. The project is expected to address high priority limiting factors for this reach including cover-wood, riparian canopy cover, floodplain connectivity, and off-channel/side channel habitat. Highway 2 boarders the river and bisects the floodplain on river left throughout much of the project area. The project will investigate feasibility and cost effectiveness of alternatives to provide water and fish access to the disconnected floodplain. The project will include a data collection task including groundwater data collection and a geotechnical analysis, a feasibility/alternatives task, and a conceptual design task. Implementation of this project will lead to future design phases and eventually implementation of a restoration project that could provide access to important, currently disconnected, habitat, as well as improve existing habitat in the Wenatchee River.

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 proposed project will achieve the following objectives:
1. Collect groundwater information at 3 -5 locations within the project area
2. Complete an alternatives analysis that will include an analysis of feasibility and cost effectiveness.
3. Complete a conceptual design of the preferred alternative

Budget Request

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

Anticipated Request - SRFB (standard round)	100,000
Tributary Committee - Anticipated or Actual	100,000
Anticipated TOTAL Budget	200,000

Project Location

Briefly describe the location of the project	Wenatchee River RM 3.25 - 4.5
Latitude (decimal degrees)	47.480107
Longitude (decimal degrees)	-120.389839
Project subbasin	Wenatchee
Wenatchee Assessment Unit(s)	Wenatchee River-Nahahum Canyon
Does the proposed project span multiple assessment units?	No
Reach(es) Name	Nahahum 04
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 | Bull Trout | Summer Chinook | coho

2. Select the project's objectives and the associated tracking metrics

Design, Monitoring or Assessment

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?

Design

Is the project eligible for Riparian Funding?

No

Design and Restoration Proposals

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

Conceptual Design

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 River

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?

Subadult Rearing (Bull Trout) | Fry | 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?

The goals of the design created through this proposal will be to provide more frequent floodplain inundation and connection at high frequency flows to floodplain and off-channel habitat, create additional cover and structure in the existing river channel, and establish riparian vegetation on mid-channel islands. 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.

Rivers, and the ESA-listed fish that live in them, require a regular connection to their floodplains to

maintain natural processes and overall watershed health. Once implemented, this project will reconnect substantial acreage of floodplain in an area of the watershed that is heavily impacted by human development and infrastructure. Floodplain habitats provide a low velocity, high productivity area that is essential for juvenile salmonids to thrive. Healthy, connected floodplains also provide important watershed process functions including, flood water and energy dispersion, water storage, carbon storage and sequestration, riparian habitat maintenance, and source of future wood/cover to instream habitats.

The mid-channel bars/islands located within this project reach are mostly bare and lacking in riparian vegetation. Riparian vegetation plays an important role in watershed processes. The existing disconnected floodplain at this site contains a riparian vegetation community in many locations. Reconnecting these areas to the river would provide immediate benefits provided by an intact riparian community. Restoring mature native riparian vegetation to the floodplain will promote natural processes including floodwater and groundwater retention and storage, sediment and pollutant filtration, bank and channel stability, and large wood recruitment.

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 proposal would explore the possibility of creating side channels within the project area.

This project occurs in the Wenatchee River – Nahahum Canyon Assessment Unit (AU). This AU is ranked as a Tier 2 for Steelhead Restoration and Tier 3 for Spring chinook restoration. For both spring chinook and steelhead the “Winter Rearing” life stage is a “High Priority” and “Smolt Emigration” is a “Medium Priority”. Both of these life stages are addressed through implementation of this project. In the Nahahum 04 reach the following Rank 1 (unacceptable) limiting factors could be addressed through implementation of
this project: Bank Stability, Channel Stability, Cover- Wood, Riparian-Canopy Cover, Temperature- Rearing. The following Rank 2 (at risk) limiting factors could be addressed through implementation of this project: Floodplain connectivity, Off-Channel- Side-Channels, Pool quantity and quality, Riparian.

This is a large project area with potentially large amounts of disconnected floodplain that could be reconnected. Implementation of this project could result in large biological benefits.

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.

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 could provide a large increase in connected floodplain.

This project will examine using process-based riparian methods. The bare islands likely receive flow velocities that are to high and preclude the establishment of vegetation. The Wenatchee River is artificially confined in this reach and lacks large wood. Installing roughness features on the islands could create the hydraulic shadow necessary to establish riparian vegetation and realize all the benefits that come along with it.

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?

Following implementation, the project will require regular check ups and maintenance during the first three - five years following implementation to ensure successful establishment of riparian vegetation. Instream project elements, e.g. pools and side channels, will be designed to be self-maintaining.

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

We will investigate the feasibility of reconnecting the disconnected floodplain on the other side of Highway 2. Potential alternatives include culvert installation or use of a boring machine.

This project will examine using process-based riparian methods. The bare islands likely receive flow velocities that are to high and preclude the establishment of vegetation. The Wenatchee River is artificially confined in this reach and lacks large wood. Installing roughness features on the islands could create the hydraulic shadow necessary to establish riparian vegetation and realize all the benefits that come along with it.

Assessment Proposals

Protection Proposals

Monitoring Proposals

Project Risk and Economic Benefits

1. What is the landownership?

WSDOT, DNR aquatic lands, WDFW

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

Yes

Please explain

The proposal has been discussed with all three agencies and all are supportive. We are currently conducting outreach to surrounding private landowners.

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

WSDOT will require a right of entry permit to conduct assessment and design work. All three agencies will have approvals for construction.

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

We expect that adjacent landowners will be concerned about increased flooding risk. We will address this issue with extensive modeling and demonstrating compliance with the FEMA/Chelan County floodplain regulations.

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

CF will manage and administer the project.

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

Don't know

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

This is a design project with low risk of failure.

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

We are currently conduction outreach to surrounding landowners. Additional outreach would be necessary prior to implementation. This is a high visibility project area that could get lots of attention and boost support for recovery efforts.

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

This design project will partially fund 2 FTEs at Cascade Fisheries and one or more local design engineering firms. Once implemented, the project will provide a substantial construction contract to a local company, support CF staff, and help salmon recovery. Given the large floodplain and overall size of the potential project area, this project could create a large biological benefit for the dollars invested.

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

CF will partner with WSDOT, WDFW, and DNR on this project. We are currently working on multiple projects with WSDOT and have a strong working relationship with them. We are currently working with WDFW on the lower Peshastin project. Through many years of partnering on this project we have learned the ins and outs of the Restoration Pathway process, and have developed strong working relationships with WDFW personnel. Additionally, CF will work the the WDFW Restoration specialist on 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)

Thursday, March 13, 2025

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	Nason Creek Acquisition
Sponsor	Chelan County Natural Resources Department
Primary Contact	Mike Kaputa
E-Mail Address	mike.kaputa@co.chelan.wa.us

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.

Chelan County Natural Resources Department (CCNRD) will acquire ~17 acres of land along Nason Creek in the Wenatchee Subbasin. The acquisition will protect the area from future development and associated impacts as well as allow for restoration of a significant portion of Nason Creek. The future condition will be a functioning riparian area and re-establishment of floodplain function.

Budget Request

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

Anticipated Request - SRFB (standard round)	620000
Anticipated Request - SRFB Riparian Funding	300000
Tributary Committee - Anticipated or Actual	620000

Anticipated TOTAL Budget	620000

Project Location

Briefly describe the location of the project	The properties proposed for acquisition are located on Nason Creek in the Wenatchee Subbasin starting at RM 10.2 and ending at RM 10.6.
Latitude (decimal degrees)	47.774941
Longitude (decimal degrees)	-120.823538
Project subbasin	Wenatchee
Wenatchee Assessment Unit(s)	Lower Nason Creek
Does the proposed project span multiple assessment units?	No
Reach(es) Name	Nason Creek Lower 9 and 10
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 1

Project Information

1. What species will the project benefit?	Spring Chinook, Steelhead, Bull Trout
2. Select the project's objectives and the associated tracking metrics	Acquisition, Easements, Leases
Acquisition, Easements, Leases: Reporting Code	Miles of streambank and/or Shoreline Protected by Land or Easement Acquisition
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?	Protection

If applicable, what is the secondary project category? N/A

Is the project eligible for Riparian Funding? Yes

Design and Restoration Proposals

Assessment Proposals

Protection Proposals

7. What type of protection are you proposing? Fee Simple

8. Is this protection project associated with a current or future restoration project? Maybe

9. Placement - Does the project protect important high quality habitat and/or watershed processes and to what degree

The project will permanently protect 0.4 miles of a mix of high-quality riparian and floodplain habitat as well as some degraded riparian condition.

10. Freshwater Benefit - What would be the anticipated loss in survival, capacity or distribution for target species at the reach scale if the proposed area is not protected?

We would expect a loss of riparian area function, temperature increases and loss of floodplain function if the properties are not protected, negatively affecting the capacity of target species in this reach.

11. Threat - How imminent is the threat of habitat degradation to the proposed land if the project is not implemented?

The property is located in a desirable area and would likely, over time, be subdivided unto small lots, increasing human activity on the riparian and floodplain areas.

12. Conditions - Briefly describe if there are any conditions regarding the protection of the property that could limit the protection benefits

None.

13. Will there be public access? Yes

14. Is the proposed acquisition area (that is applying for Riparian Funding) composed of 50 percent or less uplands, as per the UC riparian delineation? No

Monitoring Proposals

Project Risk and Economic Benefits

1. What is the landownership? Private

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

Yes

Please explain

Both landowners have expressed a desire to sell their properties for conservation and are aware of the funding application being submitted. One property owner has expressed a desire to sell their property exclusively to Chelan County.

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

None

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

No

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

Chelan County may partner with Chelan-Douglas Land Trust in the application.

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

No

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

None

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

No. There is local interest in seeing these properties acquired for conservation.

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

There will be economic benefit from contributing to the continued survival of ESA-listed species as well as economic benefit from public access to the property for educational, scientific and research purposes.

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

Chelan County may partner with the Chelan-Douglas Land Trust on this acquisition. CDLT is well-know regionally for their experience owning and managing conservation properties.

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)

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	Squilchuck Creek Passage Barrier Prelim Designs
Sponsor	Chelan County Natural Resource Department
Primary Contact	Bryan Maloney
E-Mail Address	bryan.maloney@co.chelan.wa.us

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.

Project goals are to restore full fish passage within Squilchuck Creek, an important tributary to the Columbia River. This project would develop preliminary designs for a complete fish passage barrier (0% passability) on Squilchuck Creek at RM 0.28 (South Wenatchee Ave culvert; WDFW ID 970003). This project would address the root cause of degradation of a complete fish passage barrier, by designing a replacement structure that facilitates unimpeded passage of all species at all streamflows. Implementation of the designs would restore full fish passage in this reach of Squilchuck Creek, from RM 0.28 up to the next partial barrier upstream at RM 0.55. Further, this project would restore partial fish passage up to the next complete barrier upstream at RM 1.37. Species benefited include Chinook salmon, steelhead, and coho salmon.

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].

Project objectives are to design the replacement for a full fish passage barrier on Squilchuck Creek, addressing the lack of fish passage that impacts rearing Chinook, steelhead, and coho in a direct tributary to the Columbia River. Design objectives include alternatives analysis, conceptual design, and permit-ready designs. This effort will open full fish passage to 0.27 river miles of habitat, and partial fish passage to 1.09 river miles of habitat, upon implementation, which is anticipated in 2028.

Budget Request

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

Anticipated Request - SRFB (standard round)	232671
Tributary Committee - Anticipated or Actual	41060
Anticipated TOTAL Budget	273731

Project Location

Briefly describe the location of the project	Squilchuck Creek at RM 0.28
Latitude (decimal degrees)	47.394722°
Longitude (decimal degrees)	-120.296431°
Project subbasin	Columbia River - small tributaries

Columbia River small tributaries HUC-12(s)

Squilchuck Creek - 170200100310

Does the proposed project span multiple assessment units?	No
Reach(es) Name	N/A
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/.	Unranked (not a priority or missing data)

Project Information

1. What species will the project benefit?

Spring Chinook | Steelhead | Coho

2. Select the project's objectives and the associated tracking metrics

Design, Monitoring or Assessment

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)?

Yes

Please explain which process(es) and how this proposal differs from the previous submission (e.g., different phase, modified scope, etc.)

This project was submitted for funding in 2002, but was not awarded funding.

6. What category is the project?

Design

Is the project eligible for Riparian Funding?

No

Design and Restoration Proposals

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

Conceptual Design | Preliminary Design

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)?

No

9. Which limiting factors does the project propose to address?

Fish Passage Barriers

10. Which life stages will the proposed project address?

Fry | 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?

Squilchuck Creek contains 5 miles of ESA-listed steelhead intrinsic potential spawning habitat (NOAA 2022). However, the complete barrier on S. Wenatchee Ave blocks all fish passage above RM 0.28. Squilchuck Creek provides important rearing habitat and overwinter refuge to steelhead, spring chinook, and coho juveniles that have originated in one of the major Upper Columbia watersheds upstream (i.e., Wenatchee, Entiat, Methow) but have migrated downstream to rear. Indeed, WDFW observed extensive numbers (estimated 2200 fish/mile) of spring Chinook, steelhead, and coho juveniles between these the S. Wenatchee culvert and BNSF railway culvert downstream. In contrast, zero anadromous fish were observed above the S. Wenatchee Ave culvert. Additionally, Spawning ground surveys conducted by WDFW identified live adult steelhead and redd building in Squilchuck Creek (WDFW 2007). Opening up spawning habitat in Squilchuck Creek supports fish distribution of the Wenatchee steelhead population

across diverse habitat types, which provides a buffer against catastrophic events, a complex spatial structure, and genotypic and phenotypic diversity, all of which moderate extinction risk . This suggests the small mainstem tributary is important rearing and refuge habitat for anadromous juveniles whose natal origin is in a major upstream Upper Columbia sub-basin, but migrate downstream as parr to rear. This project will initiate the effort to open the best quality habitat in Squilchuck creek which is located past RM 0.28, support this diverse life history strategy, and hence enhance the resilience of the Upper Columbia ESA-listed spring Chinook and steelhead.

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?

The proposed project will promote natural stream process by designing the replacement for a complete passage barrier in Squilchuck Creek. The existing culvert disrupts ecosystem processes by impeding the free transport of streamflow, aquatic species, sediment, nutrients, and woody debris.

The S. Wenatchee Ave culvert is a total barrier culvert that is undersized for peak stream flows. Culvert span is 3.00 m, which is little more than 0.5 m larger than the width of the channel (WDFW Barrier Report). Proposed preliminary designs will be for a bridge or 3-sided box culvert designed to replace the current structure and accommodate 100-year flow events. The replacement structure will remove the hydraulic constriction to improve ecosystem resilience to large floods and eliminate erosion of the streambed and streambanks caused by the high water velocity and the water surface drop at the site. Additionally, by including a span that encompasses the 100-yr floodplain, barrier replacement will restore floodplain connectivity and habitat forming processes that result in improved water quality, and both riparian and instream habitat quality that benefit the larger ecological food web. Floodplain connectivity will increase water availability for riparian plants.

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

1-10 years

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

50+ years

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

After construction of the culvert replacement, the new structure would be maintained by Chelan County Public Works under their standard schedule.

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

This project will initiate the design process for the S. Wenatchee Ave culvert, resulting in permit-ready (60%) designs and permit applications. The design approach will follow relevant state and federal guidelines (e.g. WDFW Water Crossing Guidelines, RCO Manual 18) to maximize ecological function and fish passage improvement. The selected design approach will be based on elements completed in the proposed design process, which will include topographic survey, hydraulic modeling, geotech assessment, design alternatives analysis, conceptual designs (30%), preliminary designs (60%), and basis of design report. Additional work will support project permitting, including cultural resource surveys, Nationwide permit application, and HPA application.

Assessment Proposals

Protection Proposals

Monitoring Proposals

Project Risk and Economic Benefits

1. What is the landownership? Chelan County Public Works

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

Please explain

We have coordinated with Chelan County Public Works for a few years about this fish passage barrier culvert on S. Wenatchee Ave. Public Works is interested in replacing the culvert and will support the project through engineering review. Additionally, the County has started reaching out to adjacent landowners for coordination about the eventual culvert replacement project.

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

Requirements from Chelan County Public Works include working within the existing right-of-way. However, the final design step will address any additional easements that may be necessary.

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 replacement structure will need to meet Chelan County Public Works standards for safety, and accommodate vehicular and pedestrian uses of the road.

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

Chelan County Natural Resource Department (CCNRD) will be responsible for project management, with considerable coordination with Public Works. Chelan County Public Works will be responsible for maintaining the new structure after construction. CCNRD will be responsible for post-project monitoring of in-stream fish passage and plant survival.

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

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

The risk of failure is limited for this project. Project options will be reviewed thoroughly during the alternatives analysis.

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

Yes, the public would be notified before and during project implementation. The project also builds on an existing project funded by the Rose Foundation to complete rapid assessments in Squilchuck Creek and coordinate a riparian improvement project with the community through a partnership with Parque Padrinos.

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

Yes, this project represents an opportunity for ecosystem restoration, as well improvement of infrastructure.

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

Chelan County Natural Resource Department has coordinated with Chelan County Public Works for a few years about this fish passage barrier culvert on S. Wenatchee Ave. Public Works is interested in replacing

the culvert and will support the project through engineering review.

Additionally, Chelan County is partnering with UCSRB and WDFW to complete fish use surveys in Squilchuck and Stemilt Creeks. As mentioned before, Chelan County is partnering with Parque Padrinos to do outreach to the local community regarding stream improvements to water quality, fish passage, and habitat.

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)

Contact Information

2025 Upper Columbia Regional Project Pre-Application

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*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	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)

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	Lower Peshastin Creek Protection RM 2.5-3.5
Sponsor	Chelan-Douglas Land Trust
Primary Contact	Mickey Fleming
E-Mail Address	mickey@cdlandtrust.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.

Permanent protect over one linear mile of Peshastin Creek, much including both sides of the creek and associated forested floodplain with high ecological integrity within anadromous reaches of Peshastin Creek.

Investigate existence and potential for acquisition or trust of water rights in this reach.

Acquire and steward property that will prevent degradation and facilitate process-based restoratio.

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].

Acquire a conservation easement on about 12 acres of property owned by Mountain Valley LLC.

Acquire fee title to 22 acre Snider property with both sides of .5 miles of Peshastin Creek.

Acquire fee title to ,71 acre Mallick property that adjoins both Mountain Valley and Snider properties.

Acquire fee title to approximately 4 acres of floodplain on King property that adjoins both Mountain Valley and Snider properties.

Budget Request

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

Anticipated Request - SRFB (standard round)	485,000
Tributary Committee - Anticipated or Actual	485,000
Anticipated TOTAL Budget	970,000

Project Location

Briefly describe the location of the project	Peshastin Creek RM 2.5-3.5, tributary of the Wenatchee River, tributary of the Columbia River
Latitude (decimal degrees)	47.53516
Longitude (decimal degrees)	-120.62044
Project subbasin	Wenatchee
Wenatchee Assessment Unit(s)	Lower Peshastin Creek
Does the proposed project span multiple assessment units?	No
Reach(es) Name	Peshastin Creek Lower 03
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 2

Project Information

1. What species will the project benefit?

Spring Chinook | Steelhead | Bull Trout

2. Select the project's objectives and the associated tracking metrics

Acquisition, Easements, Leases

Acquisition, Easements, Leases: Reporting Code

Miles of streambank and/or Shoreline Protected by Land or Easement Acquisition

Acres by Acreage Type (easement) and/or Acres by Acreage Type (fee simple)

Floodplain Areas Protected** this reporting metric does not appear in PRISM. Work with the LE to ad this metric upon completion of project.

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?

Protection

If applicable, what is the secondary project category?

N/A

Is the project eligible for Riparian Funding?

No

Design and Restoration Proposals

Assessment Proposals

Protection Proposals

7. What type of protection are you proposing?

Fee Simple

8. Is this protection project associated with a current or future restoration project?

Yes

9. Placement - Does the project protect important high quality habitat and/or watershed processes and to what degree

The project protects all or parts of 4 contiguous private ownerships along a mile of Peshastin Creek. Most has high quality riparian habitat and good shading of the creek. the Mountain Valley (MVA) property has abandoned orchard and may have some potential for returning water to in-stream. The King property

currently has structures/debris in the floodplain that must be assessed and costs of removal allocated with the property owner in the acquisition or added to this project. The Snider property is undeveloped and has high quality riparian and forested habitat. The small Mallik parcel unifies all of the above to ensure continuous protection and restoration potential.
USCRB have identified Spring Chinook and Steelhead Redds within this stretch of Peshastin Creek.

10. Freshwater Benefit - What would be the anticipated loss in survival, capacity or distribution for target species at the reach scale if the proposed area is not protected?

If the property is developed for permanent residential and/or recreational use, the impact to the creek habitat would be substantial. Residences would require wells and septic systems, and removal of riparian vegetation. Such development would further fragment the properties with lots 5 acres or smaller and prevent process-based restoration.

11. Threat - How imminent is the threat of habitat degradation to the proposed land if the project is not implemented?

The MVA owners are investors with some development plans (yet undetermined) on their property.
The King property is owned by an elderly man in poor health and they have indicated the desire to sell quickly..
CDLT has been in contact with Monte Snider for several years, and he wants t5o sell or develop.

12. Conditions - Briefly describe if there are any conditions regarding the protection of the property that could limit the protection benefits

None known

13. Will there be public access? Yes

Monitoring Proposals

Project Risk and Economic Benefits

1. What is the landownership? private

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

Please explain

MVA and Snider have signed landowner Acknowledgment forms. Requests are in process with Mallick and King.

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

MVA prefers a conservation easement to fee simple. The others would be fee simple.

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

None known

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

Chelan-Douglas Land Trust

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

Don't know

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

The risk of failure is non-acceptance of the appraised value by each landowner.

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

CDLT members are familiar with CDLT's long history of riparian protection activities. Due to landowner sensitivity, these are not shared when acquisitions are proposed. After the acquisition, CDLT publishes press releases regarding new protected lands and its importance to salmonid populations. CDLT makes contact with neighbors about its ownership and about restoration activities.

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

Every acquisition project benefits the local economy by supporting salmon populations and enabling future restoration projects. On fee owned lands, CDLT and partners conduct educational activities, and this site is more accessible that upper White or Entiat River areas. CDLT lands are managed to benefit the public and local economy.

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

CDLT will work with Cascade Fisheries on planned restoration on the MVA property and see what opportunities are available on the other properties.

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)

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	Peshastin Creek RM 3
Sponsor	Chelan-Douglas Land Trust
Primary Contact	Mickey Fleming
E-Mail Address	mickey@cdlandtrust.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.

Chelan-Douglas Land Trust (CDLT) seeks funding to acquire 22 acres on Peshastin Creek between river miles 3-3.5.The goal of the project to permanently protect this stretch of Peshastin Creek, and partner with Cascade fisheries to perform much-needed restoration of Peshastin Creek. In the Wenatchee Basin, Lower Peshastin Creek is ranked first priority tier for steelhead protection, second priority for steelhead restoration, and second priority for Spring Chinook protection and restoration. There is restoration potential to improve salmonid habitat with possible bank restoration, channel complexity restoration, floodplain reconnection, instream flow enhancement, riparian restoration, and upland management. The owner of this property, Monte Snider, is contemplating developing this property if CDLT cannot acquire it for conservation purposes.

CDLT is also working with Cascade Fisheries on a possible conservation easement and restoration project directly downstream from this project at RM 2.5, which application will also be submitted for the 2025 SRFB funding round.

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].

This project seeks to address the degraded salmonid habitat of Peshastin Creek by permanently conserving the land on both sides of the creek through fee acquisition, which transaction could close by the end of 2026. After acquisition, CDLT will work with partner Cascade Fisheries to implement restoration projects on this property to improve the creek habitat. CDLT and Cascade Fisheries hope to perform this restoration work in conjunction with a proposed restoration project just downstream, on property owned by Mountain Valley LLC, on which CDLT aims to acquire a conservation easement.

Budget Request

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

Anticipated Request - SRFB (standard round)	190,000
Tributary Committee - Anticipated or Actual	190,000
Anticipated TOTAL Budget	380,000

Project Location

Briefly describe the location of the project	The project will occur on Peshastin Creek starting at RM 3 and ending at RM 3.5, Chelan County Parcel No. 24-18-32-320-100
Latitude (decimal degrees)	47.530644
Longitude (decimal degrees)	-120.621358
Project subbasin	Wenatchee
Wenatchee Assessment Unit(s)	Lower Peshastin Creek
Does the proposed project span multiple assessment units?	No
Reach(es) Name	Peshastin Creek Lower 03
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 2

Project Information

1. What species will the project benefit?

Spring Chinook

Steelhead

2. Select the project's objectives and the associated tracking metrics

Acquisition, Easements, Leases

Acquisition, Easements, Leases: Reporting Code

Miles of streambank and/or Shoreline Protected by Land or Easement Acquisition

Acres by Acreage Type (easement) and/or Acres by Acreage Type (fee simple)

Floodplain Areas Protected** this reporting metric does not appear in PRISM. Work with the LE to ad this metric upon completion of project.

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?

Protection

Is the project eligible for Riparian Funding?

No

Design and Restoration Proposals

Assessment Proposals

Protection Proposals

7. What type of protection are you proposing?

Fee Simple

8. Is this protection project associated with a current or future restoration project?

Yes

9. Placement - Does the project protect important high quality habitat and/or watershed processes and to what degree

Yes, the project would protect important spawning and incubation habitat for Spring Chinook and Steelhead. UCSRB and WDFW identified 21 redds within the subject stretch of Peshastin Creek between 2007 and 2011.

10. Freshwater Benefit - What would be the anticipated loss in survival, capacity or distribution for target species at the reach scale if the proposed area is not protected?

If the property is developed for residential/recreational use, then the impact to the creek habitat could be

substantial,and could limit/prevent any future protection and/or restoration, depending on the type of development. Residential use would require drilling wells and installing septic systems.

With protection, there will be opportunities to increase species health with future stream and shoreline projects.

11. Threat - How imminent is the threat of habitat degradation to the proposed land if the project is not implemented?

The current owner is an investor and developer. He could decide to develop the property at any time.

12. Conditions - Briefly describe if there are any conditions regarding the protection of the property that could limit the protection benefits

None known.

13. Will there be public access? Yes

14. Is the proposed acquisition area (that is applying for Riparian Funding) composed of 50 percent or less uplands, as per the UC riparian delineation? No

Monitoring Proposals

Project Risk and Economic Benefits

1. What is the landownership? Private

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

Please explain

CDLT has been in communication with this landowner for several years. He is aware of and supports CDLT submitting this application.

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

Since this would be a fee acquisition, CDLT is unaware of any landowner requirements, other than an acceptable appraisal price.

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

N/A

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

CDLT will manage and maintain the property. There will be no further landowner responsibilities.

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

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

The risk of failure is that the owner will not accept the appraised price for the property.

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

After the acquisition, CDLT will publish press releases regarding the acquisition of this property and its importance to salmonid populations. CDLT and Cascade Fisheries would also publicize any future restoration projects tot the community.

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

The project benefits the local economy by supporting a healthy salmon population through acquisition and then future recovery projects. CDLT lands are managed to benefit the public and local economy. Private ownership does not have the same priority.

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

CDLT will work with Cascade Fisheries to implement restoration projects. Cascade Fisheries would provide the funding and all resources to perform restoration work on the property.

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)

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	Lower Chiwawa Area D, Final Design
Sponsor	Chelan County Natural Resource Department
Primary Contact	Scott Bailey
E-Mail Address	scott.bailey@co.chelan.wa.us

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 project addresses identified habitat limiting factors for high- and medium-priority spring Chinook and steelhead life stages (i.e., holding, summer and winter rearing, and fry colonization) in Reach 4 of the Lower Chiwawa River AU including Floodplain Connectivity, Off channel Side-channels, Riparian Canopy Cover, Instream Cover (wood), Deep Pools, and Temperature (rearing). This phase of the project will prepare construction-ready designs, finalize and complete environmental compliance tasks (i.e., continue consultation with regulatory agencies and finalize and submit permit applications), and prepare bid documents to improve conditions along ~1.25 miles of mainstem channel; create up to 0.25 miles of side channel habitat; enhance two cold water tributary confluences; and consolidate/reduce dispersed camping, decommission ~1,000 lf of forest roads and reduce potential for future impacts and enhance vegetation within ~15 streamside acres.

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].

Objectives of the proposed project are to:
1. Develop a construction-ready design package within 12 months of funding that identifies restoration actions to:

(a) add large wood structures and other habitat features along ~1.25 miles of mainstem channel (and at two cold water tributary confluences) to redirect flows and increase inundation of river left floodplain surface, increase wood loading to greater than 70 pieces of wood per mile, improve cover and increase pool quantity and quality and improve habitat quality and access at tributary confluences.

(b) add up to 0.25 miles of side channel habitat to increase side channel area in project reach to greater than 5% of total channel area.

(c) decommission approximately 1,000 lf of forest roads, consolidate camp sites/control access, and plant native trees and shrubs to improve conditions within ~15 acres of riparian habitat.

2. Finalize and submit HPA and JARPA applications within 15 months of funding.

3. Prepare and release bid documents for project implementation within 18 months of funding.

Budget Request

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

Anticipated Request - SRFB (standard round)	$64,258
Anticipated or Actual Other Funding	125,000
Anticipated TOTAL Budget	$189,258

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

A 2024 BOR WaterSMART Aquatic Ecosystem Restoration Projects grant includes up to $125,000 for work on this phase of the Area D project. We have been notified that we were selected for this funding and are currently working with BOR staff to secure the agreement.

Project Location

Briefly describe the location of the project	The project site is located along the lower Chiwawa River from the Goose Creek confluence upstream to the Alder Creek confluence, approximately RM 6.0-7.25
Latitude (decimal degrees)	47.8396
Longitude (decimal degrees)	-120.6638
Project subbasin	Wenatchee

Wenatchee Assessment Unit(s)	Lower Chiwawa River
Does the proposed project span multiple assessment units?	No
Reach(es) Name	Reach 04
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 2

Project Information

1. What species will the project benefit?	Spring Chinook Steelhead Bull Trout
2. Select the project's objectives and the associated tracking metrics	Instream Habitat (Includes Floodplain & Off-Channel Reconnection) Riparian Habitat Upland Habitat
Instream Habitat: Reporting Code	Total miles of instream habitat treated 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
Upland Habitat: Reporting Code	Acres of upland habitat treated Number of erosion/ Sediment control installations Miles of road abandoned
4. Does this project already exist in Salmon Recovery Portal or PRISM?	Yes
5. Has this project been submitted previously for funding through the SRFB and/or other process(es)?	Yes

Please explain which process(es) and how this proposal differs from the previous submission (e.g., different phase, modified scope, etc.)

A related project on the lower Chiwawa River was submitted for funding in 2020. It did not receive SRFB funding because the application was pulled and the project revised. The revised effort (an assessment of the entire Lower Chiwawa AU) was funded by Tributary Committee and Bureau of Reclamation (BOR). That project identified and completed concept development for seven project sites in the AU. This Area D project was identified during that prior effort.

An earlier design phase for the Area D project was proposed for SRFB funding during the 2022 grant round. That proposal was funded, and preliminary designs and other products are being developed under that agreement (the design documents and other work products are being uploaded to PRISM). That RCO agreement is set to end September 2025. BOR also provided financial support for this earlier design phase. BOR contracted directly with the design firm, that is designing the in-stream restoration treatments.

In addition, CCNRD requested funding for this final design effort in a BOR WaterSMART Aquatic Ecosystems Restoration Projects (WaterSMART AERP) funding request. That proposal was selected for funding, and we are currently working with BOR staff to secure the award. This 2025 SRFB request serves as the required 35% non-federal match for the WaterSMART AERP funding.

6. What category is the project?

Design

If applicable, what is the secondary project category?

N/A

Is the project eligible for Riparian Funding?

Yes

Design and Restoration Proposals

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

Final Design

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 Chiwawa River Assessment, InterFluve 2023

9. Which limiting factors does the project propose to address?

Cover - Wood
Off-Channel - Floodplain
Off-Channel - Side-Channels
Pool Quantity & Quality
Pools - Deep Pools
Riparian - Canopy Cover
Temperature - Adult Holding
Temperature - Rearing

10. Which life stages will the proposed project address?

Fry
Holding and Maturation
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?

Currently, floodplain connectivity, side-channels, cover wood, riparian canopy cover, and temperature are classified as Unacceptable, and deep pools are classified as At-risk, for Reach 4 of the lower Chiwawa River (UCRTT 2020). Based on the Upper Wenatchee Pilot Project: Aquatic Habitat Assessment and Restoration Strategy Report (Cramer Fish Sciences, 2019), streambed substrate is dominated by cobbles and boulder and LWD is rare in this reach. Overall pool frequency was rated Adequate, but the reach was rated At-risk for pools due to a limited number of deep pools. Riparian road densities were rated Moderately High and this resulted in a riparian condition rating of At-risk. Channel dynamics were rated Poor in this reach due to a high bankfull width to depth ratios, low entrenchment ratio, and low side channel percentages compared to predicted meandering and braided channel forms.

This project is intended to improve habitat quality for target species life stages including holding, fry, summer rearing, and winter rearing. Upon implementation the proposed project will improve habitat quality at two tributary confluences; increase the length of side channel habitats, the number of deep pools and amount of LWD present along ~1.25 miles of mainstem channel; and treat historical and ongoing recreational impacts to riparian vegetation and water quality (and minimize potential for future impacts) along the project reach. Based on the above, this project will enhance the quantity and quality of habitats along the project reach, and we expect that this will increase capacity for holding, incubation, fry and summer and winter rearing life stages, which we expect to improve survival, reproduction and fitness for target species.

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?

The lower Chiwawa River has been impacted by historical land use practices, particularly timber harvest practices that used the stream corridor to transport logs. This has resulted in a simplified, plane bed channel that is wide and shallow and disconnected from its historical floodplain. As a result, the streambed is well-armored and large cobbles and small boulders dominate the bed substrate. Pools and persistent LWD structures are rare. In addition, dispersed camping in the area has adversely affected riparian and upland vegetation, resulted in a web of social roads and trails and a proliferation of garbage and unauthorized latrines. These impact water quality and stream and forest health (and creates management issues for USFS).

The project proposes to continue an ongoing effort to assess an ~1.25 mile reach of the river and ~15 acres of adjacent riparian habitat and identify actions that can be implemented to restore habitat values, promote natural processes, minimize future recreational impacts, and facilitate USFS management of the area. The proposed design process is supported by extensive data collection and modeling. It will anticipate projected effects of global climate change and be consistent with reach-scale geomorphology and USFS planning and management efforts. The project will also be consistent with guidance provided by the UCRTT in its recent restoration prioritization update which promulgates the following recommendations for the project reach: Improve cover wood, Improve off-channel side channels, Improve off-channel floodplain, and Improve temperatures.

Designs are intended to promote natural processes by adding structure to enhance the mainstem channel and tributary confluences, connect floodplain and side-channel habitats, create new side channel habitats and facilitate recruitment of naturally occurring LWD and streambed materials. The design process also is developing treatments for past anthropogenic impacts to streamside habitats that are also intended to minimize potential effects of continued recreational use of the area. These treatments are collectively expected to improve conditions for adult holding, fry, summer rearing, and winter rearing life stages in the near-term and provide long-term benefits to aquatic habitats.

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?

50+ years

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

This phase of the project is for preparation of construction-ready designs, so there will be no associated maintenance at this time. However, it is our intent that the project will be self-maintaining and require little or no further human intervention once construction is completed. That said, we anticipate involvement with the project during and after implementation and will work with USFS to monitor the project post-construction and complete maintenance as needed to ensure the project continues to function as designed.

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

A variety of methods will be used over the course of this final design effort. Our goal is to design a project that improves conditions along the mainstem channel, creates additional side channel habitat and better connects floodplain surfaces, enhances two tributary confluences, addresses dispersed camping and roads, identifies site management and planting strategies to improve riparian/upland habitats, and facilitates long-term management of the area for the landowner.

New data was gathered and analyzed during two previous design and assessment phases including high resolution aerial imagery and LiDAR topo-bathymetric data and development of an AU-wide existing conditions hydraulic model. The current preliminary design phase is utilizing these and other data sets and model outputs to build upon initial concepts.

The proposed project will gather additional data at the site, continue 2D hydraulic modeling, and employ other science and engineering methods to finalize location(s) and characteristics of restoration treatments (e.g., methods employed, size and type of materials, etc.) that will be used to meet project goals and to evaluate their influences. The engineering design process will continue to utilize best available science and follow regulatory design guidelines to finalize identified implementation techniques that meet project objectives including engineered log jams, log and boulder placement, selective grading, and vegetation management. We also will continue to develop treatments for past recreational impacts that limit future effects of recreational use. All actions will be consistent with USFS planning and management needs, and the design process will continue to be informed by internal and external review.

Assessment Proposals

Protection Proposals

Monitoring Proposals

Project Risk and Economic Benefits

1. What is the landownership?

USDA Forest Service

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

Yes

Please explain

We currently have a signed Landowner Acknowledgement Form for the Preliminary Design Phase of this project, and USFS is a partner in the ongoing design effort. We will obtain a signed Landowner Acknowledgement Form for this proposed Final Design Phase later on in this SRFB application process.

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

Project must avoid impacting nearby long-term lease cabins, Goose Creek Campground, and the Chiwawa River Road bridge that crosses the river just downstream of the Alder Creek confluence.

Dispersed camping consolidation/reduction and road decommissioning will follow USFS guidelines and standards, and in-stream restoration will be consistent with design criteria and conservation measures promulgated under ARBO II (Programmatic Conference and Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for Aquatic Restoration Activities in the States of Oregon and Washington).

None of these requirements are expected to adversely affect the project because safety considerations and following established guidelines and standards is commonplace in stream restoration design.

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

Instream projects often raise concerns of recreational boaters, adjacent property owners, and other interested parties. Our designs will take boater safety and project risk to into account through the use of the Bureau of Reclamation's Large Woody Material - Risk Based Design Guidelines (which assesses risks to property and public safety).

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

This proposal supports preparation of construction-ready designs, so no on-the-ground management or maintenance activities are expected with work performed under it. However, management and maintenance of the project site may be needed following project implementation. CCNRD anticipates that the project site will be monitored post-construction and that USFS will ultimately be responsible for maintenance and management. However, CCNRD will work with USFS to provide for necessary management and maintenance during that time. Treatments in the dispersed camping areas are expected to facilitate USFS management of the area and reduce potential for future human impacts to streamside vegetation and water quality.

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 always risk associated with stream restoration projects, but with good data collection, careful design and modeling, and implementation that follows the designs and utilizes construction best management practices, potential for failure is low. For this design phase, we will work with a licensed engineer (and support staff) employed by a reputable company with extensive river restoration experience. The design effort to date is consistent with applicable design criteria and has included extensive review and revision. The project will be subject to further review and refinement during preparation of the proposed final designs. These steps assure a high factor of safety and minimize potential for failure.

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

We will work with USFS to continue and expand outreach that began during the current concept development phase of this project to assure that local resident and forest users are aware of the project and its potential effects and benefits. Outreach will be structured such that it meets USFS standards and needs and informs the public about the type of restoration actions being implemented, emphasizes the need for and benefits of stream restoration, and builds support for salmon recovery efforts.

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

Yes, this project represents an opportunity for economic benefit. The proposal supports the final design phase. As a result, it will employ design consultants and agency staff. The subsequent implementation

phase will employ design consultants, agency staff, construction contractors and material providers.

Kellon and Hesselgrave (2014) have reported that restoration efforts support 19-24 jobs for every $1-million invested (depending on labor intensity), money spent on restoration projects generates substantial additional spending and economic output (roughly double the amount of the original investment), and 80% of funds spent on restoration efforts stay in the county where the project is located (with 90% staying in state). While their study focused on restoration projects in Oregon, economic benefits of restoration are almost certainly similar for Washington state.

Cathy P. Kellon and Taylor Hesselgrave, “Oregon’s Restoration Economy: How investing in natural assets benefits communities and the regional economy”, S.A.P.I.EN.S [Online], 7.2 | 2014, URL: http://journals.openedition.org/sapiens/1599 (link confirmed March 3, 2025)

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

Chelan County NRD has extensive experience implementing design projects such as the one proposed. CCNRD has:

- worked with USFS on several past and ongoing restoration efforts.

- a long-standing partnership with the Bureau of Reclamation. BOR was a primary funder for the effort that identified this project site and has directly contracted with InterFluve, Inc. for the current preliminary design phase of this project. Further, BOR funds are expected to support this project phase.

- a working relationship with InterFluve. IFI is the design firm on the current preliminary design phase,

- working relationships with other design firms and construction firms with experience designing and implementing this type of project.

Given the above, CCNRD is well situated to complete the proposed final design effort on-time and on budget, move on to the subsequent implementation phase, and achieve the expected results.

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)

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	Roaring Creek Floodplain Reconnection Project
Sponsor	Cascadia Conservation District
Primary Contact	Mark Ingman
E-Mail Address	marki@cascadiacd.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 project will treat and reconnect the lowest 1.2 miles and over 40 acres of Roaring Creek floodplain that is located on Forest Service lands (RM 1.4-2.8). Grazing, timber harvest, uncharacteristic/catastrophic fire (2014, 1988), and historic extirpation of beaver are some of the leading causes of channel incision, floodplain disconnection with the stream, reduced baseflows, and simplification of the stream network. The project design separates the treated areas into three project segments (upper, middle, and lower), each with different treatment methods and goals. By aggrading and recovering the streambed, reconnecting floodplains, raising groundwater tables, increasing structural wood in the channel and system, increasing habitat complexity, and off channel habitat, the project will substantially benefit ESA threatened steelhead for multiple life stages.

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 objective are directly aligned and correspond to the limiting factors for Roaring 03 and 04, respectively, as follows:
1) baseflow (Score 1 red,1 red) , 2) cover-wood (3 yellow,1 red) , 3) off channel/side channel (3 yellow, 1 red), and 4) course substrate (3 yellow both reaches).

As such, using the same numbering as above limiting factors, our project objects will directly 1) benefit baseflows by raising groundwater to approaching the floodplain level and provide an anticipated delay of return to baseflows over 1.4 mile project scale (already measuring pre-project with up and downstream flow gauges per WA Ecology funded QAPP), 2) increase cover-wood through large wood additions in all treated reaches within the project (large scale wood loading), 3) provide new side and off channels through fully aggrading upper and lower reaches that are disconnect from floodplain through a combination of Stage Zero floodplain reset methods and heavy in-stream wood loading methods, and finally, 4) providing multiple flow paths and complexity to sort substrate of multiple sizes/classes (including coarse size) within the newly created, anastomosing stream network.

Budget Request

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

Anticipated Request - SRFB Riparian Funding	470,000
Tributary Committee - Anticipated or Actual	330000
Anticipated or Actual Other Funding	220,000
Anticipated TOTAL Budget	1,020,000

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

USFS Roaring Creek Floodplain Enhancement - $220,000, actual/secured

Project Location

Briefly describe the location of the project	The project will occur in Roaring Creek starting at RM 1.4 and ending at RM 2.8.
Latitude (decimal degrees)	47.682246
Longitude (decimal degrees)	-120.361772
Project subbasin	Entiat
Entiat Assessment Unit(s)	Roaring Creek

Does the proposed project span multiple assessment units?	No
Reach(es) Name	Roaring 03, Roaring 04
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 2 Unranked (not a priority or missing data) Multiple reaches (provide details below)

Please detail the reach-ranking of the reaches below

Roaring Creek 01-04 are listed as "unranked" on the basis of a FS valley confinement ratio algorithm. This is a error in the algorithm as the valley width is great that 8x bankfull width and there is considerable floodplain in which to do restoration for the greater extent of the 1.4 mile project area. We request a full review and consideration of this project despite is unranked status.

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 Flow Instream Habitat (Includes Floodplain & Off-Channel Reconnection) Riparian Habitat
Instream Flow: Reporting Code	Change in water flow
Instream Habitat: Reporting Code	Total miles of instream habitat treated 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 miles streambank treated 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

If applicable, what is the secondary project category?

N/A

Is the project eligible for Riparian Funding?

Yes

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)?

No

9. Which limiting factors does the project propose to address?

Cover - Wood
Flow - Summer Base Flow
Off-Channel - Floodplain
Off-Channel - Side-Channels
Pool Quantity & Quality
Riparian
Riparian - Canopy Cover

10. Which life stages will the proposed project address?

Fry
Spawning and Incubation
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?

Habitat quantity (side and off channels, inundated extent, and floodplain habitat area) will be increased.

Habitat quality will also be improved. The predominantly single thread channel will become anabranching (multi-thread) in nature post treatment, and this quality improvement will be significantly increased through installation of large quantities of structural large wood in channel in within the treated floodplain extent. We anticipate relatively fast vegetative response in the widening of the riparian corridor both through active plantings and passive natural recruitment. As a result, edge habitat will be significantly expanded.

Fish: A total of 16 steelhead redds have been documented within the treated project area during surveys conducted in 2008, 2009 and 2011. Modeled peak flows in the planned treated area of the documented redd locations indicate the potential redds have been washed out by peak flows in some years in some

locations. The restoration methods will have the effect of slowing and spreading peak flows, spreading and sorting gravels, that combine to produce reduced flows and expanded spawning opportunities. An additional 13 steelhead redds were documented within Roaring Creek, downstream of the project area during the same survey years (data source: UCSRB). There is a PIT array in Roaring 01 ("RCT").

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?

Restoration actions align with natural confinement patterns along of the project reach. Full floodplain treatments are proposed in the unconfined Upper and Lower reach segments. These segments have valley bottoms greater than 8 times the bankfull width and were historically depositional in nature. Through streambed raising, roughness (wood) treatment, and improved groundwater interactions, we anticipate vegetation response and development of multiple threads within 2-4 years.

The middle segment is naturally confined by colluvial and landslide deposits. The restoration approach accordingly targets and seeks to activate pocket floodplain areas with strategic low-tech and landslide-simulating wood treatments. We anticipate localized response in floodplain activation, sediment sorting, and pool development within similar timeframes.

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

1-10 years

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

50+ years

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

The level and interval of maintenance will depend upon the reach and its corresponding treatment methods. Overall, the project sponsor has extensive direct experience with low tech process based restoration in the Upper Columbia region. In our discussions with stakeholders we have received feedback that floodplain reset ("stage 0") methods benefit significantly through adaptively managing the desired stream response through low tech process based restoration (personal communication, Paul Powers, USFS). We will be monitoring fish response (separate SRFB proposal), stream response, and riparian establishment and growth through multiple funding sources (WA Ecology -secured; other proposals in progress). The project sponsor has been successful each cycle in applying and receiving state restoration maintenance/stewardship funding through the WSCC Riparian Grant Program (RGP). WSCC RGP can support both riparian maintenance and BDA/Low Tech maintenance. We foresee low tech restoration based adaptive management for 10 years following the implementation, and then less maintenance thereafter. The potential for beaver being a primary actor in ongoing maintenance and restoration is relatively high given the signs of both historical and recent beaver activity in Roaring Creek (above the project area, and within the project area).

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

Upper Reach (naturally unconfined, high incision): The upper reach is naturally unconfined (valley bottom >8x channel width) but incised 4-6 feet from its historical floodplain level. This reach has proposed Stage 0 (streambed) raising restoration techniques. The lower end of this reach will include a transitional roughened channel meet grade with the middle reach.

Middle Reach (partially confined with localized "pocket" floodplains): The middle reach is naturally confined by hillslope and colluvial deposits. These deposits create localized floodplain pockets that have mixed to low connectivity. The proposed restoration actions will include low-tech structures to create localized complexity and connectivity in areas where riparian disturbance is undesirable. Restoration actions will also include landslide-simulating logjams to activate floodplain areas where equipment access is feasible.

Lower Reach (moderate-high incision): The lower reach has similar attributes to the upper reach, with a naturally wide valley bottom and high incision. The proposed restoration actions include Stage 0 (stream-bed raising) approaches to connect floodplains, reduce stream power, improve groundwater interactions, and promote riparian regrowth.

17. If the project is eligible and applying for Riparian Funding, does the project have in-stream components? If so, briefly describe those components, how they support riparian plant survival and/or natural regeneration, and why they are necessary for the success of the riparian habitat elements of the project.

Yes, the project is eligible for Riparian Funding. The in-stream components will raise the bed grade to a full floodplain reset (Stage 0) level in the upper and lower reaches where this method is appropriate and most needed. This means aggrading stream bed incision that is as much as 6 feet below the floodplain in its current and unrestored state. Stage Zero and large wood additions will significantly raise groundwater levels, delay the annual return to baseflows, that will invariably rewet the floodplain for robust riparian growth and establishment in which a response is expected in the 2-4 year time interval. The project will benefit riparian vegetation both passively through raising groundwater levels, but also actively through a riparian planting plan encompassing the upper, middle, and lower reaches.

Assessment Proposals

Protection Proposals

Monitoring Proposals

Project Risk and Economic Benefits

1. What is the landownership? Forest Service

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

Please explain

The landowner is the original project implementer and co-funder of the project and the Forest Service has partnered with Cascadia CD to implement the project. Cascadia CD has received an award from the Forest Service to implement the design and the construction (partial construction award as match). The Forest Service is reviewing all design milestones of the project and co-leading permitting for the project with Cascadia CD. The Roaring Creek Floodplain Enhancement project is named as part of the USFS Mad Roaring Mills Landscape Restoration NEPA of 2018, finalized in 2023.

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

The Forest Service has provided match funding for the design, and partial funding for construction. The Forest Service is reviewing the 30%, 60% and final design stages. There is Forest Service gate and primitive road that leads to the project area. The design team has been in conversation with the Forest Service about widening at least one part of the road in order to transport large quantities of wood to the staging areas.

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

There is relatively low/infrequent use of Roaring Creek and the primitive roadway is mostly out of the floodplain and unaffected by the restoration methods. There is some occasional dispersed camping points in the treated area that were unpermitted and may be better displaced than encouraged. It is a relatively low recreational use adjacent and along the stream. Additionally, this project was part of the MRM NEPA that was finalized in 2023. The project sponsor organizes the Entiat Watershed Planning Unit

and utilizes this and other venues to present project updates and receive feedback.

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

Cascadia CD will have the responsibility of managing the project for at least 10 years, which is the same duration we require as a district for all projects. The current and future landowners will remain the Forest Service. The Forest Service provides input at each design stage as well as funding for both design and construction (funding serving as match). The design project is on the Forest Services work plan for 2025. Cascadia CD looks forward to continuing it partnership with the Forest Service to complete the design, implement, and continue ongoing maintenance.

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

No

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

This project benefits from utilizing process based restoration at the full floodplain scale. In this way, it is utilizing natural processes coupled with engineering design and modeling. We have collected input from multiple agencies and stakeholders before and during the design process and we continue to take in feedback at every consequent design milestone. We have collected considerable field and remote sensing data, reviewed existing datasets and records, and consulted with outside experts who have experience with the same type of full floodplain projects (P. Powers, R. Flitcroft, and others, predominantly versed in full floodplain/stage 0 projects). We have intentionally focused on such risk factors as 1) grade control at the downstream location, 2) water rights – confirmed downstream users are in fact now groundwater users, 3) geophysical subsurface transects, 4) streamflow gauges upstream and downstream of treated project area, 5) limiting impacts to wetlands and sensitive species, and other leading risk considerations. The project sponsor is part of a CRM, which leverages our pooled resources among staff, community relationships, low tech processed based program, Wenatchee-Entiat Beaver Project, and other capabilities for all of our projects. This creates a level of redundancy and a depth of resources.

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

The Roaring Creek Floodplain Reconnection project is included in the “Mad Roaring Mills Landscape Project” as one primary component sites of the public NEPA process (See “Objective 3 – restore floodplain connection” https://www.fs.usda.gov/project/okawen/?project=59963). The NEPA was finalized in July of 2023. We continue to provide landowner outreach about this award through direct engagement with local landowners as well as through public venues such as the Entiat Watershed Planning Unit, a quarterly public meeting facilitated by Cascadia Conservation District. There has been past and recent outreach with downstream landowners on Roaring Creek regarding restoration activities.

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

The project will result in funds being invested into the local economy in the form of subcontracts, payroll, materials, supplies, fuel. The project sponsor is mindful of sourcing materials locally and regionally whenever possible. The Entiat watershed is an important recreation location in Nort Central Washington. The reconnection of over a mile of floodplain along Roaring Creek will not only benefit threatened steelhead and other native fish, but it will benefit wildlife on a watershed scale. This benefits extend to hikers, birders, and many other forms or recreation. Water scarcity is a real concern going forward and the slowing of water leaving Roaring Creek benefits the watershed at every location downstream in terms of the availability of water resources. While we do not have a calculation of dollars spent, we do feel that our ratio of dollars spent per distance and area restored is perhaps the best ratio of dollars invested for linear stream and acres restored ($1M for 1.4 miles and over 40 acres)!

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

Cascadia CD I part of a coordinated resource management (CRM) team with Cascade Fisheries and Trout Unlimited. Trout Unlimited initiated several BDAs with the Forest Service on Roaring Creek to arrest several

head cuts for fish passage. In 2023 Cascadia CD assisted Trout Unlimited in installed several beaver dam repairs upstream of the project area. Recently Cascadia CD and Cascade Fisheries and collaborated on project development of other sites on Roaring Creek. Cascadia CD will undoubtably utilize the CRM for assistance during all phases of implementation (such as Low Tech PBR components), maintenance, and monitoring.
The US Forest Service has been developing the Roaring Creek Floodplain Reconnection project since around 2018 that coincides with the Mad Roaring Mills Landscape Project (NEPA). The Forest Service received funding for landscape scale projects and awarded Cascadia CD funding for design and implementation of the project. The Forest Service team includes fisheries biologists, hydrologist, botanist, archeologist, and the ranger. We have also consulted with member of the USFS Pacific Northwest Research Station. Concurrent to the Forest Service's award, the WA Department of Ecology provided funding for design and monitoring of the Roaring Creek Reconnection Project. The WA Ecology has reviewed and approved streamflow monitoring of the project, which includes streamflow measurements above and below the project site. Our consultant design team includes Lichen Land and Water as principal, Nick Legg PG and Dominique Shore (geomorphologist), Gabe Williams, PE, Resource Specialists Inc. as lead engineer, Lauren Zatkos, Wetland Scientist, W2R, and AJ Jones, PE, ESCM, Wolf Water Resources. The consultant design team has extensive experience with full floodplain restoration projects in the Pacific Northwest to include full floodplain and Stage 0 restoration. The project sponsor, Mark Ingman has a MS in Water Resources and over ten years of experience in natural resources project management. Cascadia CD also has its own archeologists on staff for cultural resources inventories.

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

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

Project Title	CRM Riparian Stewardship Package
Sponsor	Cascade Fisheries (Lead Sponsor), Cascadia Conservation District (Co-sponsor), Trout Unlimited (Co-sponsor)
Primary Contact	Phillip Klenke
E-Mail Address	phillip@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.

The Coordinated Resource Management (CRM) group, a partnership between Cascade Fisheries, Cascadia Conservation District, and Trout Unlimited, submits this joint proposal to restore riparian and in-stream habitat across the Upper Columbia region. This proposal focuses on the stewardship of riparian and in-stream habitat restoration efforts by the CRM across 23 project sites in the Wenatchee and Entiat River watersheds, as well as in two tributaries of the Columbia River. The primary goals are to improve the success and rate of riparian habitat establishment and to enhance the development of normative stream processes and functions, promoting self-sustaining ecosystems.

To achieve these goals, this project will focus on managing invasive plant species and noxious weeds, replacing unsuccessful plantings, increasing groundwater availability through in-stream structures, and supplementing sites with irrigation water as needed. Additionally, efforts will be directed toward improving the effectiveness and longevity of low-tech process-based restoration (LTPBR) in-stream habitat structures, such as Beaver Dam Analogs (BDAs) and Post-Assisted Log Structures (PALS), through annual maintenance, monitoring system response, and adaptive management based on observed responses.

Beavers create, maintain, and improve habitat that supports survival, capacity and/or distribution of salmonid species by creating ponds that store cool water, create rearing habitat, aggrade incised streams,

reconnect floodplains, and lower downstream turbidity. Every year, Trout Unlimited works with landowners and public agencies to keep beavers in place through education and various coexistence measures. When leaving beavers in place is not an option and those beavers would otherwise be lethally removed, Trout Unlimited will live trap beavers and relocate them to streams where they can create and restore quality salmonid habitat.

By addressing the root causes of habitat degradation, including reduced riparian vegetation, competition from invasive species, loss of in-stream complexity, removal of beavers, and diminished hydrologic processes and functions, this project will foster resilient riparian and aquatic ecosystems. The desired future condition is a network of stable, connected habitats with thriving native vegetation and beavers, improved water retention, and enhanced capacity to support fish and wildlife populations. Through continued stewardship, this project will ensure that restoration efforts achieve lasting ecological benefits and contribute to the long-term health of these watersheds.

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].

This project will achieve the following objectives:

- Riparian Vegetation Establishment: Restore and expand riparian vegetation communities to address shade cover and high stream temperatures for all salmonid life stages by providing stewardship and maintenance to over 21 acres of previously planted riparian habitat through managing invasive species, replacing unsuccessful plantings, and supplementing water (irrigation) to achieve self-sustaining riparian communities that are on a trajectory to becoming fully functioning riparian systems. The project will also improve conditions for riparian vegetation establishment through ponds created by released beavers.
- Invasive Species Management: Manage invasive plant species and noxious weeds across more than 21 acres of previously planted riparian habitat, to promote native vegetation establishment and riparian resilience.
- In-Stream Habitat Structure Maintenance: Maintain and enhance over 500 BDAs and 100 PALS across more than 11 miles of previously treated aquatic habitat by conducting annual inspections, routine structure maintenance, and adaptive management, to achieve self-sustaining stream processes that promote the formation of riparian communities and in-stream habitat for aquatic species.
- Beaver Relocation: Reintroduce beavers to 5 sites in Chelan and Douglas Counties. Based on linear beaver colony densities reported in the literature (Scrafford et al. 2018; Cox and Nelson, 2009; Boyce, 1980; Busher et al. 1983; Busher et al. 1983) we anticipate that every beaver family maintained in place has the potential to treat 0.9 – 1.6 km of stream with ecosystem benefits (instream habitat), so beaver relocation could result in a total of 4.5-8 km of maintained and improved instream habitat across 5 sites.
- Hydrologic Process Enhancement: Improve groundwater recharge, streamflow retention, and in-stream complexity by ensuring that BDAs, PALS, and relocated beavers are actively promoting natural stream processes (i.e. lateral floodplain connectivity, pool formation, sediment retention, etc.) as observed during routine structure maintenance over the 5-year term.
- Irrigation and Water Supplementation: Support riparian vegetation survival by supplementing sites with irrigation water as needed, ensuring soil moisture levels remain within optimal ranges during the driest months of the year, to achieve self-sustaining riparian communities that are on a trajectory to becoming fully functioning riparian systems.

Project objectives are summarized across all 23 project sites. While each site has specific treatments and recovery goals, these objectives establish the common recovery goals shared across all project sites. Detailed site-specific objectives are not included in this pre-application to maintain clarity and focus on the unified restoration strategy.

Budget Request

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

Anticipated Request - SRFB (standard round)	$600,000.00
Anticipated Request - SRFB Riparian Funding	$600,000.00
Tributary Committee - Anticipated or Actual	$200,000.00
Anticipated TOTAL Budget	$800,000.00

Project Location

Briefly describe the location of the project	This project will take place across 23 different project sites (14 “work sites” or stream systems) within the Wenatchee and Entiat Rivers, and the Columbia River Tributaries. A list of river miles (or length of stream affected for smaller streams) by site can be found in “Attachment A- Worksites and Properties Info”. Beaver Relocation work will take place in rivers and streams throughout Chelan and Douglas Counties.
Latitude (decimal degrees)	A list of Latitudes and Longitudes by site can be found in “Attachment A- Worksites and Properties Info”.
Longitude (decimal degrees)	A list of Latitudes and Longitudes by site can be found in “Attachment A- Worksites and Properties Info”.
Project subbasin	Multiple Subbasins

Please explain why there are multiple subbasins

This proposal focuses on the stewardship of riparian and in-stream habitat restoration efforts by the CRM across 23 project sites in the Wenatchee and Entiat River watersheds, as well as in two tributaries of the Columbia River.

Does the proposed project span multiple assessment units?	Yes
List the additional assessment units directly impacted by this proposal.	There are 10 total Assessment Units associated with the project sites proposed in this project. The Columbia River Tributaries do not have a designated AU. A list of AUs by site can be found in “Attachment A- Worksites and Properties Info”.
Reach(es) Name	The projects included in this proposal take place across 14 different defined reaches. The other 9 project sites occur in reaches that have not yet been defined. A list of reaches by site can be found in “Attachment A- Worksites and Properties Info”. Beaver relocation and coexistence will take place as needed on public and private land in collaboration with landowners and land managers.
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/.	Multiple reaches (provide details below)

Please detail the reach-ranking of the reaches below

The projects included in this proposal take place across 14 different defined reaches. The other 9 project sites occur in reaches that have not yet been defined.

A list of reaches and associated rankings by site can be found in “Attachment A- Worksites and Properties Info”.

Beaver relocation and coexistence will take place as needed on public and private land in collaboration with landowners and land managers.

Project Information

1. What species will the project benefit?

Spring Chinook | Steelhead | Bull Trout | Summer Chinook | Coho, Sockeye, Lamprey, westslope cutthroat

2. Select the project's objectives and the associated tracking metrics

Instream Habitat (Includes Floodplain & Off-Channel Reconnection) | Riparian Habitat

Instream Habitat: Reporting Code

Total miles of instream habitat treated | Number of beavers | Number of structures placed in channel

Riparian Habitat: Reporting Code

Total riparian miles streambank treated | 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

If applicable, what is the secondary project category?

Restoration

Is the project eligible for Riparian Funding?

Yes

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)?

Ten of the 23 project sites included in this proposal fall within defined reaches. Those reaches will likely have had Reach Assessments completed for them to some degree. It is unknow to the sponsor if the other 13 project sites have completed or soon-to-be-completed Reach Assessments. UCSRB's Prioritization Web Map does not name the assessments performed to gather reach data.

9. Which limiting factors does the project propose to address?

Cover - Wood
Flow - Summer Base Flow
Off-Channel - Floodplain
Riparian
Riparian - Canopy Cover
Riparian - Structure
Temperature - Adult Holding
Temperature - Adult Spawning
Temperature - Rearing

10. Which life stages will the proposed project address?

Subadult Rearing (Bull Trout)
Fry
Spawning and Incubation
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?

Several native aquatic species are threatened, endangered, or a species of concern in the Wenatchee, Entiat, and upper Columbia watersheds. These species include steelhead (Oncorhynchus mykiss), spring Chinook salmon (Oncorhynchus tshawytscha), bull trout (Salvelinus confluentus), Pacific lamprey (Entosphenus tridentatus) and Westslope cutthroat trout (Oncorhynchus clarkii lewisi). Coho salmon (Oncorhynchus kisutch), a reintroduced species of cultural importance to both the Yakama Nation and the Colville Confederated Tribes, and sockeye salmon (Oncorhynchus nerka), are also present in the Wenatchee watershed. Much of the region's available restoration funding is directed towards habitat restoration with a focus on increasing channel structure, off-channel habitat, habitat complexity and heterogeneity, and water quality within the mainstem river and side channel anadromous zones (UCSRB 2020). Comparatively few restoration dollars are directed upstream to address root causes of anadromous zone degradation. This includes reduced seasonal streamflow caused by rapid conveyance of water through disconnected and incised stream channels in headwater streams, as well as the excess sediment and nutrient transport from low order tributaries after disturbance events and legacy degradation (Powers et al. 2018). The majority of project sites in this proposal within WRIAs 45, 46, and 44 are in lower order streams within the upper extent of the active anadromous zone. The process-based restoration projects included in this proposal, that were previously implemented by the CRM, to increase structure, habitat complexity, and reconnection with floodplains are providing multiple essential benefits to onsite and downstream anadromous habitat and salmonids by:

1. Reducing erosive stream power emanating from degraded and incised headwater streams (Pollock et al. 2014, Wheaton et al. 2019)
2. Reducing large scale debris, sediment, and nutrient transport during disturbance events (Beechie et al. 2010, Wohl et al. 2018).
3. Increasing water residency time in headwater basins through the reconnection of streams with floodplains, recharging groundwater (Wohl et al. 2018, Wohl et al. 2019).
4. Slowing the groundwater return downstream of floodplain inundation moderates stream temperatures

in all seasons, cooling streams in the heat of summer and warming them in the depths of winter, both critical to salmon across life stages (Bouwes et al. 2016, Majarova et al. 2019)
5. Slowing conveyance of water through headwater basins, increasing late season stream baseflows, and moderating annual baseflows (Yokel et al. 2018, Wheaton et al. 2019).

Riparian restoration projects provide critical freshwater benefits to our region's target species throughout their life stages by enhancing habitat complexity, regulating water temperature, and stabilizing streambanks. Riparian vegetation improves instream habitat by increasing the future recruitment source of large woody debris, which creates pool habitat and cover that is essential for juvenile rearing and predator avoidance (Roni et al. 2002). The shading provided by mature riparian canopies helps moderate stream temperatures, which is particularly vital for thermally sensitive species such as bull trout (Salvelinus confluentus) and spring Chinook salmon (Oncorhynchus tshawytscha) (Poole & Berman 2001). Additionally, riparian root systems reduce sediment transport and improve substrate quality, benefiting egg incubation and early fry development by maintaining suitable interstitial flow and oxygen levels in spawning gravels (Naiman et al. 2005). The increased habitat complexity from floodplain reconnection and side channel formation further supports juvenile fish by providing low-velocity refugia during high-flow events, improving survival rates across various life stages (Beechie et al. 2010). By restoring riparian function, these projects address both local and downstream habitat conditions, supporting the long-term resilience of anadromous and resident fish populations in degraded freshwater systems.
Research has demonstrated how beavers create, maintain, and improve habitat that support survival, capacity and/or distribution of all life stages of salmonid species:
1. Beaver ponds retain surface water, store cool water, and elevate water tables to enhance base flows and promote aquifer recharge. (Naiman, Johnston and Kelley, 1988 and Dittbrenner et al. 2022)
2. Ponds offer habitat for salmonids and other aquatic/terrestrial species including invertebrate food sources, and lower downstream turbidity. (Pollock et al., 2004)
3. Beaver dams and BDAs increase stage to aggrade incised streams, reconnect streams with floodplains, and create critical off-channel habitat. (Bouwes, et al., 2016)
4. Beaver activities attenuate flooding and sediment transport. (Rosell and Parker, 1996)
5. Beaver habitats create natural fire breaks and refugia and increase riparian vegetation fire resistance. (Fairfax and Whittle, 2020)
6. Beavers recruit woody debris to the stream system. (Orr, et al., 2020)

Benefits to other aquatic and riparian dependent species: All native aquatic and riparian dependent species that evolved in WRIA 45 and 46 are challenged by current conditions of watershed degradation, changing precipitation patterns, and a warming climate. Riparian areas and their streams hold some of the most complex and biodiverse ecosystems around the world and the majority of all freshwater and terrestrial species are dependent upon riparian/aquatic systems for some stage of their life cycle, if not the entirety (Abell, Robin, et al. 2008, Naiman et al. 1993). LTPBR and riparian planting provide immense value by returning water to the riparian floodplain and helping maintain wetted conditions across a greater proportion of valley widths throughout these watersheds. This broad scale wetting would exponentially increase habitat conditions conducive to diverse life and restore resiliency into our ecosystems (Wheaton et al. 2019). This resilience will enable faster recovery from ongoing climate exacerbated weather events. A number of riparian and aquatic species are currently at risk and would benefit from broad watershed LTPBR actions to improve habitat quantity and quality: state ESA listed endangered greater sage-grouse (Centrocercus urophasianus), several species of freshwater mussels, many bat species including the spotted bat (Euderma maculatum), Townsend's big eared bat (Corynorhinus townsendii), and little brown bat (Myotis lucifugus) and amphibians including the Columbia spotted frog (Rana luteiventris) are candidate species for at risk listing in WA (ISSSSP 2020, WDFW 2020).

The 23 project sites included in this proposal fall across 10 different Assessment Units (AUs) within the Wenatchee and Entiat watersheds. Due to the majority of included project sites occurring in lower order streams within the upper extent of the active anadromous zones of WRIAs 45 and 46, many of the project sites do not have associated reaches that have been defined. Ten of the 23 project sites included in this proposal fall within defined reaches. Out of those ten projects (covering 14 reaches), only five reaches have had the necessary information collected to allocate priority rankings for restoration on the UCSRB prioritization list. These five reaches are: Nason Creek Lower 10 (Rank 1), Peshastin Creek Lower 01 (Rank 1), Peshastin Creek Lower 03 (Rank 2), Wenatchee River Ollalla 01 (Rank 3), and Chumstick Creek 02 (awaiting rank).

Though there are no defined ranks associated with the majority of the project sites included within this proposal, these projects still provide multiple essential benefits to the region's priority species at multiple life stages within these systems, and extend to downstream systems and their associated life stages. These projects were originally identified by the CRM group to address the limiting factors that exist within our priority species' habitats, supported by funding from various partners, and have been implemented by the CRM partners utilizing process-based restoration techniques (primarily LTPBR methods).

The overarching goal of this proposal is to restore riparian communities through continued stewardship and to restore structure to tributary streams through the maintenance of LTPBR actions and reintroduction of beavers, addressing the many forms of habitat degradation in WRIAs 45, 46, and 44. The restoration projects included in this proposal provide freshwater benefit in these systems, with regards to the way that riparian planting, LTPBR, and beaver reintroduction projects address the historic loss of habitat and habitat forming processes. Our project follows Castro & Thornes' "stream evolutionary model" that includes hydrology, geology, and biology, with biology being the active agent for the change and healing of watersheds (2019). By providing the necessary inputs to restore the normative hydraulic, geomorphic, and biological processes present within stream ecosystems, we aim to improve survival, capacity, and distribution for the region's target species.

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?

This proposal focuses on the stewardship of riparian and in-stream habitat restoration efforts by the CRM across 23 project sites in concert with beaver reintroduction across the Wenatchee and Entiat River watersheds, as well as in two tributaries of the Columbia River. The primary goals are to improve the success and rate of riparian habitat establishment and to enhance the development of normative stream processes and functions, promoting self-sustaining ecosystems. The included projects integrate varying degrees of low-tech process-based restoration (LTPBR) techniques, beaver relocation, and riparian planting to create a powerful, holistic approach to restoring stream ecosystems and watershed functions. These efforts work together to address hydrological, geomorphic, and ecological processes that sustain resilient river systems. However, while these restoration techniques set the foundation for recovery, active stewardship and maintenance are crucial in the first few years after implementation to ensure long-term success and self-sustainability.

1. Hydrological Process Restoration
a. Floodplain Reconnection: LTPBR techniques (e.g., BDAs, PALS, wood supplementation, and side-channel reactivation) and natural beaver dam complexes slow down high flows, promoting floodplain inundation and restoring groundwater recharge.
b. Water Retention & Baseflow Improvement: Reconnected wetlands and riparian zones store water during wet seasons and release it slowly over dry periods, ensuring sustained baseflows in drought conditions.
c. Stormwater Attenuation: Increased floodplain roughness, in-stream structure (BDAs, PALS, woody material, natural beaver dams), and vegetation help slow floodwaters, reducing peak flows and protecting downstream communities.

2. Geomorphic Process Restoration
a. Bank Erosion Control: Native vegetation (e.g., willows, cottonwoods, and sedges) stabilizes banks with deep roots, reducing collapse and sediment runoff.
b. Sediment Balance & Channel Stability: In-stream structures (BDAs, PALS, woody material, natural beaver dams) and riparian vegetation reduce excessive sediment erosion while allowing natural deposition that helps form riffles, pools, and stable banks.
c. Encouraging Channel Evolution: Streambank plantings, floodplain restoration, and beaver reintroductions promote the natural stream processes that encourage channels to evolve and change through time, leading to the formation of more complex and sinuous channels, creating diverse habitats and enhancing water storage capacity. Additionally, beavers excavate side channels to access food and habitat, enhancing this effect.

3. Ecological and Biological Process Restoration
a. Temperature & Oxygen Regulation: Riparian trees shade the stream's surface, preventing excessive heating from solar radiation and ambient air, which is crucial for temperature sensitive salmonids and other aquatic species. In-stream structures and beaver dams raise the water table and increase base

stream flow, which increases the density and growth rate of riparian trees.
b. Habitat Enhancement: In-stream structures (BDAs, PALS, woody material, natural beaver dams) and riparian vegetation create diverse aquatic and terrestrial habitats for aquatic and terrestrial species, providing foraging opportunities and cover from predators.
c. Nutrient Cycling & Food Web Support: Leaf litter and organic matter from riparian plants, as well as accumulated sediment from in-stream structures and natural beaver dams, fuel aquatic food chains, benefiting macroinvertebrates and fish populations.

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?

Less than 10 years | 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?

This proposal focuses on the stewardship and maintenance of riparian and in-stream habitat restoration efforts by the CRM across 23 project sites in the Wenatchee and Entiat River watersheds, as well as in two tributaries of the Columbia River.

Riparian Plant Stewardship: Of the 23 project sites included in this proposal, 16 sites included riparian planting as a project component during initial implementation. The sources of funding used to implement those projects have since, or will soon expire, leaving these sites without proper stewardship before the plants have adequately been established. Newly planted riparian vegetation requires active stewardship for 3-5 years, including watering (irrigation), mulching, and invasive species/noxious weed management, to ensure survival and the establishment of deep root systems. Stewardship of these riparian project sites allows for continued observations to track the development of riparian communities, and to replant or adaptively manage for plant mortality.

LTPBR structure maintenance: Of the 23 project sites included in this proposal, 19 sites included LTPBR methods as a project component during initial implementation. The sources of funding used to implement those projects have since, or will soon expire, leaving these LTPBR structures (BDAs and PALS) without proper maintenance before the normative stream processes have become established within the system. The longer that LTPBR structures are maintained, the higher the chance of success of restoring normative stream processes, and for those processes to become self-sustaining into the future.

BDAs require annual maintenance and inspection for the first 5 years after implementation and every other year after (up to 10 years post-implementation), to add more material and support to the structures that may have been lost due to seasonal conditions and/or high-flow events. Additionally, BDAs are constructed using natural, untreated materials that may begin to biodegrade at varying rates and need to be supplemented to maintain the structure's form and function.
Maintenance actions could include:
- Adding additional "weave" material to create a tight seal on a BDA's pond.
- Replacing the posts used for structure stability, if they have been lost or become degraded.
- Altering the size and shape of structures depending on the site conditions and the effectiveness of the treatments. (i.e. extending structure length/width, extending structure height, reinforcing structure, etc.)

PALS require annual inspection and may require some level of maintenance from year-to-year, for the first 3-5 years after implementation. This is to evaluate the structure's integrity and to determine if it needs to be altered, due to seasonal conditions and/or high-flow events that jeopardized it's integrity. PALS are constructed using natural, untreated materials that may begin to biodegrade at varying rates and need to be supplemented to maintain the structure's form and function.
Project sites will be adaptively managed based on outcomes and effectiveness of LTPBR treatments (i.e. new structure placement, structure removal, structure "abandonment"). BDAs and PALS will be evaluated on their progress with regards to structure, complex (set of structures), and site goals.

One goal of maintaining BDAs and PALS on these projects is to create conditions that attract beavers to the site or that are favorable for relocation of beavers, who can take over the maintenance of the structures and the site, stewarding the normative stream processes into the future. Beavers maintain their dams daily and adaptively manage their habitats based on the site conditions, providing a level of maintenance and stewardship that is impractical for humans to replicate. Put simply, beavers do it better. However, beavers are unpredictable factors in the overall ecosystem, and it cannot be determined when or if beavers will colonize a site. Due to land use activities and goals, existing infrastructure, and public perception, it is not feasible to assume that beaver colonization is the end-goal at every LTPBR project site.

Beaver Relocation: Relocated beavers maintain beneficial stream conditions and enhance degraded sites. Beavers can restore degraded sites on their own or expand upon and maintain previously restored sites. TU monitors relocation sites after releasing beavers at least three times, one month post release, once in the fall following the release, and once in the spring following the release, to assess whether beavers have remained at the relocation site and whether additional releases may be advisable. TU uses game cameras and pit tags to track relocated beaver movement through watersheds and relies on a variety of resources to keep track of beaver occupancy throughout local watersheds. WDFW requires on the ground relocation site assessments for every beaver relocation, and sites must score highly enough to support beaver reintroduction.

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

As previously stated, this proposal focuses on the stewardship and maintenance of riparian and in-stream habitat restoration efforts by the CRM across 23 project sites in the Wenatchee and Entiat River watersheds, as well as in two tributaries of the Columbia River and beaver relocation in Chelan and Douglas Counties. The primary goals are to improve the success and rate of riparian habitat establishment and to enhance the development of normative stream processes and functions, promoting self-sustaining ecosystems.

To achieve these goals, this project will focus on managing invasive plant species and noxious weeds, replacing unsuccessful plantings, increasing groundwater availability through in-stream structures, relocating beavers, and supplementing sites with irrigation water as needed. Additionally, efforts will be directed toward improving the effectiveness and longevity of low-tech process-based restoration (LTPBR) in-stream habitat structures, such as Beaver Dam Analogs (BDAs) and Post-Assisted Log Structures (PALS), through annual maintenance, monitoring system response, adaptive management based on observed responses and reintroduction of beavers as appropriate.

Methods to achieve project objectives are:

- Riparian Vegetation Establishment: Restore and expand riparian vegetation communities to address shade cover and high stream temperatures for all salmonid life stages by providing stewardship and maintenance to over 21 acres of previously planted riparian habitat through managing invasive species, replacing unsuccessful plantings, and supplementing water (irrigation) to achieve self-sustaining riparian communities that are on a trajectory to becoming fully functioning riparian systems. The project will also improve conditions for riparian vegetation establishment through ponds created by released beavers.
- Invasive Species Management: Manage invasive plant species and noxious weeds across more than 21 acres of previously planted riparian habitat, to promote native vegetation establishment and riparian resilience.
- In-Stream Habitat Structure Maintenance: Maintain and enhance over 500 BDAs and 100 PALS across more than 11 miles of previously treated aquatic habitat by conducting annual inspections, routine structure maintenance, and adaptive management, to achieve self-sustaining stream processes that promote the formation of riparian communities and in-stream habitat for aquatic species.
- Beaver Relocation: Reintroduce beavers to 5 sites in Chelan and Douglas Counties. Based on linear beaver colony densities reported in the literature (Scrafford et al. 2018; Cox and Nelson, 2009; Boyce, 1980; Busher et al. 1983; Busher et al. 1983) we anticipate that every beaver family maintained in place has the potential to treat 0.9 – 1.6 km of stream with ecosystem benefits (instream habitat), so beaver relocation could result in a total of 4.5-8 km of maintained and improved instream habitat across 5 sites. TU conducts outreach and responds to beaver conflict calls and works with landowners and managers to identify suitable coexistence solutions and relocation sites. When suitable coexistence options cannot be found, TU conducts live trapping and when successful, processes and temporarily houses beavers at their acclimation facility for up to two weeks, until all family members are captured. TU prepares the release

site in advance and then relocates the beaver to the previously identified site. Relocated beavers are monitored using game cameras and a minimum of three post-release site visits are conducted.

- Hydrologic Process Enhancement: Improve groundwater recharge, streamflow retention, and in-stream complexity by ensuring that BDAs, PALS, and relocated beavers are actively promoting natural stream processes (i.e. lateral floodplain connectivity, pool formation, sediment retention, etc.) as observed during routine structure maintenance over the 5-year term.
- Irrigation and Water Supplementation: Support riparian vegetation survival by supplementing sites with irrigation water as needed, ensuring soil moisture levels remain within optimal ranges during the driest months of the year, to achieve self-sustaining riparian communities that are on a trajectory to becoming fully functioning riparian systems.

17. If the project is eligible and applying for Riparian Funding, does the project have in-stream components? If so, briefly describe those components, how they support riparian plant survival and/or natural regeneration, and why they are necessary for the success of the riparian habitat elements of the project.

This proposal focuses on the stewardship and maintenance of riparian and in-stream habitat restoration efforts by the CRM across 23 project sites in the Wenatchee and Entiat River watersheds, as well as in two tributaries of the Columbia River and beaver relocation in Chelan and Douglas Counties. The in-stream components that were previously implemented across these project sites aim to improve the success and rate of riparian habitat establishment and to enhance the development of normative stream processes and functions, promoting self-sustaining riparian and aquatic ecosystems.

The in-stream components on these projects are process based restoration structures, primarily LTPBR structures (BDAs, PALS, woody materials). These in-stream structures support riparian plant survival by:

1. Slowing down high flows, promoting floodplain inundation and increasing groundwater recharge.
2. Providing structure to aggrade sediment, which reverses channel incision and decreases bank erosion.
3. Promoting the lateral flow of water, reconnecting wetlands and riparian zones, which increase the storage of water during wet seasons and release it slowly over dry periods, ensuring sustained baseflows in drought conditions.
4. Raising the water table and increasing base stream flow, which increases the density and growth rate of both riparian plantings and the natural regeneration of riparian vegetation.
5. Kick-starting the natural stream processes that encourage stream channels to evolve and change through time, leading to the formation of more complex and sinuous channels, and subsequently the formation of larger riparian communities. Additionally, beavers excavate side channels to access food and habitat, enhancing this effect.

Many of the project sites included in this proposal are in remote locations where supplementing the riparian plants with water may not be feasible. The in-stream habitat structures provide the benefits listed above, increasing the residence time and storage of water already in the system to provide water to riparian plants during the dry season, and promoting the natural recruitment of riparian vegetation due to these wetter conditions. The maintenance of these project's in-stream structures is critical to ensuring that the normative stream processes develop in these systems, which provide the wet conditions that the associated riparian plants need to survive and establish.

Assessment Proposals

Protection Proposals

Monitoring Proposals

Project Risk and Economic Benefits

1. What is the landownership?

Landownership across all 23 project sites included in this proposal is a mix of Private and Public (state and federal) lands. A list of landownerships by site can be found in "Attachment A- Worksites and Properties Info". Beaver relocation and coexistence work takes place as needed on

public and private land. TU conducts outreach and responds to beaver conflict calls, and works with landowners and land managers to identify suitable relocation sites.

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

Yes

Please explain

Landowner participation or acceptance of the projects included in this proposal has already been acquired during previous phases of each project (development, design, and implementation). As this proposal is for stewardship and maintenance at these project sites, current landowner agreements between the project sponsors and the various project landowners are still active, which details the stewardship and maintenance of project activities for 10 years post-implementation.

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

Landownership across all 23 project sites included in this proposal is a mix of Private and Public (state and federal) lands. Any landowner requirements that may exist are the responsibility of the CRM partner (Cascade Fisheries, Cascadia Conservation District, or Trout Unlimited) that is the project lead on the various project sites.
Landowners that have known requirements are as follows:

- United States Forest Service- requires project agreements and consultation with Forest Service staff during project design, permitting, and implementation.
- WA Dept. of Transportation- requires that a right of way be maintained during project actions.
- Dept. of Natural Resources- requires a Land Use License to be issued that covers project actions.
- Washington Department of Fish and Wildlife- requires landowners to notify neighboring property owners and sign a Landowner Attestation Form prior to having beavers released on their properties.
- United States Forest Service- requests to review all potential relocation sites on National Forest land prior to beaver trapping and release.

As these requirements have all been met during the initial implementation of these projects, we do not anticipate any effect on this 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)?

No, this project will not raise concerns for interest groups or the community at large. As this project focuses on stewardship and maintenance of previously implemented projects, impacts to interest groups or the community would have been considered during design and planning, and addressed before the implementation of each project.
These projects represent a continued commitment to environmental health and are a benefit to the natural spaces this community lives in and relies upon for resources, recreation, and intrinsic value.

Trout Unlimited provides valuable assistance to local landowners and land managers facing challenges with beavers and seeks coexistence solutions or relocates beaver to sites where they will provide valuable stream and habitat benefits and are not anticipated to create future challenges. In the event that relocated or naturally occurring beavers create issues for landowners or managers, TU responds quickly to address the concern. Beavers are primarily relocated from sites where they are in conflict with landowners (falling orchard trees, causing flooding, damming culverts, etc.), to sites high in watersheds, typically on public land, far from neighboring landowners.

The CRM provides multiple opportunities for the public and youth to be involved and also informed of our stream and streamside restoration efforts, Including: WRI Birdfest tours, fall and spring tours, community tabling events, Salmon Recovery Series with the NCW Library, social media campaigns for each organization, printed materials, the CCD quarterly newsletter to all Chelan County residents, direct outreach and education with youth such as Entiat, Wenatchee, and Leavenworth Schools (Kids in the Creek, Kids in the Forest, Kids in the Snow, field trips and hands-on learning at restoration sites, etc.). These events garner a large degree of community support and interest for our restoration projects.

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

Managing and maintaining the various projects will be the responsibility of Cascade Fisheries, Cascadia Conservation District, or Trout Unlimited, whichever organization is the lead on any given project site. Project components on both private and public lands are property of the landowner after implementation, but the lead organization for that project is responsible for maintaining the project components for a time period specified in the landowner agreement. Past the end of the project or landowner agreement, any further management and maintenance are dependent on landowner willingness, continued funding, and project needs. Landowner agreements generally define participation from the landowner for 10 years from the date the agreement was signed, to allow for the lead organization and permitting agencies to return to perform maintenance, monitor project performance, and evaluate project compliance with associated permits. The landowner cannot remove or alter project components during the life of the landowner agreement and is required to provide the landowner agreement as a sales contingency if selling the property that the project is on.

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

Don't know

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

As this project focuses on stewardship and maintenance of previously implemented projects, the risk of failure would have been considered during design and planning, and addressed before the implementation of each project. There is little to no risk of failure for the projects included in this proposal, with regards to the actions that this project will perform.
This project's goal is to reduce the risk of failure of the projects included in this proposal, through the stewardship and maintenance of riparian planting sites and LTPBR structures as well as beaver relocation. This project ensures that the restoration efforts initiated in these projects achieve lasting ecological benefits and support the long-term health of these watersheds. Additionally, this project is designed to safeguard the original investment made in implementing these restoration efforts.
Beavers are wild animals and may move to other locations within release streams or watersheds after they are relocated. Regardless of where they choose to reside, relocated beavers will create habitat and restore degraded streams within Upper Columbia River watersheds. In the event that relocated or naturally occurring beavers create issues for landowners or managers, TU responds quickly to address the concern.

TU monitors release sites post relocation and. if it is determined that beavers have not settled within one mile of the release site, that site becomes a viable candidate for future relocations, which will add genetic diversity to local beaver populations.

One of the important functions of the CRM is to provide a depth of staff and resources that span three organizations, each having their own unique skillsets, knowledge, experiences, relationships, tools, and other resources. No organization or agency is immune to loss of staff or funding, but as a CRM we have been able to successfully utilize the strengths and the redundancy of having multiple field crews, multiple staff with project management skills, and a robust level of relationships with community members. This has allowed us to nimbly adapt to unforeseen challenges at the individual project level as well as the grant funding and permitting levels. We work almost interchangeably on each other's projects, allowing us to overcome every challenge we've faced since the inception of the CRM in 2019. We likewise feel confident in our ability to meet future challenges, anticipated or not. From the perspective of the CRM, we consider this proposal to be of relatively low risk.

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

The stewardship and maintenance of riparian planting sites and LTPBR structures, as well as beaver coexistence and relocation, provide our organizations with valuable opportunities to engage the public through outreach events, educational opportunities, and site visits. By actively managing these sites, our organizations can host volunteer workdays, educational tours, and hands-on restoration activities, allowing community members, school groups, and other interest groups to participate directly in conservation efforts and contribute to their community. These projects serve as a platform for immersive environmental education lessons, where participants can learn about watershed health, habitat restoration, and the importance of beaver and riparian ecosystems in supporting salmon populations.

Additionally, restoration projects located on publicly owned properties create accessible spaces for the community to recreate, explore, and strengthen their connection to the local environment. As these areas are restored and maintained, they provide opportunities for hiking, wildlife observation, and other outdoor activities that encourage a deeper appreciation for nature. By fostering public involvement and demonstrating the long-term benefits of habitat restoration, these projects help build strong community support for salmon recovery efforts, cultivate environmental stewardship, and inspire continued investment in conservation initiatives.

Furthermore, these project sites serve as demonstration areas where prospective private landowners can observe the types of restoration projects our organizations can provide and the potential ecological and aesthetic benefits that could be realized on their properties. By seeing firsthand how these efforts enhance habitat, improve water quality, and support wildlife, landowners may be more inclined to partner with organizations like us to implement similar projects on their land, expanding the reach and impact of restoration initiatives.

Beavers are charismatic animals that capture the imagination of people young and old. The Wenatchee-Entiat Beaver Project acclimation facility at the Leavenworth National Fish Hatchery draws locals and tourists alike to view the animals as they are being held prior to release. There, they learn about beavers and their relationship to salmon recovery by interacting with Beaver Project staff and interpretive signage. TU conducts community outreach and landowner education through beaver coexistence efforts. Landowners are often eager to engage neighbors who are having conflicts with beavers, thus expanding the program's reach. This outreach and interest in beavers more generally provides opportunities to discuss the interrelated nature of beaver reintroduction and salmon recovery with a diverse array of community members.

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

This project presents a significant economic opportunity by supporting local organizations, creating jobs, enhancing property values, stimulating local businesses, preventing property or crop damage, and reducing long-term resource management costs. By financially supporting the local organizations leading this proposal (Cascade Fisheries, Cascadia Conservation District, and Trout Unlimited) this project ensures sustainability of restoration efforts while also funding full time staff and seasonal technician

positions. These positions create opportunities for professionals to gain hands-on experience in natural resource management, fostering career growth and workforce development within the local economy.

Investing in the stewardship of riparian and restoration sites and addressing beaver conflicts on private, state, and federal lands benefits property owners by improving land values and alleviating management burdens. Healthy, well-maintained landscapes contribute to the renewal and sustainable use of natural resources, reducing long-term costs associated with land degradation. Additionally, this project stimulates the local economy by directing funds toward businesses such as native plant nurseries, hardware stores, and natural resource contractors, strengthening regional supply chains and supporting small businesses.

By integrating with forest health practices and wildfire fuels reduction, this project also plays a role in reducing the risks of wildfire and the smoke created from burn piles by using excess fuels such as trees, branches, and slash in restoration work. This contributes to the creation of green firebreaks, enhances water retention in the landscape, lowers future emergency response and recovery costs, and bolsters economic activities that would otherwise be hindered by smoke. Additionally, maintaining native vegetation on restoration sites helps control the spread of invasive species, reducing the economic burden noxious weeds place on local agriculture and minimizing the costs associated with weed management programs.

Trout Unlimited provides valuable assistance to local landowners and land managers facing challenges with beavers. TU works with landowners and managers to provide free coexistence and live trapping services. Beavers are primarily relocated from sites where they are falling orchard trees, causing flooding, or damming culverts, among other impacts, potentially causing expensive damage, to sites where they can provide ecosystem benefits without conflicting with landowners. Additionally, TU has developed partnerships with Douglas Public Utility District's Wells Dam and the United States Department of Agriculture Animal and Plant Health Inspection Service Wildlife Services to expand relocation efforts through acquiring beavers trapped by these agencies for relocation to high priority sites. As such, this project turns a potential economic burden into a positive force for salmon habitat restoration.

Ultimately, this project maximizes the return on each dollar invested by ensuring that restoration efforts continue to provide ecological, economic, and community benefits. Through job creation, local business support, land value enhancement, and reduced long-term public and private expenditures, this project serves as a cost-effective and sustainable investment in our region's environmental and economic health.

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

The Coordinated Resource Management (CRM) group is a formal partnership between Cascade Fisheries, Cascadia Conservation District, and Trout Unlimited. Established in 2019, the CRM partners collaborate to leverage their unique resources, expertise, and opportunities in pursuit of shared missions and values, with a focus on salmon recovery in and around Chelan County. The group's mission is to create a network of healthy, connected tributaries that provide crucial habitat and climate refugia to native fish populations. These partners work closely to develop, plan, design, and implement salmon recovery projects throughout the region by employing LTPBR practices, fish barrier corrections, side-channel and floodplain reconnection projects, as well as beaver relocation and coexistence strategies. Thanks to support from the US Bureau of Reclamation, the CRM has been able to enhance and expand the ways this partnership benefits each organization's mission and increases their capacity to implement additional salmon recovery projects.

The CRM is further strengthened by its partnerships with various Federal and State agencies that collaborate on project development, design, planning, permitting, and implementation. These agencies include:

- Federal
  - US Bureau of Reclamation
  - US Forest Service
  - US Fish and Wildlife Service
  - National Resources and Conservation Service
  - Bureau of Land Management
- State
  - WA Department of Fish and Wildlife

- WA State Conservation Commission
- Department of Ecology
- Department of Natural Resources

The CRM collaborates closely with these agencies to ensure that the many projects we perform align with our shared goals of fish and wildlife recovery throughout the region. The support we receive from these partners takes many forms, including new project ideas, project funding, design review, consultation, permitting guidance, resource and equipment sharing, and even providing staff to help implement projects. The knowledge, expertise, and support exchanged between these sectors forge powerful connections that drive this important work forward. This collaborative network empowers us to produce higher-quality results at a faster pace, breaking down the silos that traditionally exist between organizations. Together, we are united in our mission to restore the precious natural resources we are dedicated to conserving, protecting, and restoring.

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)

Attachment A - Worksites and Properties Information

Worksite #	Property #	Site Name	Stream	County	WRIA	Subbasin	HUC12	AU	Reach	Reach Rank	River Miles	Stream Length Affected (Ft)	Latitude	Longitude	Site Ownership Type	Landowner	Site Address	Parcel #	Implementation Year(s)
1	1	Alder- DS	Alder Creek	Chelan	45	Wenatchee River	170200110308	Lower Chiwawa River	Alder Creek 01	unranked	0.29-0.91	3274	47.851775	-120.659304	Public	USFS	128 ALDER CREEK TIE FS 6200-200 RD LAKE WENATCHEE, WA 98826	271712200000	2022
		Alder- US	Alder Creek	Chelan	45	Wenatchee River	170200110308	Lower Chiwawa River	Alder Creek 02	unranked	1.55-1.8	1320	47.862329	-120.657312	Public	USFS	UNASSIGNED LAKE WENATCHEE, WA 98826	271701000000	2022
2	2	Beaver Ck	Beaver Creek	Chelan	45	Wenatchee River	170200110701	Wenatchee River- Beaver Creek	undefined	unranked	3.22-3.66	2323	47.781495	-120.595298	Public	USFS	UNASSIGNED LEAVENWORTH, WA 98826	261804000000	2023
	3	SF Beaver Ck	South Fork Beaver Creek	Chelan	45	Wenatchee River	170200110701	Wenatchee River- Beaver Creek	undefined	unranked		3500	47.772594	-120.605793	Public	USFS	UNASSIGNED LEAVENWORTH, WA 98826	261804000000, 261809000000	2024
3	4	Merrit Oxbow	Nason Creek	Chelan	45	Wenatchee River	170200110203	Lower Nason Creek	Nason Creek Lower 10	1	10.7-11	1584	47.77801	-120.832675	Private	CHELAN-DOUGLAS LAND TRUST	18675 US HWY 2 LAKE WENATCHEE, WA 98826	261603420000	2022
4	5	Jones	Chumstick Creek	Chelan	45	Wenatchee River	170200110705	Chumstick Creek	Chumstick Creek 02	TBD		280	47.616348	-120.649949	Private	HESS SUMMER N & JONES MATTHEW	25 SYLVESTER MEADOWS LN LEAVENWORTH, WA 98826	251831320300	2024
5	6	Youkey	Eagle Creek	Chelan	45	Wenatchee River	170200110704	Eagle Creek (Wenatchee)	undefined	unranked		240	47.633609	-120.628361	Private	YOUKEY DONALD & KARI	15 ADLER BACH LN LEAVENWORTH, WA 98826	251829300022	2023
	7	Bosket	Eagle Creek	Chelan	45	Wenatchee River	170200110704	Eagle Creek (Wenatchee)	undefined	unranked		170	47.634024	-120.627688	Private	BOSKET VINCENT N ETAL	11025 EAGLE CREEK RD LEAVENWORTH, WA 98826	251829300023	2023
	8	Hedeen	Eagle Creek	Chelan	45	Wenatchee River	170200110704	Eagle Creek (Wenatchee)	undefined	unranked		600	47.640496	-120.585148	Private	HEDEEN PAUL F & KNAPP ROSEMARY	9425 EAGLE CREEK RD LEAVENWORTH, WA 98826	251827545070, 251827545065, 251827545020	2025
	9	Headrick	Eagle Creek	Chelan	45	Wenatchee River	170200110704	Eagle Creek (Wenatchee)	undefined	unranked		535	47.645816	-120.576859	Private	HEADRICK TODD R & JENNIFER L TRUST	9247 EAGLE CREEK RD LEAVENWORTH, WA 98826	251822430100	2024
6	10	Conkle	Little Chumstick Creek	Chelan	45	Wenatchee River	170200110705	Chumstick Creek	undefined	unranked		600	47.719425	-120.633968	Private	CONKLE MICHAEL H & KAREN D MATAYA	16520 CHUMSTICK HWY LEAVENWORTH, WA 98826	261830440080, 261830400060	2023
	11	O'Neill	Little Chumstick Creek	Chelan	45	Wenatchee River	170200110705	Chumstick Creek	undefined	unranked		300	47.728024	-120.637019	Private	O NEILL JULIA A	16970 CHUMSTICK HWY LEAVENWORTH, WA 98826	261830120050	2023
	12	Holte	Little Chumstick Creek	Chelan	45	Wenatchee River	170200110705	Chumstick Creek	undefined	unranked		350	47.728857	-120.637282	Private	HARWELL ALEXANDRA & KEVIN HOLTE	16982 CHUMSTICK HWY LEAVENWORTH, WA 98826	261830100265	2023
	13	Drew	Little Chumstick Creek	Chelan	45	Wenatchee River	170200110705	Chumstick Creek	undefined	unranked		300	47.729788	-120.637607	Private	DREW DOUGLAS R & KATHRYN A REV TRT	41 STARGAZER LN LEAVENWORTH, WA 98826	261830100310	2023
7	14	Stroud	Derby Creek	Chelan	45	Wenatchee River	170200110706	Wenatchee River- Derby Canyon	undefined	unranked	3.49-4.43	2500	47.605288	-120.549595	Private	STROUD III WILLIAM G	6905 DERBY CANYON RD PESHASTIN, WA 98847	241802000050	2019, 2025
	15	DNR-Derby Ck	Derby Creek	Chelan	45	Wenatchee River	170200110706	Wenatchee River- Derby Canyon	Derby Canyon 01	unranked	0.48-0.86	2034	47.577349	-120.583215	Public	DNR	UNASSIGNED PESHASTIN, WA 98847	241816100000	2025
8	16	Roaring Ck-DS	Roaring Creek	Chelan	46	Entiat River	170200100208	Roaring Creek	Roaring Creek Entiat 03	unranked	1.45-1.51	317	47.685875	-120.349269	Public	USFS	UNASSIGNED ENTIAT, WA 98822	252008100000	2020
		Roaring Ck-US	Roaring Creek	Chelan	46	Entiat River	170200100209	Roaring Creek	Roaring Creek Entiat 04	unranked	2.65-2.91	1373	47.67664	-120.374218	Public	USFS	UNASSIGNED ENTIAT, WA 98822	252007410000	2023
9	17	Potato Ck	Potato Creek	Chelan	46	Entiat River	170200100207	Entiat River- Potato Creek	Potato Creek 02-03-04	unranked	0.17-1.3	5966	47.796104	-120.380376	Public	USFS	UNASSIGNED ENTIAT, WA 98822	271936000050, 272031000000	2020, 2022, 2023, 2024
10	18	Stormy Ck	Stormy Creek	Chelan	46	Entiat River	170200100207	Entiat River- Potato Creek	Stormy Creek 01	unranked		775	47.821637	-120.421286	Private	CHELAN-DOUGLAS LAND TRUST	UNASSIGNED ENTIAT, WA 98822	271922554480	2023
11	19	Rock Island Ck	Rock Island Creek	Douglas	44	Columbia Tributary	17020010	undefined	undefined	unranked	0-15	21120	47.508429	-120.131089	Private	Mutliple	Multiple	24213600000, 24223100000, 23220610001, 23220700000	2022-2028
12	20	Lower Peshastin	Peshastin Creek	Chelan	45	Wenatchee River	170200110503	Lower Peshastin Creek	Peshastin Creek Lower 01	1	0-0.5	2640	47.557168	-120.577467	Public	WDFW	UNASSIGNED DRYDEN, WA 98821	241822746006, 241822310100, 241822745006	2025
	21	Peshastin 2.5	Peshastin Creek	Chelan	45	Wenatchee River	170200110503	Lower Peshastin Creek	Peshastin Creek Lower 03	2	2.5-3	2640	47.538797	-120.617775	Private	MOUNTAIN VALLEY ACRES LLC	UNASSIGNED PESHASTIN, WA 98847	241832210000, 241829340200	2026
13	22	Goodwin Side Channel	Wenatchee River	Chelan	45	Wenatchee River	170200110707	Wenatchee River- Ollala Canyon	Wenatchee River Ollala 01	3	11-11.5	2640	47.528268	-120.491682	Private	WA-DOT	UNASSIGNED CASHMERE, WA 98815	24192340600	2026
14	23	Duffy Creek	Douglas Creek	Douglas	44	Columbia Tributary	17020012	undefined	undefined	unranked		500	47.50096	-120.04178	Public	BLM	UNASSIGNED	23221110000	2025