



## Contact Information

# 2024 Upper Columbia Regional Project Pre-Application

\* Pre-applications due March 11, 2024 (COB)

\*Complete applications due in PRISM April 19, 2024 (COB)

\*Revised proposals due in PRISM May 24, 2024 (COB)

\*Final revised applications due in PRISM June 24, 2024 (noon)

<b>Project Title</b>	Lower Chiwawa AU Instream Complexity and Floodplain Reconnection Design Project
<b>Sponsor</b>	Chelan County Natural Resource Department
<b>Primary Contact</b>	Scott Bailey
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## Budget Request

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

**Anticipated Request - SRFB (standard round)** \$284,275

**Anticipated Request - Tributary Committee** \$150,000

**Anticipated Other Funding** \$806,511

**Anticipated TOTAL Budget** \$1,240,786

### Other Funding Source(s)

Bureau of Reclamation's WaterSMART Aquatic Ecosystem Restoration Projects (AERP) grant program.

In January 2024, CCNRD submitted an AERP request for \$806,511 in support of this project. AERP requires 35% non-federal match, and this combined SRFB and Trib Comm request constitutes that match.

## Project Location

**Briefly describe the location of the project** The project will prepare restoration designs for four separate

areas along the lower Chiwawa River, extending from approximately RM 1.0 upstream to RM 10.0. Specific project segments are provided elsewhere.

Latitude (decimal degrees)

47.8275

Longitude (decimal degrees)

-120.6454

Project subbasin

Wenatchee

Wenatchee Assessment Unit(s)

Lower Chiwawa River

Does the proposed project span multiple assessment units?

Yes

List the additional assessment units directly impacted by this proposal.

Area C includes a portion of the Big Meadow Creek AU

Reach(es) Name

Chiwawa River Lower AU, Reaches 01, 03, 05, and 06 / Big Meadow Creek AU, Reach 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

Area B (~RM 9.3-9.9) - Chiwawa River Lower, Reach 06 - Rank 1

Area C (~RM 9.0-9.3) - Chiwawa River Lower, Reach 05 - Rank 2, Reach 06 - Rank 1; Big Meadow Creek (~RM0.0-0.2), Reach 01 - Rank 1

Area E (~RM 2.8-3.2) - Chiwawa River Lower, Reach 03 - Rank 3

Area F (~RM 1.1-1.7) - Chiwawa River Lower, Reach 01 - Rank 1

## Project Information

**1. 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 Preliminary Design Packages for each of four Lower Chiwawa AU project areas (Areas B, C, E and F) within 24 months of funding. Collectively, the designs will identify restoration actions to: (a) increase cover and complexity along ~1.35 miles of mainstem channel, (b) create up to 1.1 miles of new

side channel habitat; and (c) better connect ~33.5 acres of floodplain. Road and riparian treatments also are expected.

2. Complete cultural resources survey/reporting and wetland delineations at each of four Lower Chiwawa AU project areas (Areas B, C, E and F) within 18 months of funding to facilitate data collection, site evaluation and preparation of permit applications.

3. Prepare draft HPA and JARPA applications for each of four Lower Chiwawa AU project areas (Areas B, C, E and F) within 24 months of funding.

**2. What species will the project benefit?**

Spring Chinook

Steelhead

Bull Trout

Pacific Lamprey

**3. Select the project's objectives and the associated tracking metrics**

Design, Monitoring or Assessment

Instream Habitat (Includes Floodplain & Off-Channel Reconnection)

**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

**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.)**

In January 2024, CCNRD submitted an application to the US Bureau of Reclamation (BOR) WaterSMART Aquatic Ecosystem Restoration Grant Program (AERP) requesting funds in support of this proposed project. This SRFB/Tributary Committee proposal requests cost share in support of the AERP proposal (AERP requires 35% non-federal match).

**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)?**

Cramer Fish Sciences. 2019. Upper Wenatchee Pilot Project: Aquatic Habitat Assessment & Restoration Strategy Report. InterFluve, Inc. 2023. Lower Chiwawa River Assessment and Conceptual Design Report.

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

Cover - Wood

Off-Channel - Floodplain

Off-Channel - Side-Channels

Pool Quantity & Quality

**10. Which life stages will the proposed project address?**

Adult Non-Spawning (Bull Trout)

Natal Rearing (Bull Trout)

Subadult Rearing (Bull Trout)

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?**

UCRTT has rated several Limiting Factors as Unacceptable or At-Risk for reaches 1, 3, 5 and 6 of the lower Chiwawa River (and Big Meadow Creek, Reach 1). Among these are floodplain connectivity, side-channels, cover wood, pool quantity & quality, and temperature (UCRTT 2020). Based on the Upper Wenatchee Pilot Project: Aquatic Habitat Assessment and Restoration Strategy Report (Cramer Fish Sciences [CFS], 2019), streambed substrate in these reaches is dominated by cobbles, boulders and bedrock, and LWD is rare throughout. Pool frequency is variable, with some sections rated Adequate and others At-Risk. However, Deep Pool Frequency for these reaches is rated At-Risk or Poor. Riparian road densities were rated low for reaches 1 and 6, but Moderately High for reaches 3 and 5, and this resulted in riparian condition ratings of Adequate and At-risk, respectively. Channel dynamics for these reaches were rated Poor to At-Risk due to moderate to high bankfull width to depth ratios, low entrenchment ratios, and a lack of side channels.

This project is intended to address identified limiting factors and improve habitat quality for target species life stages including holding, fry, summer rearing, and winter rearing. We anticipate that implementation at the four sites included in this proposal will include ELJ construction (and other large wood placements), side-channel construction, road and campsite decommissioning, and riparian habitat improvements. Relative to aquatic habitats, future implementation at these four sites is expected to enhance habitat quality along ~1.35 miles of mainstem channel, add approximately one mile of side channel habitats, and substantially increase the number of pools and amount of LWD present throughout much of the lower Chiwawa River.

Upon implementation, restoration actions identified through the design work proposed with this application will enhance the quantity and quality of habitats at sites that collectively account for 10-15% of the Lower Chiwawa UA. This is a large-scale restoration effort and, as a result, we expect it will increase capacity within the AU for holding, incubation, fry and summer and winter rearing life stages, improving survival, reproduction and fitness of 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 primarily by historical land uses, particularly timber harvest

practices that used the stream corridor to transport logs. These historical impacts continue to adversely affect stream processes to this day. Currently, the lower river has a simplified, plane bed channel that is wide, shallow and entrenched. As a result, the streambed throughout the AU is generally well-armored and dominated by large cobbles and small boulders, pools and persistent LWD structures are rare, as are side channels and connected floodplain surfaces.

This project proposes to initiate designs for restoration treatments at four separate project sites along the lower Chiwawa River: Area B (~RM 9.3-9.9), Area C (~RM 9.0-9.3 - plus Big Meadow Creek ~RM 0.0-0.2), Area E (~RM 2.8-3.2), and Area F (~RM 1.1-1.7). Collectively, work at these sites is expected to (a) enhance ~1.35 miles of mainstem channel, (b) add ~1.1 miles of new side channel habitats (and better connect four historical floodplain surfaces), and (c) substantially increase the number of pools and amount of LWD present throughout the lower river.

The proposed project will develop Conceptual and Preliminary design packages that identify actions to be implemented to restore habitat values and promote natural processes. The proposed design process will be supported by extensive data collection and modeling, and will anticipate projected effects of global climate change and be consistent with reach-scale geomorphology and ongoing federal and private planning and management efforts. The project will also be consistent with guidance provided by the UCRTT in its most recent restoration prioritization update which promulgates the following restoration actions for the project reaches: Channel Complexity Restoration, Side-channel and Off-channel Habitat Restoration, and Floodplain Reconnection (among other recommended priority actions).

Designs will seek to promote natural processes by adding structure to the mainstem channel and connecting and creating floodplain and side-channel habitats. In addition to the structural changes associated with the expected restoration elements, we anticipate the proposed treatments will initiate scour and pool formation, facilitate sediment deposition and sorting, improve hyporheic exchange, and facilitate recruitment of naturally occurring LWD. The design process also will identify methods to treat past and ongoing anthropogenic impacts to stream side habitats and minimize potential affects of continued transportation and recreational use in the areas. Collectively, these actions are expected to improve conditions for several salmonid life stages including adult holding, fry, summer rearing, and winter rearing in the near-term. In addition, since proposed restoration actions are long-lived, the project is expected to also provide long-term benefits throughout the Lower Chiwawa AU.

**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?**

This phase of the project is for preparation of Conceptual and Preliminary designs, and permit applications. So there will be no maintenance associated with the proposed effort. However post-implementation, it is our intent that the projects designed during this proposed effort will be self-maintaining and require little or no further human intervention. That said, CCNRD will remain involved at the restoration sites after implementation. We will work with project partners and landowners to monitor the project sites after construction, and to conduct maintenance as needed to ensure the sites continue to function as designed.

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

We expect that a variety of methods will be used over the course of this proposed design effort (and subsequent implementation). Our goal is to design a project that improves conditions along the mainstem channel, creates new side channel habitats and better connects existing side channels and floodplain surfaces, addresses past and ongoing land use impacts, and facilitates long-term site management by the landowners (all while minimizing construction-related impacts to the areas).

The proposed designs will utilize the best available science and follow applicable engineering design guidelines to explore and refine a variety of potential implementation actions and techniques, and evaluate their potential effects. We will also continue to work closely with all site owners in developing the design packages so that final designs are consistent with long-term management goals for their properties. Access routes and construction sequencing will be carefully considered during the proposed effort to minimize potential impacts to existing riparian vegetation during construction. In addition, the design process will pay particular attention to areas where in-stream habitat conditions are good and where human development exists to assure that these areas are not adversely affected by restoration actions.

Restoration elements to be designed are expected to include (a) engineered log jams and other wood placements to provide cover, enhance in-stream complexity and direct flows; (b) selective grading to create new side channels and connect floodplain surfaces (including historical floodplain channel scars); (c) constructed rock and log riffles to raise stage, facilitate floodplain connectivity, and add complexity; and (d) upland/riparian treatments to remove/correct sources of impairment and improve streamside habitat quality.

## Assessment Proposals

## Protection Proposals

## Monitoring Proposals

## Project Risk and Economic Benefits

1. What is the landownership? private and Forest Service

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

Yes

### Please explain

We have secured Landowner Acknowledgement Forms from landowners at each of the four project areas incorporated into this proposal. These will be uploaded to PRISM.

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

Landowners have not expressed any specific requirements at this time. However, we expect that landowners will participate in all phases of the design process, and will be asked to approve all proposed restoration treatments. Treatments that receive landowner approval will be advanced during subsequent design iterations.

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 have completed quite a bit of outreach in the lower Chiwawa Basin over the past few years while we have evaluated the area and identified potential restoration actions. During this work we have communicated with several residential landowners along the lower river who expressed support for in-stream and riparian restoration along the lower river provided that these actions do not increase risk of flooding or property damage in developed areas, or adversely impact community water systems.

In-stream projects often raise concerns of nearby landowners and recreational users. As a result, to assure that we fully understand issues surrounding recreational use of the river as part of this project we plan to hire a contractor to complete a detailed study of boating and boater safety in the Lower Chiwawa AU, evaluate existing large woody material with respect to river navigability and user safety, and develop recommendations on how best to balance the safety of recreational users with in-stream habitat improvement. Because the proposed project may also raise concerns among adjacent landowners and

people who camp and recreate at some of the sites included in this proposal, we will continue to evaluate the project with respect to these potential concerns. We plan to continue community outreach to inform nearby landowners about the proposed restoration efforts and solicit their feedback, and will work with USFS to identify and implement ways to solicit and incorporate feedback from people who recreate in the area.

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

This proposal supports a pre-construction project phase. Management and maintenance of the project sites may be needed following project implementation, but none is expected during this proposed design phase. Post-implementation, Chelan County NRD will monitor the project sites for up to 5 years and will work with the landowners to identify and implement necessary management and maintenance actions.

All current landowners were involved during previous work that evaluated the lower river and identified potential restoration actions at the four sites included under this proposal, and we expect they will continue to have similar involvement during the proposed design phase.

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

Yes

**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 minimized. For this proposed effort, we will work with a licensed engineer (and other technical staff) employed by a reputable company with extensive river restoration experience. We will also perform a variety of work to provide additional site-specific data that will help inform the design and permitting processes. In addition, this design effort will include extensive internal and external review and revision. These steps assure that project designs are subject to peer review, have 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 project partners to assure that County leaders, local residents and others are aware of the project and its potential effects and benefits. Outreach will focus on the specific restoration actions being proposed, and will emphasize the need for, and benefits of, stream restoration to build support for this and other salmon recovery efforts.

CCNRD has a history of working with stakeholders in conjunction with aquatic restoration efforts throughout Chelan County. We expect to hold individual meetings with site landowners to outline the project schedule, goals and objectives and to go over designs and receive feedback. The larger community will also be engaged - we anticipate at least one community meeting annually from 2025-2027, which will include presentations on this proposed effort and provide opportunities for public comments and questions. We also anticipate presentations to the Upper Columbia Regional Technical Team, HCP Tributary Committee, Washington Department of Fish and Wildlife, US Forest Service, and other agencies/organizations. At these meetings we expect to present conceptual and preliminary designs, and solicit reviews and comments from attendees (many of whom will have technical expertise related to fisheries, restoration, hydrology, geomorphology, etc.).

All comments, questions and concerns received during outreach efforts will be captured in comment matrices prepared as part of the Conceptual and Preliminary design packages.

**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. It includes preparation of conceptual and preliminary design packages and other tasks and will lead to subsequent project implementation. The proposed project will employ design consultants and other professionals needed to complete wetland delineation, cultural resources surveys and reporting, and other tasks needed for development of designs

and permit applications. Much of this work is expected to be performed by companies based in Washington state. Subsequent implementation efforts will involve construction contractors, material suppliers and others. Construction will likely be completed by a Washington-based contractor(s) and material purchases will predominantly benefit local suppliers.

Kellon and Hesselgrave (2014) have reported that (a) restoration efforts support 19-24 jobs for every \$1-million invested (depending on labor intensity), (b) money spent on restoration projects generates substantial additional spending and economic output (roughly double the amount of the original investment), and (c) 80% of funds spent on restoration efforts stay in the county where the project is located (with 90% staying in state). While this study focused on stream restoration projects in Oregon, economic benefits of aquatic restoration projects are almost certainly similar for Washington state. In addition to the aforementioned study, a variety of other studies also have confirmed the economic benefits of environmental restoration - from a job/spending perspective as with the previous paper, and from the perspective of socioeconomics (economic value of recreation, etc.) and ecosystem services (flood control, clean water, etc.) (see Cullinane-Thomas, et al., 2016; Samonte, et al., 2017, and Nielsen-Pincus and Moseley, 2010).

Kellon, C.P. and T. Hesselgrave. 2014. Oregon's Restoration Economy: How investing in natural assets benefits communities and the regional economy. S.A.P.I.EN.S [Online], 7.2 (URL: <http://journals.openedition.org/sapiens/1599> ). Document accessed online on 22 February 2024.

Cullinane-Thomas, C., C. Huber, K. Skrabis, and J. Sidon. 2016, Estimating the economic impacts of ecosystem restoration—Methods and case studies: U.S. Geological Survey Open-File Report 2016–1016, 98 p., <http://dx.doi.org/10.3133/ofr20161016>. Document accessed online on 22 February 2024.

Samonte, G., P. Edwards, J. Royster, V. Ramenzoni, and S. Morlock. 2017. Socioeconomic Benefits of Habitat Restoration. NOAA Tech. Memo. NMFS-OHC-1, 66 p. <https://repository.library.noaa.gov/view/noaa/15030>. Document accessed online on 22 February 2024.

Nielsen-Pincus, M. and C. Moseley. 2010. Economic and Employment Impacts of Forest and Watershed Restoration in Oregon. Ecosystem Workforce Program Working Paper No. 24. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/10777>. Document accessed online on 22 February 2024.

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

During an earlier project that identified the restoration sites included in this proposal and developed site concepts, we worked with a variety of partners including U.S. Bureau of Reclamation (BOR), Rock Island Habitat Conservation Plan Tributary Committee (Trib Comm), U.S. Forest Service (USFS), Upper Columbia Regional Technical Team members, and numerous private landowners. During the proposed project, we expect to partner with many of these same entities.

US Forest Service is the landowner at Area B and C, and we anticipate that they will provide data, design reviews and permitting assistance. US Bureau of Reclamation is expected to provide funding and technical assistance during the proposed project. Randy and Cici Asplund, Peter Valaas, James Krieger and Kim Wicklund, and Thousand Trails Resort are landowners at Areas E and F, and we anticipate that they will review and comment on designs at these two sites. Finally, we are partnering with Yakama Nation Fisheries (YNF) for the work at Areas B and C. Through this partnership, we expect to share project management and other responsibilities for the design work at these two sites.



## Optional Section - Preparation for PRISM

The following questions are identical to the questions RCO requires in the PRISM application. If desired, sponsors can complete associated questions early and copy responses into PRISM during the "Complete Application" phase due on April 19, 2024.

Do you want to review and/or pre-populate PRISM questions?

No

## Supporting Documents

[Upper Columbia Process Guide 2024](#)

[SRFB Manual 18 \(2024\)](#)

[RCO Application Resources \(2024\)](#)