

**CMZ 12 Side Channel Adaptive Management**

**Chelan County Natural Resources Department**

**Stephen Lesky**

**Stephen.lesky@co.chelan.wa.us**

**Prism #23-1285**

<b>Anticipated SRFB Request:</b>	<b>\$187,543</b>
<b>Anticipated Trib Comm Request:</b>	<b>\$0</b>
<b>Other Match:</b>	<b>\$0</b>
<b>Anticipated TOTAL Project Budget:</b>	<b>\$187,543</b>



Thursday, May 18, 2023

## 2023 Regional Project Pre-application

# 2023 Upper Columbia Regional Project Pre-Application

- \* Pre-applications due March 10, 2023 (COB)
- \* Complete applications due in PRISM April 20, 2023 (COB)
- \* Revised proposals due in PRISM May 19, 2023 (COB)
- \* Final revised applications due in PRISM June 26, 2023 (noon)

### Project Title

CMZ 12 Side Channel Adaptive Management

### Contact Information

#### Sponsor

Chelan County Natural Resources Department

#### Primary Contact

Stephen Lesky

#### E-Mail Address

stephen.lesky@co.chelan.wa.us

### Budget Request

#### Anticipated Request - SRFB (standard round)

\$187,543

#### Anticipated TOTAL Budget

\$187,543

### Project Location

#### Briefly describe the location of the project

Project location is approximately 2.8 miles southwest of the SR97/US2 interchange (Big Y). Project is located within the floodplain on the left bank of the Wenatchee River immediately below the highway grade.

Latitude (decimal degrees)

47.5331

**Longitude (decimal degrees)**

120.545547

**Project subbasin**

Wenatchee

**Wenatchee Assessment Unit(s)**

Wenatchee River-Ollala Canyon

**Reach(es) Name**

Wenatchee River Ollala 02

**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 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 be adaptive management for a previously constructed project within the floodplain of Channel Migration Zone 12 (CMZ12). Chelan County Natural Resources Department (CCNRD) had previously applied for and was awarded funding for construction of this site in 2007 under SRFB application 07-1771. Since completion of this project, the outlet of the side channel has experienced sedimentation and infestations of reed canarygrass. The sedimentation and invasion of reed canarygrass has created a scenario where the side channel does not completely drain when the mainstem low flows deactivate the side channel, resulting in entrainment and ponding concerns for salmonids. The side channel is also void of riparian vegetation through most of its length. The lack of shading and ponding poses concerns of high-water temperatures and low dissolved oxygen levels. CCNRD is applying for Preliminary Design funding to investigate potential solutions to aid in the complete draining of the side channel during low mainstem flows, creation of a sinuous thalweg through incorporation of wood structures, enhancement of riparian cover and potential conversion to a perennial side channel. This will address the Unacceptable rated limiting factors of cover wood and off-channel side channel habitat and the At Risk rated limiting factor of floodplain connectivity for this reach.

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

Spring Chinook

Steelhead

### 3. 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.)

Previous submission for this parcel was submitted under application number 07-1771, this was initial construction of this parcel including levee removal, side channel re-connection, and high-flow LWD enhancement. This project was intended to be a self-maintaining side channel. Through monitoring efforts of this site, it has been discovered that flows through the side channel have not been of sufficient amount to maintain the self-maintaining goal of the original project. This project will be adaptive management of the original construction to investigate potential solutions to the ponding and entrainment issues currently noted within the side channel. Through the utilization of other funding sources CCNRD has identified three areas of the side channel that could benefit from adaptive management.

### 6. What category is the project?

Design

## 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)?

Upper Columbia River Biological Strategy (2007), Wenatchee River Channel Migration Zone Study (Jones and Stokes, 2004) and Lower Wenatchee River Geomorphic Assessment (CH2M Hill, 2006)

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

Cover - Wood

Off-Channel - Floodplain

Off-Channel - Side-Channels

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

Winter Rearing

### 11. Freshwater Benefits - Describe how will your project improve survival, capacity and/or

## **distribution for target species at the reach scale?**

Adaptive management of this previously constructed project will provide for the resolution of stranding and entrapment concerns currently noted within the side channel. Additionally, enhancing riparian cover and habitat complexity will provide for increased winter survival of salmonid species within the Lower Wenatchee River system. This project targets improving spring Chinook and threatened summer Steelhead rearing, forage, and refuge habitat.

## **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 project will investigate the potential of improving the function of the established seasonal side channel and adjacent floodplain. Currently the side channel does not completely drain once deactivated during low mainstem flows. This creates a scenario where salmonids are not only trapped in the side channel but also opportunity for entrained water to increase in temperature during peak summer temperatures, adding additional warm water an already warming system. Additionally, this creates an environment for invasive vegetation, such as the established population of reed canarygrass, to flourish and out compete native riparian vegetation species. Restoration opportunities in the lower portion of the channel including adjusting channel morphology to reduce width to depth ratio and provide for complete drainage during periods of disconnection from mainstem, enhancement of riparian habitat, and allow for correction of existing ponding and stranding issues.

## **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?**

The level of maintenance for a completed project will be determined through the design process with the intention of developing a self-maintaining side channel as originally planned. Vegetation survival monitoring and replanting will likely constitute the bulk of the required maintenance to achieve vegetation survival metrics set by required permits.

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

The lower portion of the channel has a positive gradient, and this prevents the side channel from completely draining as flows in the mainstem recede. This contributes to ponding and fish stranding in the middle portion of the side channel. In addition, riparian habitat quality is poor. Restoration opportunities in this section of the side channel include adjusting channel morphology to reduce width to depth ratio and provide for complete drainage when side channel is not connected to mainstem flows, addition of in-stream structure, and riparian vegetation enhancement. Enhancing riparian vegetation along this and other portions of CMZ 12 should include steps to control reed canary grass, coupled with planting of native species (primarily shrubs and trees). In addition to the aforementioned ponding and stranding, the middle portion of the side channel has wide and shallow geometry and lacks a defined thalweg. Riparian habitat quality also is poor. For this area, we recommend work to reduce the width to depth ratio and establish pools and a defined thalweg, addition of in-stream structures to enhance sinuosity and add complexity, and riparian habitat enhancement. Channel bed elevation at the side channel inlet is high and this limits flow into the side channel so that the channel is activated during higher spring runoff flows, but disconnects in late spring/early summer and remains disconnected during most of the remainder of the year. For this portion of CMZ12, potential exists for re-aligning and re-grading the side channel inlet to allow for year-round side channel engagement. Addition of structure in the mainstem to enhance flow into the side channel will also be explored.

# **Assessment Proposals**

# Protection Proposals

## Monitoring Proposals

### Project Risk and Economic Benefits

#### 1. What is the landownership?

Washington Department of Transportation and Washington Department of Natural Resources

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

No

#### Please explain

This project has been presented to and is currently being reviewed by Washington Department of Transportation staff to ensure it fits within their environmental stewardship goals and Department directives. CCNRD does not believe obtaining landowner approval of this project will be a barrier. CCNRD has a positive working relationship with WSDOT, and has successfully completed project on not only this property but other WSDOT properties in the past. Conversations have also been initiated with Washington Department of Natural Resources for project review and ensure compliance with State Aquatic Lands compliance.

#### 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 has not communicated any concerns of this project to date. As the landowner for this project WSDOT will be actively involved in all project processes and provided all design iterations for review and approval. WDNR will also be involved in throughout this project to ensure all design elements are in compliance with applicable State Aquatic Lands regulations.

#### 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 is a Preliminary Design project. The development of designs will not result in any alteration of current property conditions. Stakeholders within the community will be identified throughout the project and allow to review and comment on conceptual and preliminary designs. Early involvement of all stakeholders in this process should alleviate and account for any concerns raised.

In-stream and side channel projects often raise concerns for recreational boaters; thus, boater and recreational safety will be taken into consideration throughout this design process.

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

CCNRD will see this project through the preliminary design stages and project close-out. Given this is a preliminary design project, no physical alterations to the property will occur at this point. Responsibilities of the current landowners will not change and will be carried out in their typical manner.

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

No

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

Given this is a design project the risk of failure is minimal. Ultimately not addressing ecological concerns of the project site is the largest risk of failure for this project. The long term goal of this project is to enhance sub-optimal habitat conditions for anadromous fish species in the Lower Wenatchee Watershed.

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

As the project develops a public outreach plan will be developed to communicate project goals and objectives as well to identify additional stakeholders. Completion of this project continue to build on the positive relationship CCNRD has built over the years with residents of Chelan County concerning salmon recovery. This project will continue to bolster community support in projects like this showing that previous efforts are monitored and managed to attain salmon recovery goals.

**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 for an economic opportunity for firms and professionals with expertise in aquatic habitat restoration. The project will ultimately be investigating how to enhance the ecological function of a floodplain. Properly functioning floodplains in river systems such as the Lower Wenatchee River can have tremendous effects of negating property damaging flood events.

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

WSDOT is the likely partner for this project, as the landowner. CCNRD will work with WSDOT to ensure designs meet WSDOT standards for these types of projects. Additionally, Washington Department of Natural Resources will be involved in this project is located on State Aquatic Lands.

## **Optional Section - Preparation for PRISM**

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

No

Supporting Documents

- Upper Columbia Process Guide 2022 (updates anticipated January 2023)
- SRFB Manual 18 (2023)
- RCO Application Resources (2023)

**Does the proposed project span multiple assessment units?**

No



PROJECT: 23-1285 PLAN, CMZ 12 SIDE CHANNEL ADAPTIVE MANAGEMENT

Sponsor: Chelan Co Natural Resource Program: Salmon State Projects Status: Application Returned

## Parties to the Agreement

### PRIMARY SPONSOR

Chelan County Natural Resources Department

**Address** 411 Washington St Ste 201

**City** Wenatchee **State** WA **Zip** 98801

**Org Type** County-Open Space/Nat Resources

**Vendor #** SWV0001231-12

**UBI**

**Date Org created**

**Org Notes**

[link to Organization profile](#)

Org data updated

### SECONDARY SPONSORS

No records to display

### MANAGING AGENCY

Recreation and Conservation Office

### LEAD ENTITY

Upper Columbia Salmon Rcy Bd L

### QUESTIONS

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

WSDOT; WSDOT is the landowner of this project site, and, as such will be involved in all design review and alternatives analysis.

WDNR: This project does fall within the State Aquatic Lands determination. WDNR will also be involved in all design review and alternatives analysis.

## External Systems

### SPONSOR ASSIGNED INFO

**Sponsor-Assigned Project Number**

**Sponsor-Assigned Regions**

### EXTERNAL SYSTEM REFERENCE

Source	Project Number	Submitter
HWS	23-1285	DHecker

# Project Application Report - 23-1285

## Project Contacts

Contact Name Primary Org	Project Role	Work Phone	Work Email
<u>Amee Bahr</u> Rec. and Conserv. Office	Project Manager	(360) 867-8585	<a href="mailto:Amee.Bahr@rco.wa.gov">Amee.Bahr@rco.wa.gov</a>
<u>Doran Lower</u> Rec. and Conserv. Office	MAgy Fiscal Contact	(360) 902-3007	<a href="mailto:doran.lower@rco.wa.gov">doran.lower@rco.wa.gov</a>
<u>Stephen Lesky</u> Chelan Co Natural Resource	Project Contact	(509) 670-8094	<a href="mailto:stephen.lesky@co.chelan.wa.us">stephen.lesky@co.chelan.wa.us</a>
<u>David Hecker</u>	Lead Entity Contact	(208) 869-9446	<a href="mailto:dave.hecker@ucsr.org">dave.hecker@ucsr.org</a>
<u>Sofia Bjorklund</u> Chelan Co Natural Resource	Billing	(509) 667-6324	<a href="mailto:sofia.bjorklund@co.chelan.wa.us">sofia.bjorklund@co.chelan.wa.us</a>

## Worksites & Properties

### # Worksite Name

#1 Channel Migration Zone 12/13

### Planning Property Name

- ✓ CMZ 12 parcel # 241835140050
- ✓ CMZ 13 parcel # 241835130050

# Project Application Report - 23-1285

## Worksite Map & Description

### Worksite #1: Channel Migration Zone 12/13

#### WORKSITE ADDRESS

**Street Address** Unassigned  
**City, State, Zip** Dryden WA 98821

## Worksite Details

### Worksite #1: Channel Migration Zone 12/13

#### SITE ACCESS DIRECTIONS

From the town of Dryden, at the intersection of Dryden Avenue and US 2, travel east along US 2 towards Cashmere approximately 0.8 miles. Site is located on Right side of the highway. This section of highway is a divided highway with median barriers, site can only be access from East bound lane. Access to the site is limited, as no official parking space is allocated for the site. A wide road shoulder exists near the railroad bridge for one or two vehicles. site is then accessed by foot, walking down embankment to CMZ 13 and downstream along river left to CMZ 12.

#### TARGETED ESU SPECIES

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

#### Reference or source used

NOAA Protected Resources App (online:  
<https://www.webapps.nwfsc.noaa.gov/portal/apps/webappviewer/index.html?id=7514c715b8594944a6e468dd25aaacc9>) WDFW PHS (online:  
<https://geodataservices.wdfw.wa.gov/hp/phs/>)

#### TARGETED NON-ESU SPECIES

Species by Non-ESU	Notes
Bull Trout	WDFW has documented occurrence of this species within the project area. Project will support habitat improvements for Bull trout.
Cutthroat	WDFW has documented occurrence of this species within the project area. Project will support habitat improvements for Cutthroat trout.
Rainbow	WDFW has documented occurrence of this species within the project area. Project will support habitat improvements for Rainbow trout.

#### Questions

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

Project site is located along US Highway 2 at approximately mile post 107.3

# Project Application Report - 23-1285

## Project Location

### RELATED PROJECTS

#### Projects in PRISM

PRISM Number	Project Name	Program Name	Current Status	Relationship Type	Notes
07-1771 R	Lower Wenatchee River Complexity Site 12/13	Salmon Federal Projects	Closed Completed	Earlier Phase	Original Construction of CMZ 12 & 13
00-1742 P	Lower Wenatchee Channel Mig. Zone Study	Salmon Federal Projects	Closed Completed	Earlier Phase	Initial study conducted by Chelan County to identify channel migration zones within the Lower Wenatchee Watershed.

#### Related Project Notes

Although CMZ 12 was included in the previous Lower Wenatchee River Complexity Site 12/13 project, the bulk of that project focused on reconnection of CMZ 13 to the mainstem Wenatchee River. Work in CMZ under the previous project consisted solely of installing eight log jam structures throughout the side channel.

#### Questions

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

This project is located at approximate river mile 12.8 on the Wenatchee River. Project is located on river left within the floodplain and mapped channel migration zone with an existing high flow side channel.

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

Upper Columbia Regional Salmon Recovery Plan pg. 194-195 Section 5.53 Habitat Objectives, this project will aid in addressing the following bullet points; Short Term Objectives "Protect and restore water quality where feasible and practical within natural constraints" Currently within the existing side channel there are several cold water inputs both from Ollala creek and natural seeps, this would provide a cold water refuge in summer for rearing habitat. "Protect and restore riparian habitat along spawning and rearing streams and identify long term opportunities for riparian habitat enchantments" This project would also aim to improve and increase the quality of the riparian habitat within the floodplain and along the side channel. "Protect and restore floodplain function and reconnection, off-channel habitat, and channel

migration processes where appropriate and identify long-term opportunities for enhancing these conditions." Currently the existing channel is only accessible at flows greater than 6000cfs with a topographic barrier at the channel outlet barring fish from entering or exiting in lower flows. This project will investigate the options for reconfiguring the channel geometry at the outlet to allow for year round access. This will promote the amount of side and off mainstem habitat available for rearing and coupled with the aforementioned cold water inputs provide for thermal refuge as well.

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

No

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

Yes

Washington Department of Natural Resources has been provided a project summary, is in support of, and has supplied a Landowner Acknowledgement form for this project.

## Property Details

# Project Application Report - 23-1285

Property: CMZ 12 parcel # 241835140050 (Worksite #1: Channel Migration Zone 12/13)

✓ Planning

## LANDOWNER

Name State of Washington (Department of Tran  
Address 2830 Euclid Ave  
City Wenatchee  
State WA Zip 98801  
Type State

## CONTROL & TENURE

Instrument Type  
Timing Proposed  
Term Length Fixed # of years  
# Yrs  
Expiration Date  
Note

Property: CMZ 13 parcel # 241835130050 (Worksite #1: Channel Migration Zone 12/13)

✓ Planning

## LANDOWNER

Name State of Washington (Department of Tran  
Address 2830 Euclid Ave  
City Wenatchee  
State WA Zip 98801  
Type State

## CONTROL & TENURE

Instrument Type  
Timing Proposed  
Term Length Fixed # of years  
# Yrs  
Expiration Date  
Note

## Project Proposal

### Project Description

This project is located within the lower Wenatchee Watershed at approximate river mile 12.8. This will be a design project focusing on identifying and developing restoration actions and alternatives within the floodplain and adjoining side channel. This project will provide improvements to summer and winter rearing habitat for steelhead and chinook. Currently the existing side channel is only activated during flows in excess of 6,000 cfs and becomes completely disconnected from the mainstem during low flows. Major points of interest in this project will be to evaluate and potentially reshape channel geomorphology at the channel outlet, where a topographic barrier currently exists. This barrier prevents fish from adequately exiting the channel during periods of flow recession eventually trapping the in the channel until flows rise above 6,000 cfs again. this barrier also prevents fish from entering the channel during summer months. There are several documented cold water inputs in the existing side channel, which could lend to an area of temperature refuge, if the channel were accessible via the outlet. Channel width to depth ratios will also be evaluated for the length of the channel and options to reshape channel geometry will be explored as well as enhancements to riparian vegetation to increase shading.

### Project Questions

## Project Application Report - 23-1285

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

Currently a topographical barrier exists at the side channel outlet that creates standing and ponding issues once the side channel is disconnected from the Wenatchee mainstem. Removal of this barrier would create additional side channel rearing habitat and habitat complexity in the lower watershed, which are both listed as limiting factors for this reach. There are also several documented cold water inputs within the side channel. Under current conditions, a small fraction of these inputs actually enter the main channel. Removal of the topographical barrier at the side channel outlet would allow year round access for anadromous species to the thermal refuge this side channel could provide. This project would also investigate the channel geometry, as the existing channel is wide and shallow. Strategic placement of engineered log structures would aid in development of a thalweg within the side channel, adding to habitat complexity through scour pools and cover material. Riparian cover along the side channel is also at sub-optimal levels, riparian establishment and enhancement would also be components of the eventual design. Final component of this project is to evaluate the possibility of augmenting the side channel inlet to accept flows at lower rates and allowing connection to occur longer through the spring and summer months. Augmentation of the inlet is, however, a lower priority than addressing ecological factors of the outlet and middle portion of the of the side channel.

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

Limiting life stages for both Chinook and Steelhead in this reach is winter rearing. Unacceptable limiting this project looks to address for this reach are; Cover wood, off-channel/side-channel habitat, riparian cover and riparian vegetation and temperature. Documented cold water inputs to the side channel would provide an excellent temperature refuge in both summer and winter, however, the topographical barrier at the outlet prevent fish from entering for the bulk of the year, especially during winter flow levels. Re-grading of the outlet would also provide new access to side channel habitat that is currently inaccessible by fish for the majority of the year. Strategic placement of additional engineered log structures would aid in address the cover wood limitation.

Rank 2 limiting factors this project aims to address would be pool quantity and quality. Currently 8 log structures exist within the side channel, however, they are at an elevation where they are predominantly only in the flow path during periods of high flow and provide marginal benefit for creation of scour pools. Placement of new log structures at lower elevations along the bank would allow them to be in the flow path for an increased duration and provide proper activation for creation of pools and cover.

#3: What are the project goals? The goal of the project should be to solve identified problems by addressing the root causes. Then clearly state the desired future condition. Include which species and life stages will benefit from the outcome, and the time of year the benefits will be realized. **Example Goals and Objectives**

Goal 1: Increase quantity and quality of off-channel winter rearing and temperature refuge habitat.  
Goal 2: Strategically place engineered log structures within side channel for natural development of thalweg, scour pools, cover structures and correct width to depth ratio.  
Goal 3: Enhance Riparian vegetation along side-channel to increase shading.  
Goal 4: Assess feasibility of re-grading channel inlet for increased activation periods.

## Project Application Report - 23-1285

#4: What are the project objectives? Objectives support and refine biological goals, breaking them down into smaller steps. Objectives are specific, quantifiable actions the project will complete to achieve the stated goal. Each objective should be SMART (Specific, Measurable, Achievable, Relevant, and Time-bound). [Example Goals and Objectives](#)

Goal 1 Objectives; preliminary design to include removal topographical barrier at side channel outlet. Channel geometry near the outlet will also be analyzed to ensure proper flow and drainage.

Goal 2 objectives; digital modeling coupled with field investigations will be required to determine best locations for new log structure installations.

Goal 3 objective; comprehensive planting plan will be developed with appropriate species to establish and enhance riparian communities within the floodplain.

Goal 4 objective; Through digital modeling coupled with field investigations will be required to determine if increased activation of the side-channel is feasible and at what flow rates. Preliminary design will include this as possible alternatives for consideration by landowners and stakeholders.

## Project Application Report - 23-1285

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

### Task 1. Background Data Review and Reconnaissance (Consultant and Sponsor)

The development of project goals and objectives will be prepared in coordination with CCNRD and landowners/stakeholders

Deliverables:

- Kick-off call/meeting
- Site Reconnaissance

October/November 2023

### Task 2. Hydrology and Hydraulics Assessment (Consultant) Existing Conditions Model

A 2-D hydraulic model will be developed to represent existing condition within the study area and used to evaluate existing hydraulic and floodplain processes, existing flood risk to parcels, and inform development of adaptive management options.

Consultant will create a new digital elevation model (DEM) from existing available LiDAR data discussed in Task 1. The 2-D model will extend from river mile 12.5 to 13.5 and be calibrated from results of field survey.

To evaluate conditions a steady state simulation of the following flow events will be ran:

- 100 year flood discharge
- 10 year flood discharge
- 1 year flood discharge
- Typical winter flow
- Low summer flow discharge

May-August 2024

### Task 3. Alternative Analysis (Consultant and Sponsor)

Consultant will use the results of the background data review, field reconnaissance, and existing conditions hydraulic model output to develop two project alternatives. For the purposes of this Scope of Work the project alternatives are assumed to include; 1) instream wood structures to direct and deflect flows 2) Side channel and inlet/outlet grading and 3) riparian revegetation.

Deliverables:

- Alternatives Analysis Matrix

July-August 2024

### Task 4. Conceptual Design (Consultant)

Consultant will prepare conceptual adaptive management designs for the preferred alternative as selected in Task 3 in compliance with SRFB Manual 18

Deliverables:

- Conceptual plans and cost estimates
- Project timeline

Anticipated Completion: September 2024

### Task 5. Preliminary Design (Consultant)

The preliminary designs will further develop the structure size, locations, elevations and grading associated with the proposed adaptive management elements.

Deliverables:

- Field verification with Landowners/Stakeholders
- Preliminary design drawings, Cost estimate
- Draft basis of design report

Anticipated Completion: September 2025

### Task 6. Project Management/Administration (Sponsor)

Project Sponsor (CCNRD) will manage contracts, participate in design team, work with landowners, permit agencies and other stakeholders. This includes the process for selecting a preferred alternative, considering comments on Conceptual and Preliminary Designs and incorporating landowner/stakeholder feedback into the design process.



## Project Application Report - 23-1285

#6: What are the assumptions and physical constraints that could impact whether you achieve your objectives?

Assumptions and constraints are external conditions that are not under the direct control of the project, but directly impact the outcome of the project. These may include ecological and geomorphic factors, land use constraints, public acceptance of the project, delays, or other factors. How will you address these issues if they arise?

The major constraints of this project will be any land use constraints set forth by the landowners. Landowners have not communicated any clear constraints at this point in the project development process. The lowest portion of the side channel is at the base of the BNSF railroad grade, limitations for ELJ structures or riparian planting may be constrained in this portion of the side channel. Overall, landowner land use decision will potentially have an impact on ELJ structure locations and riparian planting width.

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

Chelan County NRD has completed numerous projects to enhance instream conditions throughout our service area. Modern river restoration has evolved considerably from early efforts and a substantial body of knowledge is available to inform project design and implementation. To assure that our projects are state of the art and meet objectives, CCNRD draws from internal and external knowledge sources when designing and implementing such projects, and, we partner with design firms that specialize in river restoration with substantial expertise. Our experience with past restoration projects also informs how we select sites for projects, and the actions proposed. We are increasingly looking for opportunities to complete reach-scale projects where we can employ a variety of restoration actions to treat identified deficiencies, and, for areas where we can improve/enhance habitat conditions. It is through this evolving view that this project was selected.

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

This project was identified through funding made available to CCNRD by BPA for Project identification and development within the Wenatchee Watershed. Six potential project sites were identified under the BPA funding and preliminary project development was conducted for each site. All sites were then ranked internally by CCNRD staff using a combination of RTT and BPA scoring metrics. The CMZ 12 project scored highly among the six, using the modified RTT/BPA scoring matrices.

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

Primary stakeholders for this project include WSDOT and WDNR. WSDOT is the landowner and given this site qualifies as State Aquatic Lands, it falls under the purview of WDNR. Both WSDOT and WDNR were approached by CCNRD regarding this project and provided with a project overview of potential adaptive management options. Both Agencies have agreed to allow CCNRD move forward with the SRFB process. Both Agencies have also provided signed Landowner Acknowledgement Forms.

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

Yes

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

Terrestrial and aquatic temperature increases are both major components of anticipated climate change effects. The Wenatchee River system has documented increases in water temperature. A major component will be to evaluate and determine the best options for increasing the amount of cold water inputs in the side channel into the mainstem Wenatchee River.

## Project Application Report - 23-1285

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

This project aims to increase the amount of available habitat for anadromous fish species and provide additional cold water refugia in a warming system. Modification to the side channel with existing cold water inputs will allow for year-round access to cooler water temperatures. Enhancement of the riparian vegetation will also provide increased shading to aid in combating temperature increase due to solarization.

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

CCNRD has implemented over 60 salmon habitat restoration projects within the Wenatchee and Entiat sub-basins. These projects have ranged in complexity from small riparian planting projects on private lands to fish barrier removal projects on both private and public lands to large floodplain reconnection projects requiring multiple years of planning and design with multiple entity coordination and negotiated agreements. CCNRD has successfully completed projects with BNSF Railway, WA Department of Transportation, U.S. Forest Service, large organized private landowner groups, individual private landowners, Irrigation Districts and other local state government landowners. CCNRD has connected side channel habitat and added complexity in the Lower Wenatchee and Entiat Rivers including the Monitor Side Channel, and the Harrison Side Channel where similar conditions existed. Monitoring of those projects has shown extensive juvenile fish use and pool development.

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

No

## Project Application Report - 23-1285

### Planning Supplemental

#1: Is the project an assessment / inventory?

No

#2: Is your project a Barrier / Screening Diversion Inventory Project?

No

#3: Is this a fish passage design / screening design project?

No

#4: Will the project develop a design?

Yes

#4a: Will a licensed professional engineer design of the project?

Yes

#4b: Will you apply for permits as part of the project scope?

no

# Project Application Report - 23-1285

## Planning Metrics

### Worksite: Channel Migration Zone 12/13 (#1)

Area Encompassed (acres) (B.0.b.1)	6.5
Miles of Stream and/or Shoreline Affected (B.0.b.2)	0.20

### DESIGN FOR SALMON RESTORATION

#### Conceptual Design (B.1.b.11.a RCO)

Total cost for Conceptual design	\$90,000	<b>Note:</b> This includes Data Collection, Assessments, Wetland Delineation and Conceptual design development.
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Project Identified in a Plan or Watershed Assessment. (2457) (B.1.b.11.a)	Wenatchee Watershed Planning Unit, 2008 Detailed Implementation Plan, resources/documents/Planning/Wen_Planni
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Priority in Recovery Plan (2458) (B.1.b.11.b)	Wenatchee Watershed Planning Unit, 2008, Wenatchee Watershed Planning Phase IV Detailed Implementation Plan, Pg. 22 and Table 5-1. CMZ projects listed as Tier 1 Biological Benefit Projects
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#### Preliminary design (B.1.b.11.a RCO)

Total cost for Preliminary design	\$77,895	<b>Note:</b> Includes all consultant tasks related to Preliminary Design development and project administration, and, includes CCNRD Project Administration costs
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Project Identified in a Plan or Watershed Assessment. (1220) (B.1.b.11.a)	Wenatchee Watershed Planning Unit, 2008 Detailed Implementation Plan, resources/documents/Planning/Wen_Planni
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Priority in Recovery Plan (1222) (B.1.b.11.b)	Wenatchee Watershed Planning Unit, 2008, Wenatchee Watershed Planning Phase IV Detailed Implementation Plan, Pg. 22 and Table 5-1. CMZ projects listed as Tier 1 Biological Benefit Projects
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### CULTURAL RESOURCES

#### Cultural resources

Total cost for Cultural resources	\$15,000
Acres surveyed for cultural resources	2.71

### AGENCY INDIRECT COSTS

#### Agency Indirect

Total cost for Agency Indirect	\$4,648
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## Overall Project Metrics

### COMPLETION DATE

Projected date of completion	09/30/2025
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## Planning Cost Estimates

### Worksite #1: Channel Migration Zone 12/13

Category	Work Type	Estimated Cost	Note
Agency Indirect Costs	Agency Indirect	\$4,648	
Cultural Resources	Cultural resources	\$15,000	
Design for Salmon restoration	Conceptual Design (B.1.b.11.a)	\$90,000	This includes Data Collection, Assessments, Wetland

## Project Application Report - 23-1285

### Category

### Work Type

### Estimated Cost

### Note

RCO)			Delineation and Conceptual design development.
Preliminary design (B.1.b.11.a		\$77,895	Includes all consultant tasks related to Preliminary Design
RCO)			development and project administration, and, includes CCNRD
			Project Administration costs
	Subtotal:	\$187,543	
	Total Estimate For Worksite:	\$187,543	

### Summary

	Total Estimated Costs:	\$187,543
	Total Estimated Planning Costs:	\$187,543

# Project Application Report - 23-1285

## Cost Summary

	Estimated Cost	Project %	Admin/AA&E %
<u>Planning Costs</u>			
Planning	\$187,543		
SUBTOTAL	\$187,543	100.00 %	
Total Cost Estimate	\$187,543	100.00 %	

## Funding Request and Match

### FUNDING PROGRAM

Salmon State Projects	\$187,543	100.000000
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### SPONSOR MATCH

## Questions

#1: Explain how you determined the cost estimates

Cost estimates were developed based on estimates of previous projects developed by qualified and experienced design consultants. Remainder of estimates were developed based on CCNRD departmental knowledge for staffing requirements to successfully conduct projects of this nature.

## Cultural Resources

### Cultural Resource Areas

#### Worksite #1: Channel Migration Zone 12/13

##### Area: CMZ 12 APE

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

Ground disturbing actions are not anticipated at this point in the project development process. Field reconnaissance efforts may identify the need for geotechnical investigations at a later point, however, all potential ground disturbing actions will be scheduled after a complete cultural review has been completed.

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

Currently the site is composed of a gravel bar floodplain on the side channel right bank. Left bank of the channel consists of a steep embankment leading up to the BNSF railway. Current land use is as an active floodplain.

#3: Will a federal permit be required to complete the scope of work on the project areas located within this worksite?  
No

#4: Are you utilizing Federal Funding to complete the scope of work? This includes funds that are being shown as match or not.  
No

#5: Do you have knowledge of any previous cultural resource review within the project boundaries during the past 10 years?  
No

Cultural resource review was completed for the 2008 construction

## Project Application Report - 23-1285

Cultural resource review was completed for the 2000 construction of this project, however, that falls outside of the above listed 10 year period

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

No

### Project Permits

Permits and Reviews	Issuing Organization	Applied Date	Received Date	Expiration Date	Permit #
None - No permits Required					

# Project Application Report - 23-1285

## Attachments

### Required Attachments

6 out of 6 done

- Applicant Resolution/Authorizations ✓
- Cost Estimate ✓
- Landowner acknowledgement form ✓
- Map: Planning Area ✓
- Photo ✓
- RCO Fiscal Data Collection Sheet ✓

### PHOTOS (JPG, GIF)

Photos (JPG, GIF)



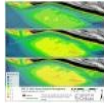
# 559186 Primary



# 559188 Secondary



# 559189



# 567763

### PROJECT DOCUMENTS AND PHOTOS

Project Documents and Photos

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
	07/17/2023	Application Review Report	Grant Manager Comments, 23-1285P(rtnd 07/17/23 12:51)	AmeeB	Grant Manager Comments Report - 23-1285 (rtnd 07-17-2023_12-51-04).pdf, 571326	✓
	06/26/2023	Project Application Report	Project Application Report, 23-1285P (sub 06/26/23 10:57:49)	StephenL	Project Application Report - 23-1285 (submitted 06-26-2023_10-57-49).pdf, 567764	✓
	06/26/2023	Visuals	Lidar Analysis.jpg	StephenL	Lidar Analysis.jpg, 567763	✓
	06/26/2023	RCO Fiscal Data Collection Sheet	2023 SRFBFiscalDataCollectionSheet_CCNRD_	StephenL	2023 SRFBFiscalDataCollectionSheet_CCN... 567762	
	05/24/2023	Application Review Report	Grant Manager Comments, 23-1285P(rtnd 05/24/23 14:45)	AmeeB	Grant Manager Comments Report - 23-1285 (rtnd 05-24-2023_14-45-50).pdf, 563798	✓
	05/18/2023	Visuals	CoverSheet_JotForm Combined.pdf	StephenL	CoverSheet_JotForm Combined.pdf, 563379	✓
	05/18/2023	Visuals	Vicinity Map.pdf	StephenL	Vicinity Map.pdf, 563378	✓
	05/18/2023	Visuals	Wenatchee-River-Ollala-02-CMZ-12-Side-Channel-Adaptive-Manag	StephenL	Wenatchee-River-Ollala-02-CMZ-12-Side-Channel-Adaptive-Management.pdf, 563374	✓
	05/18/2023	Visuals	CMZ 12 Regional Coversheet.pdf	StephenL	CMZ 12 Regional Coversheet.pdf, 563372	✓
	04/21/2023	Project Application Report	Project Application Report, 23-1285P (sub 04/21/23 15:58:55)	StephenL	Project Application Report - 23-1285 (submitted 04-21-2023_15-58-55).pdf, 559259	✓
	04/21/2023	Cost Estimate	CMZ12_SAL-CostEstimate.xlsx	StephenL	CMZ12_SAL-CostEstimate.xlsx, 559240	✓
	04/21/2023	Map: Planning Area	CMZ 12 Project Area Map.pdf	StephenL	CMZ 12 Project Area Map.pdf, 559196	✓
	04/21/2023	Photo	20221116_114324.jpg	StephenL	20221116_114324.jpg, 559189	✓
	04/21/2023	Photo	20221116_115629.jpg	StephenL	20221116_115629.jpg, 559188	✓
	04/21/2023	Photo	20221116_115705.jpg	StephenL	20221116_115705.jpg, 559186	✓
	04/21/2023	Applicant Resolution/Authorizations	2023 ApplicantAuthorizationResolution_CCNRD_	StephenL	2023 ApplicantAuthorizationResolution_CC... 559106	✓
	04/21/2023	Landowner acknowledgement form	WDNR LandownerAckForm_ChelanCo_LowerWei	StephenL	WDNR LandownerAckForm_ChelanCo_Lowe... 559104	
	04/21/2023	Landowner acknowledgement form	Signed WSDOT LA Form CMZ 12.pdf	StephenL	Signed WSDOT LA Form CMZ 12.pdf, 559103	



# Project Application Report - 23-1285

## Application Status

Application Due Date: 06/24/2024

Status Name	Status Date	Submitted By	Submission Notes
Application Returned	07/17/2023	Amee Bahr	Thanks for addressing comments. Your project is Conditioned for design review. Please accept the condition and resubmit the application by August 3rd. Please let me know if you have any questions.
Application Resubmitted	06/26/2023	Stephen Lesky	
Application Returned	05/24/2023	Amee Bahr	Thanks for submitting you application! It looks like we need a little more information. Please respond to the Review Panel and Grant Manager Comments and resubmit the application by June 26th. Please let me know if you have any questions.
Application Submitted	04/21/2023	Stephen Lesky	
Preapplication	04/06/2023		

I certify that to the best of my knowledge, the information in this application is true and correct. Further, all application requirements due on the application due date have been fully completed to the best of my ability. I understand that if this application is found to be incomplete, it will be rejected by RCO. I understand that I may be required to submit additional documents before evaluation or approval of this project and I agree to provide them. (Stephen Lesky, 06/26/2023)

Date of last change: 07/17/2023



# CUMULATIVE TOTALS

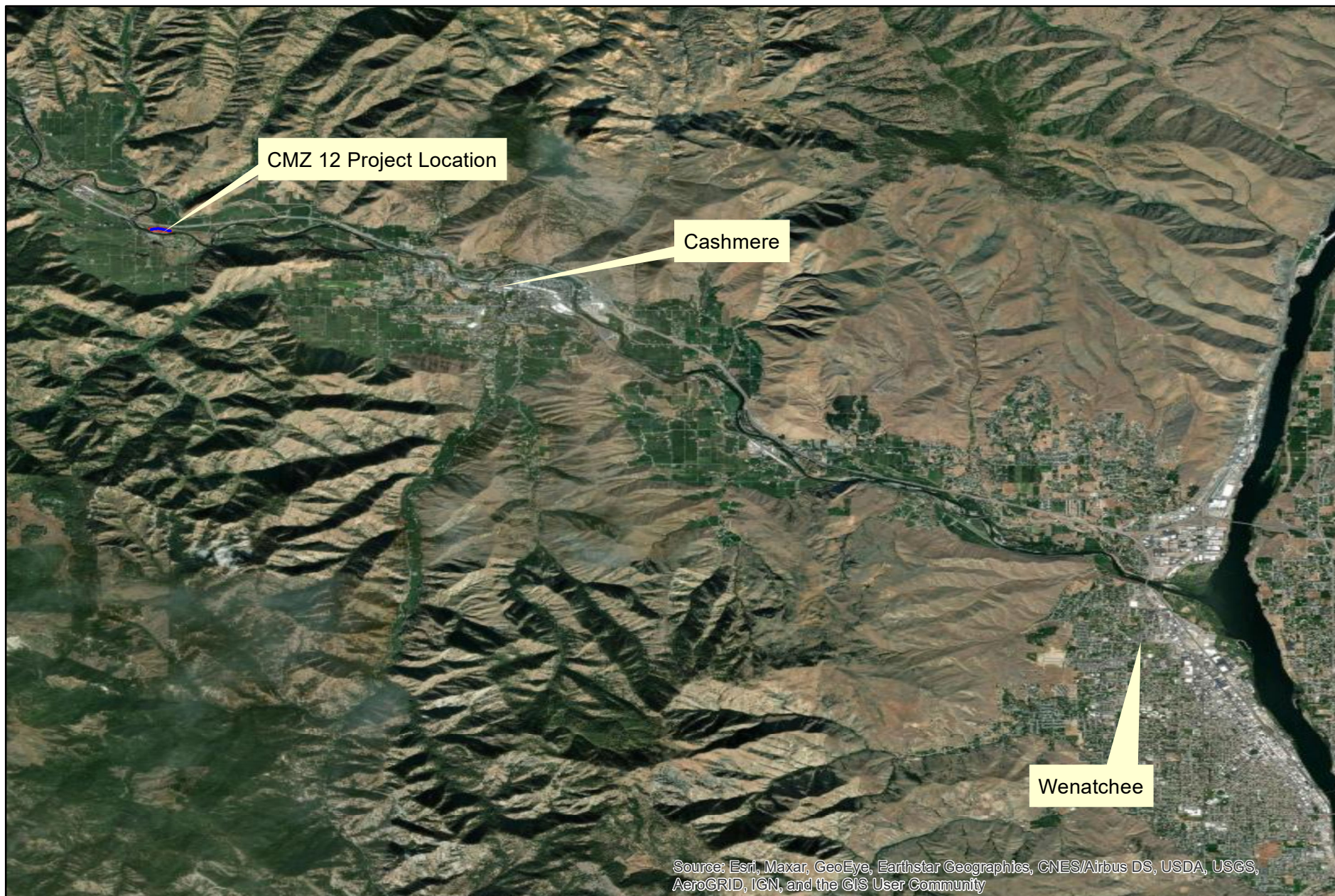
*This sheet contains automatic calculations*

Project Name	enter
SRFB #	enter
Sponsor	enter

	OVERALL PROJECT Cost	GRANT REQUEST Amount	PRISM MATCH Amount	MATCH NOT IN PRISM Amount	Budget Check
<u>Sheet #1 Acquisition</u>					
Property Costs	\$ -	\$ -	\$ -	\$ -	0
Incidental Costs	\$ -	\$ -	\$ -	\$ -	0
Administrative Costs	\$ -	\$ -	\$ -	\$ -	0
Indirect Costs	\$ -	\$ -	\$ -	\$ -	
<b>STotal</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>0</b>
<u>Sheet #2 Design</u>					
Design Costs	\$ 182,895	\$ 182,895	\$ -	\$ -	
Indirect Costs	\$ 4,648	\$ 4,648	\$ -	\$ -	
<b>STotal</b>	<b>\$ 187,543</b>	<b>\$ 187,543</b>	<b>\$ -</b>	<b>\$ -</b>	<b>0</b>
<u>Sheet #3 Restoration</u>					
Construction Costs	\$ -	\$ -	\$ -	\$ -	0
AA&E	\$ -	\$ -	\$ -	\$ -	0
Indirect Costs	\$ -	\$ -	\$ -	\$ -	
<b>STotal</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>0</b>
<b>Totals</b>	<b>\$ 187,543</b>	<b>\$ 187,543</b>	<b>\$ -</b>	<b>\$ -</b>	<b>0</b>



# Vicinity Map: CMZ 12 Side Channel Adaptive Management



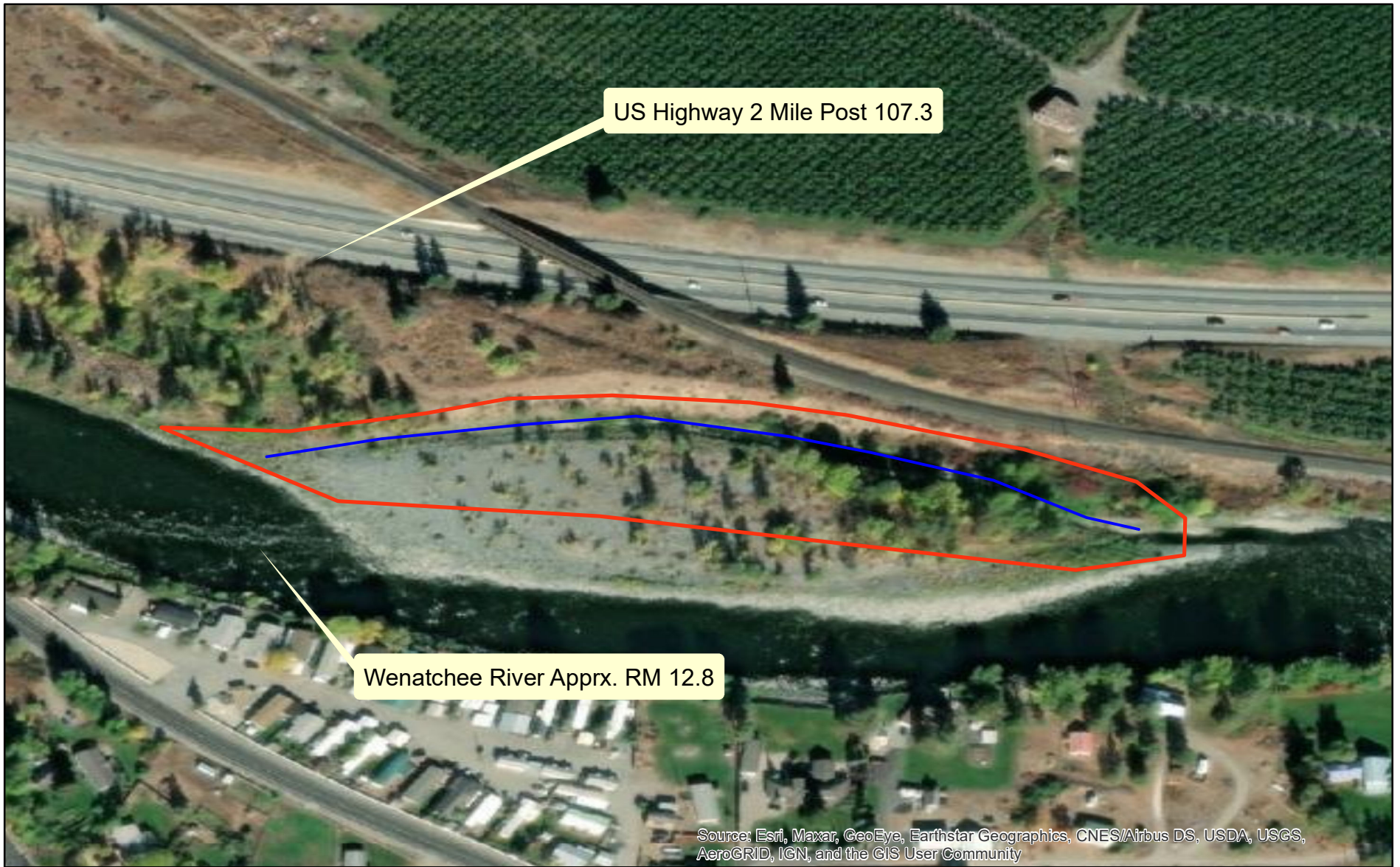
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 1.25 2.5 5 Miles



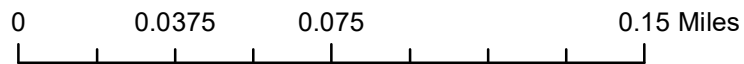


# CMZ 12 Adaptive Management Project Map



## Legend

- Side Channel Midline (Approximated)
- ▭ Project Boundary







Chelan Co Natural Resource; CMZ 12 Side Channel Adaptive Management (#23-1285)

Attachment #559188, 20221116\_115629.jpg









Chelan Co Natural Resource; CMZ 12 Side Channel Adaptive Management (#23-1285)

Attachment #559186, 20221116\_115705.jpg