Application Name: Middle Upper Grande Ronde River Boulder Additions

By: Grande Ronde Model WS Foundation

Offering Type: Upper Grande Ronde Initiative

Application Type: Restoration

OWEB Region: Eastern Oregon
County: Union
Coordinates: 45.198602,-118.395198

Applicant:
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Budget Summary:
OWEB Amount Requested: $0
Total Project Amount: $323,050

Administrative Information

Abstract

Provide an abstract statement for the project. Include the following information: 1) Identify the project location; 2) Briefly state the project need; 3) Describe the proposed work; 4) Identify project partners.

The CTUIR and USFS propose implementation of fish habitat and floodplain enhancement using the CTUIR's River Vision to increase habitat suitability for native fish spawning and rearing, fluvial processes and ecological functions.

The Middle Upper Grande Ronde River Canyon Fish Habitat Enhancement Project is located in the Upper Grande Ronde Subbasin along the Grande Ronde River between RM 156 and RM 158. The Project reach is located on the Wallowa-Whitman National Forest within the Upper Grande Ronde River Atlas Biological Significant Reach UGR15. The Project area presents a large-scale and significant opportunity to expand, create, and enhance core spawning and rearing habitat for ESA listed spring-summer Chinook salmon and summer steelhead.

The Project is a continuation of habitat restoration actions previously conducted by the USFS and CTUIR (primarily large wood additions). Strategies include: 1) identifying and prioritizing response reaches within project area for improved floodplain connection and side channel habitat creation; 2) Utilizing Engineered Log Jams (ELJs) to force split channel flow and increase habitat complexity and diversity; 3) Installation of channel spanning wood structures to increase depth and pool habitat and decrease velocity to mimic onsite examples exhibiting these key habitat conditions.

Phase I of the project was constructed during summer 2019. Due to Section 106 permitting the project was constructed by helicopter only, limiting sponsors ability to utilize ground based construction equipment to key in structures and install boulder ballast for structural stability. Following construction in July 2019 project sponsors installed pins and rope to select wood structures to increase and maintain structural stability. Installation of boulder ballast under this proposal will help increase structural stability and contribute toward meeting core project objectives and minimizing the risk of downstream migration of large wood material.

Location Information

What is the ownership of the project site(s)?

✓*Public land (any lands owned by the Federal government, the State of Oregon, a city, county, district or municipal or public corporation in Oregon)*

What agency(ies) are involved?

U.S. Forest Service - Wallowa-Whitman National Forest

❑*Private (land owned by non-governmental entities)*

❑*This grant will take place in more than one county.*

Permits

Other than the land-use form, do you need a permit, license or other regulatory approval of any of the proposed project activities?

● Yes
❍ No

For Details Go to Permit Page

I acknowledge that I am responsible for verifying applicable permits, licenses, and General Authorizations required for the project, and can update information at grant agreement execution.

✓*Yes*

Racial and Ethnic Impact Statement

Racial and Ethnic Impact Statement

● The proposed grant project policies or programs could have a disproportionate or unique POSITIVE impact on the following minority persons. (indicate all that apply)

❍ The proposed grant project policies or programs could have a disproportionate or unique NEGATIVE impact on the following minority persons. (indicate all that apply)

❍ The proposed grant project policies or programs WILL HAVE NO disproportionate or unique impact on minority persons.

❑ *Women*
❑ *Persons with Disabilities*
❑ *African-Americans*
❑ *Hispanics*
❑ *Asians or Pacific Islanders*
✓ *American Indians*
❑ *Alaskan Natives*

Please provide the rationale for the existence of policies or programs having a disproportionate or unique impact on minority persons.

In January of 2007, the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) Department of Natural Resources (DNR) adopted the following mission:

To protect, restore, and enhance the First Foods - water, salmon, deer, cous, and huckleberry - for the perpetual cultural, economic, and sovereign benefit of the CTUIR. We will accomplish this utilizing traditional ecological and cultural knowledge and science to inform: 1) population and habitat management goals and actions; and 2) natural resource policies and regulatory mechanisms.

The First Foods are considered by the CTUIR DNR to constitute the minimum ecological products necessary to sustain CTUIR culture. The CTUIR DNR has a mission to protect First Foods and a long-term goal of restoring related foods in the order to provide a diverse table setting of native foods for the Tribal community. The mission was developed in response to long-standing and continuing community expressions of First Foods traditions, and community member requests that all First Foods be protected and restored for their respectful use now and in the future.

The River Vision outlines physical and biological processes encompassing 5 touchstones: Hydrology, Geomorphology, Connectivity, Riparian Vegetation, and Aquatic biota which together with the First Foods, provide an overall framework for guiding tribal programs in regards to protecting and restoring ecological processes and functions. Healthy watershed processes and functions are the fundamental elements that create diversity, resiliency, and the ability of our river systems to provide sustenance and natural resources to support our culture and heritage.

Please provide evidence of consultation with representative(s) of affected minority persons.

The Confederated Tribes of the Umatilla Indian Reservation is the sponsor of the Middle Upper Grande Ronde Fish Habitat Restoration Project.

Insurance Information

❑*Working with hazardous materials (not including materials used in the normal operation of equipment such as hydraulic fluid)*

❑*Earth moving work around the footprint of a drinking water well*

❑*Removal or alteration of structures that hold back water on land or instream including dams, levees, dikes, tidegates and other water control devices (this does not include temporary diversion dams used solely to divert water for irrigation)*

❑*Applicant's staff or volunteers are working with kids related to this project (DAS Risk assessment tool not required, additional insurance is required)*

❑*Applicant's staff are applying herbicides or pesticides (DAS Risk assessment tool not required, additional insurance is required)*

Additional Information

❑*This project affects Sage-Grouse.*

Problem Statement

Describe the watershed problem(s) that this restoration project seeks to address.

Fish habitat suitability has been significantly affected and suppressed by physical alterations of the river and its associated floodplain (splash dam logging, mining, and road construction) that have contributed to severely degraded habitat conditions. Problems include homogenous, high energy, plane bed riffle-run channel types with a lack of large pool habitat, channel complexity, peripheral habitat bed armoring and alteration of sediment sorting and coarsening of streambed gravel, altered groundwater and hyporheic function, and degradation of riparian and wetland plant communities.

Natural habitat recovery is limited by current environmental conditions that suppress development of diverse hydrologic and geomorphic processes, including an armored streambed, lack of mature riparian vegetation and associated complexity/wood loading, and lack of significant floodplain activation/connection.

Core habitat suitability limiting factors affecting juvenile summer and winter rearing and adult holding and migration include: water quality (temperature), channel and bed form and complexity (limited low velocity and large pool habitat), riparian conditions, and sediment.
In the Project reach, the upper Grande Ronde River historically would have had both unconfined and confined channel reaches with alternating pool-riffle and run bedforms. Beechie et al. (2006) empirically determined based on regional data that intermediate sized unconfined channels that transport their sediment primarily as bedload and retain wood long enough to establish erosion-resistant points were transitional, and generally favored island-braided patterns in forested mountain systems. Beechie et al. (2006) data also shows that island-braided channels are continually adjusting to intermittent perturbations which sustains a high degree of successional states, resiliency, and habitat diversity. In general, island-braided riverine systems provide abundant peripheral and transitional habitats, and complex channel structure and bedforms resulting in the highest degree of biological diversity that supports both aquatic and terrestrial species during varying life stages.

Channel degradation has occurred in response to floodplain constriction from constructed roads, levees, and railroads, as well historical log transport operations by splash damming through the project reach. The quantity and force of logs moving along the channel are known regionally to have coarsened stream beds and severely truncated pool-riffle sequences.
Railroad grades, road grades, and levees through the floodplain create artificial channel constrictions and disconnected floodplains that have resulted in a single-thread, enlarged, and incised channel. Constriction increases flow depths, flow velocities, and shear stresses during high water events. The outcome is a wider, more uniform plane-bed armored channel.
Existing riparian vegetation conditions include scattered patches of woody shrubs and immature trees, and large areas of herbaceous vegetation with shallow rooting depths. Beavers are uncommon and no longer play a major role in wood delivery to the channel or maintaining diverse off-channel habitats and riparian conditions.

The Oregon Department of Environmental Quality (ODEQ) has identified many stream segments within the Upper Grande Ronde Subbasin as water quality limited (ODEQ 2010). Oregon's 1998 303(d) List of Water Quality Limited Waterbodies identifies nine parameters of concern: algae, bacteria, dissolved oxygen, flow modification, habitat modification, nutrients, pH, sedimentation, and temperature. Water quality parameters of concern within the Project reach include: dissolved oxygen, flow modification, habitat modification, nutrients, pH, sedimentation, and temperature. Water quality parameters (and standards) of temperature (64°F/55°F, rearing/spawning), dissolved oxygen (98% sat), habitat modification (pool frequency), and flow modification (flows) directly relate to the beneficial use for fish life. (NPCC 2004).

How have past or current land management practices contributed to the problem?

Fish habitat has been adversely affected by historic land uses, including livestock overgrazing, road construction, logging, channelization, and utility right of ways. Current channel conditions are out of balance with the sediment supply and disconnected from the historic floodplain, resulting in channels with high stream energy, little to no spawning gravel, limited velocity refugia, and lack of pool habitat.

Prior to Euro-American settlement and associated disturbances, the upper Grande Ronde River developed under an intermittent disturbance regime where flows, sediment inputs, and large wood dynamically interacted to create successional states. Riparian vegetation likely included woody species such as cottonwood (Populus), willow (Salix), river birch (Betula nigra) and alder (Alnus) of varying ages (seral stages). The upland areas adjacent to the active flooplain likely supported mature Ponderosa pine (Pinus ponderosa) and Douglas fir (Pseudotsuga menziesii) trees readily delivered to the channel through lateral channel migration and avulsion.

Beavers were common and played a vital role in the local delivery of wood to the channel and maintaining and diversifying the off-channel habitats and riparian conditions. Necessary wood sizes and quantities would have accumulated during high-water events to form transient logjams (i.e., bar apex jams and flow deflection jams). These logjams could have persisted long enough to create erosion-resistant hard points capable of forcing flow divergence that result in split-flow channels and floodplain-type side channels.

The role of beaver in riverine ecosystems has been well documented along with the benefits they provide for fish and wildlife species. Much of the Grande Ronde River and tributaries have been subject to extensive anthropogenic alterations which have contributed to degraded instream and riparian conditions and decreased habitat suitability for beaver. The current beaver population in the basin is thought to be extremely low, though no formal population census has been completed. Currently, beaver colonies within the system are geographically limited with isolated colonies found in suitable locations, and sporadic small populations that appear to be transient groups which typically dwell in bank lodges. Loss of floodplain and wetland habitat from historic conditions and associated loss of hydrophytic shrubs and trees (a primary food source) results in local beaver selecting poor locations for dam construction.

Project History

Continuation - Are you requesting funds to continue work on a project previously funded by OWEB where that work did not result in a completed project?

❍ Yes
● No

Resubmit - Have you submitted, but were not awarded an OWEB application for this project before?

❍ Yes
● No

Phased - Is proposed work in this application a phase of a comprehensive watershed restoration plan or project?

❍ Yes
● No

Plans and Salmon

Is the proposed restoration activity(ies) identified in a local assessment or other plan?

● Yes
❍ No

Provide name of local plan, Watershed assessment or other locally relevant document.

Bureau of Reclamation (Reclamation). 2014. Upper Grande Ronde River Tributary Assessment, Grande Ronde River Basin, Tributary Habitat Program, Oregon: Department of Interior, Bureau of Reclamation, Pacific Northwest Region, Boise, Idaho, 74 p.

ODFW, CTUIR, NPT, Washington Department of Fisheries, and Washington Department of Wildlife. 1990. Grande Ronde River Subbasin Salmon and Steelhead Production Plan. Columbia Basin System Planning. Northwest Power Planning Council. Columbia Basin Fish and Wildlife Authority.

Federal Columbia River Power System (FCRPS Biological Opinion (BiOp) (U.S. Bureau of Reclamation, Bonneville Power Association, US Army Corps of Engineers, 2004).

Northeast Oregon Snake River Recovery Plan (National Marine Fisheries Service, 2010); see p. 261 Re: increased sediment quantity; p. 258, riparian condition; p. 262, LWD recruitment and temperature; p. 260. side channel & wetland conditions, floodplain connection, anthropological barriers, in-stream structural complexity; p. 263. decreased water quantity.

NMFS [National Marine Fisheries Service]. 2014. Endangered Species Act Section 7(a) (2) Supplemental Biological Opinion. Consultation on Remand for Operation of the Federal Columbia River Power System. National Oceanic and Atmospheric Administration. NWR-2013-9562. Re: basin appropriate passage and limiting factors.

NMFS [National Marine Fisheries Service]. 2013. Draft Proposed ESA Recovery Plan for Snake River Spring/Summer Chinook salmon and Snake River Steelhead. National Marine Fisheries Service, Northwest Region. National Oceanic and Atmospheric Administration. Predecisional document, Accessed March 28, 2014. Re: limiting factors by species.

Will this project benefit salmon or steelhead?

● Yes

❍ No

✓Snake River Basin - Steelhead
✓Snake River Spring/Summer-run - Chinook Salmon

How will the resulting restoration project benefit salmon or steelhead or their habitat?

Summer and winter rearing habitat will increase in the main channel and side channels through (1) addition of large wood to provide cover and create pools, (2) creation of natural pool-riffle sequences and enhanced riparian vegetation to increase foraging opportunities for juvenile salmonids, (3) creation of additional side channel habitat by using historic side channel relic features within the reach that are currently disconnected, (4) creation of multiple locations of increased hyporheic exchange through increases in floodplain connectivity and the water table, construction of bar features, and alcove features providing thermal refugia with cooler temperatures in summer and warmer in the winter. As a whole, the design will increase the occurrence of low velocity refugia, increase the availability of open water habitat during the winter, and moderate winter temperatures to reduce anchor ice formation.

Juvenile emigration habitat will increase by adding the number and area of pools, creating additional side channels, alcoves, and off-channel habitat, and creating slow-water edge and cover habitat through the addition of large wood structures. Habitat for immigrating and holding adults will improve by decreasing summer temperatures and enhancing the availability of thermal refugia, creating new pool habitat, enhancing main channel passage during low-flow conditions by restoring natural width to depth ratios, and increasing complexity through the addition of large wood. Spawning habitat will increase by decreasing temperatures, augmenting spawning gravel, and creating thermal refugia for adults (reducing pre-spawn mortality). Conditions for spawning, incubation, and emergence will improve by natural gravel sorting through large wood placement.

Does the project address a restoration action identified in a regional assessment or recovery plan?

● Yes
❍ No

Regional Assessments or Recovery Plans
Northwest Power and Conservation Council Grande Ronde Subbasin Plan
Oregon's Native Fish Conservation Policy
Oregon Conservation Strategy
The Oregon Plan for Salmon and Watersheds

For each plan chosen above, describe how your project is consistent with specific recovery/restoration actions cited in that plan.

The NPPC Grande Ronde Subbasin Plan identifies restoration priorities for threatened salmonid species (table 46, page 193). The Project will address habitat limiting factors (sediment, riparian conditions, water quality) and will improve floodplain processes and function, reduce sediment delivery, increase channel complexity, and improve riparian conditions.

The intent of the Native Fish Conservation Policy is to provide a basis for managing hatcheries, fisheries, habitat, predators, competitors, and pathogens in balance with sustainable production of naturally produced native fish. The policy has three areas of emphasis. The first is defensive
to ensure the avoidance of serious depletion of native fish. The second is more proactive to restore and maintain native fish at levels providing ecological and societal benefits. The third ensures that, consistent with native fish conservation, opportunities for fisheries and other societal resource uses are not unnecessarily constrained. The Project goals and objectives are to support all three areas of emphasis and to ensure the conservation and

recovery of native fish.

The goals of the Conservation Strategy are to maintain healthy fish and wildlife populations by maintaining and restoring functioning habitats, preventing declines of at-risk species, and reversing declines in these resources where possible. The goals and objectives of the Project are to improve and restore functioning habitats for ESA-listed salmonid species.

The mission of the Oregon Plan for Salmon and Watersheds is "Restoring our native fish populations and the aquatic systems that support them to productive and sustainable levels that will provide substantial environmental, cultural, and economic benefits." The Project, using the CTUIR's River Vision as a guideline, will benefit native fish populations and aquatic systems by improving channel, floodplain, and riparian processes and function.

Does this project address one or both of the following:

✓ *Habitat needs for one or more Endangered Species Act-listed species and/or species of concern*

✓ *Concerns identified on 303(d) listed streams*

❑ *No*

Proposed Solution

Goal, Objectives, and Activities

State your project goal. A goal statement should articulate desired outcomes (the vision for desired future conditions) and the watershed benefit.

The long-term rehabilitation vision (CTUIR's River Vision) for the Middle Upper reach of the Grande Ronde River is to improve physical and ecological processes by rehabilitating and restoring the project area to achieve immediate and long-term benefits to chinook, steelhead, and bull trout at all life stages.

List specific and measurable objectives. Objectives support and refine the goal by breaking it down into steps for achieving the goal. (NOTE: If you quantify your objectives, ensure all numbers match the metrics listed in your selected habitat types.) Provide up to 7 objectives.

Objective #1

Objective

Increase the stability and functionality of previously constructed Phase I ELJs to withstand forces from high water velocities.

Helicopter placement of large key member wood pieces with rootwads will increase complexity and floodplain connectivity for fish, both within the river channel and along the floodplain, as well as sort and store sediment. Additions of channel spanning structures that slow water velocities will assist in evaluating the size and quantity of sediment through the project reach. Future project phases will evaluate and consider gravel augmentation at selected locations at or near large wood installation sites as well as potential to add additional wood material to the reach. Sediment sorting, storage, and potential future gravel augmentation could help in addressing the legacy effects of historical splash dam logging and impacts on suitable spawning and rearing habitat.

Benefits to ESA-listed and non-listed native fish species will be achieved through restoration and rehabilitation of the whole floodplain ecosystem. Targeting of present and specific limiting factors such as temperature, in-stream habitat conditions, and sediment loads will achieve immediate benefits to salmon. Long term benefits will be realized through a focus on restoring fluvial habitat-forming processes, floodplain and groundwater hyporheic connectivity, riparian and wetland plant communities, and instream complexity and diversity commensurate with the reach's natural potential.

Describe the project activities. Activities explain how the objective will be implemented.

ELJs constructed as part of Phase I, 2019 were done so utilizing helicopter-only wood placement; ground-based actions were unable to occur due to Section 106 permitting. As per original design recommendations these ground-based activities were intended to provide additional structural stability to helicopter-constructed ELJs. Actions included: trenching in select key members to increase ELJ stability, and boulders were designed to have been strategically placed in wood structures to wedge key members and provide additional ballast for structural soundness during high velocity flows.

Currently proposed project activities include helicopter-placement of 6 boulders within each of 44 previously constructed Type A ELJs to increase structural stability (approximately 264-300 boulders total will be added to wood structures within Phase I reach).

ELJ stability is required to ensure that the physical processes they are intended to influence and promote will continue to perform when confronted with high energy river velocities.

Previous project objectives for the ELJs themselves include promoting the following ecological and geomorphological processes:

- Increase the number and quality of large pools (>20m2, and >1m deep) in the main and/or side channels from <2/mile to >20/mile.

- Increase the number and frequency of LWM in the main and/or side channels by installing 304 (18” DBH) key members and 844 (8”-14” DBH) racking members.

- Increase habitat diversity, instream velocity breaks and cover through the addition of LWM (54 Engineered Log Jams).

- Create and enhance channel margin low water velocity areas in the main and/or side channels to improve juvenile rearing habitat.

- Expand on previously installed LWM structures to add lateral and vertical complexity to the channel planform and bed morphology (install 54 Engineered Log Jams) to increase hyporheic exchange.

- Increase diurnal buffering, decrease maximum daily temperatures, and allow access to cold water spring sources within the project area (temperatures within the project area are currently being monitored and will be monitored post-implementation).

- Re-invigorate self-sustaining native plant communities (multi-year/phase planting efforts) with diverse compositions and structures along channel margins and across the floodplain, including patches associated with beaver colony activity.

- Increase riparian vegetation to support overall bank stability, particularly in locations where habitat structures have been installed and along banks with increased hydraulic roughness that are susceptible to erosion from loss of root mass.

- Create self-sustaining in-channel hydraulics that support varied bed forms including deep pools and a range of particle sizes with smaller median particle size favorable to salmonid spawning (pre-project data will be collected prior to implementation and sediment transport models will be evaluated).

- Support diverse geomorphic processes, features, and patterns of sediment movement, sorting and deposition within the active channel(s).

- Increase the quantity of suitable habitat for juvenile Chinook winter rearing, based on the depth and velocity HSI curves per Favrot and Jonasson, 2014.

- Increase the quantity of suitable habitat for juvenile Chinook emigration.

- Increase the quantity of suitable habitat for juvenile Chinook summer rearing.

- Increase the quantity of suitable habitat for adult salmonid use including spawning and holding.

Installation of boulder ballast under this proposal will help increase structural stability and contribute toward meeting core project objectives and minimizing the risk of downstream migration of large wood material.

List the major project activities and time schedule for each, including post project implementation.

Element	Description	Start Date	End Date
Sec. 106 permitting	Start Date: 03/2015 Status: complete	3/2017	10/2017
NEPA Environmental Assessment	Start Date: 03/2016 Status: complete	3/2017	10/2017
HIP III Permit	BPA's Habitat Improvement Program Status: complete	9/2017	4/2018
Construction Contract Solicitation	Job announcement, bid requests, review and contract award	5/2021	5/2021
Mobilize, Staging	Acquire boulders, haul to staging area/landing zone, prepare for helicopter cabling. Coordinate traffic control	7/2021	7/2021
Boulder placement	Helicopter will fly boulders for placement within previously constructed 2019 Phase I ELJs	7/2021	7/2021

Element	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
Sec. 106 permitting																			
NEPA Environmental Assessment																			
HIP III Permit																			
Construction Contract Solicitation																			
Mobilize, Staging																			
Boulder placement																			

Habitat Types

In which habitat type(s) are you proposing to work?

✓*Instream Habitat: below the ordinary high water mark (includes in-channel habitat restoration, bank stabilization, flow, fish screening, and fish passage) -- Details will follow.*

❑*Riparian Habitat: above the ordinary high-water mark of the stream and within the stream's floodplain.*

❑*Upland Habitat: above the floodplain and improves native habitat and watershed function.*

❑*Wetland Habitat: land or areas covered, often intermittently, with shallow water or have soil saturated with moisture.*

❑*Estuarine Habitat: tidally influenced areas.*

Instream Habitat

Select all applicable Instream categories.

❑**Bank stabilization**

❑**Fish passage improvement**

❑**Fish screening project**

❑**Instream Flow**

✓Instream habitat restoration

Select all the actions you propose to implement to address the problem.

✓*Placement of materials in channel*

Does the proposed project follow:

✓*ODFW Guidelines*

✓*NOAA Guidelines*

✓*Other*

Specify

BPA HIP III Guidelines

What types of instream habitat materials are you proposing to install? (select all that apply)

❑*Large wood*

✓*Boulders*

Number of structures.

44

Average number of boulders per structure.

6

Average size of boulders per structure (feet)

3

❑*Combination log/boulder*

❑*Other materials: Materials that stabilize the streambed*

❑*Channel reconfiguration and connectivity, including alcoves and side channel reconnection*

❑*Spawning gravel placement*

❑*Beaver reintroduction*

❑*Non-native plant control*

❑*Nutrient enrichment*

❑*Animal species removal*

Is the primary purpose of the instream habitat restoration treatment(s) to address water quality limiting factors?

● Yes

❍ No

✓High Temperature

Total miles of stream to be treated with all instream habitat restoration treatments

2

❑Stockpiling logs

Wrap-Up

Watershed Benefit

Describe the watershed or ecosystem function(s) that the project will address through the proposed restoration actions and the resulting benefits to water quality, native fish and wildlife habitat, and/or watershed health. Explain why the project is a priority for investment at this time.

Engineered Large Wood Structures (ELWS) are intended to restore habitat complexity and diversity by creating and enhancing scour pools, by maintaining and improving side channel and floodplain connection, by increasing hydraulic complexity, and velocity refugia on active channel margins, by promoting gravel deposition, and by recruiting naturally occurring large wood.

In order for the previously constructed Phase I ELWS to effectively achieve the above objectives they must maintain composure under stress from high velocity river forces. The addition of boulder ballast within select wood structures will improve the likelihood that key member logs will remain in the intended strategic configuration as they were initially placed. In addition, incorporating structural support to Phase I ELWS will lengthen the time they remain intact, promoting the physical processes which drive the uplift of ecological factors important to salmonid survivability, as these processes can take multiple seasons of high water events to achieve.

Benefits to salmonids will be achieved through restoration and rehabilitation of the whole floodplain system. Targeting of present and specific limiting factors such as temperature will achieve immediate benefits to salmon. Long term benefits will be realized through a focus on restoring fluvial and habitat-forming processes, floodplain, groundwater, and hyporheic connectivity, riparian and wetland plant communities, and instream complexity and diversity commensurate with the reach’s natural potential. These habitat-forming processes are driven by the natural episodic disturbance regime that historically occurred prior to direct and indirect human modifications. Intermittent disturbances, such as floods, sediment delivery, wood accumulations, beaver activity, and associated channel dynamics foster and maintain a spatial mosaic and diverse range of aquatic and terrestrial habitats within a healthy riverine corridor.

Investing in proposed boulder additions is a priority due to having not implemented original design recommendations that suggest the addition of boulder ballast will increase structural stability of Phase I ELWS. Installation of boulder ballast under this proposal will help increase structural stability and contribute toward meeting core project objectives and minimizing the risk of downstream migration of large wood material.

Public Awareness

Does this proposed project include public awareness activities?

● Yes
❍ No

Describe these activities, as well as any related products, and explain how the proposed activities relate to the project's objectives.

Project partners (US Forest Service and CTUIR) will share information with the public, potential funders, local elected officials, and others to build their knowledge base, gain overall participation, and encourage the sharing of innovative ideas. Post-project tours will be conducted with members of the public, funding agencies, stakeholders, and school groups to inform interested parties of the benefits to the overall health of the watershed.

Design

Were design alternatives considered?

❍ Yes
● No

Select the appropriate level of design for your project.

❍ No design is required.
❍ 10-30%: Conceptual design (evaluation of alternatives, concept-level plans, design criteria for project elements, rough cost estimates).
❍ 30-85%: Preliminary design (selection of the preferred alternative, draft plans, draft design report, preliminary cost estimates).
● 85-100%: Final design (final design report, plans, and specifications, contracting and bidding documents, monitoring plan, final cost estimate).

If work remains on the project's design, describe the work that remains to be done and when you expect to have it completed. If no design is required put "N/A"

Describe the steps you will take to minimize adverse impacts to the site and adjacent lands during and after project implementation.

To minimize soil disturbance, compaction, and damage to riparian vegetation and culturally important locations, boulders will be transported and installed using helicopters. Adverse impacts to the site and adjacent land during and after project implementation will be minimized by following the mandatory conservation measures included in HIP III including:

1) Erosion control
2) Emergency erosion controls
3) Contaminants
4) Site layout and flagging.
5) Temporary access roads and paths.
6) Temporary stream crossings
7) Staging, storage, and stockpile areas
8) Equipment

9) Dust abatement
10) Spill prevention, control, and countermeasures
11) Invasive species control
11)Fish salvage
12)Site restoration
13)Revegetation

Project Management

List the key individuals, their roles, and qualifications relevant to project and post project implementation. At a minimum include the following: project management, project design, project implementation, and project inspection.

Role	Name	Affiliation	Qualifications	Email	Phone
Project Sponsor	Allen Childs	Confederated Tribes of the Umatilla Indian Reservation	Project management, design, implementation, and inspection experience	allenchilds@ctuir.org	(541) 429-7940
Project Sponsor	Jake Kimbro	Confederated Tribes of the Umatilla Indian Reservation	Project management, design, implementation, and inspection experience	jakekimbro@ctuir.org	(541) 429-7941
Fish & Wildlife Program Engineer (RRT)	Sean Welch, P.E.	Bonneville Power Administration	Project management, design, implementation, and inspection experience	spwelch@bpa.gov	(503) 230-7691
Project Partner	Bill Gamble	U.S. Forest Service	Natural resource management experience	bgamble@fs.fed.us	(541) 962-8582
Project Partner	Aric Johnson	U.S. Forest Service	Natural resource management experience	ajjohnson@fs.fed.us	(541) 962-8517
Project Sponsor	Travis Dixon	Confederated Tribes of the Umatilla Indian Reservation	Project management, design, implementation, and inspection experience	travisdixon@ctuir.org	(541) 969-2903
Project Partner	Sarah Brandy	U.S. Forest Service	Natural resource management experience	sbrandy@fs.fed.us	(541) 962-8590

Optional Monitoring

OPTIONAL: Restoration Project Monitoring

✓ *Salmonid Monitoring*
✓ *Non-salmonid biological monitoring*
✓ *Water (quantity) flow monitoring*
✓ *Water quality monitoring*
❑ *Rangeland monitoring*
✓ *Onsite*
✓ *Downstream*
✓ *Upstream*
❑ *Upslope*

Will effectiveness monitoring be conducted for this project?

● Yes
❍ No

Please describe the monitoring activities and any additional sources of funding (amount and source) to support this effort.

Effectiveness monitoring for this project will be conducted post-project and is designed to measure progress toward achieving the project objectives, inform maintenance needs, and provide input into whether the restoration project is trending towards or away from achieving project goals. Based on the project goals, physical and biological parameters will be monitored using standard field techniques that will produce data compatible with various monitoring protocols including:

• Scientific Protocol for Salmonid Habitat Surveys within the Columbia Habitat Monitoring Program (CHaMP) (CHaMP, 2015), (Roni, et al., 2013), (Stillwater Sciences, 2012). Designed to assess the quantity and quality of stream habitat for salmonids. Draws together methods from several protocols to collect and analyze channel geomorphic data (i.e. topographical features, channel units, and geomorphic reaches).
• Snorkel surveys (White, et al., 2011). Protocol for Snorkel Surveys of Fish Densities. A component of Monitoring Recovery Trends in Key Spring Chinook Habitat Variables and Validation of Population Viability Indicators. Snorkel surveys are carried out pre-project and post project by CTUIR RM&E.
• Chinook spawning surveys (Crump and Van Sickle, 2016). Protocol for monitoring redd distribution spatially and temporally. Protocol describes field methods of redd identification, data recording and reporting. Surveys are carried out yearly by CTUIR RM&E and ODFW Fish Research.
• Physical Habitat Monitoring Strategy (PHaMS) (Jones, et al., 2015). The goal of the PHaMS is to outline methods that are useful for capturing reach-scale changes in surface and groundwater hydrology, geomorphology, hydrologic connectivity, and riparian vegetation at restoration projects. PHaMS aims to avoid duplication with existing regional effectiveness monitoring protocols by identifying complimentary reach-scale metrics and methods that may improve the ability to detect instream and riparian changes.

Budget

Item	Unit Type	Unit Number	Unit Cost	OWEB Funds	External Cash	External In-Kind	Total Costs
Salaries, Wages and Benefits							
CTUIR Design, construction, inspection	Match Lump Sum	1	$15,000.00	$0	$0	$15,000	$15,000
			Category Sub-total	$0	$0	$15,000	$15,000
Contracted Services							
Boulder Acquisiton (USFS Donation)	Each	200	$50.00	$0	$0	$10,000	$10,000
Boulder Acquisition (purchase)	Each	100	$50.00	$0	$5,000	$0	$5,000
Boulder Haul to Stockpile/Staging Area	Each	35	$500.00	$0	$17,500	$0	$17,500
Boulder Drilling	Each	300	$100.00	$0	$30,000	$0	$30,000
Helicopter delivery and placement	Hours	30	$7,500.00	$0	$225,000	$0	$225,000
Helicopter mobilization (covered under USFS Middle Fly Proj)	Each	0	$0.00	$0	$0	$0	$0
Log deck management during helicopter flight	Hours	30	$185.00	$0	$5,550	$0	$5,550
Traffic control (Forest Road 51)	Each	1	$15,000.00	$0	$15,000	$0	$15,000
			Category Sub-total	$0	$298,050	$10,000	$308,050
Travel							
			$0	$0	$0	$0	$0
			Category Sub-total	$0	$0	$0	$0
Materials and Supplies							
			$0	$0	$0	$0	$0
			Category Sub-total	$0	$0	$0	$0
Equipment							
			$0	$0	$0	$0	$0
			Category Sub-total	$0	$0	$0	$0
Other							
			$0	$0	$0	$0	$0
			Category Sub-total	$0	$0	$0	$0
			Modified Total Direct Cost Amounts	$0	$298,050	$25,000	$323,050
Indirect Costs							
Federally Accepted 'de minimis' Indirect Cost Rate (up to 10%)		1.9996%			Indirect Cost Total: $0		
			Total	$0	$298,050	$25,000	$323,050

* = OWEB funds excluded from indirect.

If the budget includes unusually high costs and/or rates, provide justification for those costs and/or rates.

If the budget identifies a contingency amount for specific line item(s) within the Contracted Services and Materials and Supplies budget categories, explain the specific reasons a contingency is needed for each line item. Contingencies are line-item specific and cannot be used for other costs.

Funding and Match

Fund Sources and Amounts

Organization Type	Name	Source Note	Contribution Type	Amount	Description	Status
Tribe	Confederated Tribes of the Umatilla Indian Reservation		In-Kind - Labor	$15,000	Design, construction, inspection	Pending
Federal	Bonneville Power Administration		Cash	$298,050	Project implementation	Pending
Federal	United States Forest Service		In-Kind - Materials	$10,000	Boulder Acquisition	Pending
Fund Source Cash Total				**$298,050**	**Fund Source In-Kind Total**	**$25,000**

Match

Contribution Source-Type: Description	Amount
Confederated Tribes of the Umatilla Indian Reservation-In-Kind - Labor: Design, construction, inspection	$0
Bonneville Power Administration-Cash: Project implementation	$0
United States Forest Service-In-Kind - Materials: Boulder Acquisition	$0
Match Total	**$0**

Do match funding sources have any restrictions on how funds are used, timelines or other limitations that would impact the portion of the project proposed for OWEB funding?

❍ Yes
● No

Do you need state OWEB dollars (not Federal) to match the requirements of any other federal funding you will be using to complete this project?

❍ Yes
● No

Does the non-OWEB cash funding include Pacific Coast Salmon Recovery Funds?

❍ Yes
● No

Uploads

Project Design: MUGR Design Final.pdf **- Design Drawings**

Project Design: MUGR Phase 1 Boulders and Anchoring Feb 2020 Reduced.pdf **- Design Drawings**

Project Design: UGRRCanyonRestorationProjectGRMWProspectus.pdf **- Funding Proposal**

Map: MUGRR Phase I Overview Map.pdf **- MUGRR Overview Map**

Map: MUGRR Helicopter Wood Access Map.pdf **- Helicopter wood access map**

Figures and Tables: MUGR Boulder Budget May 2020.pdf **- MUGR Boulder Budget May 2020**

Permit Page

Project Activity Requiring a Permit or License	Name of Permit or License	Entity Issuing Permit or License	Status
Fill/Removal	DSL/Army Corps Joint Permit Application (JPA)	Oregon Department of State Lands/ U.S. Army Corps	Completed
River, Stream, Floodplain, and Wetland restoration	HIP III	NOAA/USFWS	Completed
Restoration activities on Forest Service land	NEPA Environmental Assessment	U.S. Forest Service	Completed
Ground disturbing activities	Section 106 SHPO Concurrence	Oregon State Historical Preservation Office (SHPO)	Completed

Prospectus of Proposed Project Opportunity

Opportunity Title: Upper Grande Ronde River Canyon

Opportunity Lead

Allen Childs/Jake Kimbro
Confederated Tribes of the Umatilla Indian Reservation
(541) 429-7940, (541) 429-7941
allenchilds@ctuir.org, jakekimbro@ctuir.org

Technical Contact

Allen Childs/Jake Kimbro
Confederated Tribes of the Umatilla Indian Reservation
(541) 429-7940, (541) 429-7941
allenchilds@ctuir.org, jakekimbro@ctuir.org

Landowner

USA, Wallowa-Whitman National Forest
Attn: Bill Gamble, District Ranger
(541) 963-8582
bgamble@fs.fed.us
Contacted: Yes
Supportive: Yes
Contribution: Design input, environmental compliance

River

Name: Grande Ronde River
Mile: 156.1-164.2
Tributary – Snake River

Restoration Atlas

BSR: UGR15
Tier: 1

Initial Score:
Proposed Score:

Restoration Activities

1. Protect Land and Water (Easement, Acquisition)
2. Channel Reconstruction
3. Pool Development
7. Levee Modification: Removal, Setback, Breach
9. Restoration of Floodplain Topography and Vegetation
11. Perennial Side Channel
12. Secondary (non-perennial) Channel
13. Floodplain Pond-Wetland
14. Alcove
15. Hyporheic Off-Channel Habitat (Groundwater)
16. Beaver Restoration Management
18. Riparian Buffer Strip, Planting
24. Add Nutrients
27. LWD Placement
28. Modify or Remove Armoring
31. Improve Thermal Refugia (spring reconnect, other)
35. Road Decommissioning or abandonment

Species Affected

Focal: Snake River Spring Chinook Salmon, Snake River Summer Steelhead, Bull Trout, Pacific Lamprey

Description

The Upper Grande Ronde River Canyon Fish Habitat Enhancement Project is located in the Upper Grande Ronde Subbasin along the Grande Ronde River between RM 156.1 and RM 164.2. The Project reach sits at an elevation of approximately 3,400-4,000 feet within a watershed area of 475 mi2, which is predominantly snowmelt-driven. Most of the basin is forested (over 73 percent) and has very little development (less than 0.1 percent estimated impervious area) (USGS 2014). The Project reach is located within the Wallowa-Whitman National Forest along USFS Road 51 within the Grande Ronde recovery plan assessment unit UGR15.

The Project is a continuation of habitat restoration actions conducted by the US Forest Service (primarily large wood additions). Conceptual strategies include: 1) identifying and prioritizing response reaches within project area for improved floodplain connection and side channel habitat creation; 2) Utilizing apex Engineered Log Jams (ELJs) to force

split channel flow and increase habitat complexity and diversity, particularly in areas identified under strategy #1; and 3) Installation of channel spanning wood structures to increase depth and decrease velocity to mimic onsite examples exhibiting these key habitat conditions (e.g, ELJ's, natural wood, and beaver dams). Potential large wood sites include previous and existing large wood sites as well as additional locations with potential for achieving depth and velocity objectives. The Project area presents a large-scale and significant opportunity to expand, create, and enhance core spawning and rearing habitat for ESA listed spring-summer Chinook salmon and summer steelhead.

Channel degradation has occurred in response to floodplain constriction from constructed levees and railroads, as well historical log transport operations by splash damming through the project reach. Railroad grades, road grades, and levees through the floodplain create artificial channel constrictions and disconnected floodplains that have resulted in an enlarged and incised channel. Constriction increases flow depths, flow velocities, and shear stresses during high water events. The outcome is a wider, more uniform plane-bed channel with limited quantities of large woody material (LWM). Historical splash dam and log transport originating from upstream of the project reach also resulted in a degraded channel. The quantity and force of logs moving along the channel are known regionally to have coarsened stream beds and severely truncated pool-riffle sequences.

Existing riparian vegetation conditions include scattered patches of woody shrubs, deciduous and conifer forest, and areas of herbaceous plants that grade into coniferous forests. Beavers are uncommon and no longer play a major role in wood delivery to the channel or maintaining diverse off-channel riparian and wetland habitats, although beaver activity and beaver dams in particular likely played a vital role in maintaining and diversifying historic off-channel habitat.

Where beaver activity was prevalent within the response reaches on the Upper Grande Ronde River, the impacts could have included considerable low velocity off-channel areas. Beaver activity would have promoted a network of ponds and/or wetlands connected by single or multiple transportation routes that resulted in floodplain complexity. Beaver dams would have also provided increased sediment retention and increased groundwater recharge and retention, which may have increased in-stream flow at baseflow conditions. The off-channel wetland complexes associated with beaver activity would have provided increased total area of available fish habitat. Beaver dams also contributed to reduced water velocities, attenuated peak flows, and increased area of riparian vegetation (Pollock, Heim, and Werner 2003).

The long-term rehabilitation vision (CTUIR's River Vision) for the Upper Grande Ronde Canyon Fish Habitat Enhancement Project is to improve physical and ecological

processes by rehabilitating and restoring the project area to achieve immediate and long-term benefits to chinook, steelhead, and bull trout at all life stages, as well as providing habitat for pacific lamprey and freshwater mussels.

Objectives

- Increase the number and quality of large pools in the main and/or side channels.
- Increase the number and frequency of LWM in the main and/or side channels.
- Increase habitat diversity, instream velocity breaks, and cover through the addition of LWM.
- Create and enhance channel margin low water velocity areas in the main and/or side channels to improve juvenile rearing habitat.
- Expand on previously installed LWM structures to add lateral and vertical complexity to the channel planform and bed morphology to increase hyporheic exchange.
- Re-invigorate self-sustaining native plant communities with diverse compositions and structures along channel margins and across the floodplain, including patches associated with beaver colony activity.
- Increase riparian vegetation to support overall bank stability, particularly in locations where habitat structures have been installed and along banks with increased hydraulic roughness that are susceptible to erosion from loss of root mass.
- Provide the physical, geomorphic, and ecologic conditions that buffer diurnal and seasonal water temperature fluctuations within the project area and allow access to cold water spring sources.
- Create self-sustaining in-channel hydraulics that support varied bed forms including deep pools and a range of particle sizes with smaller median particle size favorable to salmonid spawning.
- Support diverse geomorphic processes, features, and patterns of sediment movement, sorting and deposition within the active channel(s).
- Increase the quantity of suitable habitat for juvenile Chinook winter rearing, based on the depth and velocity HSI curves per Favrot and Jonasson, 2014.
- Increase the quantity of suitable habitat for juvenile Chinook emigration.
- Increase the quantity of suitable habitat for juvenile Chinook summer rearing, based on the depth and velocity HSI curves per Maret et al., 2006.
- Increase the quantity of suitable habitat for adult salmonid use including spawning and holding.

Major Risks

Project area access is difficult due to the confined canyon, limited staging areas, and the presence of Forest Road 51. Risks associated with downstream private landowners include potential for downstream large wood migration. Additional risks include potential

impact to Forest Road 51 road prism associated with high flow events and road prism erosion. Risk elements will be incorporated into design and evaluated.

Permits and Consultation

ESA Section 7 - USFWS: Applicable
ESA Section 7 - NMFS: Applicable
COE/DSL Permit: Applicable
Cultural Resources Section 106: Applicable
DEQ 401 Water Quality Permit: Applicable

Project Schedule

Year: 2018-2020

Monitoring:

A juvenile Chinook overwintering tracking study began in 2014 to identify locations and preferred micro habitat (ODFW, 2014), and a rotary screw trap operated by ODFW is located within the project reach. Water temperature monitoring and fish presence and use monitoring began in 2009 and is ongoing. Aerial photo points will be established in 2017 to provide comparative progress of riparian condition, vegetation, channel conditions, and habitat complexity. Stream Channel morphology (profile, cross sections, and pebble counts) will be conducted pre and post-project and a 2-dimensional HEC-RAS model is currently being developed. A carcass addition evaluation conducted by the Columbia Inter Tribal Fish Commission (CRITFC) will begin summer, 2017.

Project Relations

Multi-phase Effort: Yes. Due to the size and scale, the project will likely be implemented in 2-3 phases.

Phase Description: Phase 1-2018, Phases 2-2019, Phase 3, 2020

Could Phase 1 be a Stand Alone Project: Yes

Preliminary Cost Estimate

Total: $
BPA Funding: $
OWEB FIP Funding: $
Total Needed: $

Design Funding

Design Funds Requested: No
Design Option: N/A
Type of Work: N/A
Specialties: N/A

MUGRR Canyon Overview Map

UGRR CL

USFS Boundary

MUGRR Phase I

Large wood locations

N

W E

S

0 0.25 0.5 Miles

Grande Ronde River Basin

Milton-Freewater
Helix
Athena
Weston
Adams
Pendleton
Mission
Elgin
Wallowa
Summerville
Imbler
Island City
La Grande
Cove
Union
North Powder
Haines
Project Vicinity
Sources: USGS, ESRI, TANA, AND

0 5 10 Miles

Umatilla Indian Reservation

County Boundary

Grande Ronde Basin

Scale

0 0.25 0.5 Miles

N

W E

S

Large Wood Landing

1.1 Miles

MUGRR Project Area

1.5 Miles

2 Miles

MUGRR
Large Wood
Helocopter Access Map

- Large Wood Locations
- Potential Helicopter Flight Paths
- Logging Access Road
- USFS Boundary
- MUGRR Phase I

BUDGET

Totals automatically round to the nearest dollar

A	B		C	D	E	F	G	H
Itemize projected costs under each of the following categories:	**Quantity**	**Unit**	**Unit Cost**	**OWEB Funds**	**BPA Funds**	**Cash Match**	**In-Kind Match**	**Total Costs**
	(e.g., # of hours)	Unit	(e.g., hourly rate)					(add columns D, E, F)
SALARIES, WAGES AND BENEFITS. List position titles, include only costs of employees charged to this grant.								
CTUIR Design, construction, inspection	1	unit	$15,000				15,000	15,000
SUBTOTAL (1)				0	0	0	15,000	15,000
CONTRACTED SERVICES. Labor, supplies, and materials to be provided by *non-staff* for project implementation.								
Boulder Acquistion, Hauling, and Drilling								
Boulder Acquisiton (USFS Donation)	200	each	$50				10,000	10,000
Boulder Acquisition (purchase)	100	each	$50		5,000			5,000
Boulder Haul to Stockpile/Staging Area	35	loads	$500		17,500			17,500
Boulder Drilling	300	unit	$100		30,000			30,000
Construction								
Helicopter delivery and placement	30	hours	$7,500		225,000			225,000
Helicopter mobilization (covered under USFS Middle Fly)	0	unit			0			0
Log deck management during helicopter flight	30	hours	$185		5,550			5,550
Traffic control (Forest Road 51)	1	unit	$15,000		15,000			15,000
SUBTOTAL (2)				0	298,050	0	10,000	308,050
TRAVEL. Mileage, per diem, lodging, etc. Must use current State of Oregon rates.								
								0
								0
SUBTOTAL (3)				0	0	0	0	0
MATERIALS/SUPPLIES. Refers to items that are "used up" in the course of the project. Costs to OWEB must be directly related to the implementation of this grant.								
							0	0
SUBTOTAL (4)				0	0	0	0	0
EQUIPMENT/SOFTWARE. List portable equipment costing **$300** or more per unit. Must remain property of a governmental entity, tribe, watershed council, SWCD, institution of higher learning or school district.								
								0
								0
SUBTOTAL (5)				0	0	0	0	0
OTHER. Costs must be necessary and reasonable for successful completion of this grant.								
								0
SUBTOTAL (6)				0	0	0	0	0
[Add subtotals above] MODIFIED TOTAL DIRECT COSTS (7)				0	298,050	0	25,000	323,050

A	B		C	D	E	F	G	H
Itemize projected costs under each of the following categories:	**Quantity**	**Unit**	**Unit Cost**	**OWEB Funds**	**BPA Funds**	**Cash Match**	**In-Kind Match**	**Total Costs**
	(e.g., # of hours)	Unit	(e.g., hourly rate)					(add columns D, E, F)
GRANT ADMIN. Select one of the methods below. Fill in the requested rate. Compute by multiplying MTDC (7) line by this rate.								
Federally Negotiated Indirect Cost Rate	☐							0
Federally Accepted 10% *de minimis*	☐							0
OWEB Negotiated Indirect Cost Rate	☐							0
SUBTOTAL (8)				0	0	0	0	0
POST-GRANT. Pre-paid costs ($3,500 or less) that are associated with either post implementation status reporting or effectiveness monitoring or plant establishment costs. List each separately.								
Post-Implementation Status Reporting ($3,500 or less)	/yr							0
Effectiveness Monitoring ($3,500 or less)	/yr							0
Plant Establishment ($3,500 or less)	/yr							0
SUBTOTAL (9)				0	0	0	0	0

GRANT BUDGET TOTAL *Totals automatically round to the nearest dollar

GRAND BUDGET TOTAL **[Add Totals (10), (11), and (12) as applicable]**	0	298,050	0	25,000	323,050