Grande Ronde Model Watershed

1114 J Avenue

La Grande, OR

(541)-663-0570

GRMW PROPOSAL APPLICATION - DRAFT

Project/Application Title: Lookingglass Bridge Construction

Submitted By: Deric Carson

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GRMW Request Amount: 510,000.00

Total Cost Share: None

Total Project Cost: None

Invoice Information (If GRMW is the fiscal agent)

Mary Estes GRMW Fiscal Manager

1114 J Avenue

La Grande, OR 97850

541-663-0570

mary@grmw.org

This proposal is for a RESTORATION type project!

Location/Abstract

General Location	Downstream Extent	Upstream Extent
Latitude: 45.7484820	Latitude: 45.7504790	Latitude: 45.7487410
Longitude: -117.8999610	Longitude: -117.8859780	Longitude: -117.9174870

Due to a limitation of the framework tool used to create PDFs, we are unable to display the opportunity map within this document. However, you may still view the opportunity map using the following link:
Opportunity Map Link

The Lookingglass project is located on a 666 acre conservation property acquired by CTUIR and BPA in 2015 for fish and wildlife conservation purposes. The property is located in the UGR1 assessment area of the Grande Ronde Atlas, 13 miles north of Elgin, Oregon. The project encompasses 3 miles of mainstem Lookingglass Creek and over 80 acres of historic floodplain that has been altered by road and bridge construction, channelization, pond construction, livestock grazing and timber harvest. The project area provides important habitat for CTUIR First Foods, including spring-summer Chinook salmon, summer steelhead, bull trout and resident species. The Lookingglass watershed is an important cold water refuge in the Grande Ronde Basin. Habitat limiting factors include: instream and floodplain structure and complexity, side channel and wetland habitat, and riparian condition. Significant opportunity exists to restore floodplain process and function to expand spawning and rearing habitat capacity and quality.

Proposed habitat actions include channel and floodplain grading, large wood and boulder additions, relocation of an existing undersized bridge to improve floodplain and geomorphic process as habitat quality.

This proposals seeks to secure funding to remove and relocate floodplain infrastructure critical to the restoration of the floodplain in the project reach.

Stepwise & Atlas

Prospectus submitted and review by Atlas Implementation Team: Yes

Project prospectus title and/or ID# (if applicable): Lookingglass Bridge Planning and Construction

Associated Subwatershed: UGR-1

Associated Opportunity: UGR-1 - Lookingglass 4.3 - 6.6 (Node)

Problem Statement & Opp Score

The problem statement described the critical/limiting life stages and limiting habitat factors identified in the Atlas for the subwatershed in which this project is located and explain which of these species, life stages and limiting factors will be addressed in this project (how the problems will be addressed should be discussed in the 'Proposed Solution' section). This includes past land use history with respect to the project reach and larger watershed—especially any land use that has led to the current impaired condition.

Degradation of instream and riparian habitat in the Grande Ronde Basin has been the dominant in-Basin cause of salmon and steelhead decline (NPCC, 2004). Land use activities since the early 1800s include beaver trapping, logging, splash damming, grazing, mining, channelization, water withdrawals, road and railroad construction, and urban development. Past activities have degraded aquatic habitat conditions with extensive channel simplification (White et al. 2017, pg. 212-213), loss of large pool habitat (McIntosh, 1994), significant thermal loading, and loss of cold-water refuge (Justice et al. 2017, Ebersole et al. 2003).

Anthropogenic alterations to the floodplain like, road and bridge construction, pond construction, and floodplain structures have impacted project reach and created a stream that is largely confined, high gradient with interspersed floodplain segments, homogonous, plane bed riffle-run channel form that lacks habitat diversity, complexity, and large pools, with altered sediment regime, and fair riparian condition. Spawning habitat is extremely limited in portions and mostly confined to the upper reaches of the project area. Rearing habitat is limited in most areas due to lack of pool habitat, instream complexity, and access to floodplain.

Both spring Chinook and summer steelhead runs in Lookingglass Creek are listed as threatened under the Endangered Species Act as part of the Snake River ESU. Currently, 128.9 miles of perennial streams exist within the Lookingglass Creek drainage, of which approximately 2.5 miles (2%) support spring Chinook spawning and rearing for returning hatchery fish only (Lovatt 2003). Historically, an endemic Lookingglass Creek spring Chinook population spawned and reared in 13.6 miles (11%) of the drainage's streams (Lovatt 2003). Although endemic Lookingglass Spring Chinook were extirpated from the basin, Lookingglass Creek contains critical brood stock genetics for ESA listed Catherine Creek Spring Chinook.

Final Opportunity Score (Atlas opportunity score)

None

Permits

All permits associated with the project are listed below along with a date of acquisition and date of expiration.

Permit Name	Date Acquired	Expiration Date
Section 106 Consultation	May 1, 2024	None
HIP	None	None
DSL/USACE	None	None
Fish Passage	None	None

Restoration Actions

Below is a list of all restoration actions applicable to this project.

Restoration Action	Justification
8. Remove - Relocate Floodplain Infrastructure	Relocating the bridge is not a stand alone project. In the lower reach of the project area, Lookingglass Creek is confined to valley slope and extremely incised. Relocating the bridge out of the floodplain will allow habitat restoration planning to meet project objectives. Leaving the bridge intact would result in a net loss of approximately 30 floodplain acres to habitat construction in 2026.

Proposed Solution

The proposed solution states the project goals and articulates the expected outcomes of the project. It explains how the restorations actions selected will address the problems stated in the problem statement.

CTUIR seeks to return the Lookingglass Creek project area to historic functioning capabilities to not only improve habitat for native fish species, but also to provide suitable habitat to promote the return of wildlife and native plants throughout the full range of the local food web.

Relocating the bridge out of the floodplain aims to compliment habitat planning to achieve maximum ecological uplift in the project area. Goals for the habitat project are as follows:

- Increase floodplain connectivity and frequency of inundation to a ondition closer to historical and natural form. Re-engagement of the floodplain will result in flows that are less confined, decreased stream power, increased and more variable gravel deposition, elevated groundwater tables, increased base flows, and decreased water temperatures. Hyporheic flow and native riparian species will thrive.
- Increase channel complexity with channel morphology (channel form, sinuosity, complexity, geomorphic and hydrograph stability) closer to historical and functional form especially wood, pools, and a diversity of bed material sizes.
- Increase stream velocity diversity at both low and high flows.
- Increase quantity and quality of habitat diversity, especially large wood and pools.
- Increase rearing habitat in the floodplain.
- Reestablish geomorphically appropriate sediment sorting and routing.
- Improve and reestablish in-stream thermal diversity throughout the year.
- Improve quality and diversity of in-stream and off-channel habitat for resident and anadromous fish in Lookingglass Creek by increasing locations suitable for adult spawning and increasing area available for juvenile rearing.
- Restore natural channel forming processes through the addition of large wood to increase channel complexity, and restoration of sediment routing processes through the removal of levees and other floodplain impediments.
- Reestablish native floodplain plant communities and riparian function with site-appropriate native vegetation and off-channel habitat. Realistic, cost-effective planting plans will maximize plant survival and minimize labor and maintenance; the planting plan will reflect CTUIR First Food values.

Objectives

The table below quantifies the appropriate indicators this project will include. Each indicator has a measured current condition, an action taken, a restored condition (post-restoration), a set target condition, and justification/citation explaining why the action will work. Each indicator also includes whether or not the objective will be monitored.

Indicator	Current Condition	Action Taken	Restored Condition	Target Condition	Citation	Monitored?
Quantity of accessible fish habitat	23.0	34.0	57.0	N/A		Yes

Reporting Requirements: In addition to the objectives outlined above, sponsors who receive funding through GRMW understand they will be required to resubmit the indicators/objectives table and budget after implementation to verify that work was completed as proposed and on budget. If there were any deviations from the proposed actions or budget they will be asked to explain those deviations at that time. If they plan to submit a completion report to BPA or a similar organization, they may include this table as a part of the completion report to meet this requirement. Please note that if they wish to recreate this table in their own document that it must include "proposed" and "actual" columns to accurately reflect the work completed.

Objectives Narrative

Objective Narrative: This block explains why the objectives selected are relevant to this project and why/how the actions selected in the Restoration Actions section should result in the restored condition proposed.

Lookingglass Creek through the project area is impacted by historic anthropogenic alterations like, channelization, floodplain leveling, floodplain infrastructure, pond construction, grazing, logging, and road construction. As a result, the existing creek is a high gradient, channelized, single thread system with coarse sediment, and lack of floodplain connection. Moving the bridge to the geologic control in the lower part of the valley will allow habitat restoration action to meet restoration targets in the project reach. The potential for ecological uplift in the project area would be drastically reduced if the current bridge is left intact. The project footprint would be reduced by approximately 30 floodplain acres.

Explain Target Condition: This block explains why any of the restored conditions of any objectives selected do not meet the target condition. If all restored conditions meet the corresponding target condition, then this field will appear blank.

Additional Objectives: This block includes any additional objectives not captured in the objectives table. Objectives should be specific, measureable, achievable, relevant, and time-bound.

Climate Change Concerns: This block explains considerations made regarding how this proposed work may address climate change concerns.

Climate change is perhaps the greatest threat to Tribal First Foods and other ways of life integral to the cultural, spiritual, and community of the Tribes, specifically viability and access to salmon, steelhead, and other native fish populations given the already degraded status of watershed and floodplain health. Grande Ronde Basin habitat and fishery resources have been affected by severely degraded habitat and an altered thermal regime exacerbated by loss and alteration of floodplains, channel morphology, groundwater recharge, wetlands, and riparian vegetation. Human-caused CO2 emissions have contributed to a summer warming trend in Pacific Northwest streams of approximately 0.14–0.27 °C per decade between 1976 and 2015. These warming trends are expected to contribute to range contraction and decreased capacity of salmonids in the basin. Climate change is expected to alter snowpack and availability of low flow water resources, as well as increase pathways for invasive species which can have adverse effects on habitat. Climate modeling predicts that by 2070–2099 stream temperatures will increase between 2 and 6 °C across most of the Columbia River Basin. Restoring floodplain connectivity, restoring streamflow regimes, and re-aggrading incised channels are most likely to ameliorate streamflow and temperature changes associated with climate change, thereby increasing salmonid habitat diversity and population resilience. Additionally, reconnecting and/or creating side-channels, removing and/or setting back levees, and re-meandering straightened channels can buffer peak flow increases by storing floodwater and reducing flood peaks and can increase the availability of velocity and thermal refugia. Levee removal and increases in channel planform complexity can also increase the length of hyporheic flow paths through floodplains, which buffers fluctuations in stream temperature.

Previous Work: This block describes any previous work implemented in this reach and how this project connects to or builds upon those previous efforts.

No prior work has been implemented in this project reach.

Other Species: If there any other sensitive or listed species, aquatic or terrestrial, impacted by this project, this block lists them and explains how they might be impacted by this project.

Spring Chinook

Summer Steelhead

Bulltrout

Is this a phased project?

Yes

If this is a phased project, can this phase be a standalone project?

No

Monitoring

This table shows all objectives specified for monitoring. It explains who will be performing this montitoring, how it will be implemented, how long it will take place for, whether or not it will be shared or available to Atlas partners, and how that data will be shared/made available.

Monitoring Indicator	Monitor	Protocol	Time Monitored (yrs)	Availability/Sharing
	CTUIR Fish Habitat/ RM&E		Indefinitely	Monitoring will take place following the implementation of the habitat designs.

Landowner Engagement

The following table is applicable to projects which take place on private property. It lists the relavant landowners involved in the project, the landowner agreement, whether or not neighboring landowners have been contacted, and whether or not there were any issues identified (resolved or unresolved) concerning the landowner.

Landowner	File (Click to Download)	Neighbors Contacted?	issues
CTUIR	None	No	

Timeline

Will this project be completed within 2 years if awarded funding? Projects that will be completed in the first year of the contract in-water work window will be given funding priority over out-year projects (applies to restoration projects only).

Yes

Designs

Level of Current Designs:

80%

Alternatives Analysis:

Alternatives for bridge relocation were analyzed during planning of the greater habitat work to be implemented on the Lookingglass Creek Project Area. The alternatives were as follows:

- Alternative 3 - Do nothing, leave the bridge, valley bottom, and small cabin in place and adjust the habitat design to incorporate those floodplain features.
- Alternative 2 – Remove the bridge and road from the floodplain. Seek alternative access to the project area through adjacent private lands via an easement.
- Alternative 1 – Remove all structures out of the floodplain (Road, Bridge, Cabin). Relocate bridge down valley to natural geomorphic control, and relocate road upslope of the historic floodplain.

Alternative 1 selected as the preferred alternative for several reasons. The property in which the project is planned is owned by the CTUIR. The property is protected in perpetuity for conservation and an outlet for tribal members to exercise their treaty rights for hunting, fishing, and gathering. Without full uninhibited access to the property, it puts tribal members at risk of exercising their traditional rights. Additionally, there is over a decade of research being conducted by the CTUIR RM&E (Research, Monitoring, and evaluation) program. Access to the property is imperative to monitoring the success of a large scale fish habitat project and the associated response to restoration actions. Finally, valley restoration projects are an emerging design and construction tactic for restoring floodplain function and process. It is vitally important that access to the project area remains for any adaptive management needs that may arise.

Additional Comments:

Brudge abutment design are likely to change once a contractor is under contract to implement. The rail car bridge specified for the project can come in two different load bearing configurations. Once a contractor secures a bridge, the abutment design will be adjusted to accomodate.

Connection of floodlplain area and quantity of accessible fish habitat metrics listed under objectives tab will be reported as part of the habitat work.

Designs File:

Download Designs File: Open File in Web Browser

Budget

Download Budget File: Open File in Web Browser

Budget Narrative: This block explains the budget and any unusual line items or costs.

The budget includes a line item for lower bridge decking and installation. In order for construction equipment to access the project area, the bridge decking will need to be improved for heavy machinery.

The engineers opinion of probable construction cost (EOPCC) is likely high due to uncertainty with steel and concrete markets. Total construction cost is likely to be less than EOPCC

Additional Files

File Name (Click to Download)	Description
Open File in Web Browser	Technical memorandum for fish passage and bridge design.

Signature

Signature	Accepted Terms	Draft Signed	Final Signed	Date Signed
Deric Carson	Yes	Yes	No	March 4, 2025

The signature below affirms everything the applicant has entered into this document is true and accurate to the best of their knowledge and that they agree to stipulations previously outlined in this application such as the sharing of media and reporting requirements should the project be approved by the GRMW Board of Directors.

Deric Carson
Applicant Digital Signature

March 4, 2025
Date Signed (Most Recent)