



GRMW PROPOSAL APPLICATION - FINAL

Project/Application Title: Willow Creek Royes Fish Passage Design

Submitted By: Aaron Bliesner

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GRMW Request Amount: 64659.00

Total Cost Share: 89959.00

Total Project Cost: 154618.00

Invoice Information (If GRMW is the fiscal agent)

Mary Estes GRMW Fiscal Manager

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This proposal is for a IA type project!

Location/Abstract

General Location	Downstream Extent	Upstream Extent
Latitude: 45.4894100	Latitude: 45.4894100	Latitude: 45.4894100
Longitude: -117.9795080	Longitude: -117.9795080	Longitude: -117.9795080

Opportunity Map Unavailable - Either an opportunity has not yet been linked to this project or the linked opportunity does not yet have a map location.

The Royes Dam project is part of a larger effort called the Free Willow, Lower Willow Creek Fish Passage project and is intended to improve passage for adult Chinook Salmon and steelhead. The project will allow adult Chinook salmon passage into the Willow basin for the first time in over 70 years. In addition, this project will allow juvenile salmonids both upstream and downstream passage for large portions of the year while stream temperatures allow.

The construction of the Royes and Huber irrigation dams in the 1950's created physical obstructions for salmonid migration into the Willow Creek Watershed. Anecdotal information from early fishing reports indicate that Chinook were abundant in the watershed. Passage of adult salmonids upstream and juvenile salmonids downstream is potentially completely blocked as early as March of each year. Although some adult steelhead pass through the dam prior to the installation of flashboards, Chinook salmon adults moving into Willow Creek in the early summer months are completely blocked from upstream migration. Chinook have not been documented in the Willow Creek basin since the construction of the Huber and Royes dams.

Fish passage at these lower Willow Creek irrigation diversions has been a high priority identified as a significant limiting factor for the recovery of endangered Chinook and steelhead populations in the Upper Grande Ronde basin. The District has installed a concrete fishway at the lower Huber Dam during the summer of 2022. The Royes Dam is a flashboard weir that generally functions from April to October each year. When the flashboards are in the structure, an 8- to 10-foot barrier is created without a jump pool. During the season of operation this structure eliminates all salmonid migration. The District has secured the support of the 5 irrigators relying on the backwater from the Royes diversion dam to construct a rock ramp to back water up and eliminating the need for the dam structure. District staff and project partners have worked on fish passage at these sites for the past 20 years. For the first time in that span, the water users are on board to make fish passage a reality.

Fish passage design has focused on collecting data to inform the creation of individual pump sites at four different locations above the Royes Dam and eliminate the need for flashboard installation. The primary path of investigation is a roughened channel alternative. Survey data was collected at each site and hydraulic analysis performed to assure channel modifications will not lead to increased flooding and channel instability. Funding provided by ODFW allowed the District to complete project design to the 80% level. Funding deliverables for this Technical assistance grant project will include final designs and all required permitting.

Stepwise & Atlas

Prospectus submitted and review by Atlas Implementation Team: Yes

Project prospectus title and/or ID# (if applicable): Free Willow, Lower Willow Creek Fish Passage Design

Associated Subwatershed: UGR-4

Associated Opportunity: UGR-4 - Willow 1.7 - 3.5

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.

The construction of the Royes and Huber irrigation dams in the 1950's created physical obstructions for salmonid migration into the Willow Creek Watershed. In combination with instream flow limitations during key times of the year, passage of adult salmonids upstream and juvenile salmonids downstream is potentially completely blocked as surface flow decreases. Although adult steelhead are able to pass over the dams at higher flow, spring/summer Chinook Salmon adults moving into Willow Creek in the early summer months are specifically impacted by the decrease in instream flow and installation of stoplogs in the diversion structures. The Huber dam has had a fish ladder installed and is now passable.

Migration timing for salmonids can vary by location, species and age class. Steelhead adults typically enter the Willow Creek drainage beginning in March and extending through mid-June. Juvenile steelhead outmigration timing varies with the age of the fish, but most often coincides with increases in stream discharge in the spring and fall.

Little information is known about the upstream migration patterns of juvenile steelhead in the Willow Creek Watershed, but they have been documented in the areas with cooler water temperatures and better habitat and cover conditions.

Upstream migration for steelhead and Chinook in other streams within the Grande Ronde Subbasin is often related to fish moving from warmer bodies of water into cooler headwater areas. Stream temperatures in the Grande Ronde River near the confluence of Willow Creek often reach lethal levels for salmonids in July.

Chinook have not been documented in the Willow Creek Basin since the dams were built in the 1950's however, anecdotal information from early fishing reports indicate that Chinook were abundant in the watershed. With passage restored at the two dam structures, adult Chinook returning to the downstream portion of Willow Creek between May and July would be able to access upstream areas of the watershed where water temperatures are more suitable and spawning habitat exists. Juvenile Chinook outmigrants could leave the system during either the spring peak flows or fall freshets.

Proposed 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 7	None	None
COE and DSL Joint Permit	None	None
401	None	None
404	None	None
Section 106	None	None

Restoration Actions

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

Restoration Action	Justification
23. Structural Passage (Diversions)	Structural passage at the diversion is required to achieve project goals.

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.

The primary goal at the Royes diversion dam is to provide upstream and downstream passage for all life stages of Chinook Salmon, steelhead, lamprey, bull trout, and all other native species to the Willow Creek basin. Currently, the design has been completed to the 80% design level from funding provided by ODFW for fish passage. The District is seeking funding to complete the design to the final design level and complete permitting requirements.

The original design process for this project started in 2018, and a fish ladder was designed for the Royes project site. During the construction of the Huber dam fish ladder, the property owner at the Royes dam site came to the district to ask if a solution could be developed that did not require the dam for backwater. The District sought additional funding to investigate additional alternatives to fish passage at the Royes site. Funding and the time line (less than 1 year) specified in the ODFW grant agreement were insufficient to complete the design and permitting.

Project alternative design from the point at which new funding was secured looked at several options. Floating intake systems were examined as a potential option. Smaller grade control riffles at each point of diversion were also looked at. The final alternative that was accepted as the preferred alternative was one large rock riffle. This alternative will require new pump locations with new equipment and a sluice channel to pass fine sediment. This alternative will eliminate the need for the Royes dam. Construction costs should be less than the alternative of building a fish ladder around the dam. Hydraulic conditions and water quality should improve through the project reach without the dam boards being placed in the channel.

The next steps in the design process will be funding dependant. The 80% designs have been reviewed by ODFW fish passage staff. Those comments will have to be addressed prior to the BPA RRT review that will include a NOAA fish passage review. Once this review is completed the permitting process will start. Final designs are expected to be completed by October of 2024. Permitting is anticipated to be completed by December of 2024. Project construction is planned for the inwater work window of 2025.

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	None	None	None	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.

The output of this technical assistance funding will be implementation ready designs which include: construction specifications and drawings, construction cost estimates, a Revegetation Plan, and environmental permits including: Oregon Removal/Fill permit and CWA Section 404 permit through the DSL/ COE Joint Permit Application, NHPA Section 106 requirements, a 1200C permit, and DEQ Section 401 permit. Design completion is planned for 2024 with implementation anticipated to begin during the 2025 instream water work window. Implementation of these designs will maximize fish passage at the Royes passage barrier through the year for both steelhead and Chinook at all life history stages.

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, measurable, achievable, relevant, and time-bound.

- 1) Develop and select fish passage design alternatives for juvenile and adult spring/summer Chinook salmon (*Oncorhynchus tshawytscha*) and summer steelhead (*Oncorhynchus mykiss*) during periods of migration that achieve Oregon Department of Fish and Wildlife (ODFW) and National Marine Fisheries Service (NMFS) fish passage criteria to the greatest extent possible.
- 2) Develop fish passage designs that maintain access and use of irrigation water for water rights holders and irrigators.
- 3) Provide a sustainable, permittable, easily maintained design at a reasonable cost.

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

The project sets out to provide unfettered access for both juvenile and adult salmonids to headwater reaches of the Willow Creek basin for the first time in over 70 years. Stream temperatures currently exceed lethal levels in the Grande Ronde River during the summer months. Several tributary streams in the Willow Creek basin are spring or groundwater driven and provide critical coldwater habitat for salmonids during the summer months. This access can provide critical habitat refugia for salmonids that become trapped in the Grande Ronde River in the spring and summer. In addition, Willow Creek and its tributaries could become a Chinook Salmon spawning stream once more. This could build additional resiliency into the upper Grande Ronde River spring Chinook Salmon population.

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

The Royes Dam project is part of a larger effort called the Free Willow, Lower Willow Creek Fish Passage project and is intended to improve passage for adult Chinook salmon and steelhead. To date, the lower Huber Dam fish ladder is in place and functioning to allow fish passage. Fish passage at the Royes diversion will also allow listed species to take advantage of restoration efforts that have taken place upstream of the diversion.

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.

Gonidea angulata

The western Ridged Mussel has been documented within the Willow Creek basin. Increased marine derived nutrients to the Willow Creek basin could improve habitat conditions for the soon to be listed mussel species.

Is this a phased project?

No

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

None

Monitoring

This table shows all objectives specified for monitoring. It explains who will be performing this monitoring, 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
Presence/absence	To be determined	To be determined	To be determined	To be determined

Landowner Engagement

The following table is applicable to projects which take place on private property. It lists the relevant 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
Sam Royes	Open File in Web Browser	Yes	The primary concern has been water availability post project construction. This has been the driving factor of the design to date and will continue as the designs are taken to final designs.

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).

N/A

Explanation if answer to above was "N/A":

Project Elements

The table below identifies the major work elements of this project, when the work for each element is proposed to begin, and when that work is expected to end.

Project Element	Proposed Start Date	Proposed End Date
Final Design	July 1, 2024	Nov. 30, 2024
Permitting	July 1, 2024	Feb. 28, 2025

Designs

Level of Current Designs:

80%

Alternatives Analysis:

A technical design memorandum was developed in cooperation with the Bureau of Reclamation Columbia/Snake Salmon Recovery Office to identify and characterize potential design alternatives for improved fish passage at the Royes irrigation dam. This document summarizes basic site information to define issues and concerns and identify potential action alternatives. Once funding was secured, the engineering firm gathered additional site information and completed a topographic survey to inform alternatives as part of the conceptual design process. The alternatives were evaluated by the review team and the landowners. A fish ladder was selected to bypass the existing dam.

During construction of the Huber fish ladder, the landowner at the Royes diversion asked if we could develop a design that eliminated the need for the diversion dam. Project alternative design from the point at which new funding was secured looked at several options. Floating intake systems were examined as a potential option. Smaller grade control riffles at each point of diversion were also looked at. The final alternative that was accepted as the preferred alternative was one large rock riffle.

Additional Comments:

Funding provided by ODFW allowed the district to complete project design to an 80% level. Additional funding is required to complete the design and permitting.

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.

NA

Cost Share

The table below outlines all cost share included for this project including: the organization/source of the cost share, the amount of the cost share (in dollars), whether or not the funds have been secured, whether the funding is cash or in kind, and the reference or contract number if available.

Organization/Cost Share Source	Amount (\$)	Secured?	Cash/In Kind?	Reference/Contract # (If Available)
Union Soil and Water Conservation District	\$7,545	Yes	In Kind	541-963-1313
ODFW	\$80,000	Yes	Cash	541-620-2428

Signature

Signature	Accepted Terms	Draft Signed	Final Signed	Date Signed
Aaron Bliesner	Yes	Yes	Yes	April 4, 2024

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.

Aaron Bliesner
Applicant Digital Signature

April 4, 2024
Date Signed (Most Recent)