Grande Ronde Model Watershed

1114 J Avenue

La Grande, OR

(541)-663-0570

GRMW PROPOSAL APPLICATION - DRAFT

Project/Application Title: Wallowa Valley Improvement Project

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GRMW Request Amount: 50000.00

Total Cost Share: 107565.00

Total Project Cost: 335113.00

Invoice Information (If GRMW is the fiscal agent)

Mary Estes GRMW Fiscal Manager

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This proposal is for a TA type project!

Location/Abstract

General Location	Downstream Extent	Upstream Extent
Latitude: 44.1702440	Latitude: 45.2930180	Latitude: 44.1702440
Longitude: -117.0876150	Longitude: -117.1161380	Longitude: -117.0876150

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 Wallowa Valley Improvement Canal (WVIC) is a water irrigation canal within the Imnaha River subbasin. First constructed in the 1880s to divert water into the Wallowa Valley, the canal spans various creeks within the Imnaha subbasin. It originates in the headwaters of Big Sheep Creek, crosses over to Little Sheep Creek (at portions sharing the same alignment as Little Sheep), and also captures all of McCully Creek and various other small tributaries (Salt, Redmont, Ferguson, and Canal Creeks).

Associated with this canal are three major points of diversion at Big Sheep, Little Sheep, and McCully Creeks, none of which are screened. Bull trout have been documented throughout this canal (Hudson et al. 2017) and summer steelhead distribution within Big and Little Sheep extends only up until the points of diversion. Both of those diversions are identified as full passage barriers by ODFW for bull trout and steelhead and classified as priority barriers.

Additionally, due to the topography and length of this canal, significant water losses are experienced throughout. In coordination with the Wallowa Valley Irrigation District and in partnership with the U.S. Fish and Wildlife Service, Wallowa Resources will evaluate various methods of improving irrigation efficiency to create a water savings within the Big and Little Sheep watersheds while preserving the water rights of the irrigators.

There are two primary objectives that we aim to accomplish with this technical assistance: 1.) Develop designs for the fish passage barriers at the major points of diversion, as well as identify solutions for addressing passage at the smaller captured tributaries, and 2.) Assess irrigation needs and provide alternatives to improve efficiency to create water savings within bull trout occupied critical habitat.

Stepwise & Atlas

Prospectus submitted and review by Atlas Implementation Team: Yes

Project prospectus title and/or ID# (if applicable): Wallowa Valley Improvement Canal Fish Passage Designs and Irrigation Efficiency

Associated Subwatershed: BSC1

Associated Opportunity: BSC1 - Upper Little Sheep Creek

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.

Impaired Fish Passage:
The primary limiting factor affecting fish within the WVIC is impaired fish passage. The diversions on Big
and Little Sheep are identified as full passage barriers by ODFW, while other barriers within the canal on
Redmont and Canal Creeks are classified as barriers to some native migratory fish, and all of which are
listed as ODFW priority barriers. Redmont and Canal Creeks are captured entirely by the canal, limiting
movement of any fish within Little Sheep up into these systems other than those trapped within the canal.
Bull trout were observed and tagged within Canal and Redmont Creeks in surveys conducted by Hudson
et al. (2017) that occurred between 2006-2012. Hudson's work showed that bull trout exist throughout the
WVIC, with some moving from Big Sheep (a tributary to the Imnaha) through the canal all the way into
McCully Creek that flows into the Wallowa Valley.
McCully Creek is another significant diversion that flows from timbered habitat on Forest Service land,
into the WVIC system of the Wallowa Valley with no barrier of access in between. Based on Hudson's
work and for the timeframe that the PIT tag antennas were in place (a total of 2,060 operational days
from 2006-2012), no bull trout that left the timbered habitat of upper McCully and migrated downstream
into the Valley/canal system returned to upstream McCully. This could be attributed to a variety of
reasons, including (but not limited to) increased predation within the open canal, poor thermal or flow
conditions, or the complexity of the canal and inability of fish to find their way back to upper McCully.
Additionally, while not identified as a barrier by ODFW, Salt Creek also has bull trout and is captured
entirely by the canal.
Degraded Water Quality and Altered Hydrology:
Based on temperature data collected in the Big Sheep watershed by the U.S. Forest Service in 2017 and
2018, the largest increase in water temperature observed in Big Sheep was between the wilderness
boundary and Lick Creek. Within this section, the WVIC diverts the majority of water within Big Sheep.
Based on 2018 data, throughout the year there is an observed increase of approximately 4 to 11 degrees
Fahrenheit between above the diversion and the mouth of Lick Creek. This is exacerbated by the lack of
shading vegetation downstream of the diversion, causing increases beyond temperature thresholds for
bull trout spawning and rearing. Below the diversion, the lack of flow that remains in Big Sheep likely
presents a migration barrier to fish in summer months, isolating any individuals downstream from
accessing cold thermal refuge further in the headwaters.
Altered Life History:

The altered streamflow as a result of the canal as well as a lack of screening within is believed to have
contributed to a suppression of a bull trout migratory life history that we expect would have been common

within these systems prior to the establishment of the WVIC. Bull trout within the Imnaha River, into
which both Big and Little Sheep Creeks drain, regularly utilize the Snake River. While the resident bull
trout populations that occupy Big or Little Sheep above the barriers may be able to migrate downstream
in certain flow conditions, the diversions prevent them from seeking thermal refuge or accessing
spawning habitat above the barriers. In a similar vein, it seems likely that steelhead historically would
have accessed upper portions of Little Sheep Creek, but remains inaccessible under current conditions.
Predation:
Predation is another limiting factor affecting fish within the WVIC. Upon last report, a total of 74 PIT tags
just from McCully Creek bull trout have been detected at a great blue heron rookery in the Valley. While
predation is a natural occurrence, our prevailing hypothesis is that bull trout that leave the upper portion
of McCully moving into the WVIC is subjecting them to higher rates of predation. This information is
based on surveys conducted by the Nez Perce Tribe fisheries staff, who will be pursuing additional
monitoring efforts starting in 2025 to better evaluate the impacts.
Climate:
Under current conditions, the limiting factors outlined above pose significant hurdles to the recovery of
bull trout within the Big and Little Sheep watersheds. The effects of current practices will likely be
intensified in the face of climate change. As ambient and water temperatures are expected to increase,
water savings and access to cold water refuge will be essential for these fish populations to survive.
Local extirpations of bull trout populations have been documented in recent years in eastern Oregon,
namely in the Powder River basin (P. Sankovich, personal communication). Restoring these habitats
now could be what allows these populations to persist into the future.

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
NA (Technical Assistance)	None	None

Restoration Actions

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

Restoration Action	Justification
22. Barrier or culvert replacement/removal	This project aims to evaluate the irrigation infrastructure within the WVIC, three of which are full passage barriers (Big Sheep, Little Sheep, and Salt Creek spillway).
23. Structural Passage (Diversions)	We will be pursing designs for three points of diversion, two of which are full passage barriers (Big Sheep and Little Sheep).
32. Irrigation System Upgrades -Water Management	Provide an irrigation efficiency assessment to improve water savings into the affected streams.

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.

There are two primary goals of this TA: 1.) Provide a comprehensive look at fish passage needs
throughout the canal including final designs for the major points of diversion and potential solutions for all
captured tributaries, and 2.) complete an assessment of the irrigation canal and provide alternatives for
efficiency to increase water savings within the affected watersheds while still meeting the needs of the
irrigators.

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	0.0	0.0	None	N/A		None
Water Temperature (°C)	None	None	None	MWMT Below 21°C		None

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 objectives selected in the "Objectives" tab reflect the objectives we hope to accomplish when it comes to the stage of implementation. At this current stage of technical assistance, our primary objectives remain to be providing a comprehensive look at all fish passage needs within the canal and providing designs for three of the major points of diversion. Additionally, another primary objective is to provide alternatives for irrigation efficiency to increase water savings while still meeting the needs of the irrigators.

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.

Objective 1:

Provide fish passage alternatives and final designs for three major points of diversion within the
WVIC on Big Sheep, Little Sheep, and McCully Creeks. This will also include plans and designs for how
to address the various captured tributaries. Passage alternatives will include a fully volitional roughened
channel alternative.

This action will be implemented via contracting with an engineering firm. The selected firm will be
coordinating with the irrigation district as well as a team of biologists from various tribal, state, and federal
agencies.

Objective 2:

Conduct a comprehensive assessment of the water rights and the irrigation system to evaluate for
potential for water savings within the various watersheds and across the length of Wallowa Valley
Improvement Canal. Potential alternatives that will be evaluated are piping and bentonite clay treatments.

This action will be implemented by the selected engineering firm to model potential water savings
under various scenarios and treatments throughout the length of the canal.

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

While this TA is focused on developing an irrigation assessment and fish passage designs, we also hope to identify any potential for additional restoration opportunities. The subsequent implementation that would result from this TA could include potential restoration of the various watersheds within and around the WVIC. One such opportunity would be riparian planting on Big Sheep Creek downstream of the diversion to address the high solar input, and with the hope that irrigation efficiency creates a water savings that preserves more water in the channel to support a healthy riparian canopy. The implementation of the work outlined in this TA and potential restoration would serve to reconnect habitat allowing fish to access cold water refuge in critical time periods, preserve flow in-stream, and reduce overall water temperature. All of these elements are of high importance to create and preserve a resilient population of bull trout in the Imnaha watershed. While the migratory Imnaha River bull trout are still considered resilient, the smaller resident populations within the subbasin have been disproportionately affected by land management actions and this work will hopefully create an environment in which this life history can persist or expand within these tributaries.

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

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.

- Bull Trout utilize this canal heavily as a migratory corridor, with fish being documented moving from the Big Sheep point of diversion and then being detected at McCully Creek. Both the Big and Little Sheep diversion have been identified as full passage barriers, and once a fish moves down below either of these diversions, it is unable to return to the cooper upper extents of habitat.

- Steelhead - Steelhead distribution is only documented up until the Little Sheep and Big Sheep points of diversion. Addressing these passage barriers would improve access into colder habitats essential for rearing, and potenially would expand spawning distribution.

- Chinook salmon - These diversions also present passage barriers for Chinook salmon, limiting access into cooler rearing habitats namely in Big Sheep Creek. Additionally, since the water right usage is measured further down into the valley, more water has to be pulled at the Big Sheep POD, leaving relatively little water remaining in the channel itself. By addressing irrigation efficiency and improving water savings/flow in Big Sheep, the implementation of this project we anticipate would improve habitat conditions below the POD and provide continual access into the headwaters.

Is this a phased project?

No

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

Yes

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
NA	NA	NA	NA	Technical Assistance.

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
USFS	None	Yes	This project is being pursued in partnership with the landowner on which the bulk of the canal occurs (the U.S. Forest Service), as well as the Wallowa Valley Irrigation District that manages and operates the canal. All parties are in support of pursuing the fish passage designs and irrigation efficiency assessment.

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

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
Fish Passage Designs	Jan. 1, 2026	Aug. 1, 2027
Irrigation Efficiency Assessment	Jan. 1, 2026	Jan. 1, 2028

Budget

Download Budget File: Open File in Web Browser

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)
Nez Perce Tribe	$6,000	Yes	In Kind	
Wallowa Resources	$25,031	No	In Kind	
USFWS	$39,359	Yes	In Kind	
OWEB	$177,548	No	Cash	

Uploaded Photos

By providing pictures the following photos to GRMW the applicant agrees to have their pictures displayed on the GRMW website (grmw.org) and social media accounts.


IMG_9507.JPG


IMG_9508.JPG


Little Sheep 1.JPEG

Additional Files

File Name (Click to Download)	Description
Open File in Web Browser	Paper published by Hudson et al. on bull trout use within the canal.

Signature

Signature	Accepted Terms	Draft Signed	Final Signed	Date Signed
Carmen Leguizamon	Yes	Yes	No	Oct. 15, 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.

Carmen Leguizamon
Applicant Digital Signature

Oct. 15, 2025
Date Signed (Most Recent)