

General Information

Project Name Camp Creek Headwaters Restoration

Applicant Name Connor Parrish, Trout Unlimited

Is your organization registered with the Montana Secretary of State?

Explanation: Each applicant must be registered with the Montana Secretary of State to do business in the state of Montana. Registration with the Secretary of State may be completed via the following website: <https://sosmt.gov/business/>

Is your organization registered with the federal System for Award Management (SAM)?

Explanation: Each applicant is required to register with SAM. To register or check your organization's status, go to <https://sam.gov/content/home>. If you get an "Unsupported Browser" error, copy, and paste the link into a Google Chrome browser window.

Your organization's Unique Entity Identifier number (UEI #) 051698132

Explanation: Each applicant is required to have a current UEI number. The UEI number replaces the old DUNS number. If your organization had a DUNS number, you should have received a notification from the federal government indicating that your DUNS number has been changed to a UEI number. If you did not receive this notification, or if you never had a DUNS number, you will need to go to the federal government's System for Award Management (SAM - <https://sam.gov/content/home>) to obtain your UEI number. DEQ recommends starting this process early as it is very time-consuming, requires providing documentation-sometimes with follow-up requests for additional information, and can take up to 2 months to complete. If you need assistance, you may contact the federal help desk at 866-606-8220 Monday-Friday 8:00 a.m. through 8:00 p.m. EST.

Does your organization have adequate liability insurance for the risks associated with your project?

Explanation: Each applicant must have or obtain liability insurance coverage meeting the requirements stated in the Draft Sample Contract and/or requirements negotiated based on the appropriate level of risk associated with the project.

Primary Contact Connor Parrish

Title Project Manager

Address 321 E Main St, Suit 401

City Bozeman State MT Zip Code 59715

Phone Number 406-223-9331

Email connor.parrish@tu.org

Signature Connor Parrish

Digitally signed by Connor Parrish
Date: 2024.04.05 11:57:00 -06'00'

Explanation: This is the person who DEQ would routinely contact to discuss project progress, billing, etc.

Signatory Casey Hackathorn

Title Montana State Director

Address 312 N Higgins Ave, Suit 200

City Missoula State MT Zip Code 59802

Phone Number 406-546-5680

Email casey.hackathorn@tu.org

Signature

Digitally signed by Casey Hackathorn
Date: 2024.04.05 09:00:22 -06'00'

Explanation: This is the person who can legally sign contracts and other binding documents on behalf of the applicant (e.g., a board chair)

Note: The primary contact and the signatory must both sign the application. Signatures must be either signed electronically, or wet-signed, scanned and emailed.

Describe the technical and administrative skills your organization will use to effectively and efficiently complete your proposed project(s).

Budget Form

Please fill out the [On-the-Ground Project Budget Template \(Excel file\)](#). Cells highlighted in yellow may be edited to fit the needs of your particular project. DEQ uses a template to construct nonpoint source grant contracts. The Budget Template contains tasks and typical deliverables that match up with the grant contract template. Please see the Example Contract and Scope of Work Template for a more detailed look at typical task requirements and deliverables.

Project Form

A separate Project Form (including providing separate attachments) must be submitted for each project included in your application. You must also indicate if the project is a lump sum or split into multiple projects.

Splitting Examples (fill out multiple Project Forms)

- Stream restoration work occurring on two separate streams..
- Two projects with significantly different sets of project partners.
- Two projects that address substantially different pollution sources (e.g., one project moves a corral off of a streambank, and another removes mine tailings, with both projects being on the same property).

Lumping Examples

- Contiguous stream restoration work spanning multiple land parcels.
- Three projects that address similar sources of pollution on a single land parcel (e.g., moving a corral off a stream, implementing a grazing management plan, and relocating a manure storage facility out of the floodplain, all on the same ranch)

Required Attachments

Letter of support from the author of the DEQ-accepted Watershed Restoration Plan or EPA-approved Tribal Nonpoint Source Management Plan.

Letter of support from EACH landowner, lessee, or land manager associated with the proposed project area.

Budget Table (see attached Microsoft Excel Template).

Project Form

Detailed Project site map(s) Attach a map or set of maps showing the location and size of proposed activity. The map scale must be between 1:1,000 and 1:12,500. The map(s) must have an aerial photo background (e.g., USDA NAIP photography, Google Earth imagery, etc.). The map(s) must show the latitude, longitude, site name, and landowner for the activity site. The map(s) should also identify waterbodies affected by the pollution that the activity is designed to address.

Optional Attachments

Attach additional items and information that could help reviewers better understand your project. Information could describe public health risks, opportunities to leverage other funding sources, etc. However, application reviewers may have limited time available, and excessively long, optional attachments might not get reviewed. Do not attach copies of TMDL documents, TMDL implementation evaluations, Watershed Restoration Plans, Tribal Nonpoint Source Plans, or large comprehensive studies. The following attachments may be included.

Project Design Plans/Drawings

Preliminary Engineering Reports / Site Evaluations

Landowner Agreements / Construction Permits / Floodplain Permits

Site photos

Additional Letters of Support

Other:

Other:

Other:

Project Name

PROJECT AREA: Use the tools below to provide as detailed a description of the project area as possible.

List the counties in which the project will be located.

List the 12-digit Hydrologic Unit Codes (HUCs), sometimes referred to as Sixth Code HUCs, in which the project will take place. If you need assistance in determining the HUCs, please contact DEQ.

In addition to providing your own project site map, please go to the following website and follow the instructions to add your project location to the map.

<https://gis.mtdeq.us/portal/apps/storymaps/stories/42f4a668285c4ef6aa94b1623f10df57>

Connection to a Previous or Ongoing Project

Is this project tied to a previous or ongoing project? If so, please describe the connection.

Project Purpose

Select the watershed restoration plan or tribal nonpoint source plan that your project will help implement (please type in if missing from list).

Letter of support from author entity attached? (If no, explain why below.)

IMPAIRMENT LISTINGS: Unless addressing healthy watersheds (see below), all projects must address probable causes of impairment on a waterbody identified in the 2020 List of Impaired Waters.

Waterbody name from the 2020 List of Impaired Waters

Probable causes of impairment to be addressed

Waterbody name from the 2020 List of Impaired Waters

Probable causes of impairment to be addressed

HEALTHY WATERSHEDS: While the majority of the project funding is dedicated to addressing known impairments, a limited amount of funding can be used to protect non-impaired waters (healthy waters) from becoming impaired.

Name of healthy waterbody to be protected

Description of identified threat to non-impairment status

Name of healthy waterbody to be protected

Description of identified threat to non-impairment status

Project Partners

Identify each of the project partners and describe their contribution to the project. Include landowners, land managers, project designers, funders, and your own organization. Indicate whether each partner, other than your organization, has provided a letter of support. (Note: each landowner must provide a letter of support.)

Landowner

Contributions to Project

Letter of
Support
Attached?

Project Partner

Contributions to Project

Letter of
Support
Attached?

Project Coordination and Planning Task

This task would include completion of all applicable planning tasks from the list below, as well as coordination and oversight of the efforts of all project partners.

<u>Identify the status of the following project planning tasks, where applicable.</u>	Completed?	Copy Attached?	To Be Completed Pre-Contract (Oct 2024)?	To Be Completed as Contract Deliverable?
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* Draft Project Designs

* Final Project Designs

Consultation With Potential Regulators

Necessary Permits

Cultural Resources Inventory (*may be relevant*)

Other:

Other:

Other:

***See Call for Applications Section 5.1 for minimum design standards.*

Describe any additional project planning that *will have been completed prior* to execution of a contract (October 2024).

Describe any additional project planning and coordination that *will need to be completed after* the execution of a contract (October 2024).

Landowner Agreement Task

DEQ includes the following language in every nonpoint source contract involving on-the-ground activities:

Contractor shall submit signed landowner agreement(s) verifying that Contractor and DEQ staff may access the project site, at reasonable times and with prior notification, for the purposes of project planning, implementation, and post-implementation monitoring. The agreement(s) must ensure appropriate operation and maintenance of all structures, vegetation, and management measures for the life of the project (typically 10 years). If grazing will be allowed within the project area, the agreement(s) must include a sustainable management plan for livestock grazing, designed to protect and enhance riparian function. If a signed landowner agreement does not meet the above-stated minimum requirements, Contractor shall negotiate an amended agreement with the landowner that ensures appropriate operation and maintenance of all structures, vegetation, management measures, and includes a sustainable management plan for any livestock grazing for the life of the project (typically 10 years).

Identify the status of the following landowner agreement tasks, where applicable.

	Completed?	Copy	To Be Completed	To Be Completed as Contract
		Attached?	Pre-Contract (Aug 2024)?	Deliverable?
Draft Landowner Agreement(s)				

Draft Landowner Agreement(s)

Final Landowner Agreement(s)

Grazing Management Plan

Other:

Other:

Project Effectiveness Monitoring Task

If you will be conducting any on-the-ground implementation work, you will be required to complete the monitoring activities described in the task language below, as applicable. Describe below how you plan to determine the effectiveness of your project.

If you are applying for nonpoint source grant funding for project design only, and not for project implementation, you may either skip this task, or describe below which parts of this task you intend to complete:

Example Task Language

Contractor shall, in consultation with the DEQ Project Manager, develop a reasonable method or set of methods for evaluating and reporting on the effectiveness of the project in addressing water quality issues. Contractor shall complete a monitoring plan to guide monitoring activities. Contractor shall complete the following monitoring activities:

- *Estimate the sediment load reductions (tons/year) achieved through implementation of the proposed restoration activities and management practices.*
- *Estimate the nitrogen load reductions (pounds/year) achieved through implementation of the proposed restoration activities and management practices.*
- *Estimate the phosphorus load reductions (pounds/year) achieved through implementation of the proposed restoration activities and management practices.*
- *For projects designed to address pollution from pollutants other than nitrogen, phosphorus and sediment, evaluate and report on the effectiveness of the project in addressing water quality issues.*
- *Contractor shall collect data, as directed by the DEQ Project Manager, to be used in estimating sediment, nitrogen, and phosphorus load reductions achieved through implementation of restoration activities and management practices designed to address these pollutants.*
- *Use the following measures to evaluate the sustainability of restoration activities and management practices:*
 - *[Vegetation mortality rate.]*
 - *Pre- and post-construction photo point monitoring consistent with the "Oregon Watershed Enhancement Board Guide to Photo Monitoring" methodologies, or a similar published photo point monitoring method accepted by DEQ. The U.S. Forest Service provides additional photo point monitoring guidance in the "United Stated Forest Service Photo Point Monitoring Handbook".*
 - *[Riparian survey.]*
 - *[Other.]*

Please describe any additional monitoring you intend to do as part of the project.

Project Implementation Task

Provide a detailed description of the solution you are proposing to implement to address a nonpoint source pollution problem. Describe the practices you intend to design and/or implement to solve the problem (what, where, when, how much or how many). Describe the anticipated maintenance needs (what, where, who, how long). Refer to the minimum design standards in the Call for Applications. ***Please fill out this section to the best of your ability, even if you are only seeking funding for project design.***

Education, Outreach and Training Task

To get good projects on the ground, trained staff and board members and educated, enthusiastic landowners are required. To promote the development of future projects, DEQ encourages project sponsors to use up to \$5,000 of funding to support training and conduct education and outreach. Example training topics might include: project management, public procurement, technical writing, GIS, water quality monitoring, web design, public speaking, human resource management, photo journalism, UAV (drone) piloting, financial management, and restoration techniques. Education and outreach activities might include targeted landowner outreach, conducting project site tours for local landowners, tabling at community events, holding a watershed festival, providing stipends and travel reimbursements for speakers and participants to attend a nonpoint source pollution prevention workshop, or generating articles for social media. The primary requirement for training and outreach is clearly explaining how the activity will support efforts to address nonpoint source pollution. Funding may not be used to pay for food and beverages, or for honorariums and gifts.

Describe the education and outreach activities you will complete to promote or facilitate future efforts to reduce nonpoint source pollution.

Identify the specific target audience.

Describe how the proposed training and/or outreach will increase local capacity and interest for addressing nonpoint source pollution.

Identify the goals of the education and outreach and describe how you will evaluate the effectiveness of the proposed activities.

Project Administration Task

Please use the task description below as a guide when calculating your budget for project administration. DEQ typically includes these requirements in every nonpoint source grant contract, with only minor variation. Funding applied to Project Administration must not exceed 10% of the total amount of funding requested, or \$12,000, whichever is lower.

Example Task Language

Contractor shall oversee and be accountable for the completion of all tasks. Contractor shall maintain regular contact with the DEQ project manager. Contractor shall prepare and submit Mid-Year, Interim, Annual, and Final Reports and Attachment B Billing Statements according to the format and schedule described below.

Report Format

- *Contractor shall submit each Attachment B Billing Statement, Mid-Year Report, Interim Report, Annual Report, and Final Report using the most current reporting guidance and templates provided by the DEQ project manager.*
- *Contractor shall ensure each Mid-Year, Interim, Annual, and Final Report contains adequate documentation to justify accompanying reimbursement requests and match reporting, to the satisfaction of the DEQ project manager.*
- *Contractor shall ensure that the Final Report is a standalone document describing all contract activities and containing copies of all contract deliverables (even if the deliverables were previously submitted).*

Reporting Schedule

- *Mid-Year Reports: Due June 1st of each year the Contract is in effect.*
- *Annual Reports: Due December 1st of each year the Contract is in effect.*
- *Interim Reports: Due whenever reimbursement is requested outside of the normal Mid-Year, Annual and Final reporting periods while the Contract is in effect.*
- *Draft Final Report: Contractor shall submit a complete draft Final Report for DEQ review and comment at least 15 days prior to the contract expiration date.*
- *Final Report: Contractor shall submit a Final Report, addressing DEQ comments on the draft Final Report, on or before the Contract expiration date.*
- *Attachment B Billing Statements: Contractor shall submit an Attachment B Billing Statement with each Mid-Year, Interim, Annual, or Final Report submitted to DEQ while the Contract is in effect. To maintain cash flow, Contractor may submit interim Attachment B Billing Statements as frequently as monthly during the term of the Contract. However, each interim Attachment B Billing Statement must be accompanied by an Interim Report.*
- *Exception to the Reporting Schedule: The Final Report and associated Attachment B Billing Statement will replace the last required Mid-Year or Annual Report.*

Project Timeline

4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
2024	2025	2025	2025	2025	2025	2026	2026	2026	2027	2027	2027

Project Coordination and Planning Task

Landowner Agreement Task

Project Effectiveness Monitoring Task

Project Implementation Task

Education, Outreach and Training Task

Project Administration Task

Environmental Justice

Environmental justice can be defined as: The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys:

- The same degree of protection from environmental and health hazards, and
- Equal access to the decision-making process to have a healthy environment in which to live, learn, and work

DEQ is committed to carrying out the nonpoint source pollution reduction projects in an environmentally just manner. We encourage applicants to apply the principles of environmental justice in their development and implementation of nonpoint source pollution prevention projects. Below are a few examples of how applicants might apply these principles. DEQ will award additional points in the scoring form for projects that address environmental justice.

- Project planning included consultation with Tribal Nations
- Project will benefit socially or economically disadvantaged communities
- Project will occur in a community that has not previously received nonpoint source pollution reduction grant funding
- Project will address nonpoint source pollution in a community that has been disproportionately burdened by impacts from legacy pollution (e.g., SuperFund sites, legacy mine waste, etc)

Please use this section to highlight connections your project may have to addressing environmental justice..

BUDGET

2024 Nonpoint Source Pollution Reduction Application - On-the-Ground Project Budget Template

Project Title:	Camp Creek Headwaters Restoration							
Instructions	Tasks and Potential Deliverables	319 Funding Request*	Non-Federal Match**	Other Funding***	Match Source	Match Secured? (Y/N)	Total Project Cost	Additional Information****
This task includes completion of all planning tasks and coordination and oversight of the efforts of all project partners. Provide a detailed budget and add a row if needed.	Project Planning							
	Preliminary site investigation data and site maps	\$ 2,000.00	\$ 6,000.00		Turner Enterprises LLC		\$ 8,000.00	319 ask: TU staff time Match: TEI Staff time, wetland delineation
	Required Permits	\$ 1,000.00	\$ 200.00		Turner Enterprises LLC		\$ 1,200.00	319 ask: TU staff time, site visits, drone flights, photos, measurements, submitting permits and communication with permitting agencies, etc.
	Draft Project Designs	\$ 2,000.00	\$ 1,000.00		Turner Enterprises LLC		\$ 3,000.00	319 ask: TU staff time Match: TEI Staff time reviewing permits
	Final Project Designs	\$ 1,000.00	\$ 200.00		Turner Enterprises LLC		\$ 1,200.00	319 ask: TU staff time Match: TEI Staff time reviewing permits
	Total	\$ 6,000.00	\$ 7,400.00	\$ -			\$ 13,400.00	
This task includes costs for developing and managing landowner agreements and developing grazing management plans as applicable. Provide a detailed budget and add a row if needed.	Landowner Agreements							
	Draft Landowner Agreement	\$ 200.00	\$ 100.00				\$ 300.00	319 ask: TU staff time Match: TEI Staff time reviewing agreement
	Final Landowner Agreement	\$ 100.00					\$ 100.00	TU staff time
	Grazing Management Plan	\$ 200.00	\$ 500.00		Turner Enterprises LLC	Y	\$ 700.00	319 ask: TU staff time Match: TEI Staff time
	Total	\$ 500.00	\$ 600.00	\$ -			\$ 1,100.00	
This task includes costs for developing and implementing a monitoring plan to evaluate effectiveness to reduce nonpoint source pollution. See example contract template or application instructions for required monitoring activities. Provide a detailed budget and add a row if needed.	Effectiveness Monitoring							
	Draft Monitoring Plan	\$ 400.00					\$ 400.00	TU staff time
	Project Monitoring	\$ 2,000.00					\$ 2,000.00	TU staff time
	Final Monitoring Plan	\$ 200.00					\$ 200.00	TU staff time
	Written Summary of all Monitoring Activities	\$ 1,000.00					\$ 1,000.00	
	Total	\$ 3,600.00	\$ -	\$ -			\$ 3,600.00	
This task includes all costs for implementation of the plans developed in the Project Planning task. If you are requesting funding for design only, leave this task blank. Provide a detailed budget and add a row if needed.	Project Implementation							
	Materials	\$ 74,000.00	\$ 10,000.00		Turner Enterprises LLC	Y	\$ 84,000.00	319 ask: untreated fence posts for BDAs and PALS, native plants, 2-miles of wildlife fencing (\$6/ft), etc. Match: harvest of juniper, willow, and other brush for BDA and PALS construction. Willow and dogwood cuttings for live stakes, TEI staff time, etc.)
	Equipment costs		\$ 5,000.00		Trout United and Turner Enterprises LLC	Y	\$ 5,000.00	Match: TU Post Driver, TU Drone, TU chainsaw, TEI ATVs, etc.
	Construction Labor	\$ 44,000.00	\$ 10,000.00		Turner Enterprises LLC	Y	\$ 54,000.00	319 Ask: 4 hitches of MCC Crew support (\$11k per hitch) Match: TEI Staff time
	Construction oversight/labor	\$ 20,000.00					\$ 20,000.00	TU staff time
	As-built surveys	\$ 1,000.00					\$ 1,000.00	TU staff time
	Photo documentation	\$ 1,000.00					\$ 1,000.00	TU staff time
	Landowner recommendation letter		\$ 200.00		Turner Enterprises LLC	Y	\$ 200.00	Match: TEI staff time
	Total	\$ 140,000.00	\$ 25,200.00	\$ -			\$ 165,200.00	
This task includes costs to develop and improve organizational capacity and to incorporate education and outreach into on-the-ground projects. Provide a detailed budget and add a row if needed.	Education and Outreach							
	Volunteer Coordination	\$ 1,000.00					\$ 1,000.00	TU staff time
	Event/Tour Planning	\$ 2,000.00					\$ 2,000.00	TU staff time
	Outreach/Publication materials	\$ 2,000.00					\$ 2,000.00	TU staff time
	Total	\$ 5,000.00	\$ -	\$ -			\$ 5,000.00	
319 Funding applied to Project Administration must not exceed 10% of the total amount of 319 funding requested, or \$12,000, whichever is lower. Project includes normal business expenses and reporting requirements.	Administration							
	Mid/Annual/Interim Reports and Billing Statements	\$ 5,000.00					\$ 5,000.00	TU staff time
	Draft/Final Report and Billing Statements	\$ 6,000.00					\$ 6,000.00	TU staff time
	Communication with DEQ	\$ 1,000.00					\$ 1,000.00	TU staff time
	Total	\$ 12,000.00	\$ -	\$ -			\$ 12,000.00	
	Grand Totals	\$ 167,100.00	\$ 33,200.00	\$ -			Total Project Cost	\$ 200,300.00

*319 Request - Must not exceed \$300,000

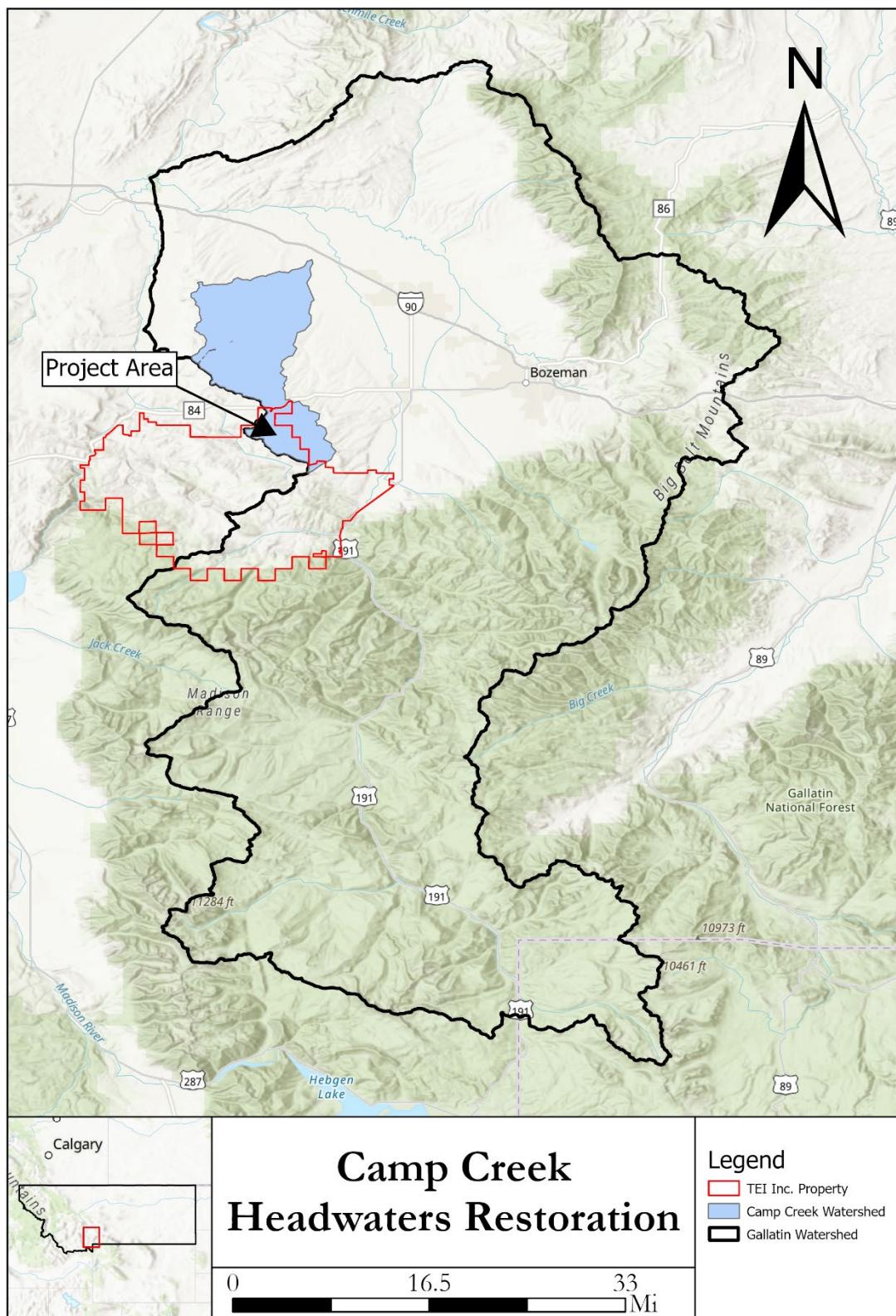
**Non-Federal Match - Can include in-kind materials.

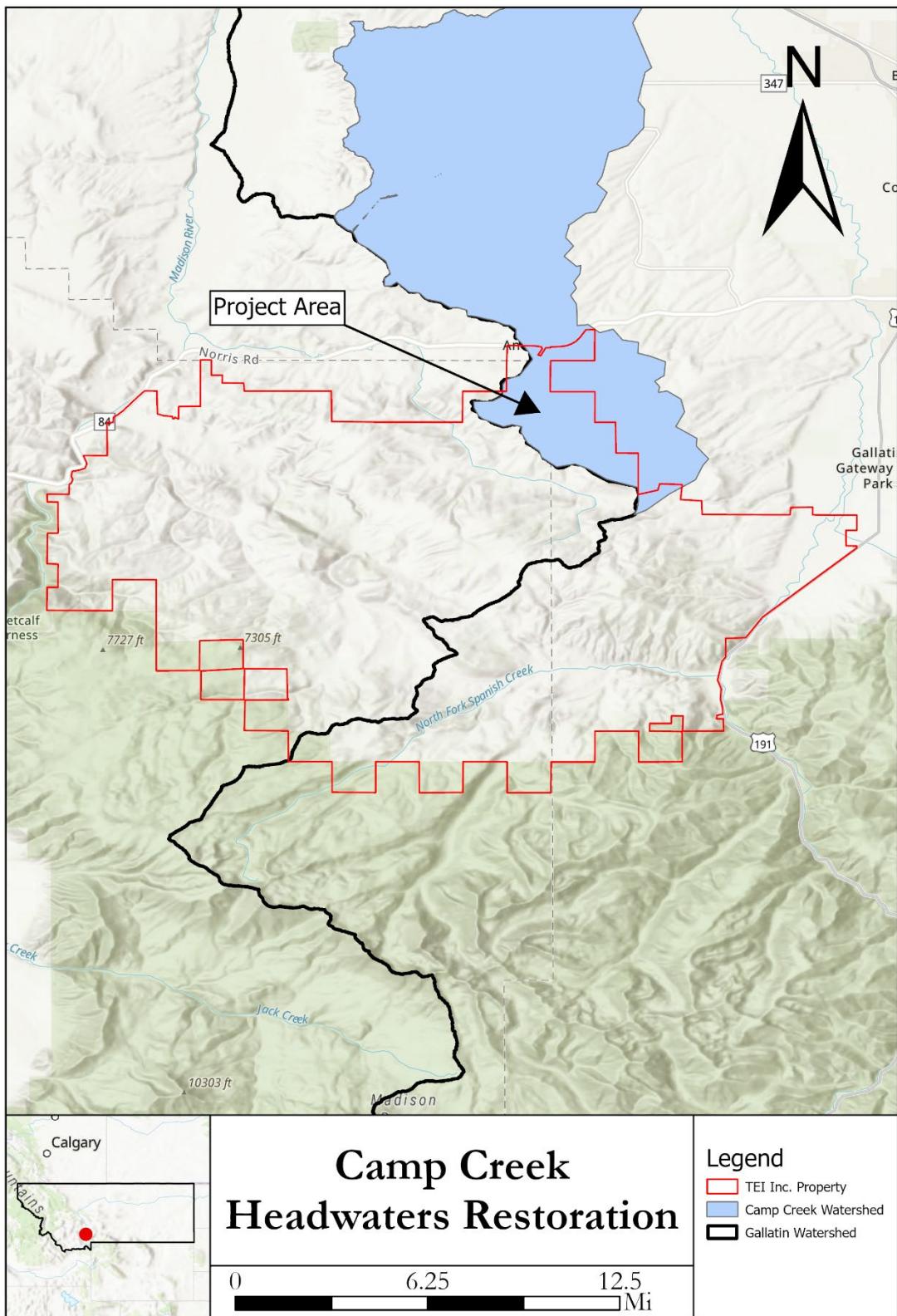
***Other Funding - Use this space for funding that will be used to support creation of task deliverables, but

****Additional Information - Use to justify cost if needed. (Hourly rates, rental costs, etc.)

**MAPS /
DESIGNS**

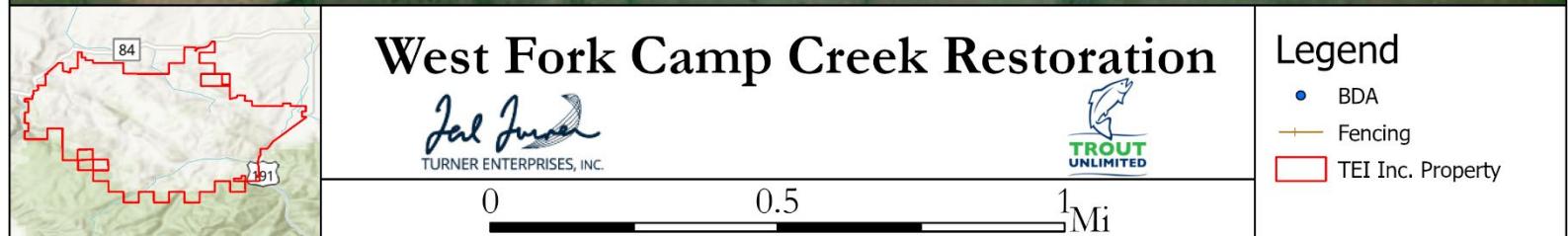
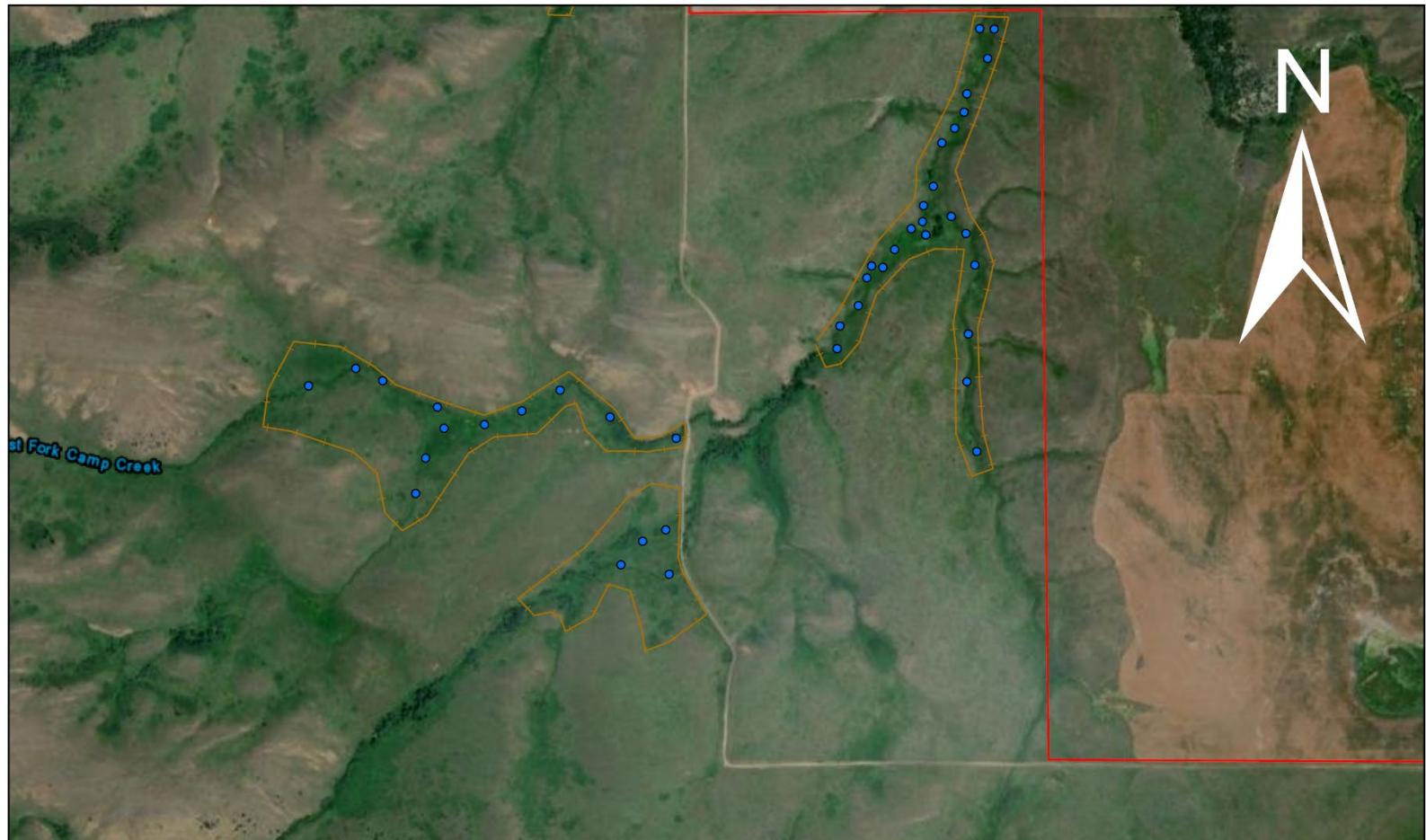
Project Maps







Project Location: 45.64510, -111.35078



LETTERS
OF
SUPPORT



April 4, 2024

Watershed Protection Section
Montana Department of Environmental Quality
Attn: Mark Ockey
1520 E. Sixth Avenue
Helena, MT 59620

Dear Mr. Ockey,

The Gallatin Watershed Council welcomes the opportunity to provide our support for Trout Unlimited's (TU's) proposal to improve water quality in the Lower Gallatin Watershed with support from the 319 Grant Program. Having been partners on restoration projects for many years, GWC has seen TU's commitment and dedication to improving water quality, restoring hydrologic connectivity, and improving instream flows. The Camp Creek Headwaters Restoration will use Low-Tech Process Based Restoration techniques to improve water quality and restore natural processes that enhance fish and wildlife habitat. Treatments will consist of the installation of Beaver Dam Analogs and Post Assisted Log Structures to improve instream habitat, capture fine sediment, and improve floodplain connection. This will result in improved conditions for riparian plantings which will be installed as part of the project. The project area will also be fenced to allow riparian plantings to thrive.

GWC developed the Watershed Restoration Plan for the Lower Gallatin Watershed, in conjunction with other community stakeholders and collaborating entities. Camp Creek impairments include fine sediment, total nitrogen, total phosphorus, and E. coli. Trout Unlimited's project goals are in alignment with the goals and direction of our watershed's WRP and will build on partner efforts all along Camp Creek to address impairments.

We value TU's experience and knowledge in watershed conservation and commend their leadership on this important project. The Camp Creek Headwaters Restoration project serves as a model for future cooperative projects in the area and we urge your full support.

Respectfully,

A handwritten signature in black ink that reads "Holly Hill".

Holly Hill
Executive Director
Gallatin Watershed Council

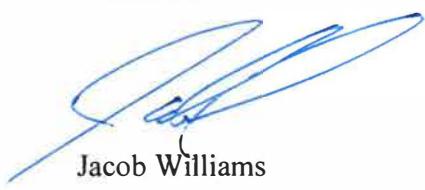


Mr. Mark Oakey
Watershed Protection Section
Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

Dear Mr. Ockey,

I am contacting you to provide Turner Enterprises Inc. (TEI) support for Trout Unlimited's (TU) application to Department of Environmental Quality's (DEQ) 319 non-point source grant opportunity. The Gallatin watershed faces numerous water quality impairments that jeopardize the health of its fish, wildlife, and growing community. TU's Camp Creek Headwaters Restoration will use Low-Tech Process Based Restoration techniques to improve water quality and restore natural processes that enhance fish and wildlife habitat. Treatments will consist of the installation of Beaver Dam Analogs and Post Assisted Log Structures to improve instream habitat, capture fine sediment, and improve floodplain connection. This will result in improved conditions for riparian plantings which will be installed as part of the project. The project area will also be fenced to allow riparian plantings to thrive. Fencing will only be removed after 10-years once the riparian plantings are well established and capable of handling grazing from wildlife and bison.

TEI has owned the Flying D Ranch since 1989. The ranch supports bison production that is conducted at a sustainable level to minimize impacts to the landscape and aquatic resources. Beyond bison production, TEI is dedicated to protecting and restoring native fish and wildlife populations. We have a long history of supporting collaborative conservation efforts in Southwest Montana, including Westslope Cutthroat Trout restoration in Cherry Creek and Arctic Grayling brood stock management in upper Green Hollow. TEI is also committed to land management practices that benefit our downstream neighbors. We believe that this project checks all these boxes, and we are excited to support it. TEI is committed to this project and will contribute in-kind match in the form of staff time and materials for the construction of habitat structures. We encourage you to fully fund the Camp Creek Headwaters Restoration project proposed by Trout Unlimited.



Jacob Williams
Aquatic Resource Coordinator, Turner Enterprises Inc.

TURNER ENTERPRISES
INC ORPORATED

901 TECHNOLOGY BLVD • BOZEMAN, MT 59718 • OFFICE 406.556.8500 • FAX 406.556.8501

OTHER ATTACHMENTS

Camp Creek Headwaters Restoration



Figure 1: looking south towards the headwaters of Camp Creek during March 2023.

Background

Camp Creek originates on the slopes of Ruby Mountain and flows north to its confluence with the Gallatin River. Historically, Camp Creek was likely a highly braided and sinuous stream that was greatly influenced by the activities of beavers. Its robust riparian area not only supplied beavers with endless food and building materials, but it would have supported substantial populations of wildlife. The combination of dense riparian vegetation and industrious beavers likely created ideal water quality and perfect conditions for aquatic organisms including native westslope cutthroat trout.

Historic land use practices including beaver trapping, high intensity grazing, agriculture, and channel relocation have greatly altered the form and function of Camp Creek. Today, Camp Creek flows almost exclusively through private ranching and agricultural operations. While many of the historic impacts have been addressed, Camp Creek is in a state of arrested degradation. According to Montana Department of Environmental Quality, Camp Creek's impairments include fine sediment, total nitrogen, total phosphorus, and E. coli. The 2014 Lower Gallatin Watershed Restoration Plan (WRP), calls for 63% reduction in fine sediment, 77% reduction in nitrogen, 71% reduction in phosphorous, and a 65% reduction in E. coli in order to remove Camp Creek from the state's list of impaired waters. The WRP includes several best management practices for addressing these impairments.

During winter 2024, Trout Unlimited (TU) and the Gallatin Watershed Council (GWC) met with Turner Enterprises, Inc. (TEI) to discuss restoration opportunities on the Flying D Ranch. One of the potential projects that was discussed included developing a project on Camp Creek and West Fork Camp Creek which flow through the ranch. During March, TU spent a day in the field evaluating restoration opportunities on the reaches of Camp Creek and West Fork Camp Creek contained within the Flying D Ranch.

Flying D Site Evaluation

The Flying D was previously a cattle ranch before it was purchased by TEI and converted into a working ranch managed for bison production as well as wildlife and fisheries conservation. It is the opinion of TU that both Camp Creek and West Fork Camp Creek were heavily grazed by the previous cattle operation which degraded riparian and aquatic habitat. The conversion to bison production is preferred over traditional cattle operations because bison naturally spend less time in riparian areas resulting in fewer negative impacts on river ecosystems. TEI also does a great job of rotating their bison into different pastures to reduce their impact on the landscape.

However, when a stream has been heavily impacted by previous cattle operations, existing wildlife as well as bison can keep river ecosystems in a state of arrested degradation. Conditions will improve over time, however many of the natural processes and native plant communities will be unable to recover. TU suggests taking a more active approach to address habitat degradation. General restorations suggested for the West Fork and mainstem Camp Creek include installing jog jams and beaver dam analogs (BDAs), revegetation with native woody riparian plants, and fencing the project areas to exclude bison and wildlife for a period of 10 years. If successful, bison and wildlife should be able sustainably utilize these areas in the future without having negative impacts on the stream ecosystem and native plant communities. This will also greatly improve habitat conditions for wildlife including beaver, deer, elk, and moose that heavily utilize woody riparian vegetation. Additionally, installation of log jams and BDAs will function as grade control structures which will capture fine sediment and promote over bank flow. These structures will also encourage floodplain reconnection, resulting in additional ground water storage. This will result in improved water quality and water availability later into the season which will benefit native vegetation as well as fish, wildlife, and bison production.



Figure 3: Heavily grazed riparian vegetation and moose scat along West Fork Camp Creek. The presence of willow and other woody riparian vegetation indicates that this type of vegetation should thrive if it is allowed to become established. Fencing will be necessary to allow the native vegetation to recover or the headwaters of Camp Creek will remain in its current degraded state.

West Fork Camp Creek

West Fork Camp Creek is a perennial tributary to Camp Creek. On March 18th it was flowing at less than 1 cfs, the stream channel appeared to be incised 1 – 3 ft on average and lacking woody riparian vegetation. What little riparian vegetation existed, was either tall enough to escape browsing or stunted by continuous grazing.



Figure 4: West Fork Camp Creek is incised 1 - 3 ft on average. Besides a few old cotton wood trees and upland snowberry, there is little woody vegetation.

Approximately 1-mile of WF Camp Creek has perennial flow. Within this reach, TU suggests installing ~40 Beaver Dam Analogs (BDAs) and wildlife fencing. The following spring, dormant live stakes of willow, dogwood, cottonwood, and chokecherry can be planted to kickstart revegetation of the riparian area. Gaps can be left in the fencing to allow wildlife and bison to access water and more easily cross the project area.

Camp Creek

Camp Creek flows for 0.6 miles through TEI property. The stream has been relocated to accommodate a county road and it appears this part of the property was heavily used by the previous cattle operation. As a result, the stream has become very incised, 3-4 ft on average, and it is disconnected from its floodplain. The stream channel is dominated by fine sediment with some

gravel and cobble in places where stream velocity can transport fine sediment. On March 18th, Camp Creek was flowing at ~4 cfs.



Figure 6: picture of Camp Creek on TEI property. The stream channel is very incised and dominated by fine sediment.

TU proposes installing a combination of ~40 BDAs and Post Assisted Log Structures (PALS) to restore natural stream processes, capture fine sediment, and raise the local water table. The upper 2/3rds of the project contains woody riparian vegetation so very little active planting would be needed. Raising the water table and fencing out bison/wildlife should allow vegetation to recover on its own with some targeted plantings. The lower 1/3rd of the reach is almost completely devoid of native woody plants and will require extensive revegetation and fencing. Gaps can be left in the fencing to allow wildlife and bison to access water and more easily cross the project area.

Once completed, the project should be monitored annually to ensure that the fence is holding up and that the BDAs continue to function as desired. Eventually, the riparian area and stream channel should recover to the point that the fencing can be removed, allowing bison and wildlife to sustainably utilize the area into the future. TU and TEI anticipate the fencing to be in place for a minimum of 10 years.

Beaver Dam Analog and Post Assisted Log Structure Typicals

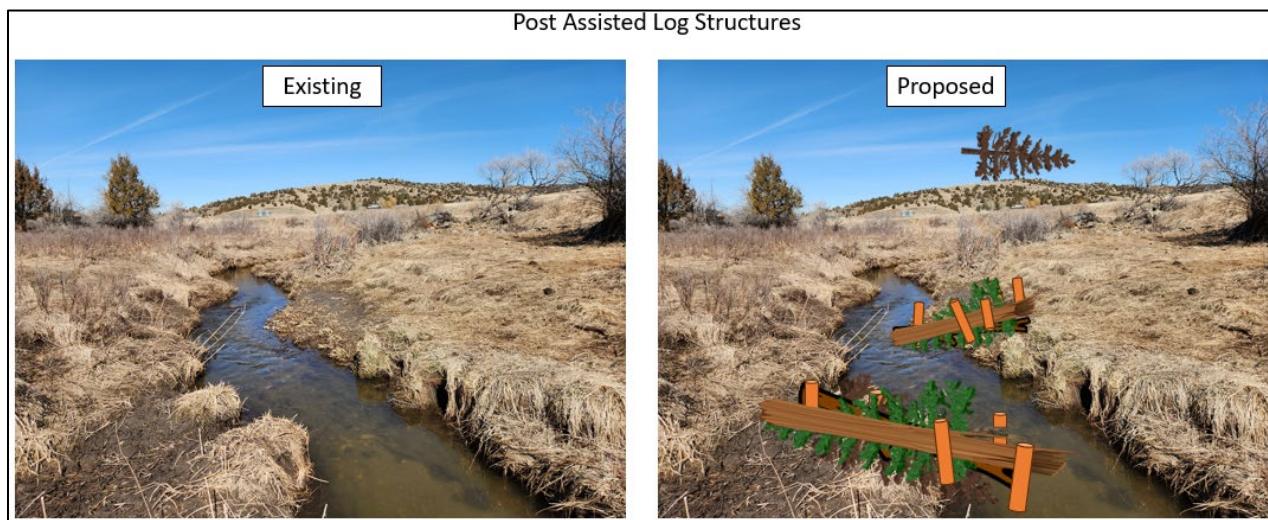


Figure 7: A photo of Camp Creek with depictions of two Post Assisted Log structures.

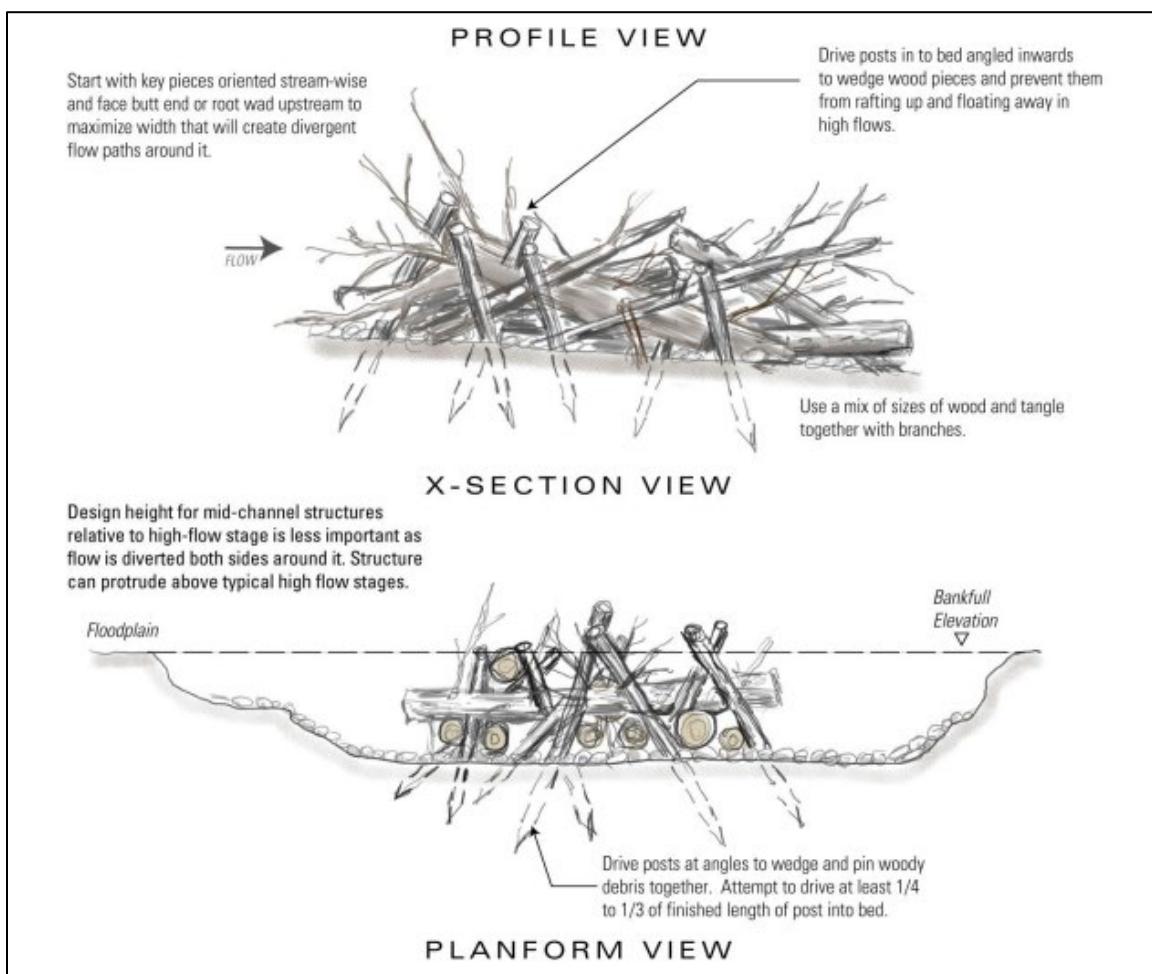


Figure 8: PALS design typicals taken from the Low-Tech Process-Based Restoration of Riverscapes Design Manual

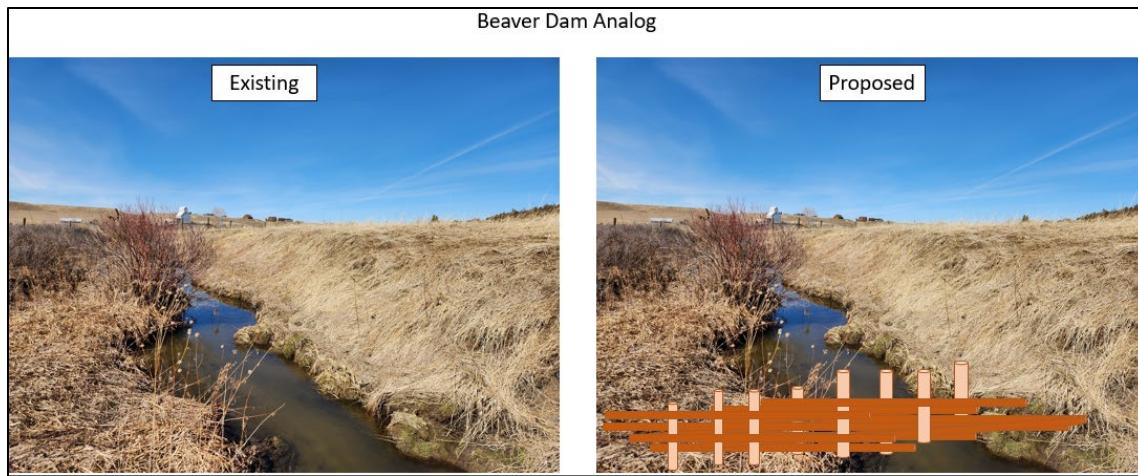


Figure 9: A photo of Camp Creek with depictions of a Beaver Dam Analog.

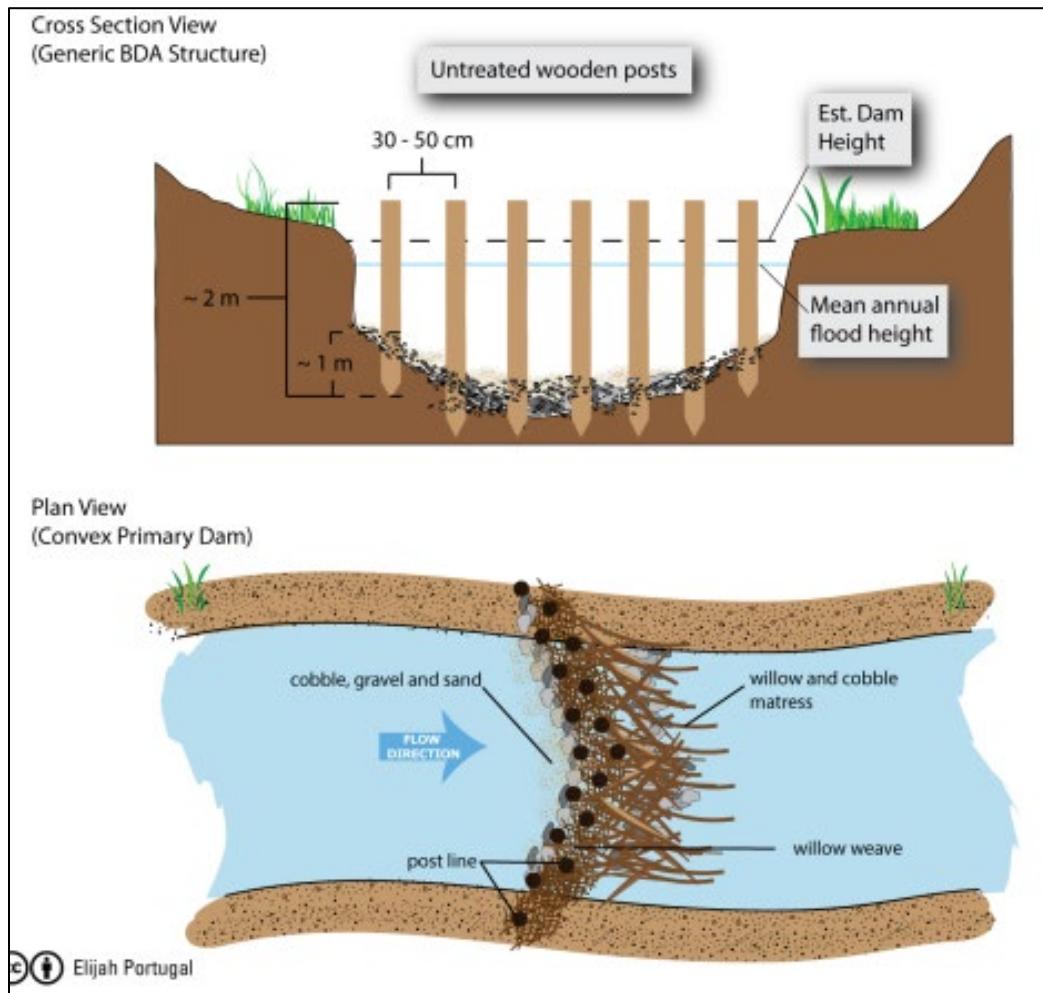


Figure 10: BDA design typicals taken from the Low-Tech Process-Based Restoration of Riverscapes Design Manual

Site Photos- Camp Creek



Site Photos- West Fork Camp Creek

