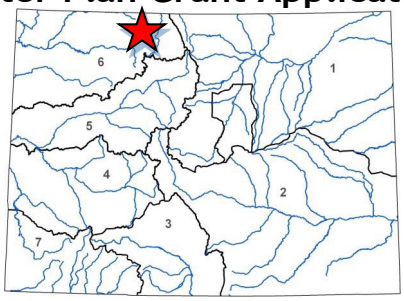
COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Middle Fork Little Snake Project
Trout Unlimited

September 2023 Board Meeting

Water Plan Grant Application

Lat: 40.944453
Long: -106.91863



LOCATION	
County:	*Routt*
Drainage Basin:	*Yampa*

DETAILS	
Total Project Cost:	$1,235,083.00
Water Plan Grant Request:	$66,494.00
Recommended Amount:	**$66,494.00**
Other CWCB Funding:	$0.00
Other Funding Amount:	$1,156,409.00
Applicant Match:	$12,180.00
Project Type:	Construction
Project Category: Watershed Health & Recreation	
Measurable Result: Bridge construction to reconnect 20 miles of aquatic habitat and resilient public recreation access	

Trout Unlimited (TU) seeks funding for project management and construction to install a bridge crossing for the Little Snake River Culvert Replacement project. The Little Snake River Culvert Replacement Project on the Medicine Bow-Routt National Forest 22 miles north of Clark, CO was identified as a high priority project in the Medicine Bow-Routt Watershed Restoration Action Plan (WRAP) in 2011. The WRAP identified nine culvert replacements for aquatic organism passage, structural and safety concerns, and improved hydrologic function. The culvert replacements will restore connectivity on 23 miles of perennial stream. Five crossings were completed between 2017 and 2018. (Two crossings were removed from the project due to limited ecological benefit.)

The engineering designs have been completed for the two remaining crossings and most of the funding for construction has been secured through Federal Highways and Infrastructure Bill funds. One crossing will be replaced with an engineered bridge, and one crossing will be an improved culvert. The Water Plan Grant will cover the funding gap in construction costs for the bridge. The Forest Service partnered with TU for project management. TU will oversee and manage all implementation aspects of the bridge construction, including bid solicitation and contract award, permitting, construction, riparian restoration, permit close out, and project monitoring.

By replacing aging and failing infrastructure and restoring the riparian corridor on the Middle Fork of the Little Snake River the new bridge will restore the streambank and reestablish riparian and wetland plants, enhance rifle/pool sequence in the stream, ensure infrastructure is climate adaptive and structurally intact, restore aquatic and semi-aquatic organism passage, increase recreational angling opportunities, and ensure downstream water conveyance during variable climatic conditions. Throughout construction volunteer events will provide an opportunity for community engagement.

Funding Recommendation: Staff recommends Board approval of $66,494000 to Trout Unlimited for the Middle Fork Little Snake Project through Watershed Health and Recreation category.

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Water Plan

Water Project Summary

Name of Applicant	Trout Unlimited	
Name of Water Project	Middle Fork Little Snake Project	
Grant Request Amount		**$66,494.00**
Primary Category		$66,494.00
Watershed Health & Recreation		
Total Applicant Match		**$12,180.00**
Applicant Cash Match		$0.00
Applicant In-Kind Match		$12,180.00
Total Other Sources of Funding		**$1,156,409.00**
Federal Highway Administration		$50,000.00
U.S. Forest Service		$1,106,409.00
Total Project Cost		**$1,235,083.00**

Applicant & Grantee Information

Name of Grantee: Trout Unlimited
Mailing Address: 1777 North Kent St., Suite 100 Arlington VA 22209
FEIN: 1,612,715

Organization Contact: Ellie Miller
Position/Title: Northwest Colorado Project Manager Email: ellie.miller@tu.org
Phone: 530-748-7773

Organization Contact - Alternate: Ellie Miller
Position/Title: Northwest Colorado Project Manager Email: ellie.miller@tu.org
Phone: 530-748-7773

Grant Management Contact: Ellie Miller
Position/Title: Northwest Colorado Project Manager Email: ellie.miller@tu.org
Phone: 530-748-7773

Grant Management Contact - Alternate: Ellie Miller
Position/Title: Northwest Colorado Project Manager Email: ellie.miller@tu.org
Phone: 530-748-7773

Description of Grantee/Applicant

Trout Unlimited (TU) is the nation’s largest cold-water conservation organization with approximately 150,000 volunteers and roughly 277 employees nationwide, working to protect, reconnect, restore and sustain America’s fisheries. TU’s volunteers and their local chapter groups work on a variety of initiatives that meet the unique needs of their watersheds.

Type of Eligible Entity

- ☐ Public (Government)
- ☐ Public (District)
- ☐ Public (Municipality)
- ☐ Ditch Company
- ☐ Private Incorporated
- ☐ Private Individual, Partnership, or Sole Proprietor
- ■ Non-governmental Organization
- ☐ Covered Entity
- ☐ Other

Category of Water Project

- ☐ Agricultural Projects
  Developing communications materials that specifically work with and educate the agricultural community on headwater restoration, identifying the state of the science of this type of work to assist agricultural users among others.
- ☐ Conservation & Land Use Planning
  Activities and projects that implement long-term strategies for conservation, land use, and drought planning.
- ☐ Engagement & Innovation Activities
  Activities and projects that support water education, outreach, and innovation efforts. Please fill out the Supplemental Application on the website.
- ■ Watershed Restoration & Recreation
  Projects that promote watershed health, environmental health, and recreation.
- ☐ Water Storage & Supply
  Projects that facilitate the development of additional storage, artificial aquifer recharge, and dredging existing reservoirs to restore the reservoirs' full decreed capacity and Multi-beneficial projects and those projects identified in basin implementation plans to address the water supply and demand gap.

Location of Water Project

Latitude	40.944453
Longitude	-106.918639
Lat Long Flag	Stream location: Coordinates based on general location on stream
Water Source	Middle Fork Little Snake River
Basins	Yampa/White/Green
Counties	Moffat; Routt
Districts	55-Little Snake River

Water Project Overview

Major Water Use Type	
Type of Water Project	Construction / Implementation
Scheduled Start Date - Design	6/1/2014
Scheduled Start Date - Construction	7/15/2024

Description

Trout Unlimited (TU) staff will collaborate with the U.S. Forest Service, Federal Highway Administration and the Yampa Valley Sustainability Council to implement a road-stream crossing replacement and stream habitat enhancement on the Middle Fork of Little Snake River. The road-stream crossing is located 22 miles north of

Clark, Colorado.

In 2014, seven culverts in the headwaters of the Little Snake River, CO were identified by the U.S Forest Service for replacement due to ecological and structural concerns. NEPA documents were completed and approved in 2016 and designs were completed from 2016 to 2020. Three of the replacements were completed in 2017 and two in 2018.

The objective of this project is to replace one of the seven identified culverts with a bridge in the summer of 2024, to re-establish hydrological processes, improve aquatic and semi-aquatic passage, address structural and safety concerns, and restore riparian function along the river corridor. Given adequate funding, Trout Unlimited and its partners will replace the final smaller culvert, thus completing all seven replacements and restoring ecological and hydrological function throughout the headwaters of the Little Snake River, CO.

Measurable Results

	New Storage Created (acre-feet)
	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive
	Existing Storage Preserved or Enhanced (acre-feet)
	New Storage Created (acre-feet)
142	Length of Stream Restored or Protected (linear feet)
32.00	Length of Pipe, Canal Built or Improved (linear feet)
	Efficiency Savings (dollars/year)
	Efficiency Savings (acre-feet/year)
	Area of Restored or Preserved Habitat (acres)
	Quantity of Water Shared through Alternative Transfer Mechanisms or water sharing agreement (acre-feet)
	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning
25	Number of Coloradans Impacted by Engagement Activity

Other

No additional measurable results provided

Water Project Justification

This project directly responds to the “Thriving watershed” action area in the 2023 draft update of Colorado Water Plan (Ch.6, pg 204) by, 1) improving fish and semi-aquatic organism passage, 2) increase access to recreational opportunity, 3) create greater drought, fire and flood resilience, 4) reconnecting floodplains and nature-based solutions, 5) rehabilitating streams to improve habitat, reduce erosion, and meet needs, and 6) improving riparian and aquatic habitat. By replacing the failing culvert with a bridge, we are reconnecting 20 miles of aquatic habitat, ensuring fish passage and ample fishing opportunity in a high-use recreational area. Currently, the dilapidated culvert impedes flows, causing scour and bank erosion during high flow events. The bridge is engineered to limit contact with waterway, thus re-establishing natural hydrological processes and flood resilience. Along with the direct replacement of aging infrastructure, we will restore the channel directly above and below the bridge to ensure floodplain access. Additionally, we will implement a riparian planting effort to further improve bank stability and sustain a stable, diverse, and abundant population of aquatic and riparian species.

This project also addresses “Uncertain climate conditions ” (Ch. 4, pg.140) in the basin challenge section of the Colorado Water Plan, which states that, “Climate change may result in extended drought and aridification that affect water users in different ways, such as reduced streamflow, changing growing seasons, and altered supply and demand patterns ". As mentioned in the plan, a potential solution to uncertain climate conditions is to improve aging infrastructure (Ch.5, pg. 150). This project would ensure adequate conveyance of water at low

flow conditions to downstream users. There are several instream flow decrees downstream of the project site (ID: 6-77W1355 and ID: 6-77W1352) which will benefit from consistent passage of flows through updated infrastructure. While on the other hand of the climate variability spectrum, floods present extensive impacts such as community damage, shifts in agricultural operations, and water quality issues (Ch.3, pg. 32). The proposed updated infrastructure is designed to withstand a 100-year flood event, thus ensuring consistent conveyance of water during high flow events and protecting infrastructure downstream by negating debris plugging and wash out.

The project aligns with the Yampa Integrated Water Management Plan (pg. 29) recommendation to, “conduct demonstration projects and community outreach” by collaborating with the Yampa Valley Sustainability Council (YVSC) to implement a community riparian planting day post-construction. The goal is to provide a unique educational opportunity about the importance of appropriately designed infrastructure to provide ecological benefit (i.e. adequate hydrological function and aquatic/semi-aquatic organism passage) and water availability, and the impact of plantings and other human actions on the quality and quantity of water, which will support the Colorado Basin Education Action Plan and the statewide Water Education Action Plan. As the project is implemented in collaboration with the U.S. Forest Service, the project will also remain consistent with the Routt National Forest Land Management Plan.

Related Studies

Center for Transportation and the Environment. (2002). Aquatic organism passage at road-stream crossings. Center for
Transportation and the Environment. North Carolina State University.

Federal Interagency Stream Restoration Working Group (FISRWG). (1998). Stream Corridor Restoration: Principles, Processes, and Practices. Federal Interagency Stream Restoration Working Group(15 Federal agencies of the United States Government). ISBN-0-934213-59-3.

Lotic Hydrological. (2021). Yampa River Hydrology Review and E&R Needs Assessment.

Frankiewicz, P., Radecki-Pawlik, A., Waga, A., apiska, M., & Wojtal-Frankiewicz, A. (2021). Small hydraulic structures, big environmental problems: Is it possible to mitigate the negative impacts of culverts on stream biota? Environmental Reviews, 29(4), 510–528. https://doi.org/10.1139/er-2020-0126

Udall, B., & Overpeck, J. (2017). The twenty-first century Colorado River hot drought and implications for the future.
Water Resources Research, 53(3), 2404–2418.

Taxpayer Bill of Rights

N/A