



COLORADO

Colorado Water Conservation Board

Department of Natural Resources

Colorado Water Conservation Board

Water Plan

Water Project Summary

Name of Applicant	Yampa Valley Stream Improvement Charitable Trust
Name of Water Project	Yampa River Post-Construction Monitoring Pilot Study
Grant Request Amount	\$199,904.00
Primary Category	\$199,904.00
<i>Watershed Health & Recreation</i>	
Total Applicant Match	\$50,014.00
<i>Applicant Cash Match</i>	
	\$25,000.00
<i>Applicant In-Kind Match</i>	
	\$25,014.00
Total Other Sources of Funding	\$0.00
Total Project Cost	\$249,918.00

Applicant & Grantee Information

Name of Grantee: Yampa Valley Stream Improvement Charitable Trust
Mailing Address: PO Box 772842 Steamboat Springs CO 80477
FEIN: 841,018,137

Organization Contact: Drew Johnroe
Position/Title: Executive Director/Board President Email: djpc@johnroelaw.com
Phone: 970-846-4304

Grant Management Contact: Drew Johnroe
Position/Title: Executive Director/Board President Email: djpc@johnroelaw.com
Phone: 970-846-4304

Description of Grantee/Applicant

YVSICT is a 501(c)(3) charitable organization that works to enhance and protect water quality and riparian areas in the Yampa Valley and to educate the public and enhance awareness of environmental water issues.

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	40.487621
Longitude	-106.838112
Lat Long Flag	Default/Proponent headquarters: If the location cannot be defined with flags above, use location of project proponent headquarters
Water Source	Yampa River
Basins	Yampa/White/Green
Counties	Routt
Districts	58-Upper Yampa River

Water Project Overview

Major Water Use Type	Environmental
Type of Water Project	Planning
Scheduled Start Date - Design	7/22/2024
Scheduled Start Date - Construction	

Description

The Yampa River Post-Construction Monitoring Pilot Study (MPS) will be a 5 year, monitoring study of 3 sites to evaluate successes, failures, and document lessons learned from completed river projects. An In-depth, multi-criteria based monitoring of river enhancement projects provides an opportunity to evaluate design/construction techniques. The Yampa River has a long history of channel improvement projects conceived, designed, and implemented consisting of differing techniques/design approaches. As such, a monitoring program that includes paired projects, with matching flow and sediment regimes, within close proximity, and different techniques/design approaches, can provide a valuable study to compare and quantify geomorphic responses to the process vs. form design approaches.

The monitoring approach will be based upon existing established frameworks, including the Functional Assessment of Colorado Streams (FACStream, Beardsley et al. 2015), the Colorado Stream Health Assessment Framework (COSHAFF), and the Colorado Stream Quantification Tool (COSQT). Basing the monitoring parameters on these existing frameworks will result in data sets that are consistent with existing monitoring efforts throughout Colorado. The data collection and analysis are intended to be an adaptive approach, in that

annual assessments and reports will be evaluated to help inform and guide future data collection efforts and performance metrics based on trend detection.

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)
Length of Stream Restored or Protected (linear feet)
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
Number of Coloradans Impacted by Engagement Activity

Other

5 years of Quantitative Monitoring data and analysis.

Evaluation of design/construction techniques to improve future project success.

Development of a replicable monitoring framework that can be applied to new watersheds.

Length of Channel to be Monitored: 19,500'

Water Project Justification

Project Description:

The proposed Yampa River Post-Construction Monitoring Pilot Study (MPS) is not itself a construction project but rather a program designed to provide technical, reliable data, recorded in a format usable and applicable for future riparian projects. Data collection and analysis of technical data is a necessary component of developing river health, assessment and construction of future projects throughout the Upper Yampa River Basin. The stated goals of thriving watersheds will be served by the MPS's analysis and provision of data, the information and methodology benefiting numerous stakeholders.

Colorado Water Plan

1. Watershed Health and Recreation

a. The MPS is a basin – specific technical analysis of three river reaches, Sarvis Creek, Pleasant Valley, and Stagecoach Mountain Ranch situated in the Upper Yampa River Basin. The areas included are high use, public access areas, providing outstanding waters for recreational fishing. The riparian areas provide valuable habitat for a variety of interconnected species of animals and plants. Recent fires in the drainage and recently performed restoration projects provide a unique opportunity for monitoring, data collection and analysis. Replicable multi-year analysis of responses of river process to restoration/enhancement strategies will provide valuable insight into successes and lessons learned for use throughout the basin and State in future projects. The data serves the goal and strategic vision by quantifying and protecting environmental and recreational water uses (CWP p. 137) and watershed planning (CWP p. 158).

i. The Yampa River Enhancement Project at Pleasant Valley was constructed in 2021 and funded by a combination of Grants from “Colorado Healthy Rivers Fund, Colorado Water Conservation Plan” and “Fishing is Fun.”

1. Design Costs: \$44,240

2. Construction Costs: \$222,500

ii. The CPW NW Design Build (Sarvis Creek SWA) was constructed in 2021 and funded through a grant from Great Outdoors Colorado (COGO).

1. Design Costs: \$84,200

2. Construction Costs: \$265,000

b. The Stagecoach Mountain Ranch site is located and funded on private property with a long history of cattle grazing and agricultural practices. The landowner self-funded the project for aquatic habitat and water quality improvement, which includes cattle exclusion fencing that will result in a more robust vegetated riparian buffer and reduction in sediment and nutrient loading to the Yampa River (and especially Stagecoach Reservoir).

c. A monitoring program focusing on these three reaches will help to improve the overall value of previously awarded grant and private funds, by providing a mechanism for evaluating project performance and improvements in river processes.

2. Education, Outreach, and Innovation

a. The MPS, will be a collaborative project, bringing together stakeholders including local watershed proponents (YVSICT, YVFF, Trout Unlimited), educational organizations (Aims Community College, Colorado Mountain College, Colorado State University), and professional river practitioners. This collaborative approach will allow multiple avenues of educational opportunities, by teaming professionals with students and river stewards to collect meaningful, site-specific field data which will be used to inform and improve future projects. Hands on experience for the next generation of river stewards will help promote lasting connections and interest in advocating for river health. The MPS will utilize innovative targeted remote sensed data collected from UAV orthoimagery and Normalized Differential Vegetation Index (NDVI), to monitor and evaluate revegetation outcomes on an annual basis.

CWP/Project Goals:

The MPS supports the overarching goals/objectives of the Colorado Water Plan through creation of an integrated, user friendly database which will be used to improve watershed health (CWP p. 204) and establish best practices for enhancement of nature-based solutions that support healthy forests, recreational opportunities and watersheds(CWP p. 204-205). The Monitoring Program will assist in meeting goals 3.1 of Developing a Healthy Assessment Framework, 3.2 and 3.4 in creation of future stream construction and forest health, 3.6 the watershed, environment and recreation (CWP p. 206). The data will be of use for in the Yampa Basin and ultimately throughout the state.

The proposed MPS aligns with Water Plan Funding Category: Watershed Health and Recreation Projects (CWP p. 175), benefiting future construction projects in the basin and elsewhere.

Other goals of the CWP are advanced including recreational use and educational outreach. The Project incorporates contributions/participation from educational entities and other stakeholders.

One of the goals of the MPS is to encourage partnership participation and involvement. The proponent of the Project is the Yampa Valley Stream Improvement Charitable Trust (YVSCIT). This is a local non-profit organization formed in 1983. The mission statement of the YVSICT from its inception is to protect and enhance water quality, trout habitat and riparian areas of the Yampa Valley and adjacent drainages in northwest Colorado, and to educate the public and enhance awareness of environmental water issues. The goals of YVSICT are consistent with the overarching goals of the Colorado Water Conservation Plan. Over the past 40 years the YVSICT has implemented this mission, each year building upon successful projects which have preceded. Over the recent 20 years, the YVSICT, in partnership with state, local and federal governments, and numerous local organizations and stakeholders, initiated and completed a multi-year, three phase project at Chuck Lewis State Wildlife Area and the Pleasant Valley Project, a reach of the Yampa immediately below Sarvis Creek. Currently a project is underway at the Strawberry Park School Campus on Butcherknife Creek in conjunction with the local

school district. YVSICT has demonstrated a history of successful collaboration and involvement of agencies, including CPW, BLM, USFS, City of Steamboat Springs and Routt County.

YVSCT has worked successfully with contractors in order to accomplish the above projects, as well as the numerous projects done previously, in conjunction with the Yampa Valley Fly Fishers Chapter of Trout Unlimited (YVFF), our sister organization.

The proposed MPS meets the goals of sustainability, collaboration, and is ready to be implemented immediately. It meets the goals of analysis of specific ecosystems, such as a basin headwater, to create stronger projects and strategies by providing the science necessary to effectuate future projects consistent with the CWP. The MPS will positively promote addressing issues of reduction of erosion, rehabilitation of streams, recreational opportunities using watershed-specific metrics (CWP p. 205-206).

Alignment with Key Statewide Results of the Analysis and Technical Update to the Water Plan:

The MPS supports ENVIRONMENTAL AND RECREATIONAL (CWP Analysis and Technical Update Pg. 196)

- Projected future stream flow hydrographs in most locations across the state show earlier peaks and potentially drier conditions in the late summer months under scenarios with climate change. – The MPS will include metrics to evaluate habitat complexity at all ranges of flows, but particularly at extreme low flows. Mapping of habitat units, pool area surveys, overhead cover, and quantifying large woody debris will help to quantify the resilience of these particular river reaches to expected low water conditions.
- For trout, increased stream temperatures under low-flow conditions also increase risks. – The MPS includes the installation and monitoring of instream temperature loggers designed in pairs to determine cause/effect of increased hyporheic exchange through construction of riffles. This data is intended to provide valuable insight into quantifiable uplift potential of temperature mitigation through restoration practices.

In Chapter 6, under the “Thriving Watersheds” section of the 2023 Colorado Water Plan, the partner actions subsection lays out activities that qualify for grant funding. The MPS aligns with these goals and objectives as follows:

1. Thoughtful Storage:

a. Nature-based Solutions (CWP pg. 205)

i. This monitoring framework criteria is based upon natural river processes that support diverse and complex natural interactions. Results and lessons learned from this program will help to identify and quantify techniques and strategies that serve to improve the overall health of the river corridor. Specific to the “Thoughtful Storage” of providing “adequate streamflows that support critical habitat for wildlife and protect recreation interests” (CWP pg. 205), two of the variables to be evaluated are Floodplain Connectivity and Riparian Condition, both of which are intrinsically related to the natural processes that support “attenuation of flood flows, boost late-season low flows, and improve ecosystem health and water quality.”

2. Meeting Future Water Needs:

a. The MPS meets the goal of rehabilitating streams to improve habitat, reduce erosion, and meet demands. (CWP pg. 205)

ii. The central goal of this monitoring program is to evaluate performance of rehabilitated stream, with regards to habitat improvements and reduction of erosion.

3. Wise Water Use:

a. The MPS meets the goal of creation of greater drought, fire, and flood resilience (CWP pg. 206)

i. The Sarvis Creek and Pleasant Valley reaches are located downstream of the confluence with Morrison Creek, whose watershed contains the 4,067 acre fire scar of the 2021 Muddy Slide wildfire. Monitoring of these two project areas will help to evaluate and determine temporal effects of increases in suspended sediments 3-8 years after the fire.

4. Healthy Lands:

- a. The MPS meets the goal of reconnecting floodplains and nature-based solutions (CWP pg. 206)
- i. See response to “Nature Based Solutions” 3 (a) above
- b. Improving riparian and aquatic habitat (CWP pg. 206)
- i. See response to “Nature Based Solutions” 3 (a) above

The MPS aligns with the most recent Yampa-White-Green Basin Implementation Plan completed in January 2022 and the following YWG Implementation Plan Goals:

- 1. Quantify and protect environmental and recreational (E&R) water uses (Yampa-White-Green BIP p. 13).
 - a. The MPS will be designed based upon previously established and tested river health assessment frameworks specific to Colorado waterways. The approach will provide a method for identifying and evaluating quantifiable metrics related to both environmental health and recreational opportunities following implementation of restoration/enhancement projects.
 - b. The MPS results will help to quantify the connection between river corridor health and the associated recreational opportunities.

Related Studies

Yampa River Scorecard Project

Taxpayer Bill of Rights

N/a