COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan

Water Project Summary

Name of Applicant	Northern Water
Name of Water Project	Kawuneeche Valley Restoration Collaborative (KVRC) Project Monitoring
Grant Request Amount	**$441,712.39**
Primary Category	$441,712.39
Watershed Health & Recreation	
Total Applicant Match	**$63,040.00**
Applicant Cash Match	$63,040.00
Applicant In-Kind Match	
Total Other Sources of Funding	**$87,137.44**
Rocky Mountain Conservancy	$63,378.08
Windy Gap Environmental Fund	$8,736.00
KVRC	$15,023.36
Total Project Cost	**$591,889.83**

Applicant & Grantee Information

Name of Grantee: Northern Water
Mailing Address: 220 Water Avenue Berthoud CO 80513
FEIN: 846,000,204

Organization Contact: Kimberly Mihelich
Position/Title: Source Water Protection Specialist
Email: kmihelich@northernwater.org
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Grant Management Contact: Kimberly Mihelich
Position/Title: Source Water Protection Specialist
Email: kmihelich@northernwater.org
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Description of Grantee/Applicant

Northern Water is a conservancy district that delivers water to municipal and agricultural entities, providing water to over a million people in northern Colorado. Northern Water jointly operates and maintains the Colorado-Big Thompson Project, a federally owned water project that delivers supplemental water to northeastern Colorado, with the Bureau of Reclamation. Northern Water also manages a variety of other water projects and infrastructure. In addition, Northern Water provides regional leadership through data collection and delivery (including water supply forecasts), water efficiency programs, source water protection and interagency cooperation.

Type of Eligible Entity

☐ Public (Government)

- [x] 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.
- [x] 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	40.393090
Longitude	-105.848448
Lat Long Flag	Precise coordinates: Project coordinates are readily definable and precisely define the location of the project
Water Source	Colorado River
Basins	Colorado
Counties	Grand
Districts	51-Upper Colorado/Fraser Rivers

Water Project Overview

Major Water Use Type	Environmental
Type of Water Project	Planning
Scheduled Start Date - Design	5/1/2024
Scheduled Start Date - Construction	

Description

Grand County’s Kawuneeche Valley in the Upper Colorado River Basin was one of the most significant wetlands in Colorado at more than 8 miles long and over a half-mile wide. Unfortunately, over the past 20-30 years, heavy browsing by elk and moose impacted beaver habitat, ultimately leading to the conversion of the valley from a beaver-willow ecosystem to an elk-moose grassland. The Kawuneeche Valley Ecosystem Restoration Collaborative (KVRC) is working to reverse this trend by increasing tall willow stands and creating habitat islands

for beaver throughout the valley. Project activities aim to increase the water table, retain sediment, and inundate areas near the channels for the benefit of people, wildlife, and the entire ecosystem.

If awarded, this grant will support the first five years of a ten-year monitoring strategy, which KVRC will use to monitor the success in meeting project objectives and will adapt upcoming project phases to be as effective as possible. KVRC aims to collect baseline data at all four locations (Beaver, Upper Baker, Lower Baker, and Onahu Creeks) and will continue to monitor as the projects are implemented.

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)
12,000	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)
206	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
15,000	Number of Coloradans Impacted by Engagement Activity

Other

5 years of geomorphic, hydrologic, vegetative, and habitat data

Water Project Justification

Over the past 20-30 years, heavy browsing by elk and moose reduced the Kawuneeche Valley's tall willow stands. Without suitable habitat, beavers are absent, leading to the drying of the valley and the continued loss of tall willow stands. The Kawuneeche Valley Restoration Collaborative (KVRC) is working to reverse this trend and restore the beaver-willow ecosystem. Initiative activities aim to increase the water table, retain sediment, and inundate areas near the channels for the benefit of people, wildlife (primarily beaver, amphibians, and migratory birds), and the entire ecosystem. The monitoring project will collect baseline data, and support continued monitoring once the projects are implemented.

KVRC's monitoring strategy and overall project support the following plans:

Colorado Water Plan

The overall KVRC initiative addresses several "Partner Actions" under the Thriving Watersheds vision, including the following. The monitoring strategy will help KVRC track the project's success in addressing these.

-Thoughtful Storage: "Nature-based solutions"(p 205)- KVRC's initiative will reverse the shift to dry grasslands and eroded channels by restoring the willow-beaver ecosystem, including pond complexes that create aquatic habitat. In the next 10-20 years, KVRC aims to increase tall willow stand areas, creating habitat islands for beaver throughout the valley. Project activities, including exotic plant treatment, willow planting, construction of several types of simulated beaver structures, and removal of abandoned infrastructure, will increase the water table, retain sediment, and inundate areas near the channels to restore and enhance wetlands and re-create lost aquatic habitat, attenuate floods, increase late-season flows, and improve ecosystem health and water quality.

-Meeting Future Water Needs: “Rehabilitate streams to improve habitat, reduce erosion, and meet needs” (p 205)- The initiative’s activities address the degradation due to heavy ungulate browsing, particularly the precipitous decline in tall-statured willows and other wetland shrubs. KVRC’s goal is to re-establish ecological and hydrological conditions that can support sustainable beaver populations and the extensive wetland and pond complexes they create and maintain throughout the watershed where conditions are suitable. KVRC anticipates that these projects will halt or reverse channel degradation in many areas, reactivate large areas of the floodplain to raise water tables and restore wetlands, and reduce sediment and nutrient loads derived from eroding tributaries to improve water quality in the Colorado River and Three Lakes System that forms the basis for the Colorado-Big Thompson Water Management Project.

-Healthy Lands: “Reconnecting floodplains and nature-based solutions” (p 206)- The low-tech process-based restoration (LTPBR) structures and revegetated riparian area will increase the connection between the stream and the floodplain by reducing the stream channel incision currently occurring in the restoration sites. The structures will slow water flow and increase sediment deposition, providing increased opportunities for overbank flooding and the exchange of water from the stream to the floodplain. Riparian vegetation provides shade to reduce evaporation and retain water on the floodplain, slowing downstream flows and increasing later-season water availability for downstream areas. Additionally, these activities will increase resilience to drought, fire, and floods by restoring wetlands and raising the water table.

-Healthy Lands: “Improving riparian and aquatic habitat” (p 206)- Ecosystem restoration in the valley will improve habitat for boreal toads, beaver, wood frogs, river otters, and waterfowl within a larger region of inhospitable, rocky, mountainous terrain. Colorado Parks & Wildlife (CPW) lists beaver and boreal toads, native species in the project area, as tier 1 wetland priority species. The boreal toad is also listed as an endangered species in Colorado with a pending petition for federal listing. The boreal toad is also a tier 1 species of greatest conservation need in Colorado. Wood frogs and river otters are listed as tier 2 wetland priority species by CPW. Wood frogs have the designation of special concern, while river otters are listed as threatened in Colorado. The importance of wetland and riparian habitat will only increase with climate change. Additionally, the LTPBR structures and revegetated riparian areas will improve water quality for downstream water users.

Colorado Basin Implementation Plan, 2022, Volume 1

As a whole, the KVRC restoration activities support the “protect and restore healthy streams, rivers, lakes and riparian areas” theme in the 2022 update of the Colorado Basin Implementation Plan (BIP) by restoring the Kawuneeche Valley’s wetland habitat and ecosystem function and reversing the drying trend. By monitoring the KVRC project initiatives, KVRC will be able to track success and adjust project activities to meet this theme’s goal to “protect and maintain healthy and self-sustaining aquatic and riparian ecosystems, and rehabilitate damaged ecosystems.” (p 14)

Related Studies

The monitoring strategy will support the assessment of sediment size and embeddedness in trout spawning habitat in a manner that is compliant with the Colorado Water Quality Control Commission Narrative Sediment Policy 98-1.

Macroinvertebrate data collection will utilize protocols approved by the Division’s Section 303(d) Listing Methodology 2020 Listing Cycle (Colorado Department of Public Health and Environment, Water Quality Control Division, March 2019).

Monitoring was informed by a condition assessment that synthesized long-term data from the Kawuneeche Valley on vegetation, hydrology, elk and moose populations, climate, and landscape composition. This synthesis will be submitted to a journal in 2024 (Cooper, D.J., Schweiger, E.W., Shaw, J.R., Westbrook, C., Kaczynski, K., Rathburn, S., Chimner, R.A. 2023. Riparian ecosystem condition assessment of the Kawuneeche Valley. In prep.). KVRC plans to publish monitoring results and lessons learned in our adaptive management process around year 5 of monitoring.

Rocky Mountain National Park's Strategic Plan identifies the restoration of wetlands and riparian systems as a high priority. The proposed restoration project reestablishes the willow-beaver system to improve habitat and ecosystem services in the Beaver Creek area of the Kawuneeche Valley. Additionally, the proposed KVRC initiatives support the National Park Service's Management Policies, including the following sections:

4.1.5- "The Service will seek to return such disturbed areas to the natural conditions and processes characteristic of the ecological zone in which the damaged resources are situated."

4.1.2- "The Service will use the best available technology, within available resources, to restore the biological and physical components of these systems, accelerating both their recovery and the recovery of landscape and biological community structure and function."

4.2.1- "NPS-conducted or -sponsored Inventory, Monitoring, and Research Studies The Service will:
-identify, acquire, and interpret needed inventory, monitoring, and research, including applicable traditional knowledge, to obtain information and data that will help park managers accomplish park management objectives provided for in law and planning documents;
-define, assemble, and synthesize comprehensive baseline inventory data describing the natural resources under NPS stewardship, and identify the processes that influence those resources;
-use qualitative and quantitative techniques to monitor key aspects of resources and processes at regular intervals;
-analyze the resulting information to detect or predict changes (including interrelationships with visitor carrying capacities) that may require management intervention and provide reference points for comparison with other environments and time frames; and
-use the resulting information to maintain—and where necessary restore—the integrity of natural systems."

Taxpayer Bill of Rights

Northern Water has reviewed TABOR's requirements and does not believe TABOR will limit its receipt of grant money pursuant to this application, or that receipt of such grant money will cause Northern Water to violate any applicable provisions of TABOR.