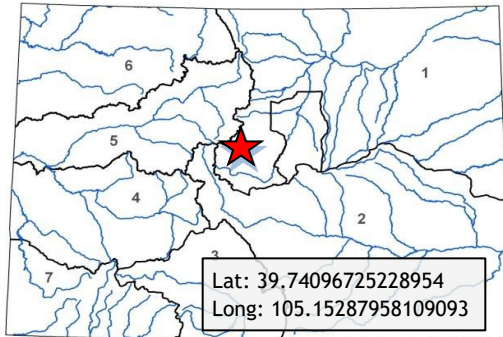




Riparian Reconnect Riverscape Restoration Colorado Open Lands

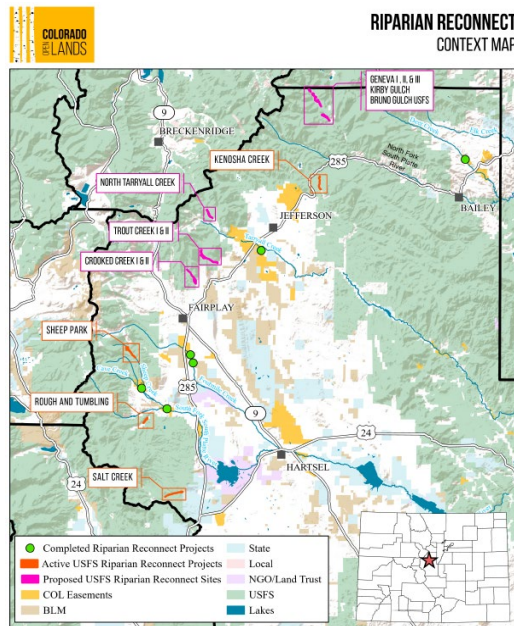
March 2023 Board Meeting

Water Plan Grant Application



L O C A T I O N

County/COUNTIES:	Park
Drainage Basin:	South Platte



Prepared: Colorado Open Lands, Date: November, 2022
Data Source: COMAP (CNIP, 2021); Roads, Lakes, and Streams (CDOT, 2021)
Public Access should not be inferred from this map. This map is not a survey and should not be construed as one.

watershed and stream characteristics that reflect those in minimally impacted systems, which is the definition of process-based restoration provided by the Colorado Water Plan. Riparian Reconnect partners have been actively studying watershed health and practitioners of riparian restoration in the South Platte Headwaters for longer than two decades. With ongoing support from CWCB as well as other state, local, and federal funders, they have completed several studies that inform this body of work and have allowed them to optimize their restoration efforts. The applicant has received 8 past CWCB grant awards and has a history and is familiar with what is required to successfully meet CWCB grant and project requirements.

The applicant is requesting \$351,120 of Colorado Water Plan grant funding to complete this riparian reconnect restoration. The applicant has 70% match funding totaling \$819,280 and 30% of this project will be funded by WPG. The applicant has secured all match funding through two grants from National Fish and Wildlife Foundation and Park County Land and Water Trust Fund.

Funding Recommendation: Staff recommends Board approval of \$351,120 for full funding to Colorado Open Lands for the Riparian Reconnect Riverscape Restoration project.

D E T A I L S

Total Project Cost:	\$1,170,400
Water Plan Grant Request:	\$351,120
Recommended amount:	\$351,120
Other CWCB Funding:	\$0
Other Funding Amount:	\$819,280
Applicant Match:	\$0
Project Type:	Construction
Project Category:	Watershed Health and Recreation
Measurable Results:	450 acres of restored habitat and 50,160 linear feet of stream restored

Colorado Water Plan Grant funding will be used to restore 450 acres of riparian habitat and 9.5 miles of stream corridor in the headwaters of the South Platte River through the established Riparian Reconnect program. This request will provide treatment of 8 high priority stream sites on the Pike National Forest in Park County. Treatments use low-tech process-based restoration (LTPBR) techniques and beaver activity to reconnect stream-wetland riverscapes that have become degraded by channelization and incision, restoring natural hydrological function and ecological health. This application also includes support for an ambitious monitoring effort to document the hydrological and ecological responses to LTPBR treatments. The naturally complex and connected aquatic and riparian habitats proposed for restoration are critical to the recovery of native and imperiled species.

This restoration project reflects the goals of numerous state and basin-level plans and embodies specific tools described in the 2023 Colorado Water Plan. The project addresses several challenges facing the South Platte Watershed as identified in the South Platte Basin Implementation Plan. This suite of sites was identified through a rigorous suitability analysis for headwater riverscape restoration in Park County. The prescribed treatments are specifically selected to mimic, promote, and sustain those processes to restore the dynamic



COLORADO

Colorado Water
Conservation Board

Department of Natural Resources

Colorado Water Conservation Board

Water Plan

Water Project Summary

Name of Applicant	Colorado Open Lands
Name of Water Project	Riparian Reconnect Riverscape Restoration
Grant Request Amount	\$351,120.00
Primary Category	\$351,120.00
<i>Watershed Health & Recreation</i>	
Total Applicant Match	\$0.00
<i>Applicant Cash Match</i>	\$0.00
<i>Applicant In-Kind Match</i>	\$0.00
Total Other Sources of Funding	\$819,280.00
<i>National Fish and Wildlife Foundation</i>	\$292,600.00
<i>Park County Land and Water Trust Fund</i>	\$526,680.00
Total Project Cost	\$1,170,400.00

Applicant & Grantee Information

Name of Grantee: Colorado Open Lands
Mailing Address: 1546 Cole Boulevard Lakewood CO 80401
FEIN: 840,866,211

Organization Contact: Dirk Rasmussen
Position/Title: Email: drasmussen@coloradoopenlands.org
Phone: (970) 368-2613

Grant Management Contact: Dirk Rasmussen
Position/Title: Email: drasmussen@coloradoopenlands.org
Phone: (970) 368-2613

Description of Grantee/Applicant

Colorado Open Lands is one of Colorado's most impactful non-profit land conservation organizations. We are committed to protecting land and water forever.

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 39.740967
Longitude -105.152880
Lat Long Flag Default/Proponent headquarters: If the location cannot be defined with flags above, use location of project proponent headquarters
Water Source North Tarryall Creek
Trout Creek
Crooked Creek
Buno Gulch
Kirby Gulch
Geneva Creek
Basins South Platte
Counties
Districts

Water Project Overview

Major Water Use Type Environmental
Type of Water Project Construction / Implementation
Scheduled Start Date - Design 4/1/2023
Scheduled Start Date - Construction 4/30/2024
Description
COL respectfully requests funding from CWCB to restore 450 acres of riparian habitat and 9.5 miles of stream corridor in the headwaters of the South Platte River through our established Riparian Reconnect program. This request will provide treatment of 8 high priority stream sites on the Pike National Forest in Park County. Treatments use low-tech process-based restoration (LTPBR) techniques and beaver activity to reconnect stream-wetland riverscapes that have become degraded by channelization and incision, restoring natural hydrological function and ecological health.

This proposal also includes support for an ambitious monitoring effort to document the hydrological and ecological responses to LTPBR treatments. Riparian Reconnect is the largest and most longstanding application of LTPBR in Colorado, and therefore an excellent opportunity to study both the ecological and geomorphological effectiveness of this fast-growing and increasingly popular restoration approach, and a good opportunity to study the potential implications of this work on streamflow patterns and water administration. By funding this proposal, CWCB will support these timely and much-needed scientific studies. Funds will go towards annual ecological surveys and equipping sites with instrumentation for longer-term monitoring of streamflow and hydrological response.

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)
50,160	Length of Stream Restored or Protected (linear feet)
	Efficiency Savings (dollars/year)
	Efficiency Savings (acre-feet/year)
450	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	
	No additional measurable results provided

Water Project Justification

Broadly, this Riparian Reconnect proposal embodies core Action Areas, The Colorado Vision, and specific Tools described in the 2023 Colorado Water Plan draft (1-8 to 1-10). This proposal is a Partner Action promoting CWCB's vision through the Thriving Watersheds partner action category (Page 6-3) Riparian Reconnects adaptive process-based approach to restoration treatments embody the Colorado Water Plan's vision for thriving watersheds: to enhance watershed health (Page 6-32).

The South Platte Basin Spans diverse landscapes and ecosystems and is home to nearly three-quarters of Coloradans and rich ecologic communities. The project actions in this proposal addresses several challenges facing the South Platte Watershed as identified in the South Platte Basin Implementation Plan (BIP) and 2023 Colorado Water Plan draft:

- Climate change may degrade watershed health, increase the risk of wildfire, impair water quality, and increase risk to environmental and recreation attributes.
- Additional data are needed to evaluate the health of streams and watersheds more completely and identify ways to improve conditions.
- Identifying environmental and recreational flow needs is challenging because of technical issues and lack of data, and due to overlapping and sometimes competing environmental and recreation needs.

Specifically, our proposal will directly protect and enhance watershed function as well environmental and recreation attributes. The South Platte Basic Roundtable prioritizes all three of these goals to build their strategic vision (4-52). The process-based stream and wetland restoration proposed herein would treat 9.5 miles of stream corridor and over 400 wetland acres throughout the headwaters of the South Platte River. These are critical

habitat areas for native and migratory species, many of which are threatened.

Restoring functional stream-wetland ecosystems has many additional co-benefits for Colorado communities. Some of these co-benefits include water detention processes that attenuate flash floods and recharge the alluvial aquifer for drought resilience, refugia and potential fire breaks that provide wildfire resilience, carbon sequestration, as well as many other co-benefits. These import co-benefits in our proposal exemplifies CWCB's desire for carefully planned multi-benefit projects (vs. patchwork efforts with narrow purposes, e.g., Page 6-32).

As a Watershed Health and Recreation Project, this Partner Action promotes CWCB's vision through the Thriving Watersheds partner action category (6-3). This project was developed collaboratively with Colorado Open Lands, EcoMetrics, and the US Forest Service under the umbrella of our longstanding Riparian Reconnect program. Riparian Reconnect uses a collaborative community-driven integrated planning and implementation approach that draws from the expertise of restoration practitioners, conservationist, researchers, land managers, and community members. Our projects prioritize long-term watershed resiliency while providing mutual co-benefits to communities and ecosystems. Our ethos is similar in this way to the Colorado Water Plan vision of Resilient Planning by "integrating local planning strategies, prioritizing collaborative solutions, and building adaptive capacity and resilience" (6-44). This process exemplifies the One Water Ethic (6-6) and CWCB's vision for Vibrant Communities that balance water supply and demand needs with their environment and urban (or rural, in this case) landscape (6-6).

Our proposal focuses primarily on Health Lands. Specifically, we are improving aquatic and riparian habitat by reconnecting floodplains to their channel, two specific Partner Actions for Thriving Watersheds (6-34)

The project is a Partner Action for Healthy Lands (6-34). The Colorado Water Plan specifically calls out floodplain reconnection and nature-based solutions (6-34) noting that:

"Projects that reconnect floodplains to waterways and restore wetlands and riparian habitat along headwater streams can enhance habitat, slow flood flows, and improve water quality. These kinds of projects enhance the natural environment, but they also help provide clean water supplies for both municipalities and agriculture."

This is precisely what our proposed restoration treatments aim to accomplish. To that end, the 2023 Colorado Water Plan draft states:

"Resilient river systems require seasonal flow fluctuations and provide complex and connected aquatic and riparian habitats that sustain stable, diverse, abundant, and reproducing populations of aquatic and riparian species. Efforts to improve riparian and aquatic habitat are important to the recovery of native and imperiled species" (6-34).

The naturally complex and connected aquatic and riparian habitats we aim to restore these headwater sites are critical to the recovery of native and imperiled species.

The Riparian Reconnect approach to riverscape restoration is also a good example of a Partner Action for Wise Water Use (6-34). The project will continue building on body or riparian restoration that may be applicable on a broader scale in appropriate settings across Colorado to create greater drought, fire, and flood resiliency. This suite of sites was identified thorough a rigorous suitability analysis for headwater riverscape restoration in Park County. Colorado Open Lands is now working EcoMetrics and federal land management agencies to identify future restoration sites throughout Colorado using specific guidance from the 2023 Colorado Water Plan draft: "Stream and watershed restoration efforts should be concentrated on areas that will create the greatest environmental benefit. Specific ecosystems such as headwaters, floodplains, and wetlands can be evaluated and

prioritized using watershed-specific metrics. Stronger projects and strategies emerge when local decision makers prioritize projects by balancing science, funding, risks, and values.” (6-34)

The primary Tool employed to meet these goals is Stream/Watershed Restoration and Enhancement (5-26). In developing this project, Riparian Reconnect partners carefully diagnosed ecological stressors of past and present land use that are currently inhibiting natural processes (see supplemental materials). The prescribed treatments are specifically selected to mimic, promote, and sustain those processes to restore the dynamic watershed and stream characteristics that reflect those in minimally impacted systems (see supplemental materials) which is the definition of process-based restoration provided by the Colorado Water Plan (5-26). Riparian Reconnect is a state leader in the development, promotion, and implementation of the process-based approach to stream restoration and stewardship.

This project will also employ the Colorado Water Plan tool of Data Collection and Sharing (5-20). Data collected while monitoring the hydrological and ecological response to restoration treatments may be used by the State to forward its goal of sharing data “to advance our knowledge and understanding of drivers that impact our water resources and potential future water supplies.” This ambitious monitoring effort aim to address a research gap by documenting the hydrological and ecological responses to treatments. Riparian Reconnect is the largest and most longstanding application of LTPBR in Colorado, and therefore an excellent opportunity to study both the ecological and geomorphological effectiveness of this fast-growing and increasingly popular restoration approach, and a good opportunity to study the potential implications of this work on streamflow patterns and water administration. By funding this proposal, CWCB will support these timely and much-needed scientific studies. Funds will go towards annual ecological surveys and equipping sites with instrumentation for longer-term monitoring of streamflow and hydrological response, including installation of approximately 100 shallow groundwater wells with datalogging water level sensors and 8 streamflow monitoring stations with flumes, staff gauges, and/or other discharge measuring and recording equipment on treatment and control sites.

Related Studies

Riparian Reconnect partners have been actively studying watershed health and practitioners of riparian restoration in the South Platte Headwaters for longer than two decades. With ongoing support from CWCB as well as other state, local, and federal funders, we have completed several studies that inform this body of work and have allowed us to optimize our restoration efforts. These include:

- 2008—Watershed surveys of aquatic habitat metrics to establish the range of natural variability.
- 2009 & 2016—Post-treatment appraisals and monitoring of past stream restoration project effectiveness.
- 2011—Watershed assessments of river stability and sediment supply (WARSSS).
- 2016—Comprehensive inventory evaluating ecological health and restoration potential of streams and wetlands in Park County.
- 2017—Collaboration with Colorado Natural Heritage Program (CNHP) to develop South Park as the pilot for their restoration assessment tool.
- 2021—Joint study with CNHP and Colorado Water Conservation Board (CWCB) evaluating the potential/limitations to restoring historic beaver complexes across Park County (BRAT).
- 2021-Present—Riparian Reconnect is currently partnering with Colorado State University faculty Dr. Ellen Wohl and her students to study carbon dynamics and habitat complexity of restored riverscapes at Riparian Reconnect sites.

From these studies, planning efforts, and partnerships with private, local, state, and federal entities, we have

identified the restoration sites in this application as several of the highest priority projects in Park County. Beyond the potential to restore ecologic function locally, restoration of these sites will have compounding impacts in a larger constellation of restored headwater riverscapes throughout the region.

Taxpayer Bill of Rights

COL is not aware of any TABOR issues that affect our application.